

FTL Transcripts Jan 2022

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Introduction

This is the complete transcripts and chat logs for The Future of Text Lab January 2020. We meet twice a week, on Monday and Friday 4-6pm UK time. The official Journal is available from the website: <https://futuretextlab.info>

3 January 2022

3rd January 2022 Video

https://youtu.be/plN_KHTZwcY

3 January 2022 Transcript

*Note: Only this session, and the one with Barbara Tversky has been human transcribed,
All others are automatic.*

Rafael Nepô: [00:02:48] You guys enter into a virtual reality phase.

Frode Hegland: [00:02:53] Well, you say it's a phase, I don't think it is a phase and you know, you talked about costs and things. Don't forget. Don't forget that kind of strangely, people who don't have that much money, they're the ones who tend to buy the biggest TVs. That's because they like entertainment, and there's nothing wrong with that, it's an it's an effective way to get entertainment, right? Yeah. I think it'll be something similar with VR that a lot of people will jump in. And I see now there is a bit of a tipping point, but still the issue we've been discussing. Well, there will be proper productivity stuff.

Alan Laidlaw: [00:03:32] Mm hmm.

Rafael Nepô: [00:03:33] I'm a complete I just want to clear up that I'm a complete fan of VR. I love it. It's it's incredible. And I mean, it's something that we've been doing since the dawn of text, if you think about it, right? Because storytelling is virtual reality in a way where you're listening to somebody telling a story and you go into another dimension, another world. So it's just another interface for for seeing things. [00:04:00]

Frode Hegland: [00:04:01] Yeah, I mean, we're waiting for Brandel and Alan, you know, to dive into the community planning thing. I'm glad you agree. But the thing that surprised me is a couple of things. Number one is this thing about you have 3D on a computer screen. That's one thing that if you can move your head, you know, and if you can move that and it becomes

something really strangely different anyway, I'll report back when you guys get your Oculus, I'll meet you in that land. But anyway, OK, well, we're waiting for the rest of the guys. Let's have a look at this.

Mark Anderson: [00:04:39] I think the other useful thing that came up just about the speed was we're discussing the fact that having having the having something like the Oculus was less about a 3D experience, more potentially a sort of end dimensional experience in that it's a bit naive just to think of it. Ooh, oh, you know, this is this is the [00:05:00] next revolution of sort of blocky 1980s Wolfram diagrams, but more that for the sort of things we're talking about, it's the ability to say, take some information and look at it on a whole number of different axes. And now you've got the performances of these things to work with. I mean that that I find much more interesting than just being able to play a game with the headset on, which is, I think, where a lot of people's head is out at the moment. And that's that's absolutely fine. But I don't think that's the interesting part of it at all.

Rafael Nepô: [00:05:28] I love the idea of of VR glasses as entering a mind palace where, you know, I keep my things. So it's a literal entryway to a mind palace. So it's very nice.

Frode Hegland: [00:05:43] Yeah, I I agree with you. That is a very nice way of looking at it. By the way, there are some things with this setup that's really amazing and some that are really awful. Like I'm trying to log into Google, excuse me, YouTube, Google. Same thing in a way. And you know, I have the headset [00:06:00] on and I have to do a cold here and can go to another part of the app. And just obviously, it's something you'd only do one, but at once, that's pretty bad. Right? So on the agenda, I met with Ward Cunningham yesterday. Everybody knows him. He's the inventor of the wiki, right?

Mark Anderson: [00:06:16] Mm hmm.

Frode Hegland: [00:06:17] Wonderful chat. I showed him. This was not really to do with my PhD because my thesis has officially been handed in, even though they don't have the documents. So it was not recorded, but he really likes the idea of visual meta. He really thinks it's cool that we accept the documents still exist because he doesn't and his work. But intellectually, he likes that. But more interestingly, the map and author, you click on something you see the lines he really likes because it isn't messy. So that was actually his his main thing. And he would very much like to join us for a hosted session. So what I think we

should do, considering the potential group of people [00:07:00] we have, we should do every two weeks because if we only plan until June six months, that's actually quite a lot of time. And then we can during that get enough people for the next year because otherwise one year it'll be filled up really quickly. What do you think, guys?

Rafael Nepô: [00:07:18] So until June, that would be eight people we can get eight people for six months, that's that's completely fine, I think. Oh, I think it's more of a matter of logistics and getting people's agenda. So basically, if we take January and we fill all the slots until June, we're fine.

Frode Hegland: [00:07:40] Yes, Barbara will join us January 21st. Mm hmm. So I think we should put Ward. I don't know. But anyway, they have said yes. Also, Richard Saul Wurman, who founded Ted. Barbara is already up there already consistently [00:08:00] because she has moved across. And then we have these other high suggestions, so like and lower, I'm going to invite her soon. I think we all agree on her, right?

Rafael Nepô: [00:08:11] Yeah, she's been doing a great, great amount of work towards tax productivity and, you know, knowledge management area. It's good.

Frode Hegland: [00:08:23] Oh, so that's why that.

Rafael Nepô: [00:08:34] I would love to get about the Mango on on board. This book has been incredible and it's it's hundred percent about text and he's very, very thorough, and he worked with Jorge Luis Blige's from the, you know, the infinite library.

Frode Hegland: [00:08:53] That's amazing.

Rafael Nepô: [00:08:55] He's, you know, living a living person that had contact [00:09:00] with, you know, some, some amazing people and he would be a very valuable asset. I'll try to try to find some contact information for him.

Frode Hegland: [00:09:13] Special effect for Brandel arrived. Excellent. Yeah, sorry. Yeah, and I, Rafael, if you get him, that would be amazing. I obviously have his book and read it too. So that would be really cool. Yeah, yeah. Brandel, you have to send me a friend request

or whatever it's called on.

Mark Anderson: [00:09:36] Yes, I will definitely do that. I'll think you are cool.

Frode Hegland: [00:09:41] So now we just need everyone else to feel excluded. So they'll also join us. We'll do the psychological thing of pretending we're better than them. I'm sure it's not working, is it? No.

Rafael Nepô: [00:09:52] All right. Not working.

Frode Hegland: [00:09:55] So Brandel, I was just saying I spoke with Ward Cunningham yesterday, had [00:10:00] a really lovely chat and he would like to join us for one of the hosted things. We also have Richard Saul Wurman, who founded TED. So I think we just agreed as a group that we're going to try to do a host of meeting every two weeks because that means June, you know, 12 people. It's not that bad. You know, we could easily do that. But then we need to decide on in this meeting what our journal will be, what medium and so on will it be? Blog PDF or whatever? We just have to put a put a stick in the ground and just make a decision and can always change it. But we've got to do something.

Mark Anderson: [00:10:44] The PDF really strikes me as an act, as an output format, in other words, it's best used for something that is broadly become static or it's reached a, you know, an addition, you know, a point at which you want to crystallize it. And [00:11:00] in that way, it sort of reflects a boundary between the old fashioned thing was quite literally, you had to put it on a piece of paper to show somebody as opposed to the brave new world. We're moving on. We're arguably never has to exist in a documentary form, which I guess is where water is coming from. You know, as long as it's always connected in, and that's the assumption we're sort of making.

Frode Hegland: [00:11:20] Well, well, I think he thinks that PDFs are important in the context of how we are doing it. But the thing is, let's talk about it from an almost child perspective. What is a journal? A journal is a published work, therefore exported, therefore frozen. But that should not preclude a very interactive experience with a journal entry or the whole corpus of journals, right?

Brandel Zachernuk: [00:11:51] Yeah. I mean, there are a number of different components to

hypertext in that there's cross linkage [00:12:00] and there's web delivery, and the web delivery aspect of the hypertext is the aspect that is problematic or challenging for for sort of durability. It would be possible to have a local archive or to be able to save a zip of a set of pages and give that to people. In terms of the way that they would be able to interact with each other, it might be somewhat odd if you wanted to give people something, you can host it as well, but also just make sure that it's always downloadable. That sort of serves a number of purposes simultaneously. I don't know whether solid. I mean, I haven't spoken to him before, but I don't exactly understand how it's all of this supposed to be helpful, to be honest. But but it might be a mechanism that is worth considering, or if only spiritually as well. So if [00:13:00] anybody's is familiar with what it is, that's all it is supposed to do for the concept of durability and hosting. I'd be very interested.

Frode Hegland: [00:13:06] One of our colleagues, Mark and I, his name is Henry Henry Story. He did Solid. And along with Chris Gutteridge, who is probably the most clever person I've ever met with all due respect to everyone here, we don't get it either. We really like the basic ideas, but it seems when you get to what it actually is, there's a lot of. They're doing it, by the way, just to show you and an author you can export to WordPress currently doesn't work very well because some APIs changed, but it wouldn't be that hard for me to change that to work. But let's because I'm, you know, I'm in of an artistic personality traits, to put it that way. Let's say that one thing we would like is to have this be relatively easily intractable in VR space. What just for [00:14:00] that aspect, because we can obviously output in many, to many different formats. So Brendan, what would you like it to be if you were going to be interacting with it in your software?

Brandel Zachernuk: [00:14:12] Uh, this is where I clashed a little bit with the rest of the web VR community, but I think that it should be an HTML in order to make sure that it works well in virtual reality. The one caveat is that in order for me to be able to do my work of rendering something to HTML, it's necessary just to have it in the right sort of tag structure. That means that I can extract what needs to be seen and where. So beyond having some mind an expectation that it's well-structured enough to do that and to think about the scale and the size of the pieces within it, I don't believe that it's worth trying to optimize for anything more than that. So, you know, most people in Web VR at this point aren't using. Um, [00:15:00] aren't using documents that are using 3D models. I think text should be text. I think it should be represented as such so that it has the sort of transposed ability and change ability. And to that end, I have built things that support being able to render a document or being able to take a snapshot of a document at a moment and turn that into text. That's what's

in reality. That's what's in deep regret. So, yeah, I.

Frode Hegland: [00:15:31] I am just trying to say, if I can log into my WordPress server here and I'm having problems, so I'm not going to waste anybody's time on that.

Mark Anderson: [00:15:40] Very quickly before we skip ahead to first, just to pick up the point about solid something I've heard said and it wasn't it wasn't said in any way so disparagingly, but in a way solid is sort of is trying to take another crack at the semantic web. That never quite happened. There wasn't, you know, when people write about the semantic web, I think they genuinely thought it [00:16:00] was going to happen and clearly it has. So this is another attempt, and it probably comes more from an engineering community that is rather exasperated that the world doesn't understand, you know, XML and, you know, just does think things like RDF, you know, is not natural to most people, and I think that upsets them. But you know, we have we are so solid is is an attempt, well, attempt to provide referencing means. But I think the sort of where it comes from was picking up the ashes of what what semantic web never quite came to be. If that helps. I mean, it does. But I'm still perplexed as to what people's expectation of the impact it would have on on a user or community level because ultimately technologies must have that or they aren't anything. And so when people say things like blockchain is going to revolutionize [00:17:00] Kickstarter and yet you won't feel a thing, then you can't have both things either something that's going to change or it's not going to revolutionize everything. So indeed, it's another version of, you know. But all my friends use Product X, you know, exasperation. Yes, I I mean, I think it's well intentioned. I think a lot of good work's gone into it at my sort of thinking it's going to go anywhere fast. Likely not because I think what it, it makes no attempt to do is to wrap the human into it, into the thing. Now, if we were going to hand everything off to our robot overlords, solid probably would be good part of the jigsaw. But I don't think we're there yet.

Frode Hegland: [00:17:44] It's pretty simple. Ok? Innovation will only happen if it's needed.

Brandel Zachernuk: [00:17:50] Hmm. Ok, well, thank you. Thank you for the detour. I'm somewhat relieved and disheartened to hear that the future of tax community also doesn't [00:18:00] know what solid does for us.

Frode Hegland: [00:18:03] I would absolutely love to understand and support solid. I mean, Tim Berners-Lee, not only Mr Famous Man, but he is one of the wisest people I've come

across and I would love to have him active in our community. I've only had a chance from a few times and I was so impressed, but this just doesn't grok to use that Americanism.

Mark Anderson: [00:18:24] Well, it's not a case. I don't think they're doing anything wrong. I think it's a classic case, but maybe you're just not doing anything right at the same time. So, you know, it's well thought. I don't think there's anything apart from people who are going to go really down in the technical ways. No. And you know, in fact, I really do think it's semantic Web 2.0, the semantic Web 1.0 didn't go anywhere, and the question that perhaps they aren't asking themselves, they're asking the wrong questions is why did the first thing fail? And well, let's not go down the rabbit hole because it's not our problem.

Rafael Nepô: [00:18:59] And the thing is, [00:19:00] with all of the projects that are decentralized where you have your own little server in your machine and you own all your information and everything like that is that it has to be set up in the moment you're setting up the computer. So it has to be out of the box if it's not out of the box. I don't see it happening any time.

Frode Hegland: [00:19:20] So guys, a key question. And you know, I just texted Adam because he hasn't been here for a while to make sure he's OK. And that is, I'm not. I don't want to give anybody work. That's not what we do here. But let's say, for the sake of argument, Randall, you had decided that you desperately wanted the journal to go into your world. You've already said you would prefer to have it as HTML. Can you tell us a little bit more? Because if it's cheap and easy for me to modify and export from author, considering we already have to WordPress, then maybe we could do something that we could easily export to all kinds of different, useful things simultaneously. [00:20:00]

Mark Anderson: [00:20:02] Yeah. So having the simplest markup, one of the reasons why Wikipedia is such an appealing thing for me is that it one it's a very large purpose to it's pretty good information, but three that the representation is incredibly simple. So there's very little that you need to know about what the CFS is doing. I mean, it's good that there had a little one heading to stuff like that. But more importantly, it's it's very simple and very consistent, somewhat consistent across the articles so that you know that a paragraph is representative of approximately this amount of text and stuff like that. Whereas for better or worse, on a lot of commercial websites, those kinds of guarantees aren't necessarily the case. Apple does a pretty good job, but like fighting to make sure that that textual representation is somewhat [00:21:00] consistent with the way that the most basic reader would want to be able to render

a page is is a constant uphill battle with anything that's a little bit more opinionated with regard to representation. So, yeah, I think within the context of that, I would also aim for and argue for simply a simpler representation because not just with VR, but with other technologies and in the future, the vision of HTML as a document format that is less opinionated about presentation than the specific browser that's responsible for doing it. I think it was a really useful thing. And as computing changes to become a party to representing things in a more diverse array of ways, we'll probably need to lean back on that and remind people that HTML is is a format for information and browsers are a machine for deciding what to do with.

Rafael Nepô: [00:22:00] Mm [00:22:00] hmm. Right. For the for the Me platform as well, basic text would be better for structuring it in different ways and even modularized if we need.

Mark Anderson: [00:22:14] This is mostly consistent with the idea of having a police level address ability. And in fact, if you think about leaving aside the exact letters HMO, if you have this this structured approach effectively built in, if you if you treat that as a necessary constraint, I suppose that's one way to look at it. It frees you up from other stuff. Now if I'm working, say an author, I don't need to see that. But if author knows that at some point, it knows that the ground truth underneath whatever you're typing. The structure that you know, the headings you zoom in and out of are, in fact, the headings belonging to this structure, which you know at the moment we're calling it. I think that's the way I see it fitting together, [00:23:00] because in that sense, in many, in some aspects. Author or reader will be functioning as the browser. I know that might seem a bit odd, but effective it is because you're saying, Oh, here's some text. Yep, I I know what this is. This is how this is, how I present this sort of text and I read something that looks like a document doesn't look a web page. I'm happy. That's what I expected to see. I don't actually really care the structures that you see as the end user. I don't care. Those of us who care about the the interrelation and the permanence of that text do want to care about that structure, because that's half of the thing that helps us cross-reference it. Keep it alive.

Frode Hegland: [00:23:40] Right. So a question is, I'm asking Rafael, Peter and Mark first, how do you want to consume the journal? How do you want to quote unquote read it? And what

Rafael Nepô: [00:23:53] Way? Oh, that's that would be up to the readers, [00:24:00] but I

would assume for me personally, I would go tablet based. I think reading on a tablet is incredible.

Frode Hegland: [00:24:11] Hang on, Rafael, just to really explain the question. I also mean, should we transcribe it? You know, so it's properly done with a human, whether your friend Daniel has been very good. Should we just use the YouTube transcription? Should we leave it as video or something? What is the kind of medium that you guys personally, when you go back in a few months, you want to look back? What would you like to use?

Rafael Nepô: [00:24:35] So, for example, a lot of people love podcasts, but I cannot listen to the podcast for the life of me because it doesn't engage me in a way that video engages me. So if it's a recorded podcast where people are talking and there's camera one and two jumping back and forth, that's perfect. I love to to to watch people having conversations. [00:25:00] So audio format for me is it's no good. I I tend not to consume audio content. Spoken audio content, right? Not only music, but personally, I would go either I would go video and text. Considering we're going to have these recorded so.

Frode Hegland: [00:25:28] Ok, so you do you think that if we can afford it, considering it costs about \$50 dollars each? If we do a human? Do you think we should do that or do you think we should use a kind of a scraping mechanism to get the raw YouTube, which doesn't say who was talking? For your own personal consumption profile.

Rafael Nepô: [00:25:48] So for my own personal consumption, I would love to see since we're if we do it twice, twice a month, that's fortnightly, right? And if we have fortnightly publications connecting that with the [00:26:00] newsletter and having it in both, you know, receiving it an email but having. Having. But I like to print out stuff, right? So if it's easy to print out a little booklet with it, with the transcription? That would be nice, but that's me personally. I would do that even if I would do it myself. Right? But yeah, a fortnightly publication in text would be amazing with, you know, the video conversation of the meetings.

Frode Hegland: [00:26:36] What about you, Peter? How would you like to consume the because the journal, well, at least in large Part B are Zoom meetings. How would you like to consume a result?

Peter Wasilko: [00:26:50] Well, to my mind, I would like to see Typekit tech on a tablet

backed up by machine readable text.

Frode Hegland: [00:26:59] Ok, [00:27:00] Mark,

Mark Anderson: [00:27:04] I think I mean, I was thinking, I mean, to say, it's to me, it's actually really quite a toss around word. It's sort of context dependent. If I'm wanting to listen to part of the journal where there's a lot of cross-referencing, I don't, for instance, want to be listening to a conversation. I want to be looking at as some kind of a hyper textual, regardless of what the sort of browser type is, but something where I can in the moment follow all those links. Otherwise, it's interesting what Rafael was just typing something in. But but I find I very often, yeah, I find getting traction in podcasts is difficult. What I tend to do is I do tend to listen to, I say, listen to videos, so I'm probably not watching the video. Most of the time. I flip back occasionally if there's something being shown. I normally listen it between one and a half to two times speed because there's too much feel otherwise, and my mind tends to wander off on to something else. So I'll [00:28:00] listen fast, and if necessary, I'll backtrack. If there's something interesting I didn't understand or if it's signposted, we've now got to the bit that I made a note before that I really need to listen to.

Mark Anderson: [00:28:10] I might slow it down. But again, in fairness, I'm talking there about normally me listening to someone in my native language. I, for me, you know, another native English speaker, I'm very conscious. But but then again, if it allows some people to listen to it more slowly because that aids aids comprehension, I think that's a good thing. Again, if I was reading the journal, maybe not in my first language, I'm probably as important would be having some translation facilities at hand, whether provided by, you know, out of journalistic work or something else. And that's why I say it's really it's sort of really quite contextual, you know, if it's English this week, but it's all Japanese next week, I'm going to want to interact with it in a different way because I know from the get go that I've got a steeper comprehension task [00:29:00] involved. I'm not sure if that's helped, but that is not sort of the question.

Frode Hegland: [00:29:07] Yeah, I think it has actually. Brendan, how would you like to consider that?

Mark Anderson: [00:29:13] I'm in the audio video. If it's primarily to do with the transcript or the video, then I think that that is a source of truth. I definitely do a lot of listening to

videos then accompanied by a written and indexed currency of where the primary things are on an overall sort of summary of what it is that got covered in that time would be useful so that you can kind of glance and say, Well, if I need to go back to that conversation and kind of re familiarize myself with it, then I can do that. So that would be really useful as a as a representation similar to the Worldwide Developers Conference [00:30:00] videos, although it doesn't have that sort of pricey component. They've got a clickable transcript. So that would be really nice. The extent to which one has control over that as a consequence of things being on YouTube, I think, is limited. But that's not to limit people's capacity for building sort of sidecar information that can link to codes and stuff like that as well. I'd be curious as to what kind of solutions already exists for that, but otherwise I'm pretty interested in playing with what kinds of additions and capabilities could be bolted on, either by using it as an API or as writing bookmarklet. I've had a lot of success in the past with just writing things to take control of the JavaScript page on YouTube for my own purposes.

Frode Hegland: [00:30:50] Ellen enters just in time to be asked the same question.

Mark Anderson: [00:30:55] Well, what's what's what's up?

Frode Hegland: [00:30:58] So we are going [00:31:00] through into planning. And are you coming on video or is that your audio today?

Alan Laidlaw: [00:31:09] Audio. I'm having internet troubles.

Frode Hegland: [00:31:12] That's fine, that's fine. Ok. Right, so we so I talked to Ward Cunningham yesterday, you know, Wikki, guy, and he's very happy to join us. So we have a good amount of people. So we're considering every two weeks because that means 12 people by June. That's I think we can do that. First of all, do you have a big comment on that?

Alan Laidlaw: [00:31:36] Do. I think it's insane. Ambitious, but you know, that's that's that's not. You know, the worst thing in the world, I think maybe a way around that would be what if we thought about this in seasons? So [00:32:00] we do the two weeks and then we say, OK, we're going to do this for like there's going to be a four month crunch and then we can we can assess for two months or four months you and then another season.

Frode Hegland: [00:32:16] Ok, that's very interesting, so the discussion you just entered into

was I'd asked everybody how they want to consume this quote unquote journal. And by that I meant, do you want to read it as an really refined? Somebody does a transcript for \$50 a piece or just scraped YouTube text, which doesn't even know who's talking or audio or video, or what should it actually be? And Adam Air, Alan is thinking about an answer, Adam, and we shall ask you in a moment, by the way. Happy New Year, everyone.

Mark Anderson: [00:32:57] Happy New Year.

Frode Hegland: [00:32:59] While Alan is [00:33:00] thinking just to repeat the question, so you can also think about it, this journal thing that we are now planning today. You know, we're going to have at least one Post-it meeting a month, maybe two. But the thing that comes out of it? How would you like to consume it as just video or as a transcript? And if it's a transcript and what form, et cetera? So that's what Alan is going to tell us now and then, hopefully you.

Alan Laidlaw: [00:33:27] Here's. Uh, oh, gosh. Ok. Let's take a step back, and rather than think about what we're trying to make, let's think about let's make assumptions about our audience.

Frode Hegland: [00:33:42] And but, Alan, before we do that, can we just talk about us as individuals? So your own personal preference?

Alan Laidlaw: [00:33:51] All right. So my personal preference is that I'm pretty swamped and [00:34:00] I. I don't know that I would. I think a consumable would wind up collecting on my wall, right? My bookshelf and whatever form that, you know, whatever metaphor you like for that. So a a passive kind of resource that's always there. A Wikipedia of sorts is. I don't know, like since I'm on the spot, I'm trying to think of what are the opposites of deliverables, what are the opposite of consumables? You know? And on the flip side, you've got something that's super dynamic like Discord or circle or Slack. And I am like getting more and more allergic to those because that just adds to the overwhelm, right? So. That's [00:35:00] kind of the angle that I've tried to take, it is like when I say take the audience into consideration, I mean me, but. It I don't want this to be like something that you put a bow on. Can give it away, but I don't know. That's an interesting question, I think the newsletter made sense. In the kind of low key here, if you want it. Uh, yeah, that's all I got for the moment.

Frode Hegland: [00:35:42] Just to add to that, before we go to Adam, when I met with Ward Cunningham yesterday, who really wants to come in and talk to us and all of that good stuff. He also hosts wiki meetings. And so the whole idea you mentioned recently, I about kind of us reporting on other things, [00:36:00] really? Yeah, like that idea that communities reporting on other oh great, just by the communities.

Alan Laidlaw: [00:36:07] So I have more thoughts on that as we get to it.

Frode Hegland: [00:36:13] Ok, so Adam, how do you want to consume the record of our interactions?

Adam Wern: [00:36:20] First, I don't like the word consume. But that word makes me a bit allergic because it feels like something you eat or and it passes through you, but I want to I want to in a way interact and dance with the ideas, really be immersed in them and consume is the wrong metaphor for that. But I say where the word content. I don't like the word content either. I want works and not content, because yeah, content is it's a low bar to be content [00:37:00] nowadays. So I rather. Not confidence with the works, but to be a realistic. When I watched talks or read books, a very low percentage is really, really meaningful or useful, but it's very useful those parts. So I want to find the the few ideas or sentences that that you can. Keep and think more about it at all candor, and sometimes it's not even in the talk, but in the discussion afterwards or between the lines or your own interaction with the ideas that I have to make it to make sense of it. So I don't know if I'm answering the question, but. And. You are most of the value comes from from the [00:38:00] from the interaction with the material, not just watching or reading a newsletter, but actually thinking about it and discussing it and taking it further. For example, for the future textbook, there are so many ideas there that I feel are kernels or embryos for ideas or for discussion that most of the value comes from actually discussing those ideas, not from just reading a formulation of the problem.

Mark Anderson: [00:38:30] We must also point.

Adam Wern: [00:38:33] So I don't know what that leads or what to, but that's my.

Frode Hegland: [00:38:40] I think that's that's wonderful. Adam, I say Rafael has his hand up, but just really briefly, Rafael. So what we have automatically, we have this video stream,

you know, whatever direction we want. That is a thing that we have, right? So that's great. That exists. It's a channel that we're probably going to rename it. We'll talk about that today. But I think [00:39:00] we're all saying here that this idea of a professor sitting down with a sweater like, I got this from Edgar, by the way, call a sweater in the world. But you know, sitting down with candlelight and reading through the pages of our discourse is just not going to happen. Nobody has time for that anymore. So what I think Alan and Adam really highlighted, and I think everybody agrees we need. Oh, that's interesting. You know, we need a way to to have that thinking space. So we need to think beyond everything. I think that's really, really fantastic. Ok, Rafael, sorry.

Rafael Nepô: [00:39:34] Yes. When Adam was talking, it reminded me of what David Lesbo did for the future of text book, where he took every piece and, you know, he kind of scrutinized it. So select, you know what? Ok.

Frode Hegland: [00:39:49] Well, Rafael. We lost out.

Alan Laidlaw: [00:39:54] Can you repeat? Still can't hear you.

Mark Anderson: [00:40:02] You [00:40:00] I still haven't

Adam Wern: [00:40:08] I heard some static Rafael, so maybe it's my microphone that actually

Rafael Nepô: [00:40:13] I think the battery on the microphone died. Can you hear me now?

Alan Laidlaw: [00:40:17] Yes.

Rafael Nepô: [00:40:18] Ok. So hearing Madam Speaker reminded me of what David Lebel did for the future of text book where he took. He basically took the matter information of each of the texts and made it so it's visible. So if we have, you know, I talk with Richard Solomon, I want to know who he mentioned, you know, any dates or any kind of technical words or any kind of specifics, because that way I can have an overview of the conversation without having to digest the complete conversation. If I find the tags interesting, then I go in and then I do a deep dive and consume everything. But I would love to see the content, you

know, remove [00:41:00] the, you know, the main pieces.

Alan Laidlaw: [00:41:04] That's a comment on that. Unless there's somebody else speaking, that's a. A great point. In fact. Like, what that made me think is, hey, that was one thing I wanted to do for future of text as well. I would have had no idea that he was going to do that. Oh, I wish that I could have known that he was doing that, and maybe I could have helped him out. Right? So that makes me think maybe there are some embryo's approaches that have cropped up in prior texts say, Hey, this is a pattern that we like. Let's expand on this particular thing, you know, like the sound bites, but maybe there's. Maybe there are other [00:42:00] approaches as well that we could sort of. They say this is a pattern who wants to be a part of this pattern, who wants to help make this pattern happen? Then it's easier to think about and create

Frode Hegland: [00:42:12] That we can really, really, really high level, which is really cool. But this meeting today, we have to nail down a few practicalities. And also, I just posted in the text chat, Zatar Gqom Esther Connection, they do some of this Zoom stuff, but I do think that it's kind of annoying that we're not all on the same platform because the thing about the Zoom transcript, sorry. Video It doesn't somehow computationally say who we're speaking one, because that would be really, really useful. We've gone through different levels of different software trying to extract it, but you have to teach it. It just doesn't work in all of that stuff. So sorry, I just got a message that wasn't been interrupted. So I'm just [00:43:00] thinking. Ok. Just this is me doing a detour against what I've said, you shouldn't do, so I'll try to be quick. Imagine if we had an app on a computer, if it's a web app, fine doesn't matter, but it has that key thing we talked about. You can press buttons to say when something is interesting or tag it live. Right, and if that knows what the community is, then all of those are compiled into a PDF, html virtually, it doesn't matter. It could be anything at that point, but that means that we're beginning to get close to this thing of our journal is. Here's the video. That's the core truth, so to speak. And here is our list of the bits that we thought were interesting or not, and you can just click through Brandel highlighted something Peter thought something else was boring, whatever it might be. Isn't that a basic kind of thing we should attempt to somehow try to make for ourselves?

Alan Laidlaw: [00:43:59] I'm getting the context [00:44:00] more of the talk since I jumped in late, starting to hone in on a little bit more on what you're after. But. Uh, somebody else can say anything.

Frode Hegland: [00:44:13] I think Mark has a hand up.

Mark Anderson: [00:44:15] I just pick up the point that it's interesting that I said we're not on the same platform and I was just thinking about to of us saying, you know, I'm almost over discord and whatever the best word is, you know, I'm the same because basically. Although they work at distances about effectively being in the same room, and if you're not in the same room, it it's not, it's not so useful. And also, it's one more thing that the occasional user actually has a massive burden to use. And yet really, what we're talking about is address ability. So the key thing here is the structure of what we do not, not necessarily the means of consumption, because I think the other thing [00:45:00] that you know and unprompted said on arrival was, well, we need to think about actually how in effect other people use it. And I know in a way we're a useful proxy to start with. But but it is also useful to say just think, how does somebody who has no immediate drive to use us has no immediate requirement to use it? How would they how would they use to get stuff from it? And the thing that I hear coming out from all angles is effectively structure for interaction. So if Adam just wants to dance through the data, that's cool. If the structure is there so it can be, it might be more useful to think about it in terms of the structure and how the suspension mark the data structure. So rather than thinking of it in terms of an idealized output, it's what are what are the things that we need to record and how do we how do we put them together in such a way that the consumer, [00:46:00] the browsing device, medium context can get what the person needs out of it? I think that's I think that's a an easier and deeper a more useful for the long term way to address the question we're asking.

Frode Hegland: [00:46:16] Well, I think no, no, no, not the video back off.

Mark Anderson: [00:46:20] All right.

Frode Hegland: [00:46:21] Yes. I'm just kidding. Sorry. So you have a response to Marc, right?

Mark Anderson: [00:46:27] So yes, I had.

Frode Hegland: [00:46:28] Yeah. If I can't see you.

Alan Laidlaw: [00:46:30] Yeah. No, no, no, no. Let me grab my glasses anyway.

Frode Hegland: [00:46:34] Oh, wait.

Alan Laidlaw: [00:46:35] Just to grab these glasses, I'm going to make it. I'm going to make it real. Dark Web. All right. I have the solution.

Mark Anderson: [00:46:46] Ok.

Alan Laidlaw: [00:46:48] So first off, highly likely that we're overthinking this, right? Because that's what we tend to do. And I think the key word is embryo, [00:47:00] oddly enough. And what it reminds me of is, I know, a believer magazine, but a lot of times in older publications and ephemeris whatever, you'd have this nice front piece of of a chapter, you know, and here's everything that's discussed in this chapter right before you jump in. That's pretty much all that we need. Like, I think, hey, no one's going to go through and watch us talk, right, but if we say here are the things that are discussed and we kind of turn it into either a nice little narrative of like this was brought here and that led to this or there are links within that paragraph, you know, but I'm talking about like two or three paragraphs, because first of all, that's easy to put together. We could even go back to previous ones and talk about that. Then we can link to whatever references, right? But we can't expect the audience to go through and do a deep dive. What's far more pleasurable is what came out of this. Oh, these are interesting. I see the bounce back and forth, [00:48:00] and now it feels like I read a little a simple little novel and I can move on with my day.

Frode Hegland: [00:48:05] Ok, so I have a question then, because I don't I don't like that at all. But for for two reasons. One, it would mean work. Outside of this time, and to either I'm going to have to do it, you're going to have to do it or we have to pay someone. Because it's, you know, a little bit of thinking work, it's not just so. That the other point is, I do love it because if it can be made to happen, of course it's fantastic, but those two barriers are quite strong for me. But if we decide that, for instance, I've used a friend of Raphael's for some transcripts and he's been very good, he's very reasonable and he's clever. So he understands our field. And if we tell him to do his transcript where it doesn't have to do interpretations. But you know all of this? Hello, where are you? [00:49:00] We're in blah blah blah. And all of that didn't just don't write it down, but he can still write quite a verbose transcript. But leaving out a lot of that stuff, I would be OK to try to find funding for that. Let's say, if we find a way to, you know, for the one hour, fifty dollars or something, which we should

probably do that. But I think that if anybody in here in this group say, we're going to try to do that, we may disagree on what was important once we start editorializing. And I think therefore the editorializing should be one level of bar. So that's why I like the idea of it, not even necessarily enough, but something like we can all point because Peter has been going on and on about high resolution addressing because it is probably the most important thing

Mark Anderson: [00:49:44] Is that

Frode Hegland: [00:49:46] This is good. This is bad. This is good.

Alan Laidlaw: [00:49:49] It's more work and it's less consistent, and so the thing about content or whatever, if it's not going to be consistent, you know, if it starts out a flurry and then it kind [00:50:00] of drops off some, I'm just I'm not going to go off my radar. I'm no longer going to trust it, you know? So that's that's where patterns are useful. I think if you want to do the transcript. That's great. I think that's a lot of work, but someone can be paid to do that. The then and then a more abstracted layer, even just from the transcript, which you know, I'm thinking of Gong, which is a software that I use a lot that is similar to Zoom or it sinks in with Zoom, but it does an automatic transcript of everything was spoken. It gives you a. A timetable of who is speaking when and then it categorizes what each person is talking about.

Frode Hegland: [00:50:44] Why are we not using that software, Alan?

Alan Laidlaw: [00:50:47] It's super expensive, and it's designed for. Meetings with the clients, it's really cool, though. I mean, they're really on top of it. If [00:51:00] I could, if I was allowed to give you a tour, I totally would. Yeah, there you go. So you

Mark Anderson: [00:51:10] Face pretty.

Alan Laidlaw: [00:51:13] Yeah. Yeah. The point is is that while you have the transcript, what they've done is they've done tags, they've done auto tagging now. You know, of course, like Otter does that as well. What I'm talking about. I think. Takes less work than the involvement of the thumbs up, thumbs down, right? And is less of a big deal. It could be the kind of thing that could easily be created by one of us or two of us. Submitted to the group for edits, you know, and then agreed to a final form, and then that's just like the front piece. And if you

want to go watch the video or read the full transcript, you can, [00:52:00] right? But but in the meantime, you get a nice hey, here's here's the things that were discussed, you know? And I think that's at least. When that's done, we can put that episode to bed, you know, and if we want to go in and explore it further and, you know, extract an inner twinkle, we can't quite dig it.

Frode Hegland: [00:52:24] Here's my thesis. It's one hundred and fifty four thousand four hundred and twenty four words, including Appendix. And I wrote everything in one document. Mark told me he had one chapter per document, which I know people who write books do too, so that's completely legitimate, but I'm talking about it because of the interaction. So for instance, right here I come across Hamilton. Oh, no, Hamilton again, right? But I want to know where it's mentioned. So I do command and I can see all the mentions of Hamilton in my entire thesis. I think that kind of everything interaction is so crucial. You [00:53:00] know, here is British home. It won't be as many. And then I go back out of it. That's the kind of thing we need to aim for for our record. That's, you know, even though I'm all about PDF is a save mechanism. How the heck are we going to be able to every time Randall talked about VR and Marc Andreessen also, did you know we need to get to a point where that's the kind of question that can be answered, right? So that's why it's a yes, the whole idea of having some kind of a summary

Alan Laidlaw: [00:53:32] And obvious answer admitted visual matter, right? Like we.

Frode Hegland: [00:53:39] Yeah, but the thing is, OK, first of all, really important question, what should we call this when I say and I want to upload this today, I want it to have a name we're going to love over the next year. What is this? Is it called dancing with text as it called text coffeehouse? Is it called something entirely different? What do you guys want it to be called?

Mark Anderson: [00:54:03] My [00:54:00] my wife reminded me that discussion group, while not being an exceptionally sort of vivacious name, is accurate and reasonable for a number of other contexts as well. So to that end up being recognizable, calling it like a text discussion group is not unreasonable, but I'm also open to that challenge.

Frode Hegland: [00:54:30] If we go with that. Not that, would it be a discussion group for future tax discussions or just tax discussion?

Rafael Nepô: [00:54:39] The state of Texas?

Frode Hegland: [00:54:41] Now we want the picture, though, the state of Texas, the state of Texas. I actually really like future tax discussions. What do you think guys like?

Mark Anderson: [00:54:59] Yes, [00:55:00] I think it picks up exactly what I was getting at. And it's and put bluntly, it's not too pretentious because there are so many things, you know? No, no, no. But you know, we in an attempt in an attempt to be appealing and so about the crowds, what also happens often. And you look back, I think God, did we really? Is that really what we thought was the best way to describe what we're doing, which is something one at the same time, more humble but much more interesting than than the label we put on it, Zanna.

Rafael Nepô: [00:55:32] Yeah, I like I like the generic descriptive. I think they it works nicely and people are you don't have to explain if we call it, for example, the library. Well, what is the library, you know? Well, the library is a meeting. We go, you know, every week, every two weeks. So if it's descriptive, people get it fast and it's easy to share.

Frode Hegland: [00:55:52] The first one was August 2020. Wow. I don't know why this [00:56:00] is in there, that's a music thing that's always slip in school. I try to find a way to get that off it.

Mark Anderson: [00:56:06] Electronic remix of the Orange Is the New Black there, I think. Yes. All right. Thank you.

Frode Hegland: [00:56:13] So we tried a few. Know I put them by one to three. I'll probably rename them by dates. Make myself a screenshot. But OK. Future tax discussions. And that's what I'll call the video. So that's step one we've agreed on, right? She. Yes.

Mark Anderson: [00:56:38] What about discussions on the future of text? I mean, they are very small points, but. Like future tax discussion sounds like it could possibly the discussion might actually also refer to the to the to the future, rather than simply to the tax

Rafael Nepô: [00:57:00] Discussions [00:57:00] on the future of text.

Frode Hegland: [00:57:08] Tell me what other way you can interpret it again, please.

Mark Anderson: [00:57:14] Um, if future tax discussions could mean that they are discussions of text in the future or that it is somehow a future text

Frode Hegland: [00:57:28] About future of tax discussions because all the other stuff is the future of text.

Mark Anderson: [00:57:34] Well, that still can mean that it's the it's the future of tax discussions could be still discussing the the. It could be about the future of discussing text. So it's the discussions on the future of text is the least ambiguous information.

Frode Hegland: [00:57:53] But that sounds clunky. What about a little quote marks around it like this?

Mark Anderson: [00:57:59] Yes, [00:58:00] that does the same job as in writing the the the place that discussions goes. I don't have a huge preference. I mean, I lean towards you. I'm not. I'd be happy to put it honestly, because those things are qualitative. It could actually just be to do with whatever other pattern matching my mind is doing on it. So I'm happy to actually see that go. Well, I

Frode Hegland: [00:58:27] Think you to do it this way. So there so we need and wherever we all happy with discussions on the future of text. Well, this is kind of nice, by the way. Seven more, we've got hundred. Um, actually, because this one is shouldn't be there.

Alan Laidlaw: [00:58:50] Randall's point is valid, and I agree, but I also think your point about the clunkiness is kind of important too, because there is a kind [00:59:00] of a, you know, cognitive placeholder that this this holds in people's minds and it's easy for those things to get lost. So like, for instance, a lot of things get abbreviated and you just wind up saying. Right? Future text, right? So. Maybe the. Maybe there's a way to have both, but still have, like the future of text discussions is nice because it shortens to FTD.

Frode Hegland: [00:59:30] But I think that's a good point, Alan, because also with Ismail, I'll be doing these interviews. So we're going to call that the future of text interviews. The Future of Tech Symposium. The Future of Text, Vol. one to three. So if we lead with that, but as long as we have the quote marks, it's OK, right, Randall? Ok, cool. Right, so back on this. A few more questions that are really practical. Should we invite Howard Rheingold? Considering he wrote [01:00:00] the book Tools for Thought.

Mark Anderson: [01:00:04] I'd be happy to have him. I've really enjoyed his discussions with Andy Clarke and read tools without recently, and I very much enjoyed it. So a link to that is, yes, sure.

Alan Laidlaw: [01:00:21] No, I mean, like so I know the book, but what what was the thing that you enjoyed?

Frode Hegland: [01:00:26] Recently, I like you said recently

Mark Anderson: [01:00:31] I found him actually because he was one of the few people who interviewed and had a discussion with Andy Clarke on Extended Mind. Many years ago. Ok.

Alan Laidlaw: [01:00:45] I know Steven Johnson mentioned him, and he's a favorite. Steven Johnson might be another one to reach out to, actually.

Frode Hegland: [01:00:52] Okay, well, let's go through this list briefly then, because you know, we're a little bit over time. Right. So everybody [01:01:00] agrees. Howard Rheingold Yes. Right? Anybody say no? Yes. We're going to invite him. Yes and bite. I'll do that. Ward Cunningham and Richard Solomon were happy with who else from this list should we invite? I'm going to try and lower again. Oops! Uh, anybody here want one invite somebody specific?

Rafael Nepô: [01:01:31] Yeah, I try to contact Alberto Munga.

Frode Hegland: [01:01:35] Do you have a link to this? Can you add his name as well?

Rafael Nepô: [01:01:38] Uh, could you send it on, Chad, please?

Frode Hegland: [01:01:42] They can try.

Alan Laidlaw: [01:01:51] Oh, who added, Andrew Hinton, I know him.

Frode Hegland: [01:01:57] I have. Oh, that was your thing.

Alan Laidlaw: [01:01:59] I'm actually [01:02:00] sort of sort of friends with him. I can reach out to him. Ok, great book. Can I add that?

Frode Hegland: [01:02:11] Not Chair Alan Kay is out of commission for a while, he's recovering from something. Ok, good, so that means that we have quite a few people. As you know, once we invite these with the ones we have here, we should be able to do 12 by June or one per month by December. So then we need to go back to this discussion of how we're going to record this. I honestly think that we agree. I honestly think I hate that expression. I apologize. I try to be honest with you all the time. There will be snippets of stuff sent back and forth, and they should be able to go back to once they came from right. And also other dimensions. So we all agree on that, but we need to decide on this. Very first [01:03:00] call has to go into this in some rudimentary form. All right, I need to step away just for one second, but let's just think of this very first call. How are we going to store it and disseminate it one second?

Rafael Nepô: [01:03:20] He means not just publishing on YouTube.

Mark Anderson: [01:03:27] Yeah. I mean, right now, YouTube has the. I'm not familiar with whether there are more artifacts that are recoverable from the Zoom, having never recorded something onto myself. Maybe I should try that sometime to see what one gets out of it. But it's it's a shame that people need to go to page solutions for the who's speaking aspect of it, because just thinking about what is actually available to the Zoom platform, that's trivially recoverable. I can. The thing [01:04:00] that I did with being able to record the screen of a computer and put it on another computer was actually in support of being able to recover that data, which I'm confident I should be able to have done in half a day, which I'm going to try today. But other than

Alan Laidlaw: [01:04:15] That? Sorry, go ahead.

Mark Anderson: [01:04:18] But with with that, in combination with the transcript that YouTube provides, I think that we have some pretty useful artifacts, not necessarily the ones that are sort of user serviceable, but it's a good start. Yeah. Yeah.

Alan Laidlaw: [01:04:37] I think the bigger thing is the is the editing. Lot of the noise, right, like the. I keep coming back to the decreases of compression, meaningful compression, because no one has time to go through all of this and and and. Maybe [01:05:00] that's a longer process where we keep nursing it the way we do this Google Sheet, you know, it maybe doesn't have to happen all at once, but that compression is is the I mean, if you're talking about something that you want to last for a long time, it's it's that, you know, we remember the phrases of of Socrates than than the entire transcripts.

Mark Anderson: [01:05:31] Yeah. And also, it might take us half an hour to get to the bottom of something to which there is then an answer, which is the intractable fact. Now, if in 100 years time some doctoral student wants to sit through hours as our conversation, they'll still be there. But you're absolutely right. Most many of the people would probably imagine consuming this much better word with a positive attitude and, you know, haven't got the time. And [01:06:00] if they had the time, they probably be here in person and they're not so well.

Rafael Nepô: [01:06:05] The real value add

Mark Anderson: [01:06:07] Is actually as well as the long term repository, which we can't assume anyone will necessarily read in this raw form is actually the sort of the extracted scheme of understandings that we come to. And cross-references be the tools we lay to other groups or effectively new understandings that we think we've established, right?

Frode Hegland: [01:06:31] So it's quite clear that nobody is going to be listening to this conversation unless they are an historian and a thousand years. So that is this is an example of interesting for us because it's framing the community and stuff, but completely boring for everyone else, right? And that's not a bad thing. You know, it helps our conversation. So the thing about. Ok. Let's imagine we can build a database, let's think [01:07:00] a little bit old fashioned, let's imagine that endless database goes the video and the chat transcript was is hugely important because links and things go in there and the normal transcript, then you know, if we have such a thing, if we just decide on that, how we output it, we can output in

several different ways, writes. But one so the dimension that's so good. So the dimensions we need time we have. We also need identification of speakers. It's so important and software right now unless you train it and spend a lot of time isn't good enough. So should we just try to find a way to make a web app that does the thing we talked about records all our own perspectives first. It lets us click a button. This is interesting. It lets us add highlights with stuff and just put that into some server somewhere. And then we export it as PDF and HTML and all kinds of good stuff. So we just figure out a way to do that because [01:08:00] we don't actually have a playing space where we should put our data. Yet all we talked about is, OK,

Alan Laidlaw: [01:08:05] Yes, and let's let's figure out a way to do that. And I think maybe what's going on here is actually we're talking about the need for man hours. We need is a post-production team. Right. Because none of this stuff magically happens. Right. And and I can't like it can go. It can. It can make it easier. Augmented, you know, but it's going to be wrong in some ways. So we need to talk about the value of where to where to focus on a post production team that the the the urgency of that, you know, how does that happen right after the video comes out? You know, I don't personally think so. But like I think the video can come out and then it can go through stages of compression and post-production. But I can I can I mention a slight Peter [01:09:00] before you go, can I mention a slight twist of topic? Which is this? I'm going to go out and do it. Great job on Digital Planet. And you froze. Or no, you just weren't moving. Ok. And it reminded me that. Our purpose here is one navel gazing, kitsch and fun times, friends, but it's also kind of saying, Hey, there's this future that everybody talks about, that includes climate change and equality and all that sort of stuff. And what we're trying to do is inch into that picture of the future. The general idea of the future that the public has this place for text. Right. And to think about text in this new way, and it doesn't have to be a specific solution. Visual media is one of those parts of it and it's a very good part. But mainly we want to wedge [01:10:00] in our our our union unconscious what the future is to include this kind of idea for text. And so we can get future thinkers. Cory Doctorow is another one. I just dropped on there that I think would be fantastic, who are generally interested in the future. But we're saying, let's fit the text into that and changes the narrative slightly, right? I think that is closer to our full purpose in why we're here.

Frode Hegland: [01:10:28] I think that's fair enough if you want to. But Corey, that would be great. Can I'm going to give the mic to Peter now, but can we all agree that whoever we feel from this list we want to invite, we will try to do it today. So we have responses by Friday. It's that call everyone who wants to invite someone. Well, it's all nodding. Ok? Peter.

Peter Wasilko: [01:10:48] Yes, in the fact that I posted the text of a newsletter posting and he's starting to move into looking at natural language processing, and he's prepared a guide to all the [01:11:00] resources we found so that links in this Typekit. Also, it occurs to me that the Zoom app itself knows exactly who who's talking when it's opening the microphone and running the text. So maybe what we should do is ask the Zoom team if they could provide a feature to simply dump a data file. Let's think Timestamp and would person's mic is open at a given time.

Alan Laidlaw: [01:11:27] Yeah, I mean, going on, yeah. Yeah. It's in the metadata.

Frode Hegland: [01:11:34] Is it where I just had a look?

Alan Laidlaw: [01:11:40] Um, I mean, it's got it's got to be in the channel metadata. Hell, Twilio VIDEO Does that as well?

Mark Anderson: [01:11:53] I didn't need it may not be exposed. It may not be exposed to the user or not with any ease at the moment, but it is a toilet. [01:12:00] I'm sorry. No, I mean, it's insane. Now I take your point.

Alan Laidlaw: [01:12:04] But I know. But I know it's got to be. I'm assuming it's in the metadata because because God doesn't make guesses about who's speaking when it has a track of the members that have joined the group and it has them all listed down and whenever they speak, even if they go up, it pops up as a blip.

Mark Anderson: [01:12:25] It may well be that Zoom's left that as an aftermarket product.

Frode Hegland: [01:12:29] Well, let's put it a different way. Let's say that we decide here now are normal calls will not be anything other than video recorded. That's it. We'll keep doing what we're doing for those the ones that we have. A guest host will spend a bit of money having a transcription. We'll figure out a way to finance that if we do that. What format should the test be? Text B. We can have several formats, so I guess if we get it as Microsoft Word, which is a neutral thing, we can just copy stuff out of. Let's [01:13:00] think it's going to be a human doing it. Most likely it'll be Danilo, who has been very good for us. Thank you, Rafael. He can deliver it in many different ways. How does Adam want it and how does Brandel want it? You know, how do we want it? We who may do stuff with it

before we give it to the world. But what could be easy for a human to give us the thing we want?

Mark Anderson: [01:13:26] Well, as long as to take your point, if it was a word document, it's almost a word document is capable of either through whatever word document, anything you have or some other process, for instance, producing the type of structured data that Randall and talking about using. Then it's fine. So I turn it round into the constraint what does what does the word or whatever format top sort of start level document need to address from the get go? [01:14:00] So in other words, you don't want to spend hours making a document and then find you've got to go back and tag it with some kind of headings or something, because those are those we did actually know. We did it.

Frode Hegland: [01:14:10] Mark, what what headings be about having having a human who is not right now in this group you may join? That would be lovely. There are some really good people on our periphery, but it basically. You know, OK, he could take us by person. That's what he's done already. He did the future of text day one and day two, our annual symposium. But, you know, if he does that, so let's take Randall you as a case study person, this person will probably get a mark. He is currently using windows. He's writing it and word now, but what would benefit you so that you have to do almost no work and it's useful for you? I guess one of the things would be at some point in the video, you'll have to have YouTube links with time marker. Not every single person speaking, but something, right? What else? What do you want?

Alan Laidlaw: [01:14:59] I want a mix of what [01:15:00] Adam made. Right, something close to the two interfaces that you design, Adam and Adam, design mix between that and reader.

Frode Hegland: [01:15:14] What about for your world, Brandel?

Mark Anderson: [01:15:19] Uh, I'm I'm used to scraping and processing, so from the perspective of being able to generate novel and interesting views, the things that I would make are what would be useful as the speaker. I do hope that it would be pretty easy to recover that quickly. And I grabbed a small sample of today's discussion in order to try to build something that will be able to kind of cover that for subsequent sessions like this. But yeah, I I. Nothing jumps out at me at this point that I'm aware of other [01:16:00] than to

make the because the YouTube transcript is actually excellent. It's just that the real estate that's devoted to it is to baseball. So having some kind of more humane representation of that text that tells you more about what it means would be very useful. So taking one of the things that I would be interested in doing is, for example, taking the time codes and maybe looking at their only discontinuities in that such that you can identify that this piece of text being after that person suggests that it's a different speaker or just that. It's a change in topic because a lot of the time changes in topic will be the somewhat larger gaps within the conversation. So, yeah, I'm mostly thinking about it in that sort of data representational sense and without having a particular application. I'm not I'm not aware of the things that I need to be able to build that, but I'm going to start playing with it.

Frode Hegland: [01:17:00] Ok, [01:17:00] I say Peter and Alan have their hands up, but just really quickly, do you have a way, Brandel, where you can extract the the YouTube transcripts?

Mark Anderson: [01:17:11] Oh, yeah, yeah, no, that's easy. I built the thing that pulls out a generator, Wardle, a bookmarklet that I built. I'll find the tree. And it was it was fun. So, yeah, it's it's just a matter of finding the HTML element that contains it and then effectively doing a copy paste of it, so you can do that with yours.

Frode Hegland: [01:17:38] So let me let me

Mark Anderson: [01:17:39] Know you can also do it in code.

Frode Hegland: [01:17:42] Ok, so before just to finish with you, Brandel, could you help put together a thing that gives a transcriber human? An easy way to add that stuff doesn't add our names. For instance, he doesn't have to type everything, but he [01:18:00] can just click, click, click, click these other people because that would reduce his workload and our money load.

Mark Anderson: [01:18:05] Yeah, absolutely. Yeah. No, that that would be pretty straightforward. You might need to register individual speakers. And then once you have those as a pool of people, then you'd just be able to click for the discontinuities, scroll through and see where different people come in and say, OK, from here on out, it's Rafael. From here on out, it's Adam, that kind of thing. So those things are manifestly possible.

Frode Hegland: [01:18:30] Ok. Let's keep talking about that, but I've been a bit of a bully, Peter.

Peter Wasilko: [01:18:37] Yeah, I suggested Jason, as a possible metadata format, deals can be a time index speaker topic responding to and the time stamp from the thing that they're responding to. That would suggest that the user interface for the user should have a button that he'd click when [01:19:00] he hears something that he plans to respond to. Those sort of like a queue for response button when you click the response button, and that would let his app know that the next statement he makes should be linked back to the timestamp when he first hit that button. Then, when he hits the button, it would send the data through. I saw that there were a couple of projects in the npm ecosystem that we're looking at, replicating the functionality of Zoom and Discord, using open source electron based tools. So the libraries to do all of the work and creating a custom plan are already out there. It's just a matter of figuring out which libraries best and walking through one of the tutorials. Here's how to replicate behavior of Zoom using npm. There are a whole bunch of them out there, so it is doable.

Peter Wasilko: [01:19:56] And again, if it's set up so that each person [01:20:00] is pushing those buttons as they go, we don't have to have the grad student being paid. The data will already be there, but we want it to be generating the data on the fly. The other thing is that we want to have some sort of a representation structure to describe the overall conversation. So there are already anthologies in place for people in the linguistic community that did that. And there are also a couple of tools I saw a long time back. One of the O'Reilly books talks about them. I have to go poking through my library to try to find where that was, but they had some tools for marking up transcripts after the fact, and those were geared more for grad students who are going through a transcription and meeting notes from interviews. They inject tags and appropriate notation, so we might be able to find some existing tooling that we could leverage in that regard. That's all that comes to mind at the moment.

Frode Hegland: [01:20:52] Ok. Right. Ok. There's a lot of stuff in there, but it's about how to get it [01:21:00] into that format. So I think definitely those who can should keep looking into that. Alan, I'm sure you have something. Yeah, related.

Alan Laidlaw: [01:21:14] Well. This is this is not my product manager. This is the opposite.

But what we're talking about, certainly in the format of metadata, reminded me of something that I still think would be possible and wonderful, and that would be. And this might be the great test bed for it, and I'd be happy to put in the work to help make it essentially. It should be possible with the right kind of mark down to say, here's the metadata form, here's the transcript form hit another button. I see it as a blog hit another button. I see it as a slide show. You know where it hit another button, and I see [01:22:00] the video with time stamps. And so it's all the same data, but I'm easily given these different views. Hit another button. I see it as a text conversation that I can view on my phone, right? That's that's not for the the here and now, but maybe we can make steps towards that, and I think it would be pretty fascinating. Also what we're talking about here as it gets more wild. Going back to the idea of rolling in the other brother, sister kind of groups. Future of work. Future of programming. Speculative future. Whatever. If we make something like this or have a have a kind of workable experimental pattern. We have a real possibility for maybe patron or or raising money with these other groups. You know, they they [01:23:00] use a similar pattern or they or they they do some version of it. And then and then all of them are consumable in a similar way.

Frode Hegland: [01:23:09] No question this could be an amazing product. Absolutely agree with you. Mark, I see your hand up. But just briefly, guys, I clicked on Randall's link to the mortal generator, which is just makes me sick with with excitement of what it could be. So this meeting that we have today? I don't mind paying for a transcript. I think it's really a very good investment, but I think we need to know exactly why and how. There's a few things we've decided today. We decided on the name of this community. So that is the kind of thing that will be cited by someone, probably. You know, 80, 90 percent of today has been woeful in the sense of someone in the future, it's been important waffle for us, but it's been woeful. There's not going to be cited. So, Adam, are you also sorry, Mark, I'm just a few [01:24:00] specific things. Are you also thinking about putting this into a system that you use? Do you have requirements for how this should be output?

Adam Wern: [01:24:10] I not really personally, I just want a few markers to the video conversation, and I would be very happy because I I have downloaded most of the future text videos and made a few simple pages with a few mark, uh, time stamps and comments either quotes from you or or just small marks where with things I want to listen to and think about again. And that covers about most of my use case. For this, and in terms of using the available money time we have here on planet Earth, I would rather work with [01:25:00] active reading or maybe text in 3-D and embodied more rich or input forms for text because I

feel a much more limited with the with the keyboard, for example. And so if I want, but this feels like I'm a party, it's a party pooper.

Frode Hegland: [01:25:24] Oh, I don't I don't think you are at all party pooper. I think one of the things that is come up is that most of what we talk about is really boring. It's exciting at the time, but it's really boring for anything to go back. Let's just accept that. But then there are the really interesting bits that people will have value, primarily us and other people. So the kind of simple use case you're talking about, I think, covers almost everything. I think that if we had a way that we can easily live would be great. But then later on, go back and click on things to say this is something I'm interested in, or even to have the text chat log integrated into the transcripts. [01:26:00] And to have this and I I mean, imagine if we had a web page for this, you know, basic log in. So everybody here with it within the community could easily go in and add a little tag or add a little timestamp, whatever you want. So we have a human who is in charge of doing the basics of putting it in the then Adam. Your system could have it. Brandl could have it. I could easily put it into author export a monthly or whatever I want PDF, you know, as in whatever we want, but I would would do that or whatever. We just need a place to put it. So I think that's really cool. Ok, Mark, I've been Ritchie for way too long, except you have yellow and yellow hands, so that's my experience now.

Mark Anderson: [01:26:40] I didn't worry. I mean, if it makes Adam feel any better, I'm going to do something else that might seem pretty open, but I think another thing to not overlook is whether what we're doing actually is useful in the general sense of scholarship and knowledge building. So another way of actually maybe getting some input [01:27:00] into this is is, you know, if we if we look at it and say, Oh, we actually are we doing something quite apart from the general interest angle that is, you know, a useful model or just even just useful data for somebody, even if they go to it and say, right, here are hours and hours of how not to do it. And even that's useful. I mean, you know, having just been through the actual process actually more often more illuminating than the things at work are the things that that didn't work, especially if there's some discourse around them. But let's just hope. I suppose the point in reductio is that just being open to the point of whether what we're doing is useful to people who are long term librarians, government archives, repositories and things like that, and I'll leave it at that. I mean, I don't have a fully formed idea. It's more just being open to the point that we may find we're doing something, and it might just be useful to pull [01:28:00] that in because often people, I think another thing that I find the academic community is really bad about doing is is is actually just get involved in things that are

happening. Yes, they want far too much upfront. They either wanted to all been fully finished. So it's all there already and there's no risk for them. Or, you know, somehow it has to be new and sexy and fun. And I think that's ridiculous. You know, this is just one of many things happening that people could benefit from.

Frode Hegland: [01:28:27] Adam, over to you. But guys, we really have to decide on on Friday, when we meet again, there will be a record of this meeting. We have to decide now what it should be and what's useful for us if it's entirely wrong come Friday. Fantastic. We've done a test.

Adam Wern: [01:28:42] Adam, I just wonder if in three or five years the the tools for meetings, I suspect they will have video meetings or video chats or Zoom meetings. I suspect they will have improved [01:29:00] a bit in three to five years because there is intense competition between the major players here, and I think there will be major improvements while in text in 3D. I don't think there will be too much interest because there are lots more. Yeah, it's so focused around games and other things. So I think it's there is a bigger void in in, for example, text input or or text in 3D. So if we want to do something unique for the world, I think it would be more useful to work with the three dimensions, for example.

Frode Hegland: [01:29:50] Yeah, the thing is, we know each other well enough now in this group for us, for me to be pushy. Let me just be honest, this [01:30:00] has to be the beginning of a record, and I think Adam, that is completely correct. So what we're going to do, I'm going to ask for this today to be transcribed into a word document and. Or should it be in a Google doc, what is actually easiest or what is most useful for us right now? Well, I mean, the transcription ask for it to have inserted the the chat, the text, as well as it can which names should be listed. That in itself is pretty useful, right? But how do we make this an ever growing corpus again, should we? Should we just Google Docs the next year and keep extracting and keep it growing? Well, someone else can have access. [01:31:00] Sorry, sorry.

Mark Anderson: [01:31:02] Well, the Google doc, as I understand it, has no, no, no, no understanding what end point. So it is it is an endless doc. So it's also compared to a word doc. It might be Raffarin. You could say there's more resilience built into it until Alphabet goes under or so some new categories and we haven't seen how.

Adam Wern: [01:31:24] But just to clarify, is this to actually extract value or is it an

experiment to try to provide some pointers for other groups or the future? I don't really get if it's

Frode Hegland: [01:31:38] The value is based on being able to navigate dimensionally. My favorite example of that is basically select text and recommend F and see all the occurrences. You know, at some point we should be able to I should be able to say, I want to say everything Adam has said, but not when this other thing happened or whatever. You know, that kind [01:32:00] of interactions is what we want to build, because some of the stuff in here is truly amazing. You know, as of right now, I have to say our VR discussions have gone in really interesting territories. I think that is an example right now that is really worthwhile, a student or anybody to listen to. And, you know, we go into all kinds of different directions. So it is about, OK, let's put it this way we're having coffee with a friend. We hear someone at the other table talking about something interesting. We say, Oh, we're doing so, and so you really should catch up on what we do in the community. What is the entryway? I think this is what Alan's been pushing. What is the entry way they should have? Some of it will be editorialized. We release a book once a year that's got an introduction and article, so that's one thing. But to be able to refer to when Rafael said this and Peter brought up this really interesting thing that has to be the interaction and today has to be the test case. Right, [01:33:00] yeah. Peter.

Peter Wasilko: [01:33:03] If I look like this, maybe have. Once in a blue moon, maybe once a month, this dedicated question to the future of cooling, just to talk about development pools and to get those of us that are building systems to see if we can move towards getting some kind of a test bed platform that we should all be contributing code to and leveraging what we're working on individually so that we start looking at technology integration. If I have a really great school for doing a visualization and Fernando has a way to do a 3D visualization off of that, we want to get to a point where we can start changing its engine code between one another and building large driver system.

Frode Hegland: [01:33:51] You got what, Alan. A Web3, you guys.

Alan Laidlaw: [01:34:01] Ok, [01:34:00] so we're talking about two different ends of a spectrum, the way that we've been talking about it is what is the ideal format for traversing this? And then the other side is, Hey, we need to have something by Friday. Right? So these are actually two totally different streams. The thing on Friday, Google Doc, maybe if we rely on an app, you know, we get more out of the box, but it's less timeless. So like my my default

is HTML. Like just freaking, let's put it on if IP fs or something just have a heavy HTML format, for starters, you know, if we want to add a compact, here's what it's about, you know, and then build out from there, you know?

Frode Hegland: [01:34:58] Ok, so we have agreed that [01:35:00] I'm going to ask for this to be transcribed into a Google doc. We will all have editing access. Anyone else can go in and view it. And I hope it'll be ready by Friday, he's quite busy now, but there we go. And then we will all play with it in our own sandboxes. And if we have other requirements or needs, we will discuss that over time, right? So let me put it this way, on New Year's Eve, we went to see Emily's two best friends who are godmothers for Edgar. One has two kids. The other one has three kids. So there was six kids altogether. We had a nice dinner. Super nice day. But there was one giant elephant in the room. It was the warmest New Year's Eve on record in the UK. I am tired of just talking. I think we [01:36:00] have to act like gun crazy Republicans and stormed the hill, and the only way we can storm the hell is if we have a target. So this is our first target, we might have to give us a brand which is useful, we're giving ourselves a beginning thing, GitHub. Yeah, GitHub is interesting. That's a bit beyond my everyday technical expertise, but I'm sure you guys could teach us all how to use it. And should we just yeah, we could just do pull requests

Alan Laidlaw: [01:36:32] And extract justice and link as we need and it could even show there's even a Google Doc format that we could use, but go ahead. I mean, a get doc.

Frode Hegland: [01:36:45] Ok. Why don't we? No, no, that's a very good interjection there. I'll get in touch with our transcription dude. Danny Lowe will be watching this and try to invite him, maybe for next Friday [01:37:00] or Monday. And you will give us all those who need it. I'm sure Ed Rendell and Adam don't need it, but a bit of an introduction to how that should be used. Would that be useful, Brandel and Adam? It Would it be easier for you to use stuff if it's if it's in that environment? Maybe.

Mark Anderson: [01:37:15] And a Google look,

Frode Hegland: [01:37:17] No, no.

Mark Anderson: [01:37:21] Uh, I don't I avoid using it as much as possible, but mostly because I despise command line tools. I use it for everything else. No, it doesn't have an

impact for me. If I can get data, it doesn't. I'm a very chaotic person in terms of data sources. I'm not particularly concerned if it's a Google Doc or if it's the stuff. I mean, by virtue of this going on on YouTube, it will be transcribed to the extent that YouTube does, and that's a really, really interesting starting point. I have a screen grab that I've taken of the today's proceedings such [01:38:00] that I can try to do that. That process of ascertaining who's speaking when such that we might be able to kind of integrate that with other things. So no particular representation matters very much for me. More the provision of specific data is, is, is the important part.

Frode Hegland: [01:38:21] This is exciting because right now a thing happened. There was a proposal and there was a point against it. So this is something that may want to be listened to in the future, right? So in the way that we have to learn to speak to Siri or Cortana or whatever, it takes a bit of literacy to remember to do that and to say things, maybe we should think about there being another person in the room now with us who can't interact with us. But so that we learn to say things like, Oh, that was interesting, or we even give this person a name. Right, so we say we [01:39:00] can't do that. Hey, Jane, because I won't say Syria. Right? Hey, Jane, what Brendel replied to Alan was really interesting. And then we have a tag, right? Can we develop a language for that? Should we have a virtual character?

[01:39:19] I like it.

Frode Hegland: [01:39:23] And of course, we will have to call Dr. Doug Wright for Doug Engelbart,

Mark Anderson: [01:39:29] That works for me. What we've got to say, I

Rafael Nepô: [01:39:32] Know I'm saying that I love having somebody in the room that will slowly optimize how we have. Conversations and discussions in a way that is useful not to be transcribed or to be recorded for the future. So if somebody is here, then they can ask, OK. You just mentioned the word hypertext and then could you quickly define it? And then that is a snippet of information to be used in the in [01:40:00] the transcription. So it's not a full text transcription like we've been doing. It's more, you know, getting bits and pieces and constructing as we go. It kind of breaks the speed of conversation and the flow of conversation. But it's it seems to be better to document it rather than just having a raw, raw data file of of mumbo-jumbo that has to be sorted later.

Mark Anderson: [01:40:25] You're talking about having a basic a human chairperson.

Rafael Nepô: [01:40:28] Yes. In the beginning, there will be more input from us into the text, into the document that this person will create. But eventually, the corpus of conversation will be structured enough that it's going to flow a lot easier. So it's it's a little harder in the beginning, but it gets easier and easier as we go.

Frode Hegland: [01:40:56] But by the way, I'm sharing screen now to show that I'm [01:41:00] thinking of calling it Doug discussion and the reason Doug is all uppercase because it's kind of an acronym as well. Dialogue for online understanding. But that's not new. But what I'm saying is, you know, we don't have a person, an actual person, which the raffle, I think, would be a good idea. But should we just try to figure out a way to speak to the camera sometimes, so to speak? And save that becomes useful or becomes entirely strained, I don't know. I like it.

Mark Anderson: [01:41:40] Ok, cool. Interesting experiments do. I mean, in a sense, and it may prove to be all wrong, but we won't need to be try it, which is the very reason to try.

Rafael Nepô: [01:41:52] Don't developers have the the rubber ducky method of developing where you talk to the rubber duck to figure out the issues with the code? [01:42:00]

Frode Hegland: [01:42:03] Adam, just pin something. How did you do that? And what did you do? Was that on your screen or was that?

Adam Wern: [01:42:14] Yeah, but there is if you do reactions and the press, Hamburg or the more options, you can put any emoji up there. So we could have a secret. And perhaps you could do keyboard shortcuts in a way for some of them to have markers. The problem is that Zoom removes them from the recording. I think so. So what I've done in the past when I did some graffiti, at some point when I added text to my window was that I had to run it through a graphic or obese studio and add a web page on top of myself. Transparent web page. Wow. [01:43:00] So that's the way to add more information on the screen, either text or symbols or markers.

Mark Anderson: [01:43:07] Literally exploding head.

Alan Laidlaw: [01:43:09] I know. Yeah, this is this is an evolution of the language right here. I mean, this could really become if we had a regular way to just visually. I mean, it's these days pretty trivial to say, look for the head exploding and then tag it purple.

Rafael Nepô: [01:43:25] You know, let's get somebody that writes in Pitman shorthand, and then we can just tell people, look for the squiggles, we can quickly find what they need.

Frode Hegland: [01:43:34] Well, so interestingly, with that issue, so, Randall, on the Mac, we have good live speech to text, but I'm not sure about how those libraries are accessible because I'm thinking maybe even if just one of us, like maybe me as the host has a basic app running tries to do what everyone's saying. But the key is that if I choose to do those little insert things, it's [01:44:00] done that they can. Then later on, when you have the YouTube transcription, they can know where to insert them. So whoever has a little thing like that, we have enough text to find those points. Does that make sense? Would that be useful? Well.

Mark Anderson: [01:44:16] Yeah, yeah. If you have some kind of reconcilable time coding system, then it should be possible to put all of those bits and pieces together. Absolutely.

Frode Hegland: [01:44:27] The reconcilable time code system is amazing because that is part of the Zoom video. It's in the lower right hand corner, which is such a gold mine for this, I think.

Alan Laidlaw: [01:44:41] Gosh, that is brilliant. I see that I see the future. The immediate future of Zoom chats being filled up with these coded emojis so that they can be extracted later on for particular meaning, like that's a that's a platform innovation.

Mark Anderson: [01:44:58] I love it.

Frode Hegland: [01:45:03] I [01:45:00] promise not to do any more investment encoding this year, but well for a few months, but maybe this. I mean, it's it's insane, you know, how I love the tap back thing on messages, right? We're basically desperately like little animals trying to claw at the door. I want to do a tap back on video. All right. It's such a basic thing, please. Yeah. Apis of the Universe. Let us build it.

Rafael Nepô: [01:45:32] Uh, follow the white rabbit. I'm going to have to take off.

Alan Laidlaw: [01:45:36] There may be an argument for Twilio video here, honestly, because it's far more open. What you can do?

Frode Hegland: [01:45:44] Sorry, I just want to say it's a little rough. We'll be here on Friday, right?

Rafael Nepô: [01:45:48] Yes, I'll be here on Friday. Now, my schedule is back to normal.

Frode Hegland: [01:45:52] Excellent.

Mark Anderson: [01:45:53] Thank you.

Frode Hegland: [01:45:55] Twilio VIDEO Allen, tell us more. I got to go in a few minutes, too, but I'd [01:46:00] love to hear about that.

Alan Laidlaw: [01:46:01] Yeah, it's just, you know, the same way that we handle SMS and all of the other tools, except that we make them developer friendly first. So the APIs are open and completely, you know? Hackable, right, you just have to have the idea, and it's very easy to spin up. Um. An instance of Twilio video it's not going to have it doesn't come with its own interface, but that's the that's the limiting factor and also the opportunity you can make your own zoom. And then invite people, et cetera, and there. I think it's pretty much almost feature matched with Zoom at this point, you know, like blurry background stuff. But [01:47:00] but then you have you can do way more on tracking the channels.

Frode Hegland: [01:47:05] I was just thinking our unique selling point could be Laurie foregrounds. Love it. Love it. Sorry. Mark, what do you want to say?

Mark Anderson: [01:47:17] It's just a quick interjection that follows on from something that Alan said earlier about, you know, there being there's the the production end and the are the tool and the content. And I just bring up another thing that I just there's another thing we've been fishing beyond, which is in a sense that the manner of delivery versus sort of what goes

in the grinder, the other end. And I think the first is more tractable at the moment. It's naturally it's kind of thing we like to do. We think, Oh, what's the really nice sort of sexy outcome we're going to produce? It's going to make everyone want to watch this. And that's because that feels like the thing to do. But probably the more the [01:48:00] more useful and long term good thing we can do actually is know. Follow on on the things we've just discussed and go through a couple of cycles. They're probably quite painful things that didn't quite work to move from the from the state of, yeah, well, we also have in all these channels to yes, practically today, you can sort of do this and we can posit that these other things are can follow in. Not not maybe not many today, but you know, we can certainly predict they'll go long how it quite looks at the end. Unless sure, I know some people want it handed on a plate with a pretty bow and nice fonts and everything. But I think a lot of people who are involved will actually come for the real meat of the thing, because that's the excitable and useful part.

Frode Hegland: [01:48:47] Alan, can you tell us more just to go on that hardcore thing? What would it involve to make your video?

Alan Laidlaw: [01:49:02] Well. [01:49:00] I mean, we could spin it up, I could spin up something, and if I can join Friday, I could probably have something to show on Friday. It would have no interface, so I need to think about. What's the bottom line needed? I didn't suggest it earlier, because I think it's overkill on the development side for what we're talking about. But. If we can get the transcription with emojis added, let me look into that. Otherwise, Zoom does the job, you know?

Frode Hegland: [01:49:45] Yeah, that and to be able to have the texture and the transcript. You can have that. So that's very, very exciting, and it's a bigger question, but [01:50:00] now that I'm a resident of the Oculus Quest, where would we and I'm asking everybody, where would one or two of us sitting with a headset and a chat like this fit in until we have face tracking? It would just be kind of stupid. We wouldn't really have an environment, right? Or is that not correct? I mean.

Adam Wern: [01:50:25] We already have Peter, that is a photo. So it's not. Less dynamic than that, but so if he was an avatar that didn't really face track but was there and moved around a bit. Maybe that could

Mark Anderson: [01:50:43] Be awkward to build an avatar by the end of the week?

Frode Hegland: [01:50:46] Well, I mean, the thing is, this is obviously a longer term question, but it's relevant because we don't look at each other in detail all the time, but the ambient. Are you paying attention and are you excited as useful? Right. And it's social. You know, [01:51:00] this whole metaphor as I am walking over here kind of stuff is currently a bit ridiculous, but clearly we are, you know, something is brewing. So if we want to take this record into that world where at some point there's a ritual representation because we would all like to be in a space now rather than in a box, right? At least to try it.

Brandel Zachernuk: [01:51:25] So in terms of people being able to be co-present, at the least worst option that I'm aware of at this point is can we can we can play around in there? I'm not aware of the ways in which people who aren't in virtual reality can participate with people who are. I think that some of the video sharing some of the video chat platforms have started to talk about the way in which VR participants can participate. But the thing is that that view has to be completely synthetic. So, yeah, I don't think that there's [01:52:00] anything good yet for being able to manage multiple people. I guess a high fidelity might actually do it

Frode Hegland: [01:52:11] Because for all my joking about Alan's camera being on off and then coming on and saying, Oh, I don't want to look at you, I would much rather look at a real alan and low pixels like we have now, rather than a sharp, high rise cartoon version.

Brandel Zachernuk: [01:52:25] Right, and yeah, and the other aspect of it, which is why we are for the time being, gives you different, but in many ways worse signals from the perspective of conversation is that had the emotion that we have in our faces is much more important than whether we have six degrees of freedom tracking of our heads. But you get in the video jet anyway. And so people, people being VR participants until such time as we have reasonable face tracking as part of it. Oculus has announced that they have intention to put some trackers in and onto the [01:53:00] face where we're in kind of a bind with regard to being able to capture the emotional performance of a participant within virtual reality. So, yeah, like I like more immersion and VR is one way to do that for some things. But for co-present social interaction, it's actually worse at this point. Ok.

Frode Hegland: [01:53:22] Fantastic. I look forward to Friday, Alan and Scott homework.

I've got some homework. Brandel and Peter, if you just happen to have any inspirations of how this might fit your own workflow. Adam, you too. Please feel free to note it down. It is important to me that these meetings are pleasant, so I don't think we should expect anybody to do anything ever. Outside of the meetings, you know, other than the ones who really passionately want to. That's why I'm a bit wary of the kind of actual normal work side outside. But if you or you [01:54:00] won't be here Friday, Peter, OK, Monday will be good. Ok, I have to rush downstairs. Anything else in closing?

Adam Wern: [01:54:10] Yeah, I mean, this is my library. I stole five hundred book images from from tools for thought. Thinker because they had a very nice home page. That just screen is great. The book covers. So these are five hundred books because I looked behind me and counted about 500 books in the bookshelf behind me and wanted to see what that would be in. If you if you put yourself inside your library, you can pick any book. Now it's repeated there, but it's just one hundred books repeated. But if you stood inside the circle of all your books and just pointed at a book and and got it because you can show the PDF in the browser just got. [01:55:00] So it was just after Brandel talked about three E.j.'s. I just wanted to try it out. So I want to see the library. It's not my selections. If you if you find the crazy Atlas Shrugged books here and there, then it's not mine.

Alan Laidlaw: [01:55:20] But imagine this four topics. Imagine this for your world of like, what actually is going around your brain? And we have a conversation and you can you can see it float behind you as as you're honing in on. You know, this is about Doug Engelbart. This is about Xanadu anyway.

Adam Wern: [01:55:36] Yeah, I tried kind of doing comic bubbles over my head in one meeting, doing graffiti on my own head, writing thoughts instead of doing it in the chat because the chat is a bit disconnected from the pictures. I would love to see that text coming inside inside our frames here, but it could be distracting, [01:56:00] of course, but I think we could find a good way of doing it. Ok, quickly

Frode Hegland: [01:56:07] I got to go. To close it down. But Adam, you are going to start working in VR soon. You're going to get yourself an Oculus.

Adam Wern: [01:56:15] I looked at you still need

Frode Hegland: [01:56:17] A story that sounded like a question. It was not

Adam Wern: [01:56:20] Yet. I looked at the prices. They looked at the availability, but it is an issue of actually registering your Facebook account because, yeah, yeah.

Mark Anderson: [01:56:30] So I have to drop that requirement. Is that true? It's true in practice. I'll take a look at the transcript to see whether it's the case. I did reset my Oculus recently. I think that they have dropped the requirement of it. You need to have an Oculus account, but it's not a Facebook account. Oh, OK, great. I'll take a look and I might be wrong, but that was my understanding from the last two.

Adam Wern: [01:56:53] If that's true, then I got the Oculus and

Frode Hegland: [01:56:57] I understand the concern about a Facebook [01:57:00] account. I've always seen Facebook is being completely public. Anything I put there, even though successful friends, something I'm completely happy with having public. But of course, if we put our knowledge work into it, it becomes something different. So yeah,

Adam Wern: [01:57:12] But it's not only that, it's also what you're supporting in the world and kind of, yeah, but addiction services. So it's a political statement. It's and to me, it's just as important as a climate crisis because it's it can fuel the climate crisis by doing well. I don't want to get into that too much now, but it's much more than being a private and exposed. It's many, many things

Frode Hegland: [01:57:40] I don't we cannot live in the metaverse. We cannot have Zuckerberg on our virtual future. There's no question about that. Even though it's an expensive device, I look at it as a disposable. It's something to learn what it feels like. I completely abhor much of what's going on there, but you know, we all have to make our own decisions as in what guns were prepared [01:58:00] to pick up, so to speak, even though there's blood on it. We look forward to Friday, guys. Please remember if there's someone you want, then it's on the list. Just invite.

Peter Wasilko: [01:58:13] One last point I saw that there's some project on Kickstarter trying to do a VR headset with the Linux platform. So we'll have to see how that pans out. And of course, we're waiting for Apple to come out with its offering, which will hopefully be sooner

rather than later.

Frode Hegland: [01:58:30] Yeah, but by the time Apple comes out, we need to be literate in how it feels to be in VR. I think that's a really key thing, you know, because a lot of it is if it's theoretical, it just you've got to go into the forest to understand the trees. Ok, love you guys and look forward to Friday on Monday. Bye.

3 January 2022 Chat Log

16:05:01 From Mark Anderson : For Rafael: <https://www.amazon.co.uk/Library-Fragile-History-Arthur-Wedduwen/dp/1788163427>

16:05:39 From Peter Wasilko : Ready Player One

16:05:58 From Mark Anderson : Above ref URL is for “The Library: A Fragile History”

16:09:15 From Peter Wasilko : See <https://www.wired.com/story/the-teeny-tiny-scientific-screwup-that-helped-covid-kill/> for an example of why our efforts to facilitate citation tracking matter.

16:10:56 From Peter Wasilko : *Facilitate

16:12:57 From Peter Wasilko : LaTeX Typeset!

16:17:13 From Peter Wasilko : I'd prefer to use Author as a font end to my blog which I will be transcluding into my website via imba.

16:19:00 From Peter Wasilko : Everyone should use S-Expressions

16:19:53 From Frode Hegland : Thanks for the Wired Peter

16:29:50 From Peter Wasilko : We need Purple Numbers in the text!

16:30:02 From Frode Hegland : Indeed. High res addressing

16:31:25 From Mark Anderson : Interesting. I often prefer to listen [sic] to a video – making occasional glances at screen for visual elements, e.g. a picture/diagram being shown. I also play with speed control a lot. so listening at x1.5–x2, slowing down for more interesting/harder parts.

16:38:59 From Peter Wasilko : The High Res addressability is the most important element to me, especially if it is mixed media, I want to be able to jump to the right time index in a case like that to just hear the relevant utterance.

16:39:35 From Mark Anderson : “Dances with words”!

16:39:43 From Frode Hegland : LOVE IT!

16:40:11 From Brandel Zachernuk : The ‘vision video’ for the site textio has some good

word-dancing:

16:40:53 From Rafael Nepô : It's a great video!

16:40:56 From Brandel Zachernuk : <https://textio.com?wvideo=bnyw8bmp2l> – not substantive but a really neat provocation

16:42:43 From Peter Wasilko : BlipSights — Short Insights, inspired by the BlipVert meme from Max Headroom.

16:43:19 From Alan Laidlaw : Lol! Ah Max

16:43:53 From Peter Wasilko : Vs. BlipCites — short bits of Visual Meta with just a VM ID to be looked up automatically!

16:44:00 From Frode Hegland : Esther Dyson connection: <https://ziotag.com>

16:44:04 From Frode Hegland : Nice Pater

16:44:08 From Frode Hegland : Peter

16:45:40 From Rafael Nepô : Twitch Clips

16:46:24 From Peter Wasilko : Sort of an Electron App version of Augment/NLS?

16:50:47 From Mark Anderson : as in "...we discussed this, so you don't have to".

16:51:10 From Mark Anderson : ^^ is response to Alan's last comments

16:53:17 From Mark Anderson : <https://www.gong.io/uk/>

16:53:35 From Mark Anderson : <https://www.gong.io>

16:53:39 From Peter Wasilko : Could we find a grad student to do it gratis in exchange for having access to our brilliance?

16:56:13 From Peter Wasilko : Oh yes TQL – transcript query language

16:56:33 From Frode Hegland : Text Discussions

16:56:44 From Frode Hegland : Future Text Discussions

16:59:47 From Peter Wasilko : Great distinction Brandel, you are thinking like a lawyer!

17:00:54 From Mark Anderson : No text but what we make.

17:02:06 From Peter Wasilko : Great Branding!

17:03:55 From Brandel Zachernuk : This is Rheingold's chat with Clark: <https://www.youtube.com/watch?v=jvqMEkNNuR4>

17:04:05 From Frode Hegland : https://docs.google.com/spreadsheets/d/1SS06scXgSIOMp_Gmj4tWG_eJKP30kDuAgkP8unpYnuQ/edit?usp=sharing

17:05:36 From Peter Wasilko : From Frederico Tomassetti: https://click.convertkit-mail.com/p9u8vedz50cqud74kdiq/z2hghnhdggxk9nap/aHR0cHM6Ly90b21hc3NldHRpLm1lL2d1aWRILW5hdHVyYWwtbGFuZ3VhZ2UtcHJvY2Vzc2luZy8_dXRtX3NvdXJjZT1uZXdzbgV0dGVyJnV0bV9tZWVpdW09ZW1haWwmdXR

tX2NhbXBhaWduPW9uYm9hcmRpbmdzZXFlZW5jZQ==

17:07:16 From Peter Wasilko : From his mailing list: “So far we have always discussed about formal languages.”

17:07:34 From Peter Wasilko : “We have seen typical programming languages: easy to process for a machine, not always so easy for human beings. We have then seen domain specific languages, which are more human friendly. There is another set of languages we did not consider yet: natural languages. The languages that we are using every day to communicate with other humans. Or sometimes with machine, using Siri, Cortana or Amazon Echo.”

17:07:51 From Peter Wasilko : “Natural languages are part of the equation of some advanced systems. They are an easy interface to be used by many persons who are not so much into computers. Also, there is an enormous body of knowledge expressed by means of natural languages. For these reasons it could be interesting to consider what is possible to do with Natural Language Processing (NLP). So we have looked into it and assembled a guide to this subject. You can use to get a clear idea of what is possible to do with NLP nowadays and which techniques permit to do so.”

17:08:12 From Peter Wasilko : “Do you want to recognize similar documents? Identify in which language a document is written? Generate a summary of a piece of text? These are some of the things we discuss in the guide.”

17:08:23 From Peter Wasilko : “Let me know what you think! Anything should we add?”

17:08:51 From Alan Laidlaw : This is like a kitchen

17:18:42 From Peter Wasilko : [{“time-index”: “0:04:34”, “speaker”: “Adam Wren”, “topic”: “interfaces”, “responding-to”:”Mark Anderson”,”at-timestamp”:”0:0:02”}]

17:18:58 From Peter Wasilko : JSON metadata!

17:19:05 From Alan Laidlaw : I LIKE “talking to”

17:21:38 From Brandel Zachernuk : This is the wordle generator, which leverages extracting the transcript: <https://twitter.com/zachernuk/status/1454379653519478793>

17:22:17 From Mark Anderson : Larger groups and waiting to be called (i.e. hand-up) add jumps into the transcript. So if a speaker is called (in response to a hand up) a likely context jump is imminent. What Peter’s speaking about right now covers this from another perspective.

17:28:05 From Peter Wasilko : [{“time-stamp”: “0:34:02”, “digress-to”: “Hamilton”}, {“temporal-delta”: “2:02”, “digress-to”:”Revolutionary War Politics”, duration”:”1:00:00”}]

17:29:10 From Frode Hegland : NOT Digression...

17:29:11 From Frode Hegland : 😊

17:30:03 From Alan Laidlaw : PoC of what can be done w text. Would truly love the VR explorations.

17:30:20 From Peter Wasilko : See Figure 2 in: <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.58.3833&rep=rep1&type=pdf>

17:31:56 From Frode Hegland : Yes, that kind of thinking Peter

17:33:55 From Mark Anderson : Sorry Rafael, didn't mean to talk over you.

17:35:26 From Peter Wasilko : "The Future of Text" : Tooling

17:36:03 From Alan Laidlaw : I got it guys!

17:36:07 From Alan Laidlaw : web3

17:37:07 From Peter Wasilko : I love IPFS!

17:38:29 From Alan Laidlaw : GitHub? That seems like what were talking about

17:43:09 From Adam Wern : The chat can be used for markers.

17:43:16 From Adam Wern : /mark this

17:48:01 From Rafael Nepô : See you all on Friday!

17:48:02 From Rafael Nepô : Gotta go

17:48:23 From Brandel Zachernuk : Oh I also wanted to put this in to the discussion because it related to the 'degrees of freedom' talk on Fri: <https://www.youtube.com/watch?v=ozuUpgxV2ts>

17:49:58 From Frode Hegland : Alan yes, let's try to build it!

17:50:06 From Frode Hegland : Brandel, will watch

17:50:29 From Frode Hegland : Reminds me, on first skim, of an actual video mirror for a high end clothing retailer

17:56:12 From Peter Wasilko : I will be unavailable Friday.

17:56:18 From Brandel Zachernuk : That picture ring is cool Adam! What is it?

17:56:46 From Mark Anderson : One ring to rule them all

17:57:00 From Peter Wasilko : A good start!

17:58:59 From Peter Wasilko : I

17:59:29 From Peter Wasilko : I will see if I can get my 3-D mouse to work with javascript.

7 January 2022

7 January 2022 Video

<https://youtu.be/TbS-GqULI7M>

7 January 2022 Transcript

Note: Accuracy of transcription and the assigning of speaker names cannot be guaranteed.

Please refer to the video in case of confusion or concern.

Peter Wasilko: [00:00:03] Good morning.

Frode Hegland: [00:00:05] Hello, Peter.

[00:00:07] Well, everything's snowed in over here.

Frode Hegland: [00:00:09] Oh, OK. Yeah, it's just cold. Not super cold, but yeah, New York has an incredible temperature swings, I remember. Well, not as bad as when the campus would ice over and you get the black ice on the way to the law building, that was just brutal up at Syracuse. Did you ever hit that patch when you were going over by Gearoid Geology? Yes, I think so. Yes. Everything would look fine. And suddenly your fired. Just be out from under you. I seem to remember that and also remember going to the computer cluster in my shirt in the evening, parked the car outside and worked all night, came out in the morning and the car was snowed under. I will never forget that was a serious temperature change, it really [00:01:00] wasn't cold in that. Yep, I hear you. Hi, Mark, we're reminiscing about the weather in Syracuse.

Mark Anderson: [00:01:08] Yes, I spent my my father when I was sort of between about seven and 11 was working in New York, so I remember New England winters. So first, first time I'd encountered real snow in sort of more than just about this much.

Frode Hegland: [00:01:25] Yeah, we don't get that much here, do we?

Mark Anderson: [00:01:30] I mean, not not in the South. It's unusual, I mean, the last the last really big time was about nineteen sixty something, which I sort of vaguely remember. We made we made igloos, you know, there was enough snow for that, but normally it's gone in a few days down south. A Mediterranean climate?

Frode Hegland: [00:01:51] Yeah. And so I'm trying to get my paper in today, and of course, today something happened to my server, so emails are not happening at all. Which [00:02:00] is very curious. They are working on it and. You know, document issues and you know, how it is, the more important the document them, are

Mark Anderson: [00:02:11] You sending, are you sending what you're sending the thesis in?

Frode Hegland: [00:02:15] I sent it in earlier to less than a day, I think today for them to have the final view.

Alan Laidlaw: [00:02:21] Oh, I see, right?

Peter Wasilko: [00:02:21] Yeah, I guess there's anything glaring and then I have to send it in Sunday. That's the latest.

Alan Laidlaw: [00:02:28] So maybe there is a sort of, I think, called drops. There basically is a thing that it's a bit like you, in fact. And I think on PDF tracker, I'm not sure whether you put in there as well. But there are things if you if you find that if you can find the secret office somewhere on the Southampton system,

Peter Wasilko: [00:02:45] It'll oh, it's just PDF tracker. That's what they want.

Alan Laidlaw: [00:02:48] All right. Okay, so that has an upload facility in it. So.

Peter Wasilko: [00:02:53] Yeah, exactly. That's that's what I'm trying to do. Oh, OK. But other issues and such as this nonsense about having all [00:03:00] these pages before the table of contents. Right. If I do that, an Acrobat, that means that the page numbers will be off.

Alan Laidlaw: [00:03:10] Uh, you know. Well, I'm sure it's a long term play with that, but I'm sure you used to be able to set custom. It's just, you know,

Peter Wasilko: [00:03:19] I'm not going to have 200 custom pages.

Alan Laidlaw: [00:03:23] No, no, no, no. I think I can't remember, but I'm in a different form of life. I do remember knowing about these things, and I'm sure. I mean, you probably can't do it in most other PDF editors. But you know, it's another bit of sort of secret sauce, I think.

Peter Wasilko: [00:03:40] Yeah, and it's still a pain in the arse.

Alan Laidlaw: [00:03:43] I agree.

Peter Wasilko: [00:03:45] I didn't use latex for it. No, I did it. No, I find it abhorrent due to the fact that it needs to exist. I think it's almost as bad as my PDF needs to exist. I mean, [00:04:00] only about two years to wrap my head around it. Yeah, yeah, yeah. No comment.

Alan Laidlaw: [00:04:07] No, I mean, the thing that finally drove me to it after I think I got to do my nine month report and realize that I hadn't actually mastered late EC enough to be able to do it. And at the eleventh hour, I had to put it all into word. And that was that just reminded me that, you know, friends don't make friends use words. So from then on that that was later. But, you know, other tools are available as you're proving. One interesting thing that sort of pertinent in a future text sort of way is is the fact that we haven't really. Another thing that we haven't sort of formalized is the fact that, OK, you have a paginated document. I mean, you know, in an idealized world, you wouldn't worry about it at all because somehow there'd be a sort of formatting layer that would just say, take this stuff, cut out the following way. But whilst we're in the world of sort of PDF and paginated documents, I'm sort of surprised there isn't a bit of formalism to say right here to hear front [00:05:00] matter here, to hear whatever hit here, you know, visual visual metaphor at the end, do not print by default for sake of argument and tune and tunes thereon. I mean, because in a sense to me, you know, that need has already arrived some years back and we still don't have it in in a way that is understood, you know, because it needs to be there so that PDF tools or PDF readers and things can understand that PDF print mechanisms can understand that and we get to a nicer place.

Peter Wasilko: [00:05:38] Yeah.

Alan Laidlaw: [00:05:40] The curse of the print age,

Peter Wasilko: [00:05:43] I don't think. I'm not sure if that's a curse, but

Alan Laidlaw: [00:05:48] No, it's an it's an inconvenience when

Peter Wasilko: [00:05:50] You're I think actually the curse is the fetish for cosmetics that academia has. All professional groups have some kind of a hazing [00:06:00] ritual in language. And I think that there's just so much there like it has to have these pages, but it has to be before the table of contents. Most of this is not for fuck's sake, you know, can we not write this?

Alan Laidlaw: [00:06:13] I know what. I agree. It's a pain. I think it's slightly unfair to just write it off. I mean, something that one that one personally at the point finds inconvenient doesn't mean it's not a convenience to anybody else. And I don't think it's not there as a gatekeeping exercise. These things all add up. No, it's not. No, no. That I think I think that's overreach. It is definitely the case that some I mean, the fact that, you know, this place wants this font and another wants a different font of that kind of thing. Well, that's that's a choice that you could argue more about. But, you know, if front papers have a meaning, say, for instance, when you when your thesis is eventually up on the server, the first page of the server PDF will eventually be some kind of a copyright or access statement, which the system [00:07:00] requires it be there. It has no bearing on your document. And in the end, when I submitted mine, I actually, in the end just made a separate PDF insert in front uploader because I was beyond caring about page numbering at that point.

Peter Wasilko: [00:07:14] But exactly that breaks page numbering. But yeah, but it also marked.

Alan Laidlaw: [00:07:21] The point is that's a fault of the page numbering. Not, not the process.

Peter Wasilko: [00:07:25] Ok. It doesn't have any semantic meaning, though, does it to the

system? What's on the.

Alan Laidlaw: [00:07:31] Well, it should do if the document is properly self describing, it should indicate that the first page is a is a whatever is a copyright or re-use assertion. So no, no, absolutely it should be if it needs to be in the document because the, you know, the organization that published it says it needs to be there, then it should be represented in the schema so that something's reading the document, for instance, those OK, I don't need to worry about that or I need to go and look up in some system that tells me whether [00:08:00] I'm allowed to process this document. So, no, no, I think it is all there. What's broken is that again, in the sort of lazy way that we transitioned to sort of faux paper, we didn't really think through all these bits. And yes, you can use something like latex and you can really, you know, you can get incredibly insane things. But to me, that's the tail wagging the dog. As I went through that process, my my feeling all the while is, this is wrong. This isn't how it should work. We should have, you know, earlier, we should have grasped by the horns, say, OK, even if it's not there for the long time. This is a structural part of dealing with print in a loose sense works. And therefore we need to have a mechanism, a schema that actually allows for this so that systems can just take that up. And then it can be almost like a presentation there. And we get away from stupid stuff like hard coding pages into, you know, where they don't need to be. So [00:09:00] when I was invited on the print

Peter Wasilko: [00:09:03] When I was working with Logitech, I started just doing some stuff, but then I started thinking about how I wanted my computer science for lawyers textbook to look. And that led me to start digging through all of the annotation related pages that I could find in the different latex packages that were available. And for a while, I was trying a couple of different document templates. And eventually I realized that I had to come up with my own document class myself. Then I decided that I want to do something really crazy for my page design. I wanted to have. And two footnote series one for the actual raw citation data and another one for bibliographic comments related to the citations. Then I wanted to hyperlink them together so that I could automatically jump from one to the other and [00:10:00] from inside the main text, I could jump down to just a bibliographic citation or to the metric citation. Then I started reading about some of the margin notes system, and I decided, Well, that wasn't quite good enough for me because I wanted to have several different broad classes of margin notes so that you could just glance at the more than you could know without bothering to do any reading what the note was like. So for that, I wanted to have one color related to culture and language, another color related to history. Another color is broadly defined related to anything really math and science that was highly technical

and one four. So I had like culture and language, we're going to be green, color coded notes, then history and management topics. We're going to be color coded with a red tint, and blue was going to be for math and science. And then I [00:11:00] decided that, well, that wasn't quite good enough. So I had the broad color codes. Then I subdivided it for pure language notes, for language usage and also cultural reference notes in a different color so that you'd be able to see what the pop culture and context was for a term being used.

Alan Laidlaw: [00:11:19] And then you went to the printer and you find it was all coming out in black and white.

Peter Wasilko: [00:11:23] Well, then then when I decided to do was that I wanted to be able to arbitrarily nest these so that I could be in a historical note. And then inside the context of a historical note, I wanted to provide a reference. And then the reference itself describing the bibliographic element might have a math note embedded in that that could itself have a historical note embedded. So suddenly I realized I was having these categorized color coded margin programs. Plus, I needed to be able to arbitrarily nest them. So in order to do that in latex, there's a distinction between the [00:12:00] mark indicating that you're pointing off to some marginalia versus the actual content. So you had to sort of stack these things. So I had to build like a little hidden stack. And that was the point when I realized I needed to write a preprocessor for latex or I'd be going insane because I wanted to, just as an author, be dealing with, OK, I'm in a math note. Now I embed a historical note inside of it. Now I embed bibliographic citation in the historical note and have it come out, right? So what really is happening is in each one of those contexts, you're getting the mark put in first, followed by the content, which has to be in like a reverse order unwound at the top level at the end of the day.

Peter Wasilko: [00:12:42] I think you are highlighting the issues very well, but it's going into. Ok, so just to slightly cut you off, we are one of the things we need to do as a community is to decide on the kind of user we want to support, [00:13:00] right? And the the link that I just put in here in the chat is I decided to OK stepping back. I was told by my advisers to, Oh, Alan's got a haircut that I was not allowed to put in the full transcripts of the interviews because of privacy and nonsense, which I think is crazy because everybody has explicitly signed up for it. But fine, I do need to conform to get this thing. So I instead made a new PDF put the transcripts in there and it's 200 pages long of just people talking about visual metaphor. Next, person. Yeah, it's interesting. So I'm going to go through and edit some of it like stuff that isn't really relevant. I'll get rid of. But so I think this could maybe

with a little bit of an introduction b issue zero point zero of our journal. Just to really get us going. And I had a long discussion with Chris Gutteridge today about addressing and so on and the whole thing about you're supposed [00:14:00] to be able to if you click on a citation and a document, if you have the local copy, it should open.

Peter Wasilko: [00:14:05] And we went all over the place and at the end I said, Chris, I've got to go. And then he gave me the solution in 10 seconds, he says, got nothing to do with any URLs or anything like that. So. I don't have the transcript from our Monday conversation yet. But what is going on with everyone else, Alan, you were looking into a few interesting things this week to right? Uh, yes. I need to I don't have anything to report at the moment, except that the the product is. Um, what Adam showed at the end, you know, the last call, which is fantastic. That's that's the kind of limitations that [00:15:00] Tullio video would have. The moment, so I'm still looking into the to the hard limits, but essentially, I mean, Zoom is going to be easier for for this crowd, for sure, right? It's just going to take more time to develop to get it. I mean, that was going to be the case anyway to get the interface right and then having to get new audience member speakers, people familiar with the new platform. Uh, gives me hesitation. Well, I think that's that's fair enough, and the reason when Peter was going in into the issues he had with the latex, just so I don't ignore that is the expert interview is one of the things that came out of it is there is a learning curve to the stuff we're talking about.

Peter Wasilko: [00:15:56] But guess what? That's a good thing. Because you need [00:16:00] a new literacy when you have new tools as kind of is obvious when you say it, but we have to accept it. One thing that I've noticed with the Oculus is that the onboarding experience is absolutely terrible. It's so bad. I mean, it's exciting for us as developers that it's bad. But in terms of mass adoption, I mean, first of all, even the printed pieces of paper that says how you put on the battery pack, it's actually missing steps. When you first put it on the cool thing they have that actually does give a bit of an introduction as a download, you have to find by yourself. And also, the quit button that you hold down the Oculus thing often just doesn't do anything right. And if we look at our community here, we have to decide, you know, are we talking late tech users that we support or just keyboard clicks? Or, you know, I'm not saying we should have the discussion now, but we all have different ceilings for our technical capability and interests. So we [00:17:00] should just keep it in mind. That's all.

Alan Laidlaw: [00:17:04] You know, this also another interesting area, which is sort of the divide between knowledge of the subject and competence in it. And I I mean, in the sense that

I definitely sort of understand the broad strokes of a lot more technology than I would ever want anyone to allow me to be put in charge of to actually achieve anything. So I'm, you know, conscious of what I don't know in that sense, but it becomes an interesting sort of liminal space between the, you know, the the completely unskilled and the very skilled.

Peter Wasilko: [00:17:36] I wouldn't say that just to be really nitpicky, because it's an interesting aspect of the particular work I'm doing now. I don't think it's a linear thing, not that you do mark. But just to kind of jump on it, so to speak. We have to decide on what kind of literary essays to support in a way because there are many different ones. Mm-hmm. Sure. Sure.

Alan Laidlaw: [00:18:00] And [00:18:00] one other thing, just just because there was just playing out as the Brandel and Allen arrived is that I think it's sort of pertinent what we're doing is pro decided by by stating the annoyance you're being asked to put some extra stuff in the front of a document and then having all the page number going out. And I just reflect on the fact that it's amazing. We still don't really have a robust and sort of robust system that works across the piece in terms of describing how page numbers as we culturally think of them. Mesh to the parts of the document. And maybe that's another thing that visual matter at some point can sort of address, you know, where's in sense, where's the body of this document? What is stuff that it's necessary to be in the document, but, for instance, may never need to be printed or may never need to be presented in a normal reading thing? You [00:19:00] know why or nothing like reading? Why on Earth what? I'm reading a document. Do I have see headers and footers on a digital screen? They helped me as an performance in the book to dive into the right place in our Chapter eight. But if I'm working on a digital device, I've got any number of better ways to do that.

Peter Wasilko: [00:19:16] Talking, talking of working on a digital device. So I don't know if you're all aware, but Adam has joined the Oculus Quest. So I haven't met Adam in VR yet because his kid stole the headset, which is fair enough. I was really shocked a few days ago. Keith Martin, whom some of you met, may join us again today. Him and I, we met in the normal horizons meeting room. And there was two things shocking about it. One, there isn't that much you can do, and it couldn't be that hard to make it more. However, the sense of presence was amazing. It was absolutely incredible. You know, I have my laptop, my keyboard, my screen, I can use the [00:20:00] screen as well in VR. It's not retina, but it's good. You're sitting opposite me. I move my head and the sound comes from him. You know, a lot of things like that. So guys, we really need to be ready for this and do something

absolutely amazing. So we have only a few outliers there who are not Oculus ready. So we'll see large mine up and dive back in and see what it's about. I hope my older Oculus will not make me look like in black and white. That would be cool and pixilated, right? Like a Minecraft? Yeah, yeah, it's yeah.

Mark Anderson: [00:20:41] At some point, horizons will drop support for our Quest one. I only have one. But yeah, there's also a VR chat. There's which is another platform. I believe Jana's VR is still working. Mozilla hubs as actual web based ones. I haven't seen how they actually work, [00:21:00] the level of fidelity that you can experience in them. But but I know that you get performance capability because I just wrote something that allowed me to to capture a performance in Quest with hands and head and then exploit that to sketch out. So that's that's really exciting because it means that we can we can get the whole body of what what's trackable so far.

Peter Wasilko: [00:21:23] And so. Sorry, go ahead, continue.

Mark Anderson: [00:21:28] No, it's it's just really great, because it means that it allows you to sort of introspect and understand that the complexity and nuance of what it is that a person is and does as a in the process of interacting with the computer in a way that that you simply can't get with it with a traditional interface, which is something I'm going to go off on a big thread about very soon.

Peter Wasilko: [00:21:54] One thing that became really obvious over the last few days, though, is what Apple is going to do and Brandel none of this has [00:22:00] been communicated from you. But I can tell you a few things that seem very obvious, and I think most of it is to do with the onboarding. That, you know, it shouldn't go into a screen with a couple of apps in front of you, you know, it really has to become important. You put it on in a useful space. And I think once Apple does that and of course, they will have a pretty good SDK, as they always do with new stuff. Once people, you know, put on the thing there somewhere, there's a way to get to where you need to go, because right now it's a complete mess. Then you know, we have our little space. You grab that, you go into it. Wow, fine. It's going to blow up. So we've got to look forward to that SDK. Yeah. Sorry, Peter, you have a hand up. Yeah. I was wondering, has anyone tried to do like a memory palace application for Oculus? I would love to. Sorry, I'm trying to find an Edgar thing. Can you explain why you would actually need that? That sounds interesting. Because it is the room [00:23:00] itself, a memory palace, so to speak. Yeah, but the nice thing, of course, VR environment, you could

take an extra copy of something and have it stored in more than one place so that if I had more than one independent dimension alone, which I was organising things, I could have, you know, everything related to my undergraduate days there.

Peter Wasilko: [00:23:20] But I could also pull out a copy of it and move to different space that's related to stuff on some technical topic and leave a copy of it there. Ok, OK, OK. I can address that for a single location. I could find it in any of multiple organizational locations. Ok. Ok, so before I say you have a handle, but just really briefly, because it's is all very, very fresh for me. The Basic Horizon's room is so close to that one of the things they have is a big meeting wall. And one things I have not done yet is allow you to designate a real world wall in your room. To do that, you can tell it what's a desk, but not so you should be able to walk up and touch the wall. But [00:24:00] to be able to do what you're saying now, Peter, I think, is that onboarding experience that you can move to different rooms that represent different things to you. It's incredibly compelling. Alan, sorry. No problem to rewind back to a few minutes ago. I'd like to make a triangle between three topics that were brought up because I think that there's some interesting space there. One is what Mark was talking about the PDFs, and if I understood correctly, you know, why couldn't they just automatically be more like e-books in certain contexts, right? Where where you get the yeah percentage you've read? You get this.

Peter Wasilko: [00:24:43] This an artifact removed. But at the other is talking about VR. And then the other is this idea of literacy, the what we [00:25:00] expected the audience. And I think there's an interesting space in the three because starting with VR and PDF one, you've got a format that's now ubiquitous and been around forever and hardly changes, right? And then with VR, you've got another one, you've got this field that people have been excited and let down in waves for decades about its potential. Right now, it's time might be now right? It might finally be now, but it didn't get there through any kind of linear path. Right? And so that leads to the third point about the sticky, tricky problem of literacy. Um, it isn't straightforward what should be expected of an audience member or say [00:26:00] their constant degree of attention or how how they interact with with whatever, because in one sense. The formats are changing all the time, but I haven't completely cohesively put the three points together, but they they were bouncing off in my head a little bit, so I wanted to introduce it because I think that it's really interesting that the theme that we bounce back and forth between PDF and VR. And they're almost like mirror images. You know? If you look at the broad scope of their technology, you know, technological advance, they couldn't be more opposite. And yet we're talking about them.

Peter Wasilko: [00:26:53] So. And how they have their own literacies. I [00:27:00] just wanted to, I guess, put a note on those three points because I think there's something thematic there. There really is, and it's funny, I just posted that video of Edgar in, well, right before he started talking, and he kind of demonstrates everything there. And please have a look with sound when you can. But the idea the reason I'm showing it is partly because it's so dark, but also because only the second time in VR, he's able to grasp objects and manipulate them. The literacy is just there for that part of it, and a level that was really surprising was that at one point he bangs into a door the physical door, because the object is behind it. And he didn't freak out like what's going on? Real world, not real world. None of that. He just accepted it. Then he mumbles, Oh, it's in the door, right? So some of these things are almost electricity free, we just have it born with it, so I'm so glad you mention it, Alan, because the higher levels [00:28:00] of when you actually build something in this kind of space, it isn't the same as a physical sculpture. It's not the same as something on the screen. We really need to to dive in, like to figure it out. And then put it back in the PDF. Adam, what do you think so far? How much have you been in the space?

Brandel Zachernuk: [00:28:25] A few few hours, a few Oculus charges in. It's it's further along than I've than I've thought. We are. I left my toes in it every five or twenty twenty years ago, I tried it first time, maybe or. And. Five years ago, I tried it again. But now having a standalone headset, I was so surprised that the standalone headset, basically a [00:29:00] mobile phone on your head, is so, so good and so immersive, and I usually get a bit seasick or a carsick in VR, but this time I wasn't, not that much. So everything about the frame rates and the fidelity of it and the resolution is almost there, I think on the Oculus two. So a few more pixels than I will be very happy. But what really surprised me most is that. It's the embodiment part, bringing your hands in there and and your automatic viewing is so. So incredible when you used to screen to actually grab things by the hand center and move them physically, it was way better than I thought. And I really we are very close to something that is very good. And I was also surprised that you could do web pages [00:30:00] or WebEx or experiences that you just step. You click on a link and suddenly you're in a in a in a virtual space with lots of interaction and so many fabulous things. So I think that right now the imagination is. It's a part where it's lacking that we haven't really figured out what to do with with the technology because many of the parts or the technology is there, but the interaction is not there yet. I see glimpses of it in almost every web page. I see something that I find very interesting, but it's not put together in a. In a fluid way and in a more human centric way, yet, I think.

Peter Wasilko: [00:30:47] I agree with Peter. I think the exciting thing will be when we start building abstract information spaces as opposed to just walking around the physical room, but go where you can start [00:31:00] selecting the dimensions that you're looking at and moving inside of things to unfold other dimensions. And those are those ideas that I found in the cyberspace first steps book that were so compelling, and I keep wanting to see something along those lines actually realizing it sounds like the technology is almost the point where we can do it. And then I think about the interfaces in Johnny Mnemonic and Minority Report, where you're grabbing things and spinning them around. And some of that seemed a little bit more frivolous. But I'm not sure what we could do when we had real data running behind it and again had control over selecting dimensions and switching the context that way. And that sort of relates back to what I was trying to accomplish in latex of being able to model that transition between nested related contexts to be able to dive in and then weave back out. Certainly, I wouldn't want to visit the raw code in latex that I was writing on anyone, but I think we should be at the level where you can have [00:32:00] simply math note and then insert historical note and an insert at arbitrary levels of nesting.

Peter Wasilko: [00:32:07] And that would be high enough that somebody who's writing could be able to deal with it easily, especially if you had like a little palette of different note types. And if you're in a note, your choices could be, you know, return to the previous context or digress into a new sub context and just had a set of categorized sub context that you could jump into to weave back. It also brings me back to an idea that I've been arguing for in tinderbox and the hypertext meaning for a while, which would be to have a mirror. No, a mirror mode where you could flip the context so that when you're looking at nested things, you could sort of look back out from the inside and see what things you'd reach them from. And that's sort of like reversing the context stack of how you got to where you are to be able to walk back out and then reverse direction to go down another thread without having to go all the way back from the start and [00:33:00] re navigate from the top down again. Mark, the system has chosen you.

Alan Laidlaw: [00:33:10] Um, yeah, I mean, just quickly, something that brought up listening to to speak just now is is the interesting reflecting on the thing of new forms of literacy because, you know, that's not the way we used to writing. And when you were talking about the work you were doing early in the late stuff you were, you were talking about, I heard you basically so teasing apart a hypertext almost. So it's an interesting thing there. Well, one one one thought I had and what may put my hand up the sense, whether we're

getting towards having I don't know what if there's a term for it yet, but what I would, I guess you call blended reality. So I might be sitting at my desk with whether it's with an eye tracker or whether it's with us or things along to my face. But what I'm actually looking at is a mixture of the virtual and the real. So I might [00:34:00] be looking at say, I might be looking at my monitor, but I might overhear, you know, in the middle of space, have a virtual artifact, which might be something else. I suppose I find myself thinking that partly because it seems a bit more comfortable than just being stuck completely in it, completely in a complete artifact space.

Peter Wasilko: [00:34:23] To jump in, that is the term of art for that is augmented

Mark Anderson: [00:34:26] Reality, and everyone has agreed that that is the target to get something called pass through augmented augmented reality or air. And so both matter and Apple has has has gone very publicly on the record, saying that it doesn't believe in VR, it believes in AR because it's so much less exclusive in the sense of being able to include people running. So I will.

Alan Laidlaw: [00:34:50] Yeah, no, no, no. It's good to hear that because I wasn't sure the reason I said Lenny was I wasn't sure. It may be just because some of the early AR amounted [00:35:00] to basically just putting labels on things.

Peter Wasilko: [00:35:02] And I think this is why it's so useful to to try it properly, because this is what the latest update and the Oculus actually does. Yeah, it doesn't do it all the time because the video quality is black and white isn't bad. But the really shocking thing was you set what they call a guardian mode, you set the space so where it's safe to walk. But if you now move close to that, you want to break that instead of showing you kind of a wall. It shows the actual video. Yeah, so it's already blended in that sense, and it really has a positive impact for exactly the same reason you're saying, right? Yeah.

Alan Laidlaw: [00:35:38] Okay. And one very last thing before I get and that is is thank you to whoever suggested this make it so I can't remember who it was the right

Peter Wasilko: [00:35:46] To blame, Alan.

Alan Laidlaw: [00:35:49] Well, great. Thanks. I'm really enjoying it. I can't shut up now.

Good. Good.

Peter Wasilko: [00:35:55] Can you hold the cover up again for a second?

Alan Laidlaw: [00:35:57] Sorry. But [00:36:00] if you can see gang bridges, it's it's basically pictures. It's going the other way, it's going from the in a sense, from the imagined picture back to, well, what does it mean in your terms, anyway, Alan?

Alan Laidlaw: [00:36:17] Yeah, I'll I'll go quick, but it's another sort of bounce around of themes. First off, something that I think really applies to us. I don't know if anyone saw John Carmack, who helped create Oculus was sort of A. Metaverse for the most wonderful of reasons. And it certainly applies to us. It's the term architecture astronauts. It's a it's a honeypot for architectural astronauts who talk in abstract terms. This is how this should work and blah blah blah. And no sense of the protocol [00:37:00] layers an actual physical constraints. I feel that acutely, but there's some twists to it, right? I would identify as an architecture astronaut myself, right? And I would say that Adam is more grounded and Peter's more grounded, right? But. Where the pluses and minuses of that, what he suggests is. This is why when he works on a product, he goes for a particular problem to solve. Because that way he can measure its value inherent in that is an inability to solve all of the problems at once with some sort of conceptual Darwinian evolution, you know? So, so an example, Mark's example of, hey, why can't PDF be [00:38:00] improved digitally would be a good example of a step forward in in the space. Another one would be. Uh. Well, I think if you go into horizons, if you go on an Oculus, what you see is a procession of these little steps of improvement where there's still lots of breaking spaces, but they don't have the ability to fix it all at once. But they are making improvements like the Guardian Boundary Bits at a time, you know? So, so and that also frustrates literacy, by the way, which I'll get into in a moment. The the OK, so that's that's one box, second box. About the transcriptions and these and in the nature of recording these videos, there are specific [00:39:00] opportunities and product enhancements there, like, for instance, we tend to repeat ourselves a lot over the course of these meetings, even though it's in different contexts, we'll say roughly the same thing. Like I've mentioned Memory Palace and I love it. I love where Peter's going with that idea, and I have a lot to say about it, but I also know that I've said those things before. So an incredible feature would be, Hey, how many times has he said this thing before? Not because repetition is bad inherently, but because you would suddenly have a window to. Well, Freud was mentioning something about his son here, but it reminded Alan, and he said the same thing that he said two weeks ago. But in his mind, it was triggered by something different. So it's a

different avenue, even though it's using the same thing that it was triggered. It made the person think of the same thing. That would be a kind of I feel like non architectural astronaut [00:40:00] enhancement where you could say here is an actual feature that we could try out and see if it's useful. Um. The final thing to Peters objects and hyper objects, which which I love. But where that links to literacy is that we're also seeing new generations of users who don't think in the same way of objects and documents the way that we do. We've talked in the past about how. Kids just use search, and they don't know where their files are anymore because they don't need it. And I think in the same way we might find that finding ideas is is more of a more time stamp than we realize and our generation realizes. And so there already are all these heuristics built around, even though they're not physical word searches, they're it's easier to find things because there's so much either video [00:41:00] attached or person I'm talking with attached, leaving all that just for the video so I can go back and address it later. Done now. While I've written so many notes, but I don't

Adam Wern: [00:41:14] I mean, it's your turn, Frodo, I talked

Frode Hegland: [00:41:16] Before. No, no, no, no, please.

Adam Wern: [00:41:20] So one thing that is obviously clear to me now when I walked around in 3D and also in the browser, in the tree, on a flat screen, but 3-D on a flat screen is that text has never really had that opportunity to be in 3D. Of course, it's in 3-D in real life, but it's always on a substrate, whether it's stone or paper or cloth or leather or clay or something. For the first time, we can hang actual actual symbols in mid-air floating around. And it really it brings new challenges because text [00:42:00] so obviously has a front side to it. So what happens when you go off access enough a little bit, you can read it. But when you go on the back side, what you do see on the back side of text or should text always face you? I mean, a programming today with I learned a new term in the in the 3D community. They call it build boarding. When objects turn towards you wherever you are or the text or something is turned towards you and and that brings other things. Suddenly, the room is a bit more alive and less memorable in a way because things move around. If you have to have lots of text that is always turning towards you, new things happen. And. And I think it's and also we have the idea that. If you have labels for four different parts of the room, they [00:43:00] can turn a turn towards you, but they can also decrease size, increase size or opacity or appear and disappear. The kind of contextual information that if you stand in one place, you get more labels and other labels fade away. But there are so many unexplored things here, but also having what would truly 3D text be symbols that can be viewed from

more sides. And how do you construct something resembling sentences, thought or lines of thought or or networks of thought that can be seen in different dimensions and conveying more information while still being compact and and and framed in a way? Lots of lots of ideas, and I love to explore those with you. And maybe in prototypes as well to just work around and show the things [00:44:00] I thought about, and I'm sure many of other has done that as well.

Frode Hegland: [00:44:06] Yeah, that sounds just exactly what we need to do so. So many thoughts, I mean, I literally feel 20 years younger because of this. I feel like the early days of quick time or something. It's like the opportunity is immense. But in many more dimensions than just 3D. So first of all, I think Apple are doing some very interesting things like the universal control, you know, control from your Mac onto your iPad or whatever. That's going to be absolutely huge and VR, because one of the biggest problems I have going in and out of the auction space is bringing my Mac with me. I can't do it. It's a faff and it's not always working. So that's really exciting. And that kind of, I think, sets up to think that it'll probably be close to Mac versus Windows. In some ways, there won't be a metaverse. It will be owned by different companies because the infrastructure for the hardware in the basics is so intense. [00:45:00] I mean, don't forget Oculus. Sorry, Metta just gave up with all their money they gave up last week, making their own OS. Or rather, that's when the news came out. That's a really big thing. Right, so the in the same way that you have Microsoft Word on Mac and Windows and you've got all those, I think we're going to see history repeat itself to a large degree. No question about that, and I'm going to paste my notes in before I forget. But I think the other thing is, I think over time, this thing that ah, is better than VR will be shown to be wrong. And I think the devices should support a ah, no question about that. You know, being able to see no problem with that. But there's two reasons I think it won't be the primary use one. You still can't focus on the background, so your eyes will still always be focused on infinity. So it won't have that kind of real depth difference that can't be done because you still have one piece of glass that you're focused on. Oh, OK. Brandel is going [00:46:00] to say something. Put your hand up, please. Make a big point about that. I'd love to hear about that. But also so I'm sitting in a room right now that has an OK kind of dining table and so on. If I am an air with you guys. First of all, I have to decide where you're going to say it's because your desks are different. But if we go fully virtual, we can have one conference table and we can put we can do the memory palace thing we can have. Peter's work is over there. Adam's got something happening over that. That can be our shared space. You can't do that on air because the space isn't big enough. It's basically the shared air space is all of our spaces divided by each other, not multiplied. So what I mean

Mark Anderson: [00:46:41] Is that a pragmatic reaction or a or a necessity? I still see that more as a pragmatism. So we can't do this now. So let's. And in that sense, it's good.

Frode Hegland: [00:46:51] No, no, no. It's a logical thing because think about it, if you just imagine, you know, kind of close your eyes and you sit us around a conference table and we're all in the exact [00:47:00] same visual space, that space is huge and we all know that, you know, this screen is air, that screen is there. But if we're going to be in your living room, Peter's living room, Adam's living room and all of that, basically. It becomes you have to choose for a person sets, you have to decide how each one of you will have the screen. If someone points over there, it's not going to be the same thing in the other person's room. So yes, air will be great for a lot of things. But when you go into a meeting like a Zoom meeting, so to speak or face time, I guess it'll be called, then I think will be fully VR anyway. Brandel did you want to comment on the focusing thing? Because that's really phenomenally interesting.

Brandel Zachernuk: [00:47:39] Yes. So the problem that you're describing is something that's well known in the industry. It's called the Virgin's accommodation conflict. The fact that we have we have two ways that we see things and understand their depth. One is based on our stereo origins. That's how close, how cross eyed we have to go in order to [00:48:00] to be able to observe things. And in reality, that's always hard, coupled with an automatic changing of our focal distance that is so ingrained that it's very, very difficult to break in and we actually don't want to break it. But and so that means that's why it's very difficult to work at things sort of quest. It's the the focal distance is about actually about here and and it's not very good at representing things any closer than arm's length. The solution to that is to have something. So Magic Leap, the Magic Leap One has two focal planes. It's got one of the infinity, which is good to about a metre and a half, and then it's got one at about 35 centimeters. So that means that it has the ability to do those things. It's got to statically. I think the Oculus have done prototype series is a very verifiable display in the sense that it has the ability using something called pancake lenses [00:49:00] to to to create a variable focus distance. And people at the University of Pennsylvania have worked on creating a very focal surface on the basis of multiple focal lengths apparatus within a thing. So that means that you can have a single image that is simultaneously projecting multiple focal distances. So the current state of art within Half Dome is that you have the ability to change the focal depth of the plane. The the University of Pennsylvania stuff has the ability to create a very focal surface so that you have the front of the image at one focal depth and the back of the image at

a different focal depth, and you're able to change that on a per pixel basis, almost. So there's a lot that can be done there and to the end that that augmented reality and virtual reality, that there is a meaningful difference to [00:50:00] your point about the fact that you would need a large enough space. And right now, the place that I've devoted to this in this space is not large enough. Virtual reality right now is controlling all of the pixels you couldn't control, like when you have good enough augmented reality. It would be possible to be able to carve out negative space within it to put additional hesitations in spaces such that you would be able to essentially make room for people to extend surfaces and walls out to the distance that would be required. The only challenge there is is based on the interaction with the real space. What are you going to get into trouble with as a consequence of claiming this space? For being able to solve the issues, you should be able to work against a wall, but then look behind you and see the real world so that you don't do that. There was a really interesting. A video a few years ago at I think it was at West called Reality Filters. I think I'll take a look for it [00:51:00] where somebody was looking at the the ability to identify the real world sort of features within a space and and put sort of thematically relevant artifacts in those so that if you have a pillar and you're in a Dungeons and Dragons game, then it might turn into an impassable pit. I'm less interested in the fantastical because I just unimaginative, boring person, and I'm more interested in word processing and excel. But yeah, it's very useful to see the way in which people can kind of seamlessly kind of include make sure that people are able to navigate within spaces like that. And then there are also mechanisms, which is admittedly a more purely virtual reality environment of a redirection and things like that, like a redirected traversal and walking and sarcastic redirection that allow [00:52:00] you to direct people around. So once you have untethered VR, you can have people actually walk around in the space. So rather than being in a space, you can go to a soccer pitch. You have very low frequency, but you can do your excel online. And that sort of adds another level of appeal to just walking around in the field. But the problem, then, is people bumping into each other. If you if you, you're actually relatively insensitive. No offense to whether you walked 70 degrees or 90 degrees. We tried an angle of 70 to 90 degrees. So if you have the computer, redirect your view in that so that it's consistently steering you away from things, then you have the ability to kind of create a virtual space that is vastly larger by doubling back and forth, for example, along a single strip that allows you to make an apparent zigzag through a larger space. So [00:53:00] as long as you have a system that's able to reconcile the virtual between between the virtual and the real, this is something that the companies avoid, which I think unfortunately has gone under. But they created large circular hallways that were large enough to. They provided the virtual illusion of going on a single linear one. So there are a lot of different sort of strategies that makes just one. One big issue is that the kind of hardware that people have had to have hitherto has been prohibitively expensive for them to

be able to make a. It seems like the bigger the the the Oculus Quest and various other devices that are coming out now with the price compression means that a whole plethora of profusion of new research within this should come to the fore, so long as everybody realizes that it's research that needs to be done.

Frode Hegland: [00:53:52] That sounds amazing. Let's see. Alan has a request for you in chat, but still, even though you can have negative positive spaces [00:54:00] as a drill hole in a wall, if we are going to be able to refer to each other and stuff like this, but you need to share a space. You know, and you just look at our rooms, we're all sitting in very different rooms and sitting in very different ways. So don't you think that let's say just the six of us wanted to meet up? It would make more sense to be in a fully VR space.

Brandel Zachernuk: [00:54:23] A possible I mean, I think it really depends on our intent and how much we want to devote to it. Like how much our meeting together has to do with each other and how much it has to do with us. And those are those are really sort of basic fundamental questions that nobody necessarily has a good reason to believe have been answered satisfactorily yet. It's really fascinating going back to Larry Tesla's videos of describing the Apple human interface and his time at park and just talking about just the dizzying free for all that the concept of the graphical user interface was within the late 70s and early 80s, and [00:55:00] the fact that they didn't the scroll bar wasn't called the scroll bar. This gold bar was called the elevator. You know, Doug called the cursor the bug. All of these things were in such flux and such a tumult in terms of what things could mean things. And we are. Not only are we there where it works because of how many fewer cues we we have to go on as to what the whole thing is. So it's an exciting time. But one of the things that I think is important is people haven't realized how little is nailed down and how much room there is to experiment and how much of an obligation there is to do that on the basis of what we know we want to be able to do within the platform. Oh, that's

Frode Hegland: [00:55:39] What makes it so exciting, Brandel. And just kind of and a little nod to Alan's know there are so many things. Once you have an avatar that is, you know, like Keith and me, we have roughly looking like each other avatar. I know it's him, but the fact that the audio comes from where he's sitting. So if I move my head, it's still the same place. You know, spatial audio and all that stuff is [00:56:00] so huge. But I think we'll definitely have simple things like, you know, you tap a little button and that means you're in privacy mode where your avatar kind of moves around and looks like you're listening, but you're actually doing something entirely different. You know, that kind of stuff we will absolutely

have and we will need to have that. And if you want to flatten yourself into a 2D picture on the wall, it can be done in these spaces. For someone who joins not from VR, you know that can be done to. And yes, of course, Alan, if you choose to have a setting like little mice on your table, that should be entirely possible too. But I just think that for much of this, a shared kind of dining table will be really important. But of course, it'll be much more interesting, exciting and dynamic how you break away from that for either a group experience or individual different preferences over. Peter, Peter, yes. What's the current situation for people who have eyeglasses and prescriptions? Well, we have to have [00:57:00] a headset that can fit over our glasses or will we be able to type into the system's preferences, what our eyeglass prescription is and then have it virtually accommodate it so we wouldn't need physical glasses on anymore? And the system could simulate it, Peter.

Alan Laidlaw: [00:57:16] I love that idea, though. That's awesome. It's a good basically, it's what they do for for your ears because you go through a process where an attenuates, how you hear. If I remember correctly and so yeah, I don't see why you couldn't do that for your eyes. Of course, that creates a huge problem when you pass your headset over to someone else and they have to go through that process. Actually, it's not. It's not. So these glasses have three levels of focus and they go dark outside. I used to have reading glasses. I don't have that anymore. So when I look at Peter's name now, it's in focus. Now it's blurry because that's Watch Apple Watch distance, and now it's definitely birds driving. But the point there is not mentioning it and cutting in is [00:58:00] when I got these glasses that did the kind of sitting down, scanning laser and all of that stuff. And then afterwards I stood in front of a box that looked at me and decided where all the different points are. So it's not science fiction to imagine a VR headset, do all those readings and do it lives. You hand it to the next person that do it live for that person to. A couple Brandel, I'm sure what's deeper one on that. Also, what's the state of the art on omnidirectional treadmill so we could actually be physically walking without going anywhere?

Brandel Zachernuk: [00:58:32] I can answer all of those things. So, yeah, so the state of the art within the sort of the focus technology is that the current generation or I imagine that the current generation of question also has there's an ability to add extra sort of base plates and spacers and here so that you have room physical room for glasses, other alternatives. People have built prescription drop ins for things like HTC [00:59:00] Vive and other devices. But yeah, at some point it would be possible to to create something that has the ability to dial in prescriptions online. There are actual dial in fluid, lens based spectacles that people distribute to the to developing countries where you where you actually put more or less fluid into a bag.

And it's very interesting because it's programmable and it's not. It's not phenomenal. But but it's enough to actually allow people to be able to kind of get custom prescriptions without having to grind actual glass or plastic point, which is very exciting. But yes, you're absolutely right that at some point it would be possible to have something that can look with enough fidelity at one's own eye in order to figure out how to correct those things. And one of the benefits of having sort of eye tracking and analysis [01:00:00] and assessment of that level is that it also means that you have a much better basis on which to understand what to display and what not to display. Because right now we all have presumably very high resolution, if not high dimension displays in front of us. But the reality of it is that we only have the ability to focus fixate on the very small, angular range about the size of the Moon in front of us. And so if we had the ability to track eyes in real time, we would be able to figure out that we don't need to have high definition over there. We only need it here. And so while there are, there is some non-trivial expense and complexity in creating a kit that has that support. It also provides manifest sort of benefits for for the efficiency of the operation, as well as sort of situational awareness of what it is that the user is doing and the ability to infer some aspect of intent and attention. So, yeah, very, very exciting. There's a lot of work to be done for the next 20 [01:01:00] years, many within VR in order to make these things happen. But at some point it will, and it's going to be really awesome.

Alan Laidlaw: [01:01:09] All right, you've convinced me of charging it up. It is so ridiculously important and not to be self promoting here, no to be self-promoting here. We do need something like visual metaphor VR. I call it vember at the end of my thesis and the reason for that. I don't care what's actually in it, and I certainly don't need to call the visual meadow. But something like virtual back in the day was interesting. And there's all these web things. All that is good. But I think that for the good and bad, what Mehta is doing is, oh, taking over the world. I think Tim Cook paid Zuckerberg a couple of billion to do this because what he's doing is taking the sting over the fact that Apple will own us much faster and much deeper because they have things like universal [01:02:00] control, airplay and all of that. So that means going in and out of virtual space. Once you buy an Apple device, if you have the other Apple device, there will be no transition whatsoever. That will be bigger than the iPhone. Yeah, I think that is. The real central, perhaps a central theme or mission is like, what does archiving or what does decomposition mean? From a VR setting, you know, I don't know that it's even PDF anymore, but the the. Or, you know, like there's always PDF, right? Ok, no problem, but it's a totally different question of, you know, what are the artifacts? What is the decomposition and archiving mean in this space, which is I don't know that anybody has I don't know of anything about that.

Frode Hegland: [01:02:54] Archiving will mean something else because the dream that I keep having is that I open my [01:03:00] laptop and oh yeah, I put on my. I'm just going to be honest, Apple Brandel glasses, and I'm calling them that. Not just because of you Brandel, but because for me, all the niggles with Oculus goes away because it's a fantasy device. So put my Apple thing on and I still have my laptop like we talked about a few times before. But now I do a gesture maybe like this and everything on the screen goes into the road. You know, that's my interaction. Who cares what actually is? We do fantastic things, we argue atoms ideas over there. We connect them, do all those amazing things, but it has to be possible to fold it back in. I think that's what we're talking about. Right, because if I now decide that I'm not going to go in Apple world, I'm going to go and Metta or Microsoft or whatever world, most of that stuff, just like with HTML and stuff, has to be livable. And we all know that you've all read the story of safari, right? Well, Brandel, what's the name of the guy who developed it and wrote that book to remember and cross-gender? I [01:04:00] read that in one setting that was raw sugar. Right? And you see the link. Oh, yeah, Brandel place in the mind. Yeah, sure.

Brandel Zachernuk: [01:04:10] If you haven't seen his worldwide baby go down now, I'll take a look. So can I did some beautiful, beautiful worldwide developer conference videos as well on some sort of development practice? And his oral histories go into a lot more detail as well with the Computer History Museum. He's decent, humane and it's very tempting to to to jump ship and try to figure out what they're doing there because they have an incredible pedigree of people working on what they claim to be the next generation of computing. And I find it hard to believe that it wouldn't be some sense of some some sort of variation of immersive computing in a way that we're talking about it. But yeah, no, I'll grab all [01:05:00] this stuff.

Peter Wasilko: [01:05:01] They have a website.

Alan Laidlaw: [01:05:05] If another bit of the road is the biography of the guy, the book is called almost perfect and it's the story of what went wrong with word perfect Brandel. You might like it to that intense place place. People say it is a walking disaster. Ok. Uh. This guy. Peter Pete, Pete Peterson. Can there is. Speaking [01:06:00] of word, Perfect reminds me of the Cannon cap. We need to organize a library of these things, I'm starting on it and I can welcome you guys to the space, if you like of doing it at the moment and craft. But regardless, like which is craft is sub optimal for some things, but it's at least straightforward.

It's all Mac, though, unfortunately. But but I can. I can switch platforms. But. Really? The link stuff is always just wonderful. You have a link to craft. I do I can invite you to the space. Give me just a moment. Was trying to find Kenyans spoke, I [01:07:00] can't find it.

Mark Anderson: [01:07:06] Put a link in the side, which is I've just done our own arms and legs because we've got some pictures of the books. In most cases, except for one book, which seems to be an HP printer cartridge for reasons known only to Amazon. But there's a list of books that I have to hand. They're all paper I don't do. I don't do digital for four for serious reading any for novels.

Frode Hegland: [01:07:30] Neither do I. But don't tell the group that you know this is another that's really. I love discussion. Sorry, go ahead. So Brandel.

Brandel Zachernuk: [01:07:42] I would really love to go deep on what it is about, about digital reading for seriousness that it isn't good enough because I think everybody saw all of the books that I was making all of the different digital VR books. Those are sort of thematic and conceptual [01:08:00] explorations for me of what it is that books are that digital reading isn't. I'd really love to hear what everybody else needs from from tangible in order to to and what it is we might have to do to the experience of digital reading in order to be able to bridge those gaps.

Frode Hegland: [01:08:20] I did a study on that and the real world Starbucks in about 10 years ago, meaning I looked at people and I wrote things down. And the surprising thing I found was that people who read on books or paper or magazines or newspapers can move the medium around easily. Um, because the thing is, what I mean is when you read on an iPad, let's say, which logically is the same thing as a book, except the light thing. You can't move it, it easily. You need a stupid stamp, which is crazy. So reading on a mac for me to read serious work stuff, I'm read on my Mac better than anywhere else. But you know, you're reading [01:09:00] more for enjoyment. The, you know, the fact that you can move it is such a huge thing over.

Adam Wern: [01:09:07] And Brandel, one of my first Web experiences was trying your the big book where you could turn Alice in Wonderland, I think your prototype of a book turning thing. And actually, the first thing thing that happened to me was that I got stuck inside the book, which was a surreal experience. For some reason. I was placed inside the book and

couldn't escape, and I couldn't even go out from the Oculus to say I was stuck into it. I had the power set, the whole thing. I was like in wonderland because I couldn't get out The Neverending Story.

Alan Laidlaw: [01:09:49] It really felt like real quick about about the I actually. I got to find what I was writing about this, but I go back and forth. I read the [01:10:00] physical books and the book primarily Kindle and and there are actual, I believe, subtle pleasures to reading digitally. For instance, I typically will read 30 percent way through a book. It's just my ad nature, right? I don't even have to try, but I found that with Kindle because it is flat, and that flatness is typically a decent disadvantage. Disadvantageous, whatever, because it is flat. I can actually finish books because I don't realize where where I am in them. And I've read much longer books in Kindle than I have in physical form. So there's something that is there is some value to it that is not in this. It isn't just a a lesser form of the print. It's really it [01:11:00] would be worth talking about some more. Yes. I think my is just languishing there. Yeah, Peter, please.

Peter Wasilko: [01:11:16] Ok. One of the things I always want to see would be applications of. Air in a library context. Imagine if instead of just like looking at the level of dust on the physical spines of books, you could actually see books that were being actively used, lit up and glowing relative to the other books on the stacks. And then another thought was What if I could select four or five different books and then ask the system, tell me, OK, who else has been looking at these so that I could reach out and initially anonymously contact them and say, Ah, I see that you have been comparing books on object oriented programming, interactive fiction, and [01:12:00] you're also into South Vietnamese modernist architecture. How would you like to get together for a cup of coffee and be able to make the linkages that way? So many invaluable contacts that just come from sheer serendipity of meeting people at conferences, and we could really facilitate that if there was a way to temporarily reach out through the library. I mean, imagine somebody is also browsing the same section of stacks. I might be lucky enough. I'm in the library at the same time to see photos looking at the same books that I'm looking at. But if we're 18 hours apart, our chances of meeting in reality reality would be very low. But in an augmented reality where a afterglow of his presence in the stacks was available for me to see. We'll be able to make contact in new ways that aren't possible. Good point. Mark.

Mark Anderson: [01:12:59] Oh, yeah, so [01:13:00] I was going to, in my literal sense, to Brenda's question, and certainly for me, the primary reason I don't use e-books. I mean, in a

sense, I'd like to have both, but I can't afford both. And so I've have to choose one, which is a physical basically because anything that has reproductions in it is basically useless on a digital screen. I've also, I found. Whereas actually, if it was well, I mean, you can say who buys code books these days, but actually, you know, being able to say copy paste something like some useful actual code will be useful. So you know what I miss about home to me. I remember some of the gently teasing me in the lab when I say PhD work and said, What are you doing? I said, Well, I'm making all my grass in art so I can make nice SVG diagrams. So what's the point? So I just copy and paste a picture of Excel. I said yes, but you can't begin that on a digital screen, which is the format in which we're presenting this. So your [01:14:00] your thing is going to look crap at certain sizes. So it looks to me like I was mad. And you know, the tailback was this is not my problem, but from readers perspective, it absolutely is the problem. So I guess it's a problem and large pictures. If you've got a heavily illustrated book, large pictures obviously are going to bulk things out. But I think so. I think that's one thing that at the moment is probably just a limitation of the technology rather than the medium as such.

Frode Hegland: [01:14:34] Just quickly mark on that point before Brandel comes in. And hi, Keith. Don't forget now with Mac and iOS, you can actually select text and a picture as text so that it's interesting how that's slightly bypassed Brandel. What have you got?

Brandel Zachernuk: [01:14:51] Actually, that reminds me that I was also going to mention the text thing so that you take a photo with your phone on iOS, [01:15:00] then you will actually be able to retrieve it. I've taken a photo of a coach, but I think that would be really interesting to do. One of the things that I did this week, most of my time was sort of building that performance capture thing that I mentioned and I tweeted about. But I also succeeded in getting Tesseract running in a web page such that I'm able to identify the list of to read the text names of everybody in the participant list in June. So the next step will be to be able to make sure that I'm doing that of a live feed of a Zoom call. And then I'll be able to run some image analysis over the column of pixels that represent the microphone. So that would be able to get a time codes of when everybody's speaking. So that's something to look forward to. I promise I'll make more headway on that soon. Uh, what was I going to say about everything? So [01:16:00] James Brandel has a really good post from about 10 years ago about some of the sort of physical functions that a book has as a tangible artifacts. He talks about the fact that it's kind of an advertisement for itself, as well as healthy and as a as trite as that sounds like it's a critical component of physical artifacts that that is simply missing. And so James Bridle has made these book cubes. My wife made a book box, which is a really

interesting way of being able to create an empty paper that can at least be standard to allow you to sort of advertise that this is a book that I've read. There's just sort of something characteristics and attributes. I like my wife. And you keep that book box. So Book Cube is what Brandel did. I like my wife's book box that she did. The cool thing about that is that you are able to have the dimensionality of it represented a little bit better so that you can. Yet signs, but [01:17:00] it allows you to print out a. To the check on a piece of paper, allow you to create a 3D object of a box that is proportionate to the size of the book that you that you read and want to kind of advertise. Another thing way back, actually, that my my wife did in the university was her thesis was on way, the living room, its shape as a consequence of introduction to television. So prior to the television, people used to have all of the seating arranged around sort of the concept that there would be this expected sort of conversation. And then it became focused on the focal plane of the television instead. And so I would imagine that we were sure you should expect to have to see your point of the kitchen table. Entire spaces reimaged and reconfigured as a consequence of the social. [01:18:00] The social order of domestic spaces, as well as commercial ones, will be figured as a consequence. So it's going to have to be a really mass. It's one of the things the mother of all demos really interesting is Doug's hat tip to the furniture company at the end, who helped to construct the objects that he was actually interacting with in order to make everything work. And I think that the scope of change that we should expect in terms of the interior spaces that we live in will be at least as large as that, if not sort of orders of magnitude larger. So those are those things I actually can't remember what I was trying to come up to talk about. So my apologies.

Frode Hegland: [01:18:42] I do have something really important that I think I just noticed before. Maybe we go off the record to talk a bit more about Alan's next hour. But and that is the thing I said earlier that I think I just think that we're going to see in VR something similar to the OS wars we've had before and browser wars. [01:19:00] So then the question becomes us as at least to a degree interested in interoperable spaces. You know, we don't want to build anything necessarily for one of the big parent companies only. You know, and we all know the story of how Microsoft Office went to Mac and how that was an issue, whatever. So then the question now becomes if we're now all of us on separate devices, let's say ten years in the future, the actual virtual room, let's say it's a full virtual room for simplicity, sake. And let's say we're looking at a model that Adam has built. We as kind of pirates, we have to decide, not a friendly fire. That's another story. We as pirates have to decide. What do we expect these hardware companies to allow us to own? Do we own the room or only Adams shape on the table? Or do we own a description of the room so we can all render it in our own ways

like we have with emojis today? What is [01:20:00] the space that we can create that isn't owned by the OS? I'm not saying we should answer it now, but at some point we should probably address it right, because otherwise we are building metal buildings or old things or whatever, right? And the browser will, of course, be a part of it. But you know, will we be able to literally step into a browser like in a cartoon? Maybe, maybe not.

Adam Wern: [01:20:28] But isn't that what we can do at the moment? Have you tried the web? It's experiences product? Because that is what I explored most here. I haven't looked at the apps so much. I would go and gone into the web rooms or things that are owned by you or or a group or so. So it's a web page, but room that you step into, whether interactive room. So. And I think that is the coolest thing of all. One of the most democratic [01:21:00] as well, or it's a real pirate room if you want.

Frode Hegland: [01:21:06] So I really liked it. Does that mean that what we should probably try as a group is to think about how to reinvent the web in VR? That that's the angle that's interesting here. Is that what that means? Um, I just want to throw a notch or a wrench in the thing for a moment, as I tend to do. Maybe. Thinking about this in terms of optional experience or ideal optimal experiences or whatever is. It. Well, wrong, perhaps, but not necessarily wrong. To put a different framing on it, let's think about mathematical notation and how that came about. It's certainly not ideal, right? It's certainly counterintuitive and hard for people to get into. But it [01:22:00] solved incredible problems over over the centuries. A new Greek letter to stand in the state that was so much harder to do or logarithms, you know, and how wonderful that was. So thinking about it rather than, Hey, what's a what's a better way for us to talk and exchange of ideas versus how can we all how can we take this massively cumbersome problem and turned it into a log? You know that that's kind of how I'd like to think about this space. Maybe that is the same thing that we're talking about. Let's see big time learning curve, but interesting. I got that link. Ok. Anyway, it is something to keep in mind, and it's really good to know that there is a solid b r sorry b r thing happening. What do you guys think, I'm wondering if maybe we should talk in private [01:23:00] to Alan a little bit about what he posted in the chat about his next meeting? Are we all cool with that for a little bit of closing time? It's not a big deal. Either way, I think it would be useful for all of us because we then kind of get to think through that particular issue. Ok, no one said I

Brandel Zachernuk: [01:23:21] Began to chat and show what I can about. I mean, you work for Twilio, but a big tech like bigger tech is even bigger, so. Yeah, I can tell you what I can tell you about all of that stuff.

Frode Hegland: [01:23:35] Ok. Stop recording now and try to edit a little bit of the transcript to remove some of that and post it. Ok?

7 January 2022 Chat Log

16:24:44 From Frode Hegland : https://youtu.be/0Y1Kb9y-_B0

16:26:22 From Frode Hegland : That video is Edgar in VR for only the second time. He is moving blocks and one is stuck behind a real-world door

16:28:38 From Frode Hegland : Alan: Documents, VR experiences and literacies

16:32:40 From Frode Hegland : I can see how Apple's 'continuity' will be important.

16:35:08 From Brandel Zachernuk : Peter: Did you see my word processor and the image browser? <https://youtu.be/LxviGskApcw?t=313>

16:35:41 From Peter Wasilko : Brandel: Not yet.

16:35:46 From Frode Hegland : And 'university control'

16:36:12 From Frode Hegland : Universal control

16:38:10 From Alan Laidlaw : <https://arstechnica.com/gaming/2021/10/john-carmack-sounds-a-skeptical-note-over-metas-metaverse-plans/>

16:45:27 From Mark Anderson : We often refer to words as (an accurate) proxy for thoughts but how accurate is that mapping, even within a given language? Is there research on this? I worry that we too readily start counting countable things whilst assuming we'll remember they are not a full and accurate mapping.

16:45:49 From Brandel Zachernuk : I strongly recommend Mike Alger's videos on the subject Adam: <https://twitter.com/MikeAlgerXR>

16:46:39 From Brandel Zachernuk : I'm a big fan of 'lazy billboarding' – having things ease toward your view, since so many space / depth cues are confounded by immediate, absolute billboarding

16:46:58 From Frode Hegland : I think VR since more is shared, less AR, in actual use... I think it will be OS wars with bridges, since its expensive to build the infrastructure. Look at meta giving up on own. Hence VMVR need. Relationships will matter even more-where things are and go and connect etc. (memory palace and so on)

16:47:40 From Adam Wern : Frode: The counter-force to different platforms is WebXR

16:51:07 From Peter Wasilko : I'd love to have 'Name Tag' labels overlaid on top of people in AR. I hate forgetting names at conferences.

16:52:50 From Alan Laidlaw : Via Brandel: <https://virtualrealitypop.com/designing-for-the-human-body-in-xr-e9ac88931e45>

16:55:01 From Alan Laidlaw : Brandel, request: write out some of these terms please so I can research them. I got varifocal surface, pancakes lenses – but you started out with a term, a mvergence conflict?

16:55:20 From Alan Laidlaw : Brandel* (autocorrect in overdrive)

16:57:32 From Brandel Zachernuk : https://xinreality.com/wiki/Vergence-Accommodation_Conflict

16:57:37 From Alan Laidlaw : To Frode: all in the same space is same argument as working in the office. At some point, being forced to be in the same room (virtual or not) will feel “traumatic”

16:57:54 From Brandel Zachernuk : <https://uploadvr.com/half-dome-3-prime-time/>

17:01:30 From Frode Hegland : “being forced to be in the same room (virtual or not) will feel “traumatic”” that will be for meetings, SUPER important not be there all the time

17:05:41 From Adam Wern : The difference between a saved “3D document” vs saved “3d space”

17:06:44 From Brandel Zachernuk : <https://hu.ma.ne/news>

17:06:58 From Brandel Zachernuk : <http://creativeselection.io/>

17:07:10 From Brandel Zachernuk : <https://www.youtube.com/watch?v=xImAMe32Itg>

17:07:20 From Brandel Zachernuk : (Oral history of Ken Kocienda and Richard Williamson)

17:07:21 From Alan Laidlaw : <https://www.amazon.com/Almost-Perfect-W-Pete-Peterson-ebook/dp/B003XKNWUE>

17:08:35 From Brandel Zachernuk : Tesler’s 1997 talk is a great primer on the pain and suffering for VR UI development in the coming decade: <https://www.youtube.com/watch?v=OW-atKrg0T4>

17:08:38 From Mark Anderson : Most of my library (Amazon just for ease) https://www.amazon.co.uk/ideas/amzn1.account.AHBBZEUCA7VIW5WIKO4GNV2IZE6A?ref=idea_yil_tab

17:09:20 From Frode Hegland : Brandel, I can’t find Ken’s book

17:12:41 From Frode Hegland : https://www.amazon.co.uk/gp/product/B07F18HYX3/ref=dbs_a_def_rwt_hsch_vapi_tkin_p1_i0

17:12:54 From Mark Anderson : Frode: https://www.amazon.co.uk/Creative-Selection-Inside-Apples-Process/dp/152900473X/ref=sr_1_1?crid=NHBTX1DT81RW&keywords=creative+selection+ken+kocienda&qid=1641575540&s

prefix=Creative+Selection%2Caps%2C43&sr=8-1

17:12:59 From Brandel Zachernuk : Bridle had a great post about some features of physical books way back: <https://booktwo.org/notebook/bookcubes/>

17:14:10 From Alan Laidlaw : Tinder for borkworms

17:14:13 From Alan Laidlaw : bookworms

17:14:33 From Frode Hegland : Yes! Let's Tinder for books 'Book Burning!'

17:15:40 From Alan Laidlaw : lol

17:16:02 From Frode Hegland : Hey Keith, here for the wrap up! 😊

17:16:22 From Peter Wasilko : Hi Keith

17:16:23 From Alan Laidlaw : Off record: I'm talking w Google in an hour about a UX role. Any advice, suggestions, warnings welcome. I have no idea what its about

17:16:44 From Frode Hegland : Let's brainstorm with recording off maybe Alan?!

17:18:22 From Peter Wasilko : <https://mitpress.mit.edu/books/software-visualization>

17:18:45 From Keith Martin : Going from experiences friends have had working with Goggle (and one who has a brother working there), Google depts tend to be organises as fiefdoms, and people (managers) chop and change between them a lot, which can make things feel like they run hot and suddenly cold.

17:19:09 From Frode Hegland : My experience too Keith, from interacting with them, good point

17:19:29 From Keith Martin : (Sorry I'm late – still technically working! Got waylaid.)

17:19:34 From Alan Laidlaw : Would love to, Frode

17:19:36 From Frode Hegland : 😊

17:19:56 From Adam Wern : That is why why I want a VR library (like the the cylinder I mocked up last call) – as anchors for different ideas and resources

17:20:23 From Mark Anderson : Capturing code from screen – interesting, but might end like this:

17:21:04 From Alan Laidlaw : I need this Ken something Safari's works, talks or book.

17:21:13 From Brandel Zachernuk : Oh yes, now I remember – it's about how unimportant books are vs. \$1,000 phones or tablets. Things need to be cheap enough to be manipulated cavalierly

17:21:35 From Alan Laidlaw : Mark, I love this library structure. I have a massive list on amazon as well, but not organized

17:21:51 From Mark Anderson : NFT rooms?

17:23:51 From Mark Anderson : Invention of zero!

17:23:58 From Brandel Zachernuk : I can barely use notation – Victor has a great post on it: <http://worrydream.com/KillMath/>

17:24:00 From Frode Hegland : Feynman diagrams

17:24:12 From Peter Wasilko : I prefer to read the LaTeX source code for maths figures.

10 January 2022

10 January Video

https://youtu.be/FK5ad23a-_g

10 January Transcript

Note: Accuracy of transcription and the assigning of speaker names cannot be guaranteed.

Please refer to the video in case of confusion or concern.

Bjørn Borud: [00:00:04] I made it.

Frode Hegland: [00:00:11] And your muted.

Mark Anderson: [00:00:19] So I suddenly realized this was starting, and I need to make some coffee and bring in some coal for the fire tonight, so.

Bjørn Borud: [00:00:29] I say it's my first few.

Frode Hegland: [00:01:02] That's [00:01:00] OK. Yeah, now my taste, this document is two point twenty five gigabytes.

Bjørn Borud: [00:01:09] Who?

Mark Anderson: [00:01:12] That's presumably you must have some large images in there.

Frode Hegland: [00:01:15] Can't see how have that many, but they start at different sizes, apparently. Of course I exported it. It's only twenty nine. And if I compress it,

Bjørn Borud: [00:01:23] It's only ten or fifteen. So yeah, I mean interest.

Mark Anderson: [00:01:28] When we wait for it to come by the summer, look and see what came out to be.

Bjørn Borud: [00:01:34] Where are we? It's. So on

Mark Anderson: [00:01:40] And. Yeah, mine was five five minutes. Well, I had very well all my images received as well to make Tony.

Bjørn Borud: [00:01:54] Oh, that helps. Yeah.

Mark Anderson: [00:02:00] But [00:02:00] it's interesting that we're discussing this morning, I sort of I sort of find it frustrating in a way that nobody bothered to say at the beginning of the process, you really you might like to think about these things. I mean, it doesn't really matter whether gene word or something else, but you know, it is this thing of just because you can pull a, you know, a file that would print out quite nicely on the side of a bus doesn't mean it's perhaps the right size to cram into a, you know, a two two paragraph memo to somebody.

Bjørn Borud: [00:02:28] Good morning. Hello.

Frode Hegland: [00:02:33] Sorry, I'm just moving some files around here. Sorry, guys. What were you saying, Mark as well?

Mark Anderson: [00:02:42] No, it's just, you know, I was thinking, you know, well, it's one going a bit now, but in the doctoral consortium there was, well, they were, you know, over the time they had about 70 people plus who'd gone through that pipeline. We're sort of not saying instead of just assuming not saying at the outset, right? Well, if, for instance, if you're going to be putting diagrams [00:03:00] in your documents, you might think to make them scalable because if they can be read as digital documents, people might need to and begin the picture as opposed to, you know,

Bjørn Borud: [00:03:10] It's going to take this call. Sorry, guys. One second.

Mark Anderson: [00:03:15] And so, you know, it's yes, another thing where everyone

assumes that somebody else is going to going to sort it out.

Bjørn Borud: [00:03:24] That.

Frode Hegland: [00:03:27] No, sorry, guys.

Bjørn Borud: [00:03:30] Well, I know from coffee.

Mark Anderson: [00:03:34] Yeah, I'm ahead of you.

Bjørn Borud: [00:03:37] Right? Hello.

Frode Hegland: [00:03:41] Hello. Hey. How are you going? This is surprisingly

Bjørn Borud: [00:03:47] Good, I would guess.

Frode Hegland: [00:03:48] It's so embarrassing. I'm trying to sink a file here, the most technical thing in the whole world and just at the beginning of our meeting, anyway, you don't get to see you. Do you want to [00:04:00] introduce it? Well, actually wait a little bit until there's more people to introduce yourself to. I'm glad you are.

Bjørn Borud: [00:04:14] Virtual reality.

Frode Hegland: [00:04:18] Yeah, also real reality. Oh, Adam, is there, so Adam and beyond your neighbors, Adam's Swedish. It's not his favorite restaurant was a Swedish restaurant, right?

Bjørn Borud: [00:04:34] Mm-hmm.

Frode Hegland: [00:04:34] What wasn't your favorite? Yeah, it was not Swedish.

Bjørn Borud: [00:04:39] Yeah. Unfortunately, the head chef decided he wanted his life back.

Frode Hegland: [00:04:51] I think life is overrated.

Bjørn Borud: [00:04:54] Yeah, yeah. That's what I told him. Told him that now I have to find [00:05:00] a new favorite restaurant, which is going to be a pain in the ass.

Frode Hegland: [00:05:06] That's it. That's a good one. London. Oh, I'm finished with that nonsense. Sorry, I just rushed back home and then I get an email from anyway. Oh, Alan is here also so very good. We haven't seen Brendan for a while and I hope Brenda will join us. We will see. So beyond before you introduce yourself, I think maybe I should introduce you, doesn't introduce us to you a little. So I've known him for quite a while, and he is super clever with a resumé considerably longer than my arm and all kinds of technologies, and I suggested maybe he join us a little bit because we are now at least partly moving into this. And [00:06:00] we are doing a more focused community where we will be publishing a monthly journal. Somehow, we have these twice weekly meetings, which in the beginning tends to be fluff for about 15 minutes, then it tends to be trying to organize something. And as most hippie communities, we will mostly fail. And then towards the second hour, suddenly somebody has some idea. We go down rabbit holes and it's really amazing. So that's fair. Well, we're waiting for maybe a few more people. And do you guys want to do maybe 30 seconds introductions of yourselves?

Alan Laidlaw: [00:06:43] Sure, you start, yeah. First off. That's what you're sorry, what's your name again? Borud as your tag, but I'm not sure if that's if that's [00:07:00] your name. Great. Wonderful.

Frode Hegland: [00:07:03] Funny how you could type that faster than me.

Alan Laidlaw: [00:07:10] Well, welcome. Glad to have you. I'm Alan. And Mike, quick thing is. I have been attending this last year because I'm very interested in. Well, the tools for thought area, but specifically the the messiness of words and categorization as a as a much deeper problem than than most of the tools and the conversations to get to. In this group we get we seem more comfortable with those deeper issues, which is great. I think that applies both to PDFs, e-books and VR. Vr [00:08:00] is totally uncharted territory, which will take, you know, probably many more steps to get somewhere close to even getting to a language and how to talk about the issues. But at professionally, I work at Tullio as a solution engineer, but I am probably the worst engineer here. No, no, actually, I'll take that back. I'm about

middle middle of the road. Sure, there are some worse than me on the call.

Bjørn Borud: [00:08:33] Thanks, Alan. But you are our customer.

Alan Laidlaw: [00:08:36] You are correct, how are you?

Frode Hegland: [00:08:37] So sorry, what did you say Bjørn, you know, Twilio, right?

Bjørn Borud: [00:08:41] Yeah. A customer. It's fantastic. So the interesting thing is, about 10 years ago, I tried to get a telco to do what you are doing. Uh, there we go. Ever since you started getting some success, [00:09:00] I've been pointing to three and saying, see, see, see, see what they're doing.

Alan Laidlaw: [00:09:07] Yeah, that's that's wonderful. That'll be something to touch on because it's in a way it's compelling because it's dealing with some late legacy latent systems of telecom that has its all this confusion, which is a rough metaphor for where PDFs are at. But in the other sense, it's become it's become an enterprise so quickly that I live the pain of the nation, they often talk about it.

Frode Hegland: [00:09:40] Excellent. So the other 'a', Adam.

Adam Wern: [00:09:49] I really don't like introductions, but

Frode Hegland: [00:09:53] I can introduce you if you prefer.

Adam Wern: [00:09:56] I can take a shot at it, but yeah, [00:10:00] try.

Frode Hegland: [00:10:02] Well, OK, other than being a small Norwegian person and trying to do quips at the Swede. Yeah, so Adam is all kinds of things, but it's also someone who actually makes things happen. You know, we have ideas on this group, and then he shows up and saying, no, I didn't actually write something, but let me show you this. And he has kids and he has Oculus. I think that's all I need to say, right? Over to you, I'm sure you can complete my sentences.

Adam Wern: [00:10:29] You have a very generous definition of making things happen because I do lots of prototypes. But to me, it feels like these are just ideas. And not really making things happen, making things happen is making tools that are used by millions and that I don't do.

Bjørn Borud: [00:10:50] Yeah, yeah. Yeah, yeah.

Frode Hegland: [00:10:57] Peter?

Alan Laidlaw: [00:10:59] Ok, I'm [00:11:00] an attorney by formal training. I've been a programmer since my undergraduate days and probably essentially I'm like undocumented PhD equivalent in the computer science side. My primary technical interests are programming language design and user programming law, and I hypertext, of course, very much interested in both looking at interactive, fiction literate programming technical topics geared towards building systems, although I don't know any system about the moves of people using yet. Other interests include foresight, future studies and university futures primarily. So I have a project I'm working on called Founders Quadrangle that's going to attempt to be a community for people to explore the design space for future universities with an eye eventually to funding one myself down the road. But that'll take a while and an awful lot of planning first before it gets to fruition. In the meantime, of course, I'm incredibly [00:12:00] excited about this community and the kinds of tools that we could use to create the next generation of academic tooling for university people to be using. I'm also very interested in typesetting and the formal presentation aspect, so I've spent more time staring at internal lab tech than any human being should ever have to do.

Frode Hegland: [00:12:24] Well, that's anything more than a minute, but fair enough, Mark.

Mark Anderson: [00:12:30] Oh gosh, I don't know.

Frode Hegland: [00:12:33] I may have. You may have met in London, actually.

Bjørn Borud: [00:12:38] Yeah, probably.

Mark Anderson: [00:12:40] Ok. So I mean, sort of my connection here in the most recent sense was I've just completed a PhD at Southampton in the same program as Brisbane, and I

got wounded into the very early stage discussions, which led to visual matter. And and [00:13:00] now I'm basically I'm basically in recovery from finishing, thinking about turning it off my arse and do something reasonable, find a job.

Bjørn Borud: [00:13:09] But I guess

Mark Anderson: [00:13:12] I'm listening to Adam's comment earlier. I think it's fair to say that I look at his doodles, and I think if only I could I. I've bounced around the edge of computer technology since my first career that I was a naval signal source of moons ago and had many years of having technology and software done unto me. And but that got me involved. Also, when I end up writing techniques, which is documentation in any other sense and in a sense, that's probably been a strand that's carried me through did that. And then in the 90s, I also did a start up through the early stage of the web selling CAD software that went nowhere. But it was very interesting to be there, you know, doing e-commerce when people didn't even know what it was. And then I fell into doing a lot of to do with meditation fed data. So I ended up effectively as an information emergency [00:14:00] plumber. Anything that people said was too boring, too hard or too difficult tended to end up at my door, often the same person ringing by four different numbers, you know, in the morning. Anyway, so I'm an odd fit around the edge of this, but I very much come from the perspective of the middle ground between people who hate anything technical and those who know far more about it

Bjørn Borud: [00:14:19] Than I do.

Alan Laidlaw: [00:14:20] Don't forget a debrief.

Mark Anderson: [00:14:23] Yeah, sorry. And I've also well, since 2004, I've been a sort of lead tester and community, I guess, with a community person for East Gates knowledge management tool. So tinderbox and story space. So I have an interest in hyper textual information as well.

Frode Hegland: [00:14:41] Yep. So Brandel, you joined at a good moment. So my old friend Bjorn Borg is here joining us for today and everybody's done brief introductions. He will introduce himself lost to make sure we have the most people, which is you. So do you want to spend 30 seconds on who you are interested in? That kind of good stuff?

Bjørn Borud: [00:15:01] I [00:15:00] a.. An interactive graphics engineer, so I do computer graphics, but in particular, the real time stuff that you can you can interact with. And right now and for the last seven years, I've been working at Apple. Previously on Apple dot.com websites and things like that. But now I do have VR sort of research and there's a lot of fun. And the particular tech that I have is that I'm very interested in understanding the impact of embodied cognition and extended mind on the way that we ought to consider using computers so that we that we actually think by doing things, particularly with our hands. And also as much as possible with each other. And that most computing hasn't incorporated that world view. And [00:16:00] that text is one of the areas that could be kind of re-imagined and reinvented through the lens of understanding that our appreciation of the physical world through our bodies and with each other is something that is important for being able to do more with the technology that we the the sort of the technical basis of the technology we have today. Yeah, that's me.

Frode Hegland: [00:16:29] It's all part of you. Yes. Rafael Bjorn is here today, we've all done really brief 20 30 second introductions. You're the last one to enter. Do you want to do a brief intro on yourself before Bjorn introduces himself?

Bjørn Borud: [00:16:45] I'm just trying to get to my computer, if that could be a little bit later.

Frode Hegland: [00:16:51] Yeah, that's absolutely fine. Do you want to say a few things about who you are, where are you coming from, whatever? I'd like to warn everyone that in a way just beyond means bear. [00:17:00] So beware.

Bjørn Borud: [00:17:03] Well, what I usually say and that's that probably comes from my my. The period of my life where I worked on search engines is that at the time I was born, a lot of people were called Bjarne. So in essence, my name carries very little information. So that's why I usually use my last name, I think, out of a group of 70 people that used together about a couple of decades ago. Thirty five were called Bjorn. Oh, yeah, yeah, my my name is beer. I tend to think of my professional career as having four periods, so initially I started writing software for money when I was about 14 years old. So my first job [00:18:00] was to automate the manufacture of cigarettes.

Alan Laidlaw: [00:18:05] So, uh, yeah.

Bjørn Borud: [00:18:08] So I spent some, some years doing industrial automation in my spare time. And then I discovered the internet, and then I spent a decade writing bits of code that you never see. Hopefully, very few people know that, I wrote, because they were I was kind of learning these things, but I still discover things that I've written that that you can still find in in the fabric of the internet. So if you are typing a query into a search engine, you probably end up running some code, I wrote at some point. So during the nineties, I [00:19:00] started in a company that was supposed to make a product, but we ended up being the weird people you called if you had a problem that you couldn't find anyone. Willing to deal with. So we did a lot of really weird stuff. I think the weirdest stuff I did was to write the system for calculating the isolation thickness of oil pipelines. Um. And then we wrote a Web crawler as a consulting project, which meant that I ended up getting sucked into the search engine industry where I spent a decade.

Bjørn Borud: [00:19:43] And this is also where. A lot of my interest in text came from. Although there have been two parallel tracks, one is how do you make a search engine? And the other part is how do you actually make sense of text? And the reason [00:20:00] I got interested in that was I wanted to do attribution analysis. Because there was an article in some hacker magazine that mentioned me and I wanted to know who had written it. And I eventually managed to find out who had written the article, so and then about 10 years ago, I set out to try to reform the telco industry. Uh, it turns out you can't reform the telco industry by being part of it, so. Alan probably knows all about that, but the telco industry left me a little bit scarred. If anyone says standard to me now, I get frightened and I want to hide. If you had used the word standard 20 years ago, I would have said Yay standards. [00:21:00] Um, yeah, right now, I would say I have PTSD,

Alan Laidlaw: [00:21:06] But I hate acronyms.

Bjørn Borud: [00:21:10] So the one thing I did that was actually led into the next in. I spent 10 years in Tokyo and then during the last five years I was leading an underfunded but fun team that was called exploratory engineering. Which essentially meant that we could do whatever we like. The problem was we never got any budget for for actually making any damage. Um, so I started leading this department in the direction of Internet of Things. That's where where we're kind of at now. So [00:22:00] I run a small startup with four people, and we we try not to design any hardware if we can get out of it. But we write a lot of IoT related

software. Um. Now, I have a bunch of interests that are pointing in every direction and my my way to understand things is to build them. So sometimes electronics, sometimes software. Yeah, and that's for VR. I'm. Uh, I guess this is the third or fourth time the air becomes hype during Know When My My Lifetime So. I'm kind of skeptical, but I'm [00:23:00] willing to be convinced. So my my my experience of VR as of late is is puking into a bucket after trying to to drive car simulators and we are. And it almost works there, just on the on my favorite track, there are only two points where I get carsick. So. Yeah, but I'm interested in looking where this we are thinking is going, and, you know, some some things take a lot of attempts to bear any fruit. And I think the best example of that in later years is I, which was this useless field where where people would have pointless arguments and not make much progress. And all of a sudden a lot of things happen at the same time. And now [00:24:00] we actually have a machine learning that can be used for something.

Frode Hegland: [00:24:04] So I think that's where we are with VR, so, you know, I've been very much flat screens, we need to solve them first and then Brundle said, Well, actually? And then I bought an Oculus. And there's two kind of points for me here that are important regarding VR. One is at some point you will be up for the lightweight thing on your head, RV or whatever, and it'll just work. That will happen. I think that's completely inevitable. I don't think that's controversial.

Bjørn Borud: [00:24:35] Oh, no, I mean. That's part of it, yes, but I think the the component that is the most useful that we have this time around is air.

Frode Hegland: [00:24:51] Ok. This is part of our discussion here, because, believe it or not, I don't actually agree with that. But that's kind of irrelevant. That's part [00:25:00] of our longer discussion. But if you take it as given that in, let's say, five years, you'll be able to buy relatively cheaply ahead, set to put it on RB or whatever, but so to speak. And it's got very good hand recognition, which we already have in the Oculus. It will be normal. Everybody will have one. I just I take that as a given at this point, just the way that I've seen various waves. So then the question becomes number one. What work productivity stuff for your brain can you do there? But what I've realized is almost as important is how can it be moved around? I just wrote this piece on ownership, and I'm going to share with you guys tonight or tomorrow morning where it says, you know, let's say we're in a room like we are now. We have laptops and then magically we we are we take stuff out of laptop into the room, move it around all these amazing things. Now who owns the room? Who owns this sculptural object? We're working. How can you give me a piece to add to it? How can I give it to you? How can

we work with it when we're outside [00:26:00] of the environment? That is the big battleground. And so in this group, we're really fighting a interaction and B ownership. And I'm glad to see so

Bjørn Borud: [00:26:11] Many shaky heads. I mean,

Alan Laidlaw: [00:26:19] I guess

Bjørn Borud: [00:26:20] I guess part of the thing that has made me not buy a VR headset yet is all the. All the troubled people are having with it being tied to some kind of account somewhere.

Frode Hegland: [00:26:35] I'm not going to do too much speaking, but on that point, no one personally, I view it as a toy. This is not my car for life. You know, I'll do whatever and there and then throw it away, even though it's expensive, but also a lot of things have gone away, like motion sickness. It's 120 hertz refresh rate, so it's a completely different thing than what it was not so long ago. It just feels like [00:27:00] we're at this level where technically things are happening on boarding is absolutely crap. Cool things on top and we have the opportunity here. Adam's already looked at some of the web VR stuff, and Brando's got huge experience. So in this community to discuss these things is just really amazing. Anyway, I'm going to keep talking unless someone else does. So please someone and trust me, it would be a very good time right now. Yeah. Rafael, why don't you introduce yourself?

Rafel Nepô: [00:27:26] Let's go. I'm sorry, I have a connection. So nice to meet you, Bjorn. Introduction. It's always nice to see, you know that people are a lot, lot smarter than than me in the room. That way, I can learn a lot from all of you. And it's it seems like a constant that there's always these kind of like unsung heroes of people who are on the backstage doing things that nobody has ever heard about and which just makes me think that, you know, life [00:28:00] continues to be kind of like this theater and whoever is on stage, is it really the ones that are building things? So when I hear stories like like yours, I always think of life as a theater, and whoever is controlling the theater is not on the stage. It's the backstage. But about me, I played a lot of video game and then I worked a lot in the presentation industry. That's why this this idea of life as a theater for about 10 years, creating presentations for corporate clients and mostly Gartner for technology research things. And then the interest for text came out of typography. There was also another conference that I used to be a part of. I still am part

of it, which is the biggest typography conference here in Brazil. [00:29:00]

Rafel Nepô: [00:29:00] It's called Jackpot Day Type or Day of Type. And then from that I started a lot of research on finding things that had a seed on education. So it started with education. From education, we went into learning, which is different than education. Education is what you get in school. Learning is what you get by yourself. And then from learning, I took another step back because learning is based on, you know, finding the right information and the right time and the right place, the right context, a lot of things. So if we make information better than we make learning and education better because, you know, teachers, they they drink from seed, they drinks, they drink from font of information to create educational materials. So basically, if if we make the foundation better, then everything else gets better [00:30:00] by default. And then the foundation of information is pretty much text. That's how I ended up here, and that's how I ended up with with my company to try to organize a little bit of the mess of the web because it's a messy place.

Bjørn Borud: [00:30:21] Yeah. Definitely. And I would know because I used to write web crawlers,so I have to interface with all of the craziness of the web.

Rafel Nepô: [00:30:33] And I think the only difference that I would like to mention is that instead of going, you know, the fully automated crawling A.I. kind of things is that I I put a lot of value on on people and I love I love human curation and people who are passionate about subjects and showcasing those things. So I would love to bring [00:31:00] the idea or the personality of having to interact with a librarian type of person to have access to information. I miss that.

Bjørn Borud: [00:31:12] That's actually interesting. Yeah, I mean, that was kind of the promise of intelligent chat bots. And then I guess there is going to be. Some number of iterations before that type can deliver.

Frode Hegland: [00:31:31] Is it? Yes, I think I think Brandel has a strong point on this, and Brandel also you had your hand up, but did you want to say something more about motion sickness while undergoing simulated motion or did you want to talk about something else?

Bjørn Borud: [00:31:46] Uh, well, so with with emotion stuff, it's one of the problems that is particularly hard. So similar to getting enough light up about resolution into people's eyes, it's

something that we'll [00:32:00] be able to get better at. We'll be able to go up to 2K 4K, but that's not anywhere near the total angular resolution of the human eye. Until you get to something that's truly variable, that is that you are able to accurately track and put something right in there. Then we will still have more to go. That said, so that means that the current generation of VR is not there in any sort of reasonable, meaningful sense in terms of being finished. Nor will the sort of the research program for being there finish within even 20 years. But now that there is money in it, then it will begin to pick up where the sort of Moore's last free lunch kind of left off and that there is stuff to be done to improve it. I'm with you in that I actually don't particularly have an interest in VR itself, but more immersive computing, the context, [00:33:00] the concept that computers will be able to be things that we can interact with without having to touch a keyboard or the mouse. Not that we want. Those are necessarily going to go away, but that they are currently the only means through which we use them. And having gestural or interactive sort of interfaces would be beneficial for a number of people and also in a number of domain tasks, a task like being able to manipulate information by tweaking the view of multiple parameters rather than having to use sliders or anything like that.

Bjørn Borud: [00:33:39] Being able to use gestural interfaces means that you have a more nuanced ability to bring your understanding of the physical reality to bear on the way that we use computers and that, like the people who have managed to make it into computers, are the ones who are willing to make those concessions to their physical awareness. [00:34:00] And the other people say, Well, I just really like using my hands, or there's just really something about books that are a lot better and those people are all right and they all have a point. And unfortunately, a lot of the people who have managed to make it through that sort of trial by fire into computing have forgotten that. But we actually are really amazing with our hands and there really is something amazing about books they don't have control over. But the affordances that exist as a consequence of turning pages is a consequence of having physical reminders of the shape of your hand. Grip and stuff like that are are really valuable for understanding what it is that you're doing with the book, how to respond to it, what to do next, and not to be distracted by trying to load a Twitter feed or something like that. So there's there's a ton of stuff there. Vr headsets are currently the least worst. Go ahead, brother.

Frode Hegland: [00:34:52] I was just going to say, I think we strongly agree, but it's worth highlighting that we need to consider we'll be living in a hybrid world. I [00:35:00] can imagine very easily, you know, small update to the Apple Watch, tiny little camera. I'm reading a physical book, you know, maybe it's just scanned the cover because that's not that

difficult, right? So I'm reading and I say, you know, search for this and then if I'm wearing it, will actually show it on the side. Is very much your world brand. I was just playing off the fact that you said a physical book does not command F, but very soon it will have.

Bjørn Borud: [00:35:24] And that's where it. Right, right. And the advances in iOS 15 and Mac 12 are sort of case in point of that of being able to actually find those things. Also, if anybody manages to make a personal privacy preserving way of putting a lot of cameras in your home, then being able to have camera feeds over your shoulder would mean that you could have an ambient sort of general computing environment that is aware of what you might be doing with your hands in front of your computer without having to include that as a way [00:36:00] of sort of presenting it to the machine. And yeah,

Frode Hegland: [00:36:05] You or anyone here know if there has been real research on how a baby manipulates its mother because I like to joke, and I think it's very true that our first interface is our mother. And they may be, yeah, crying, but different kinds of crying for different reasons, in different ways, at different times, and they are very attuned to to, you know, for the mother to know what's going on with us. Maybe a good starting point.

Bjørn Borud: [00:36:34] Well, I mean, there's a lot of work on the recognition of motor babbling. So motor babbling is the process whereby the the the the the name for when you have muscles in your body and they're connected all the way up into your brain, it's called innovation, and that's not actually complete when you're when you're born. We're barely finished. It's just that that's the last [00:37:00] moment that we would be able to fit out the birth canal. And so we take that moment to get out, but we're really not really born in a meaningful sense in terms of having the wherewithal to actually understand our stimuli. And so motor babbling is the process where we we are just randomly firing. There are multiple connections from each muscle up through the spinal column into the brain, and we and we just pinch those and we wait. And we look at the same thing that's happening with our optic nerve, and we try to try to pare it down that stimuli and response until we get some kind of one for one. I use this neuron, this motor neuron, and I use, yes, motor babbling. That's correct. And when we do that, we have the ability to know this is my finger muscle. And so that happens for babies at the same time. There's a lot about our eyes that that [00:38:00] is actually more neural. You know, people say that there are more connections from your brain to your ear than there are back. And that sort of is indicative of the fact that hearing is an active process, but also that in that same way that eyes are much more complicated organ.

Bjørn Borud: [00:38:19] And so to your point, one of the things that we do with our eyes is we we learn how to apply emotional affect. And so babies will be learning at that point how to make sure that they can convey things with their eyes at a time, probably before they learn how to convey things with language. And I know I must have asked with Daniel Kahneman did a lot of work on eyes and what it is that can be discerned from them? I'm not sure if that's something that has been a field of interest for Barbara. But it would be fascinating to talk to psychologists and developmental [00:39:00] psychologists about that. I know Meadow has a lot of stuff about hand. She may know about early childhood development, enhance as well. But yeah, there's a there's a lot there. I'm not familiar with really early childhood development and specifically the stuff that children do to parents. But yeah. Those are some places to start. What else is happening there? When I joined Brenda, I was talking about embodied learning. And I think then I don't know which point it was connected to embodied learning and the troubles of VR, because when you're VR, you have this kind of placebo embodied learning effect. You're there, but you're not quite there. So if you're if I want to learn piano and then I VR environment, I lose, you know, the physicality of these and the context, awareness and the width [00:40:00] and the depth and the pressure and a lot of a lot of these things not necessarily about.

Frode Hegland: [00:40:05] Not if you bring the physical keyboard into VR.

Bjørn Borud: [00:40:10] Like then.

Frode Hegland: [00:40:12] Yeah, and that's just the whole hybrid thing of, you know, you try to take from the best what you can into different things.

Bjørn Borud: [00:40:19] But then I would in that case. My regular glasses with amplified information on screen would be kind of better because I would be there with the extra information that I need based on the context. Um, I don't know if I want to get anywhere, I just wanted to comment that I'm a really fan of embodied learning, especially because if you think of all of the other areas that that are non non digital nine interface non screen, for example, dancing or theater, it's all embodied learning. After you do it, you know, a certain amount [00:41:00] of times. And you know, related to the context, I don't think about the keys that I'm going to press. My body does, my body remembers the keys of the song and I play the song. So what is that?

Frode Hegland: [00:41:13] You're holding that to show you guys this? It's kind of interesting. And so it's oh. It's not, in reality, all that good in terms of what is on it, the scales are a bit off. But I've been

Bjørn Borud: [00:41:31] Talking about

Frode Hegland: [00:41:35] This at a company called Suck, believe it or not, at Duke. But I was talking to Christopher Gutteridge today about using this for the Solar System. So let's say this is the size of the Sun and then you have the planets. It turns out they don't actually make these long enough to fit Neptune. Right. This is a giant that's been going on and on about, but it's not really embodied [00:42:00] in that sense, but it still helps give a sense of scale. And there's so many ways to do that. I mean, one thing we have to do is build the Solar System, and we are I haven't found any good apps for that. But you know, and then how to speed the journey, how long does it take to go from the Sun to Neptune at light speed,

Bjørn Borud: [00:42:17] From the Sun to Jupiter, I think, is four six minutes, depending on the position of the planets. And I think that, you know, the Solar System is really hard to grasp in terms of human scale because I mean, it's mostly empty space. And if you are, there was a TED talk many, many years ago where, you know, a guy talked about what an average place in the universe looks like. Well, it doesn't look like anything because an average place in the universe, you can't even see stars.

Frode Hegland: [00:42:55] Oh, yeah, I mean, the only stars we can see here are the Milky Way, we can't see anything [00:43:00] further.

Bjørn Borud: [00:43:00] Exactly. Yeah. And if you live in the city, you can you can hardly even see that. But but I think that that's kind of also tied into I spend a lot of time these days talking to people who care about energy and climate. People struggle a lot with large or small numbers and and with change. So, yeah, there are there are some things that it would be really interesting to be able to visualize. But it's really hard. So Solar System is actually giving people a realistic idea of how large the Solar System is. It's surprisingly difficult.

Frode Hegland: [00:43:53] Hmm. Yeah, it is. So here's the thing to kind of roughly go back to to what we're talking about [00:44:00] as a community. Let's let's imagine this. We start with a PDF, obviously, and in this PDF, in plain English with visual matter is something

about the Solar System. Ideally, we should be able to don our virtual glasses or whatever virtual environment literally pull that off the page, put it as a sculpture in the room. Right, interact with it, do all these cool things and someone else, you'll be able to say, Well, actually, I have a model of Sarah's which is better than yours. Plop it in, do things. And when we're done close down our goggles, that information will still be reflected in our outside of VR environments. I think it is so important that we work towards that maybe this could be something like this could be an example project to try to make that possible.

Alan Laidlaw: [00:44:52] A couple of thoughts to scatter shot around. First off, I love that thinking. [00:45:00] And even in the sense of. Future text labs. There's the side that we're doing now, which is scattershot and big ideas, but it'd be interesting if the labs is actually like, Hey, let's let's let's learn by doing right, let's figure out something and see what we can test the boundaries. So Solar System is one another one I had which to say I think would be too difficult to do. But if it's difficult, then everything else is even more difficult. This is Burns Euclid, which is a beautiful, typographic description of the concepts.

Frode Hegland: [00:45:45] Come on, you're costing me money again. What? What is it called?

Mark Anderson: [00:45:50] It's certainly the position.

Alan Laidlaw: [00:45:53] Yeah, it is, yeah, it's very made like in the early, like maybe a nineteen twenties or something, right? [00:46:00] But because it has color that goes that is in line with the concepts. What's the name of a?

Frode Hegland: [00:46:10] Elements of Euclid, thank you.

Alan Laidlaw: [00:46:13] Bye bye burn, right? So obviously, there's Euclid's garbage copy. Nobody wants that. Yeah, there you go. Ok, hold it up one more time so I can get a screenshot, do you?

Mark Anderson: [00:46:24] I'll go and look for it. But but because maybe people haven't seen it, there is a guy recently who you know again, because no one told him not to went and created all of what you just seeing in CSS

Alan Laidlaw: [00:46:35] Is to let you have the poster that he made. I can bring him in here. If you guys want to see it, it's beautiful. It's just great. And so this is an inspiration. In fact, it might even be a collaboration with him. He he created a beautiful CSS version of it.

Mark Anderson: [00:46:49] I'll try to find it.

Alan Laidlaw: [00:46:51] Ok, great. But I was thinking it would be wild continuation of that conversation that started all the way back with Euclid to see what [00:47:00] a VR version of this would be like. Right. Would it just be the pages depicted, would it be interactive? Would it be somehow immersive? I feel like even though it's exceptionally difficult, we could just do one chapter. There could be a lot of lessons in the the parts of VR that I'm interested in, and I believe Rendell is at this kind of like what is low fidelity, but not not physically representative VR learning. Working look like, you know, anyway,

Frode Hegland: [00:47:40] That's my opinion, but probably not for an early stage, but you have my vote completely. I mean, one thing I selfishly want is for Edgar to learn geometry in that. I want them to learn things in that.

Bjørn Borud: [00:47:54] I think one one, one project that we still have to do, guys, is to unify [00:48:00] our libraries because every session we have amazing book. Yes.

Alan Laidlaw: [00:48:07] Ok, so this is the main point I wanted to talk about.

Frode Hegland: [00:48:09] Yeah, this is what Helen and I talked about this weekend. How do we want someone who has an interesting resource for the group? What do we do? Helen?

Alan Laidlaw: [00:48:16] No, this is yeah, let's get tactical for a moment. Over the weekend, Frode bought the domain name, which is great. I threw well,

Frode Hegland: [00:48:28] Text info or whatever fits your text.

Alan Laidlaw: [00:48:33] I've been working in craft lately. I invited you guys to the workspace. It's understandable that that is not ideal, but it's still I can even show you the notes that I've made from this call so far. I think I think if we're going to move forward, it is

vital that we have a way to collaborate a synchronously. Um, I know we have the meetings right now, but there's [00:49:00] the there's the matter of the transcript and I think you'll find even in just the very quick one off notes that I've been making from today's, which I'll just go ahead and share my screen, that it's immediately more useful than think than digging through a transcript, right? So like right here, I've just got attending. I've got when we were talking, we were introducing ourselves. These are terms that we all mentioned, right? And and now we've got like observations. Mark mentioned a book. So if I jump over to books, I can see that today was mentioned reading and writing for an electronic book, right? And similarly, I can go over here and see other books mentioned. Almost perfect creative selection, right? I'm not suggesting this is the right way to do it, but we need to start if we're going to be more. Effective [00:50:00] this year, we need a place that has certain baseline requirements where we can work asynchronously kind of document curate a library is the first place to start.

Alan Laidlaw: [00:50:13] I've I've I've started to put together just a mention of obviously this is a little sided with just what we've recently mentioned. You know, I've made different docs for that. It doesn't have to be a doc could just be a reference. But wherever this lives, we need to have something like that. And I think some of the requirements go along the lines of. Pc and Mac, which sort of makes. Craft problematic, something where I don't have to log in every time, something that is easy to, you know, download work across devices, et cetera. We can go into what those requirements are, but I [00:51:00] would just press that we should have something like that to the point that not only do we have the library and that we have this loose categorization of. Uh, how how we're phrasing things like what I love about even just talking through this versus writing it out is that we've got, you know, terms that we would say that very quickly come to mind when we're talking, but we might struggle with if we're trying to write it out or turn it into a category and then separately, get to a point where we can actually have agendas or things that we want to talk about during some of these calls, right? Sort of future planning that is that is it? Go ahead, frode.

Frode Hegland: [00:51:41] I just wanted to underscore what you're doing and ask, I think maybe beyond, because you're kind of the newest person dipping in here today, I don't know how often you will be here. It's completely free and easy. But let me just take the pulse. I can see you all on the side here. First easiest thing to suggest is we just make this a normal [00:52:00] WordPress blog. Everybody who is involved in the community has their own account, and it's an admin account, so you can actually do anything. But we do agree on a few things, such as anybody can post a post, but only together do we make a new page. So the page is kind of become public facing to introduce new people and kind of decisions and

announcements. But the posts are entirely internal and we agree on a few rules, such as resource or whatever. So it's easy to build a page to see tags. Should we consider that or should we go further beyond and everyone else? What do you think about that old fashioned idea?

Alan Laidlaw: [00:52:40] I have an issue, a small issue with that, but I'll I'll wait till everybody else chimes in.

Bjørn Borud: [00:52:50] Hmm. I was trying to remember a friend of mine has a start up that is trying [00:53:00] to do a system that is really hard to describe. I think I did. I send you a presentation from them through.

Frode Hegland: [00:53:11] Uh, what's the company?

Bjørn Borud: [00:53:13] And I'm trying to remember the guy who started this called Jeremy Iverson. Um. So their product is really hard to describe. So you can think of it as a cross between a wiki, a database and a spreadsheet so you can put information into it and then you can start to organize it later. So, for instance, you can you can put things like devices, descriptions of devices into it. And then later, you can say this is actually these objects are or these things in this information domain are devices and [00:54:00] devices have these properties. And then you can retroactively and incrementally apply structure to information and then also. Automated. Unfortunately, they have gotten way too much funding, so they're probably going to operate under the radar for a while. But in general, I have very few. Preferences, since I usually have several modalities when when I work, so I'm very old fashioned, I make notes with with a fountain pen. Usually I didn't bring one today, but. Uh, and then so I usually have distinctive. Um, writing and organization faces, if that makes any sense. So first first stage is always to just do information capture and then later try to [00:55:00] organize it so that I can actually find what I'm looking for. Um.

Alan Laidlaw: [00:55:09] So sorry, Peter, go ahead. Yeah, I think we should actually try to do a test bed with our own front end user interface. Now we could use WordPress as a backend content management system. That's what I'm going to be doing with Founders Quadrangle. I have code that can reach into the WordPress API and pull in all of the posts, and then frontend code can scan that and manipulate it. Add extra linkages that aren't present in the WordPress portion of the feed. Merge that with bibliographic material being stored in a

literal public group. I think actually, that's what we should do for exchanging references. So Turrell has a system where you can have public groups and then anyone who's a member of the public group can have their local literal desktop client put citations into the communal database and pull updates out of it. So that'd be a really good way for us to start [00:56:00] merging our libraries.

Mark Anderson: [00:56:05] You know, I certainly keep all my books in my. It happens to be in bookends at the moment, but I keep it there simply. So I've got it handy for a site, mainly if people want know more than just a title, I can normally means I can quite quickly get them something. Well, more than a title and not just an Amazon link, because I just posted earlier because other sources are available.

Alan Laidlaw: [00:56:29] Uh, yeah. Anyone else?

Mark Anderson: [00:56:35] I it's funny that fountain pens came up because there is something, as I know when I was studying and my supervisor, Oh God, he's writing it down with a pen, you know, as if this was no. But it is. There is something, even even though it all ends up basically on on the back of envelopes and stuff. But this is my short term memory and I struggle to move off that. And I know there are all these wonderful digital things, but [00:57:00] actually, I just don't find them. I think it's partly because it's a spatial thing too. I sort of know I wrote it on the third envelope, down on the top right hand corner. And you know, that's just an odd way of remembering stuff. And I read it greening cannot purple ink or whatever, you know,

Frode Hegland: [00:57:15] I could not imagine putting my library, you know, on the other side of the room where this thing into a digital form, unless it is to share with someone. Yeah, I know what's on the shelf. But anyway, there are all kinds of comments back to Alan's main kind of concern to use that term.

Alan Laidlaw: [00:57:37] Yeah, my main concern is that we we've got a good thing going here. We've got some tailwind, right? The transcription is useful, but I think that there's a way that we could do something more without a whole lot more lift. There, I think. The the way to approach [00:58:00] it is. Whatever is close closest at hand and can evolve over time, get better over time. With those few caveats, like one of my my two main issues, I think with WordPress yarn brought up one is that, you know, I want to be able to put information in and

organize it later. I don't want to feel the pressure of I'm putting something in the wrong place, which is a lot of the reason why I don't use circle so much. Another is the necessity of or the the degree to which I have to log into something first before I access it versus something that's sort of kind of like always on and I can just jump to it. Something as simple as that, it's going to be, to be honest, you know, for me and I think for a lot of others, it's just going to be one of those little frictions where you go, like, I don't have time to do this now and then it doesn't ever get used, right? So so the main goal is to find a [00:59:00] tool, even if it's not perfect, that does get used. Even if we take it later on and put it somewhere else,

Frode Hegland: [00:59:07] We do have another constraint. Agreeing with all of those and that is I really want Adam and Brando, particularly if they want to use this data for some kind of experiment of what's in the group to be able to very easily access it. That's also constrained constraint, not necessarily a huge one. Brundle has already said he's very good and happy with scraping, so just mentioning it. I don't.

Adam Wern: [00:59:31] Now, I wonder. To me, it's really hard to with those community resources. One is that they only get half finished and then people have real life to attend to and they yeah. People love to do hundreds of categories. There are mostly empty and the opposite problem is that someone dumps everything into that. And what I need is kind of a the best resources, not the not the [01:00:00] same thing as a well-crafted Google search will give me so. And the same. And we also have different tastes as well. Someone in this group recommended free guy. And when I had the flu just before the Christmas, that is why I was away because I had like four or five weeks of fevers in the family to attend to. Oh yeah, crazy. Not regular colds, but fevers. But I watch foundation, which was OK from your recommendation and free guy, which was hopeless. It is kind of the high production value, low, low meaningfulness. I think that

Frode Hegland: [01:00:45] It was a popcorn

Bjørn Borud: [01:00:46] Movie. Yeah, but

Adam Wern: [01:00:48] We have enough popcorn in our life. It's kind of saturated with popcorn with so. But we don't swimming, meaningfulness, so we have to be a bit more. Less [01:01:00] popcorn, I think. And while the resources brand isn't in the chat like The View, the future mundane and they are absolutely excellent, so where it's I want those kind of

resources, those videos that are really, really worth watching. And thank you, Brandon, because many of the things you've sent out. So yeah, high quality. And so it's it's a matter of taste and also discernment on what you send to others and what you collect. Because as Mark often says, it's putting many things into a bucket doesn't make it valuable or useful, but you really need to rank them and hide things and promote things so you have a small selection that is good.

Alan Laidlaw: [01:01:50] Oh yeah, over Peter. I think maybe we should do, say, an electron based desktop client. [01:02:00] So it'd be cross-platform. And there's some libraries out there that could help us synchronize data and address that. So it could be something could be local on your desktop first and then automatically using some back end that exchange mechanism for sharing collaboration purposes. Ok, so I'm arguing for roll our own if we really want to be happy.

Frode Hegland: [01:02:26] We'll roll our own, I think is not a bad idea, but I do think still we should use WordPress, but mostly as a data storage mechanism. And the thing is, yeah, that makes sense. You know, I like doing the expert interviews for my own work with visual meta author and reader. One thing came up is there will be a learning curve, but that's not bad. If it's a learning curve that gives a benefit to the right user, it's a good thing most people will never use my products. Fine, it's not for most people. So similarly here, when Alan rightly [01:03:00] says that logging into WordPress is a bit of an effort, I agree it's kind of countered by. If we imagine that we are all together writing a thesis or making the next volume of the book, we are producing a thing we're not. This is not only for thinking. So if we then log in and we have to give way before we make a basic formalization like, for instance, the subject has to do in the name of the book or the web page or whatever, then we have to write why we think it's important. We can't just put it in simply not socially allowed, and then we have a few tags and whatnot. That's fine. But what that can mean is that because this data is in a structured form, we can then build powerful views for this. Like Adam can see any recommendation by Brandel and maybe mute me a little bit because I like free guy as an example. It means that these higher level interactions can become possible without having to build the whole world and maybe even build a balance going to show something, though.

Alan Laidlaw: [01:03:58] Anyway, no, I'm [01:04:00] just I'm just noting what we've been talking about.

Frode Hegland: [01:04:03] No, no. But I can tell you I was done anyway. I'm sure you'll

have a counter point of interest.

Bjørn Borud: [01:04:10] Go ahead, Mark.

Mark Anderson: [01:04:12] I'm just saying, I mean, in terms of thinking about, you know, sharing library and things, I'd much rather in the first instance I'd much rather be able to sort of share my library, which is sort of what that pinkie said of Amazon Ideas list. So I'll simply because I know they're online and I know they have to run the server. But there's an important point in this. I'm not interested in writing. I don't want to waste time writing a review for a person that might. That might be useful. One person I find him, I like, you know, I think when I was in the lab, I used to go and look at other people's bookshelves, and I might spot something interesting. If it was interesting, I would ask them. And normally one or two things would happen. They they'd say, Yeah, something you might find interesting or more useful. It might say, I actually had to look at that and actually doesn't really cover the stuff you're looking at, and it's fine if [01:05:00] you want it. I mean, if you want to have a copy of it, but it's not, it's not something you probably need to have. And that thing doesn't tend to work in, you know, when you're just told, you must write something about this because either you get five star OMG and must read or zero stars would not read again how whether it's dressed up in sort of fancy language or not. They're pretty much boils down to that level of use. So being able to see what's in the library is remarkably useful and often more useful than wading through all the comments on it because it's the first sift. Oh, right. Somebody I know knows a bit about that. I might want to. I might want to then actually have a direct communication with it to ask about

Frode Hegland: [01:05:42] My real hand trumps your artificial hand, Alan, just for a second, just to hit back at Mark. I think we're talking about two different kinds of libraries, which is very useful. I really wouldn't mind being able to pair at your physical self, even if it's virtual for exactly the reason you say. But I do think that [01:06:00] writing for a specific community and remember it's the expectation we might read it. Plus, when it's published, here's a research resource. So and so I think it's interesting because blah blah, it's this.

Mark Anderson: [01:06:13] It's very contextual, though,

Frode Hegland: [01:06:16] Of course it is. But you know, like an author, when you do the defining for the map, right? You say you're just right in plain English and then you can build

something later. So all I'm saying is that if it's not important enough for you to write why it's good, you shouldn't put it in and expect us to read it. Like Brendel has got such huge interest and is read so much for me to go through his library would be a complete waste of time. Well, not complete. It will be fun, but it would be very random. But if Brundle says for this group here, I built this be our word processor demo. Why don't you have a look?

Mark Anderson: [01:06:48] Boom, that's different to what I mean, library. I'm really, actually really, really thinking books, not academic papers or bits of software. That's that's I accept you can you can expand it like [01:07:00] that. But I just to clarify, I was talking mainly in terms of books or what pamphlets. That was not not effectively journal articles and things like that.

Frode Hegland: [01:07:10] A very important point to have that clarified. Yes.

Alan Laidlaw: [01:07:16] All right. I'll just, you know, we don't have to talk the whole time on this. It's just something that I think should be figured out and knowing, like pretty much this is exactly all the points mentioned. You know, this is how we all feel. There's not going to be a solution for it, right? The way that I've been thinking about that then, is a sort of a separation of concerns. Speaks nothing to whether they're in different places or different environments. But to Adam's point, yes. When all of these things tend to become dump trucks and on the other hand, if you have formalization, then you tend to either stress about it or use it so rarely that it just doesn't get used, right? [01:08:00] So if we have a separation of concerns like public facing or public interaction space versus project planning, meeting, planning, whatever versus library versus capture, then our tolerances, our expectations could be different and in each of these have sort of different affordances requirements. Right. But I don't think that there is a way to to handle all of these needs. And at least for me, you know, I'm not going to be at every meeting and I'm certainly not going to be paying attention. So this is not going to be consistent even if it's desired. But for me, I want to continue to at least extract some of these points, either from chat or from the actual talk and put them in something that is slightly more organized. Regardless of where it winds up, and [01:09:00] maybe we could all do little bursts or attempts of that and just kind of like. Just try it out, doesn't use your own platform and then dump it into a place later on. I don't know how you resolve right now, but something to think about.

Frode Hegland: [01:09:19] It's so important. And before we move towards VR, this was one of those forever discussions. I agree with you. But let me just ask both Adam and Brundle.

Let's say that, for instance, metasearch over the book I was talking about recently, let's say that I put it in a place. This is really fantastic. Blah blah blah. What is the most convenient way to put it that that can be completely, easily accessed while I got my headset on?

Bjørn Borud: [01:09:48] I'm hearing. Go ahead, Linda. At this point, headsets are pretty garbage for doing anything that hasn't been explicitly built [01:10:00] for them. They're not a general purpose kind of computing device in the sense that you can kind of construct something on the fly. I really love the work that's being done at Monash University toward that end, but it's still fairly tightly constrained in terms of what sort of parameters you have available. As such, I don't recommend browsing in it, but rather using it as a destination. Once you've found something, that's something that obviously I would love to be able to change, but it's something that nobody's managed to make enough headway on. So to the end of having having an endpoint that that is compatible with being able to construct a view or being able to to to view things that aren't explicitly for VR within the VR, I don't I don't have a clear perspective of a way of being able to facilitate that in the near future. If anybody's got anything that's better than nothing, then I'd be thrilled to see it, but I would need to build something for it. And so to that end, the most important aspect of what would need to be available is cross origin resource sharing, such that I would be able to pull it in from [01:11:00] wherever and then for it to be marked up in a way that's easily discernible. That this is a book title versus this being a book description and this being an image URL that I can make use of kind of the cross origin. Resource sharing is actually the more important thing, and it's a small thing, but it's it's essential for me not to have to send up my own server to procure those assets. So yeah, like I don't know that there's anything experientially that that can be done without explicitly sort of targeting that. And then the rest of the concerns are just the bog standard technical ones of being able to obtain those resources programmatically.

Frode Hegland: [01:11:35] The piece that I started writing this morning probably is entirely about that without me knowing that term. And I think this is probably the most important issue we face. You know, taking things in and out of VR because of what Adam said with some links, I managed to go to our web website and then click the button. Suddenly, it was VR space. But it certainly wasn't this. But if we were to really push on such a point, [01:12:00] could we do? What would you want? Would you want us to maybe do this in WordPress? Or is there something else where we can work on some kind of a plug in that when you're viewing it on a web browser in VR, you click a thing and suddenly the list has come out. Or something?

Bjørn Borud: [01:12:23] Well, if somebody wants to build the thing that I would build, then that would be lovely. But you know, the thing that I would ambition is to consume some kind of data feed, XML or JSON or some other language, some other markup format that has the information about the pictures of the books. And if there are any other useful pieces of information about the relative sizes of that or or sort of attending information, then from the books in VR that I've done, then I would build something that is able to then render those into positions and have them have those positions be updated as a consequence [01:13:00] of things like the relative word count of first person pronouns and the feminine versus the masculine. My sister was asking my daughter, Sorry, my sister was asking whether Alice in Wonderland says she more than hate because of the relative frequency of she and he and the English language. And so I wrote a program to be able to do that yesterday and was able to say, Actually, no, you're right. It does say she and her much more than that, says he and has an Alice in Wonderland. So those are the kinds of things that I would hope to be able to do within it. Ideally, we ought to be able to kind of come up with gestural or conversational ways of coming up with that search. But yeah, I don't. I don't I don't see, you know, computer programs as value systems. And unless, you know, what are the value systems, what is important about the way that you're representing things ahead of time? It's exceptionally difficult to construct that and couple that within the context of the application.

Frode Hegland: [01:13:56] That's really cool. So, Mark and then Rafael, but just [01:14:00] really briefly, I interpret what you're saying is we need some money for this lab. That's what I think, anyway, we need some monies to get some of this coding done, not just by the people in the group, but spread it out. So let's let's keep that on the back on the back burner.

Mark Anderson: [01:14:15] Mark, just a couple of things. One is I assume that what Alan mushiness is craft, which I apologize they haven't got round to log into yet. So the journals that is craft, is it?

Bjørn Borud: [01:14:27] Yeah, yeah. Yeah.

Mark Anderson: [01:14:29] And I mean, I find it interesting because just watching it being used, that is sort of that came close to sort of what I imagine in the journal might be for what it's worth, you know, so exposed to it raw. That's sort of the depth and degree of granularity because there's a limit to the amount of effort put into this. And I'm very aware. I mean, I am totally distracted by the most things. So, you know, typing when I'm fully concentrating is hard enough, typing it, typing and listening and talking to somebody not going to happen for

me. I mean, it's, you know, it's a lifelong embarrassment, [01:15:00] but there we are. But I put that out there that some of the things you may think we want to do, maybe not not as widely accessible to, you know, to give someone as a task because we may assume. And then I just loop back quickly something that came to mind as Brenda was talking about and saying, Well, you know, you need to consume some data format. And I was thinking, yes, and that links us back neatly to what Bjorn was talking about in terms of IoT, because some of the things we're going to be talking with or interacting with will essentially be the Internet of Things. So the data, the data formats become less trivial. I know it's a little bit that no one wants to work on because it sounds like the and the standards were gets invoked as well. But it does sort of matter. I mean, and that's why it's been actually I found this year, although it felt like drawing teeth, doing the visual matter has actually been very, very interesting [01:16:00] in that regard because of what it of what the journey of getting it from. Let's do it to suddenly, Oh, we need to do it in a month's time. All the things they did on Earth that I didn't think we trip over. So your data feeds and structures is an interesting thing, right? I see the flock.

Alan Laidlaw: [01:16:18] Hey, go.

Frode Hegland: [01:16:21] Yeah, Rafael.

Bjørn Borud: [01:16:24] Yeah, I took some notes and everybody was speaking. So regarding I'm just going to throw a bunch of words and then try to thread it all into something cohesive, so we all use different platforms. Connecting with Alan's point of finding where we could add the things that we talk about and that still is an issue because we all use different platforms that we find better, you know? I know [01:17:00] that I know that Peter is a huge fan of Thunder Box, and he always has ideas of creating something of our own that would create something custom of our own would always be better. But you don't have the time to dedicate to building some complex things, so it's always easier to do something that is already done and something. And the tools that are done that are collaborative are things that are being widely used, things like slack and discord and notion and craft and all of those things. Some of them, you know, have different platforms, but it connects to the idea. You know that we need to put in an effort to be able to do it. And there's always the question of friction also connected to that. So has to be low. Friction effort needs to be something. And the [01:18:00] idea of so I don't have a specific answer for having the perfect platform.

Bjørn Borud: [01:18:08] It could even be Google Docs, but I mean, we just have to put in

the effort to put it in, right? And that's, I think, where time and having you know, other projects and having work comes in. So I think. The possibility of dedicating more time to this would be amazing, and I think that if any of us, I think if people in this room would be given the possibility of here you go, you have now we have this, you know, either outside investment or sponsorship or something. And now we can dedicate one hundred percent of our time doing things related to text. I'm sure some of us would be delighted to do so, and we would be able to create and get more things out of paper [01:19:00] into into reality. So I think that's something that, you know, even Frode mentioned that we're going to look into this year, which would be which would be nice even to have. Maybe we can hire a couple of developers to develop some of the ideas that that go that happen throughout these conversations and related to sharing books, connecting to mark sharing physical books. And then I was thinking related to curation and context because every I think every book is important given the need for the content, but the need for the content comes up kind of randomly.

Rafel Nepô: [01:19:48] So curation is good up to a point because, as Marc mentioned, you can stumble upon a book in the library and it's better than trying to find the curation for that. So [01:20:00] if if we had something on the lines of you take a photo of your bookshelf and then technology happens and, you know, OCR the spines of books, and it automatically searches for Amazon links of all those books and little snippets and previews. And then I could very easily see the books that are in Alan's library just with very little effort. And then I can choose the ones that that intrigue me based on those those little previews. So that's the easiest way I could think of if we had, you know, a social media for my own personal library. You know, you take a photo, a photo of your little library and it creates automatically all of the things that it could find. And then you fill in the blanks if some books don't have spines or some books are sideways or things like that. Yeah, but that's my my rambling for for the past couple [01:21:00] of minutes.

Frode Hegland: [01:21:03] The brand just really briefly, I don't think we should separate resources, the resources, a resource, whether it's web video, audio book, magazine journal, it's all really important for for the library, I think. But yeah, Randall, you had your hand up, right?

Bjørn Borud: [01:21:20] Yeah, so I agree with Rafael, I think there are lots of really interesting things that you can do at all sorts of different across a continuum of level of effort. I'd really like to explore what what kinds of capabilities you can sort of conjure out of very

low effort or very sort of seamless use of technology to the OCR. And it's something that I've been doing. I think I mentioned last week that I was looking at web based OCR and this week it's not working perfectly, but I'll paste a little snippet of it. I managed to get a [01:22:00] web page that is able to look at the stuff not in that web page, but actually just happening on my computer screen and is watching the participants box for who's speaking and then writing out the list of names. Unfortunately, it mangles the the mark on the end of your name, Rafael, because it's just the currently the English training set. But I actually imagine if I were to use Portuguese, it might. It might do a better job if it knew that it was a common diacritics mark Portuguese. Anyway, so but yeah, I think I'm actually not particularly invested in being completely right about infrastructural stuff at this point, because I don't think that will get it perfectly right first press time.

Bjørn Borud: [01:22:55] And I'm more interested in understanding that continuum of results across [01:23:00] the continuum of approaches and and levels of effort. So one of the things that would be really interesting to do is, for example, if it's too onerous and I think it often is to write something about a book, I think it's actually a lot easier to say something about a book, and I think that those are interesting artifacts to be able to encode. So something I did many years ago from my grandparents was a page that let you record audio commentary about photographs. So annotate those things and voice the same sort of thing that you would do when talking to them, ideally to actually do it while talking to them and then have the ability for people to hear each other's notes and then kind of respond to them so that you can have sort of a conversation among very close, intimate sort of center of people around what it is that an artifact represents. And I think that that that kind of thing might be interesting within something like a library as well. It's a lot [01:24:00] easier in conversation to talk about why a book is interesting and if you have the wherewithal to to kind of bookend, so to speak, the conversation, to say this piece of conversations about this book, then I think you can get a lot of really interesting things out of that.

Bjørn Borud: [01:24:12] So. So, yeah, I agree that it would be cool to have these things. I'm not super concerned about the specific implementation details other than to clearly enumerate them when we're trying them and then to be able to talk about the results. And yeah, I think that that would be a lot of fun to the end of having money on that would be really cool. I'd love to be able to to work on this kind of stuff. But at this point, Apple is very cushy job. So I. So I may have to end up being the last to jump. So, yeah, no, that all sounds like really useful goals. But yeah, I think that enumerating the specific goals and values before the tools is really valuable and then taking [01:25:00] the time to then go back over how well they're

doing and what kinds of things you're not capturing as a consequence of this particular run are also really useful.

Frode Hegland: [01:25:09] And thank you, I'll give the floor to Rafael and then pull it, but I just want to remind

Bjørn Borud: [01:25:15] You guys, I forgot to lower my hand. Sorry.

Frode Hegland: [01:25:17] Oh, OK. And then after me, I just wanted to remind us all how incredibly spoiled we are. The fact that we can do amazing things is almost paralyzing us if this was 200 years ago. We find a meeting room with the books on the shelf and be done with it. We may develop a system of taking books out and maybe we'll invent an index card system to, you know, that kind of stuff. But the fact that we can do anything now is putting us in this absolutely ridiculous state. So if this was a company and any one of us was the boss, I'm sure that boss would say, pick one and stick with it. We'll fill it up. It'll fail. We'll move something else. So I think in this conversation, [01:26:00] because Bjorn is, you know, is an absolute genius, wonderful guy, close friend. I don't want him to come in here and think we're another bunch of hippies sitting around the fire with coffee, just talking all night. You know, be really good as this new person to say, Oh my God, they actually decided on a thing over.

Bjørn Borud: [01:26:20] I just remember that when I was five or six years old, I asked my mother if a computer I had the impression that you could ask a computer any question I would actually answer you. And she said, No, no, you stupid kid. Of course it can't do that. You know, if you try to google something, then well, you kind of have that today. Oh, what? I was, what I kept thinking about while we were talking was, so I see essentially this has three distinct. I deal with information in three distinct ways, so you have capture [01:27:00] and then you have trying to make sense of it or trying to to systematize it or structure it, and then you have finding it because the irony, the irony was I used to download everything and store it on my computer. And then eventually I discovered I can't actually find anything on my computers, so I stopped doing that. And instead, I started focusing on how did I find it in the first place? And if you think about how you how you figure out where your car keys are, for instance, you do that by association, you don't your brain doesn't have that information at hand. You think about I was in that room, I was doing that, etc. So they are association links and I've talked to through them about this for I think it was four or five years ago. With using [01:28:00] using graph databases to link pieces of information to each other. One other thing that struck me was. You know, you kind of need projections of that graph. So, for instance,

there might be, you know, the public private domain, so there might be associations between nodes in the graph that that are that makes sense to me.

Bjørn Borud: [01:28:31] So for instance, I can remember that I was listening to Chapter two of the book while I was crossing a stream somewhere in Oslo, for instance. And for some reason, that memory sticks in my head. But if true, there is going to try to find that information I was consuming at that moment. This is not going to make any sense to it. So I [01:29:00] kind of had this image in in my mind where let's say you're recording a conversation, OK, so you have you have a transcript from the audio down the middle and then associated with that, you have all the notes that different people take. Um, what other ideas they are linked to? They might be. You are not even in the same domain as what is being discussed. So I think that the you know, the third challenge, which is to to find the things you are interested in finding and accessing the information you're interested in accessing. I. I spend a lot of time doing that with my notes. So I do exercises like, you know, try to look at something or remember something from that day. And I also see that [01:30:00] whenever I read the notes, I remember things about the situations where the notes were taken. So I guess when when a group needs to or wants to to maintain some some piece of knowledge together. That's that's kind of. So you have you have the objective transcripts that is hopefully correct. And then you have all of the things that that people thought about or wrote down while we were discussing this. And then also you have the, you know, the projections of that. Um, if that makes any sense.

Alan Laidlaw: [01:30:47] Does I'm a huge fan of that line of thinking, and I've posted a tweet about that and have other thoughts. But sure, there's other hands up. And [01:31:00] if not, then

Bjørn Borud: [01:31:03] Need to take my hand on.

Alan Laidlaw: [01:31:06] Yeah, so so I totally agree, I think that's part of what we have wrong about our TFT approach right now. It's functional, arguably, but it falls apart pretty quickly, much like. And this is going to get real hippy, much like classical physics was based around particles. And then we found out that, you know, hey, particles are only accurate up to a point, right?

Frode Hegland: [01:31:34] What's that up to a point? That's funny.

Alan Laidlaw: [01:31:37] Yes. Yes. The the different ways to think about it that I think are really useful, for example, or or starting places. Ernst Mock said to stop thinking of objects and to think instead of objects as nodes between phenomena. Right. Which is which is great, [01:32:00] but it also can get you pretty close to nominal ism, which is that everything is a particular and nothing is a group, so that's a problem on the group side. It's it's that Hofstadter would say that, you know? Are the fuel and fire of cognition is our ability to make metaphors, which Tversky its diversity would would call essentially like mimicry are our ability to see what someone else is doing in a situation and mimic it is the same thing as our ability to make a metaphor. And metaphors are, if you think about a broadly enough, are very similar to the association that you're talking about because, you know, and I do the same thing. Uh. So rather than I'll find better success in finding the thing that I was trying to find by loosening my grip and and and and [01:33:00] reliving whatever I was associating with at that time. So a metaphor doesn't have to be a strict parallel in a computational sense. It could. It could simply be a kind of an association, but it still creates that kind of glue. And hopefully in VR, I would love to see it along. In the word processing side of things is more affordances to create those kind of loose associations and find again via via that. Like, I should drop a link. And I've always, always wanted to make an iOS game where you pull in your links to whatever you find during the day and then say you're on the subway, you get those links back, but you just sort of like tossed. You either drag it over to a bear, a palm tree, you know, whatever crazy image comes up and then whatever feels more right to you, even though they're all nonsensical, that's where you place the link and then just see if you find it better [01:34:00] that way, right? Anyway.

Bjørn Borud: [01:34:03] Yes.

Frode Hegland: [01:34:05] So what I think we should do is to work towards exactly that, I think for knowing everyone here, this would be a worthwhile goal, basically insanely interactive graphs. That's what we're talking about, graph. I mean, things connected in space. And as far as what you're talking about in the beginning, I mean, my philosophy is based on the fact that the most fundamental thing is not even information, it's interaction because it is interaction that makes things what they are, which is exactly what you're quoting there, which is nice. And that's all very interesting along the lines of where we want to go. But first, we need a library. But so what I suggest we do was set up WordPress on this thing and we just start populating it. Let's say that because one of the benefits we have currently, I am taking the transcript and putting it in my blog because [01:35:00] it's too big to fit in the YouTube

comment box. So I just put a link. It'd be much better if this was in our joint future text that we all owned together, because then if we spend a little bit of resource time, we can do things like show everything that, Randall said. That is the resource you put or even from the transcript. Excuse me, not transcript from the text chat, right? Or is there anything that is open enough that is different? Should we maybe do a wiki?

Alan Laidlaw: [01:35:31] I mean, I don't. Yes, sorry. I mean, yeah, like. I'm open to a wiki tiddly wiki notion, Obsidian sitting as a problem of being local first, I was a big fan of log stuck for a moment, but it is also local first than in our case of collaboration. That wouldn't be great. Notion is, of course, sort of maybe trapped and harder to extract. I'm I'm totally open to options. Wordpress may be the best option, but [01:36:00] WordPress gives me pause because it's still sort of based on hierarchies and files structures where that seems to go against. I don't know the opportunity space also in the sense of if we're trying to get out there a little bit more, showing our support for the current zeitgeist would be maybe useful.

Frode Hegland: [01:36:24] I mean, a benefit from using a wiki is that word Cunningham wants to be part of what we're doing. So he would come in and, you know, put his expertise to this and in a rich way. Know, so that's nice. Wordpress, just because it's simple, it's the only reason I'm advocating it. I have had tons of problems with WordPress ones that go beyond simple. But guys, what shall we use? Let's let's say that for this, we need to be web based because at one point we have to be able to do the magic thing and left it out of our laptop into VR space. I mean, to be an Oculus Horizon, which is really impressive for [01:37:00] what it is. It's ridiculous that I can have a good rendering laptop in front of me, but I can't take anything else I can't take anything out to to do something with it. It's bizarre. That's probably something we need to work on together, right?

Bjørn Borud: [01:37:18] Yeah, in terms of WordPress, it's a it's a reasonable one, I would also say I'm not sure if other people's experience with it, but I have enjoyed making use of media wiki. So the Wikipedia engine is a pretty reasonable one and relatively opinionated in terms of what what you end up doing with it. I had a an entertaining thing that I was trying to do for my family around the time was building that photo instead of making use of it as a genealogy wiki. One of the things that it was interesting to play with was rather than making pages for people saying that, that [01:38:00] people were only ever categories. And so then that meant that it automatically generated the the list of the stuff. You then tagged a photo or a specific event with that that person, which was a category, then the person was just a composite of all of the references of that of the events and the memory, something like that.

So there are a number of flexibilities that can be afforded if you start playing with media with you in a way that it's not really intended for. Why not? Not even not intended for, but not the way it's deployed in the context of Wikipedia? So yeah, I thought, does anybody hate that idea?

Mark Anderson: [01:38:45] Like I like, and I'd be interesting to see how sort of Ward's view of a wiki because of course, most of us now the general experience of a wiki is through the means of Wikipedia, which has moved some way and arguably has now has [01:39:00] opinions about what things are not always to the good. I don't mean in terms of the page content, but even just in the way it works.

Frode Hegland: [01:39:08] Who would like to install the media quickly on the website and do a kind of a collective run through?

Alan Laidlaw: [01:39:18] I can I can look into that. There's also I also created, by the way, if anybody's interested, a GitHub organization called Future of Tech's Labs for for any future use. Know there's even some options that. Lip sync to GitHub, which I think would be a good home for something. Well, with the MediaWiki topic for another time or ideally a topic offline, the brand will start a broach, is the structure of it. Light, easy, flexible structure, but with some [01:40:00] basic guidelines so that it doesn't become a dumpster fire on day one. Um, and so thoughts on that we can get into later, but I I went into some of those thoughts in the craft workspace. You know, which is basically like having a. A very few top level categories so that they're easy to get into and the top level categories are roughly header or meta, you know, about itself, the library or the main content area. And then the backlog forgotten forest places where we can put things that we don't want to delete but don't know where they go. And then that allows us to kind of move things into degrees of curation over time. But we can we can dig into that later.

Frode Hegland: [01:40:46] To Peter, I say you have your hand up, but just on that briefly, I think there should be maybe only two categories or things. One is a thing about itself or something that is a thing about something else. Meaning [01:41:00] if it has a citation, it's a resource. Otherwise, it's somebody thought without a citation.

Alan Laidlaw: [01:41:07] So to clarify, there's there's there's site structure, which is what I was referring to. And then you're almost referring to entity categorization at a top level,

which I agree those need to be very simple. But there's there's different there's different frames of reference to categorization that will need to clear up our language about, right? But you know, it's it's a it's a deep topic and probably actually would be better suited. O final idea that I actually think is the answer for the short term. Let's just all jump into a narrow space, throw these ideas around, and that can be kind of like where we can work collaboratively. I can show you an example of it right now, if you like point to things and then that that can be our sand bed or dumpster fire to [01:42:00] to, then

Frode Hegland: [01:42:01] I don't think that's a bad idea because that they have a native Oculus up as well. But while you set up. Peter, what did you want to say?

Alan Laidlaw: [01:42:11] I want to say that I lean towards passive classification schemes, and that's something worth taking a look at from the information science literature. And also, you're mentioned about being able to pick something up out of the computer brought back a memory of a couple of very interesting papers. I think they were early 1990s on pick and drop. And that was the phrase that they used and that was trying to provide mechanisms for being able to use some sort of a physical of forms that might actually be a dumb object that would be read at one system, associate it with DOD on one system, have the association link transparently stowed away in the network. And then when you bring that object to another system, the object itself would be a physical marker bound to the identifier and then [01:43:00] pull in the data over the network. So it would almost be like you could have, you know, a dumb piece of wood that had a barcode on it. If you are using that sort of an interface and you could associate that with 50 gigs worth of data, you could carry your dumb piece of wood. You wouldn't have to worry about a battery ever running out on it. We're running out of storage space and then you get to the target location. Scan the ID you want for that dumb piece of wood and then put it all in. But to the user of the system, it almost looked as if the little Fortnite that you are carrying around with you had the data on it, even though it really didn't.

Frode Hegland: [01:43:32] Peter Brendel has put in a link to YouTube. Is that a poem or was that a Newton device? This is on what you're talking about, Peter.

Alan Laidlaw: [01:43:40] Yeah, that would be what I'm talking about exactly. He found it amazing work, Brundle.

Frode Hegland: [01:43:49] Allan, did you want to do a bit of a mirror? Are you OK with that few minutes of that guy's?

Bjørn Borud: [01:43:57] Uh, yeah, no problem. Yeah, those those [01:44:00] are concepts. Uh, Peter, are very much in line with sort of the general ubiquitous computing principles of being able to have kind of basic credentials, things that are representative of other things and being able to pass those around. They can drop. It is a really useful reference point, but also put that there, which I think is actually mid to early eighties as as a demo of voice recognition and gestural interface of being able to infer sort of lexical intent through the use of the natural language that we that we typically expect to be able to interpret amongst one another and human beings. There, there are a lot of really interesting, very surprisingly early explorations of what what computer interaction as dialogue might be able to kind of ultimately become. The [01:45:00] fact that we call them dialog boxes, I think, is a funny kind of carry over from that original vision of making use of a computer as a as kind of a dialogue process of sort of doing something, responding and having an awareness of intent as part of that.

Frode Hegland: [01:45:20] Helen, before you go into this, and I think it's really cool that you are. Is there a way where a node can have some kind of a tiger category and you can say, show me only nodes that are with this thing? Not that you should do it, but it's their way of doing that.

Alan Laidlaw: [01:45:35] Not that I know of, right? I believe it's mainly for the idea of white boarding, and if I can find it, it's really great for. And I've got a video of this where we had that Xanadu two meeting kind of town hall. We got everybody into a mirabaud together and kind of rode out what concerned us and then voted and collaborating [01:46:00] grouped together these things organically. It's really wonderful. But as far as transitioning it to something resembling a pqm, no. Um, I don't think there's a way that I can add tags or or filter views.

Frode Hegland: [01:46:20] Is there a way you can link different mural boards?

Alan Laidlaw: [01:46:31] Not that I know of. We see if I can find the other one.

Bjørn Borud: [01:46:35] I think you can have links in can. So I mean, those links can be links to other Mirabaud. That's a fair point. Yeah. Yeah, I mean, one of the things that's

important, I think about what Mario is, and it's it's mostly a a a context to create visual representations of whatever semantic significance you sort of imbue it with. So at this point, you can color things. You can put words [01:47:00] next to lines and that can serve the purpose to serve the function of characterizing or qualifying sort of link properties. But it isn't an opinion and as such would need to be extracted through whatever means to represent that. You know, you'd need to say you'd need to have either sort of a glossary or a legend or some kind of API that is able to identify those features as having those semantic significances. So from my perspective, if one was actually going to use it as the source of truth, it would be ideal to have the ability to to get a dense kind of data manifest of those those things in a way that would allow me to to infer those relationships or better yet, have them made explicit. I don't know that there's a way in the camera to do that. But yeah, I'm also fairly drunk with power of having this new OCR [01:48:00] capability. So that's something I'm very much looking forward to to thinking about that the capacity to to derive structure from things that aren't readily willing to give them as well.

Frode Hegland: [01:48:13] All right. Cool. Yeah.

Bjørn Borud: [01:48:15] Um, yeah, so I have to I have to get going soon because my wife is wondering where dinner is. I just realized that you know what Peter was talking about is actually something that I have to solve in a different domain before mid-February for a customer that is just across the road here. So essentially, what they need is the ability to to pick a small device out of a box amounted to a wall and have have it connect [01:49:00] to a local gateway and then all the way up to a service via several hops while telling the world, I am this kind of device. I'm in this building. I'm connected to this this bit and then automatically have everything pop up so that it turns up in the correct building with the correct customer. And you don't open the door so that anyone can can fake it and claim that they are. You know, for instance, a temperature sensor. So it's kind of interesting that you mentioned that since. It kind of reminded me that there are there are problems in some domains of of computer science or related sciences that are solved elsewhere and vice versa. And I remember discovering this in the beginning of the 2000s [01:50:00] when. We were trying to figure out some computing problems, and then I talked to some guy from the biology department and he said, Oh, that's actually easy to compute. We do that routinely. Good point. I was going to make another point as well, but I kind of forgot

Frode Hegland: [01:50:25] While you're thinking on that mark, but also briefly, we have to wrap up in 11 minutes because I'm having another call on this zoom, I'm afraid. Family stuff.

Mark Anderson: [01:50:34] All right. Understood. I was just I just stuck my head up to it. As I heard Brunelle talking about the mirabaud, I was thinking, Gosh, this is so common. This is the thing that comes up all the time. I'm sorry to mention another place, but in a tinderbox community where people start using open ended maps, these basic whiteboards and get completely lost and it ends up as a drawing space. So they write labels against [01:51:00] the lines, which the in the case of in the case of Tinderbox are actually link types and extractable, you know, and possible to other things. But trying to get people to understand that it's sort of like what this word on this screen actually isn't just a label. And the really interesting thing that comes out of it. I mean, I was thinking when I just opened up the the miro's website just now, and I think, gosh, this is this is spray blue and colored paper writ large, you know, are we still we still stuck there? Because it's another thing I find is how quickly people who really embrace this sort of these open maps quickly move from the visual mapping to it being a mental skill. So they do the map abstraction almost in their head. But it's not a very efficient way of storing stuff. Basically, you never have a map that's big enough to be able to see at the same time, so you end up coloring off the edges and then and then the lovely affords. Seeing [01:52:00] this wonderful structure is lost to you and the people who are able to move that are the ones you see are right. What we're in the game of is doing some abstraction. So if it's the thing I want to know about later, I need to put some sort of a semantic meaning on it. Let's stop, though.

Frode Hegland: [01:52:13] I have a threat to everyone if we don't solve our library today. Now the next few minutes, then I'm going to put the next chat blog back in my blog like I've been doing for the last few. Haha. So should we,

Bjørn Borud: [01:52:31] You

Frode Hegland: [01:52:31] Know, everything doesn't have to be in the same place, should I start putting a chat logs on our future text

Bjørn Borud: [01:52:37] Lab, for instance,

Frode Hegland: [01:52:40] Because I don't want to do anything with that word press if we're about to delete it and blow blow the top level domain aspect of it.

Mark Anderson: [01:52:48] Define what you mean by library before you go any further, because I think it means different things to different people.

Frode Hegland: [01:52:53] It does, indeed. And I think that one thing that I like about my own software is Command [01:53:00] F, because an author, the command of just shows you the lines of where that occurrence is. That means that if I have an absolutely massive document, I can see all the occurrences and it keeps the headings. So when I go through the transcripts, for instance, it shows me who said it. It's such a simple thing, but it's the fact that it's one place that's a huge benefit. So I would really like to have library for all resources plus are on record, whether that's a transcript or chat log in the same thing so that with relatively simple tools in the near future, we can do. Show me every time Adam mentioned Hypertext, et cetera.

Mark Anderson: [01:53:40] So that feels like the journal. What I hear you describing is the journal. Like just the library seems more of a reference place to journalists, somewhat more living in space you navigate through and, you know, and it has the connections. The library is almost the endpoint where you

Frode Hegland: [01:53:58] Are in terms of language, [01:54:00] the article that I hope to share to you with you guys. So I have three new words of introduced just for my own self. I'm sure there are better words

Bjørn Borud: [01:54:07] In the room.

Frode Hegland: [01:54:07] You have a meeting room like Oculus around the table. Then you have the data thing. I call that a sculpture because I want this to feel it's a sculptural thing. But then there's the third thing, which is what I call the lab, which is when you go into with other people or alone into space that can be owned by one company or many, it actually doesn't matter. It's like going into Photoshop. You should take data in and out there, but it's a specialized thing, right? So I'm thinking that. I think we have to decide how these things relate to that.

Alan Laidlaw: [01:54:43] You know, I think that the the next step in the meantime, go ahead, put it in WordPress, it's very likely that we'll wind up using different tools as our own little engines. But I'd like to dig into the media wiki format [01:55:00] and see what it can do

because you know, that needs some exploration, can't can't see what it's about, but I think that there's a lot of promise there.

Frode Hegland: [01:55:10] Oh, I agree with you, al. I'm sorry, we've got a bit derailed with Myra, which I think is Myra, which I think is great for another use case. But should we then just start using WordPress for our public facing thing? What you see when you get on the page, but then you have media wiki or should we have the media wiki at the top level? That's an important thing to decide. But should a new person see when they go to the website, first of all?

Alan Laidlaw: [01:55:39] Oh. Well, I got a jump, but

Frode Hegland: [01:55:46] I'm going to jump, but we got to decide the why don't we just make media wait

Alan Laidlaw: [01:55:51] Before you know what's? How about this? How about you send us or let's just put, even if it's in Google Docs, what [01:56:00] the current transcripts are, if we can do a sifting exercise, going through some of the transcripts and extracting what we think are good statements? You know, I think that'll help a lot. To be natural and then to figure out, OK, yeah, these are the top level. Some top level ideas and that may then naturally fall out to be like, Hey, this is the this is the first page. You know, we said this in here, we said this, these are some things we're talking about. But if we can just get the transcripts and kind of like, curate very quickly. That would be better than defining. Maybe it would be better than defining, Hey, this is what needs to be on the front page.

Frode Hegland: [01:56:42] So I'm just replying to Adam here. Right. I mostly agree. I mean, I think we should have a front page that says, hi, welcome to the future Text Lab. We published books. We have a monthly session. You can find information about that here. And [01:57:00] this is our record of our chat and everything we published. We also have a shared library. Once you click on those, let's say, shared library that may go into the media wiki that has all kinds of other connections.

Bjørn Borud: [01:57:15] Yeah. So I think the most protective thing is to to not have the media Wookiee at the top level, although media Wookiee does allow you to create certain aesthetic HTML with whatever representations it would be possible to to do that. Yeah, I

think that it would be. Possible, though, to do go to Ireland's exercise of what is sort of extractable, but I mean, I think that goes for us like what? What do you what do you want to achieve with it? It's a useful thing to keep to keep focus on them and then work out the sort of the technical implementations that flow sort of necessarily hopefully minimally from the sort of the final goals that you have for that thing. So to that end, I [01:58:00] think that it would be useful to work on the impression you want to build and think about what are the tools that make the most sense for it. But in terms of making a snap decision right now, I would say simply not having the wiki at the top level, it gives you the most freedom to make those decisions.

Frode Hegland: [01:58:18] Let's let's say that we have professionally decided to have normal top section for media wiki, but we'll decide more on Friday. Any closing words from you, Peter, before anyone else?

Alan Laidlaw: [01:58:31] Yeah, I agree. We shouldn't have any interactive systems at the very top level where we have a static landing page and links so that we could change them. Maybe we might decide that something's much better than media wiki that comes out in six months. And if we were starting at the top level at media wiki, it can be problematic changing that later on. So static page talking about what we're about. Many links to some of our other stuff on different media and then we keep our options as open as possible. [01:59:00]

Frode Hegland: [01:59:00] Good, good. I look forward to Friday. Interact as you want before then. Yeah, don't worry, Alan, I will make you all accounts to be full admins on the WordPress and then we decide on Friday what we do with it. Alan. Am I frozen, all right? Yep. Oh, sorry, I thought you wanted to say something.

Alan Laidlaw: [01:59:23] No, no, no, no, I agree, I definitely don't. None of what I mentioned today had anything to do with a public facing venue. So I definitely think a simple. She is the best, and let's go with that.

Frode Hegland: [01:59:40] I see what Adam is saying personally, I'm interested in doing a minimal metaverse doc rivers linked spaces in 3-D so beyond. Now you know what this is all about. Hope to see you back here. Hope you're all well and bye. And thanks for today.

Bjørn Borud: [01:59:54] Guys have a great week, guys. Bye bye. But.

10 January Chat Log

16:05:33 From Mark Anderson : The herding cats phase...

16:05:44 From Frode Hegland : Yes!

16:05:59 From borud : Bjørn Borud

16:06:01 From Frode Hegland : Bjørn Borud

16:20:05 From Peter Wasilko : There are so many to choose from!

16:20:33 From Peter Wasilko : I love FTL thought, it is the best acronym ever.

16:20:39 From Frode Hegland : 😊

16:20:55 From Frode Hegland : FTL: Future Text Lab, for Bjørn 😊

16:22:39 From Peter Wasilko : I really worry about sim sickness.

16:22:59 From Peter Wasilko : I'd hate to puke on my Mac Keyboard.

16:25:06 From Peter Wasilko : This sounds like a job for a lawyer!

16:26:47 From Frode Hegland : 120 refresh helps a lot Peter 😊

16:26:55 From Frode Hegland : Saw your email, you make good points.

16:27:14 From Frode Hegland : Oculus to me is simply the easiest way to get to try these things as a group

16:27:23 From Adam Wern : For, motion sickness is not solved.

16:27:30 From Adam Wern : For me

16:27:38 From Frode Hegland : Not entirely no, agree, but better right?

16:28:09 From Mark Anderson : I recall how Night Vision Goggles (yeah – used for work back in my first job) were nausea-inducing due to laggy/slow update. I'm sure they, like VR are much better now

16:28:20 From Adam Wern : When I'm stationary it's perfectly fine, looking around. Moving is really rough

16:28:35 From Brandel Zachernuk : Motion sickness while undergoing *simulated* motion is going to continue to be a problem as well, but hopefully we don't need to do too much for using Excel

16:29:44 From Frode Hegland : 'Simulated'. Yes, good point

16:30:18 From Peter Wasilko : I have a 3-D mouse and I think that might be a good

intermedia point, since it lets me manipulate my viewpoint with 6 degrees of freedom while still working off my stable fixed position screen and I don't think anyone as really experiment much with what a 6df controller can let you do interacting with 2-D

16:30:48 From Peter Wasilko : *experimented

16:30:51 From Adam Wern : Interestingly, sitting down while "being moved" is worse for me than standing – so no rally for me

16:31:01 From Frode Hegland : Exactly Adam

16:31:33 From Mark Anderson : Have been reading Fischer's "History of Writing" (<https://www.amazon.co.uk/History-Writing-Steven-Roger-Fischer/dp/1789143497>) . Interesting how Chinese/Chinese-derived and Meso-American scripts encode language in such a different way. What does a Latin script only encoded data world leave on the cutting-room floor in terms of comprehension and representation.

16:32:41 From Peter Wasilko : I'd love to explore Mark's library via telepresence!

16:33:53 From Peter Wasilko : I also have a Steno Keyboard I need to master.

16:35:19 From Peter Wasilko : Crying!

16:36:41 From Alan Laidlaw : Motor babbling?

16:36:47 From Frode Hegland : Cool right?!

16:37:00 From Frode Hegland : In the UK we call that 'Top Gear' ...

16:37:01 From borud : "It's not done yet"

16:37:10 From borud : "Don't care, ship it down the birth canal"

16:37:11 From Mark Anderson : For Brandel. A couple of books re digital reading. You might already know, but if not: "Reading and Writing the electronic Book" by Cathy Marshall. (2010)// "Designing of Digital Reading" by Pearson/Buchanan/Thimbleby (2014).

16:38:21 From Mark Anderson : Learning affect – fake it 'till you make it? For some of us with ASD it's a life-long process.

16:38:28 From Adam Wern : VR feels similar, trying to find the how interface affects you and your representation. Random firing

16:39:11 From Peter Wasilko : Haptic gloves too

16:39:45 From Brandel Zachernuk : Yes exactly! There's a lot of randomness to the interaction, and a lot of re-determining what is meaningful. It's a potent metaphor for a lot of what has to happen, both for users of an interface and creators

16:41:17 From Brandel Zachernuk : <https://www.trouva.com/products/suck-uk-world-timeline-tape>

16:42:22 From Adam Wern : We have a model here in Sweden: <http://>

www.swedensolarsystem.se/en/

16:42:46 From Frode Hegland : That is PERFECT Adam

16:43:52 From Peter Wasilko : Or how about crop marks on the printed page to help an AR system slot in generated overlays?

16:46:06 From Brandel Zachernuk : <https://codepen.io/zachernuk/full/WNGOgmE>

16:47:12 From Peter Wasilko : YESSS!!!!!!!

16:47:56 From Frode Hegland : Empty so far: <https://futuretextlab.info>

16:48:30 From Mark Anderson : Byrne's Euclide: <https://www.c82.net/euclid/>

16:48:41 From Frode Hegland : Yes Mark... bought already...

16:48:43 From Frode Hegland : 😊

16:50:21 From Peter Wasilko : I can save you money! https://www.google.com/books/edition/The_First_Six_Books_of_the_Elements_of_E/HdRbAAAAQAAJ?hl=en&gbpv=0

16:50:36 From Peter Wasilko : Read for free!

16:54:04 From Mark Anderson : Incremental formalisation FTW! This is why I do my desk work in Tinderbox. Also +1 for fountain pen.

16:58:37 From Mark Anderson : Amen, forcing premature formalisation (which box to put things in) makes me very uncomfortable, even if that is much of everyday work.

16:59:41 From Alan Laidlaw : Agreed that free guy was unwatchable

16:59:43 From Alan Laidlaw : sorry

17:01:20 From borud : (Mentioned earlier. Travel from Sun to Jupiter at light speed: <https://youtu.be/2BmXK1eRo0Q>)

17:03:01 From Frode Hegland : WordPress but have to write why it's there and then build views for WordPress

17:04:52 From borud : <https://www.tagr.company/> is the company that is trying to make this wiki/database/spreadsheet thing that supports incremental structuring of data

17:06:57 From Peter Wasilko : If head scans of the front and back covers and spines of all of our books, plus their length, width, and height dimensions we could model them in VR. Blender has an architecture plug-in with a Book Model Generator we could script too!

17:07:32 From Peter Wasilko : * If we had. (That was an auto spell correct-o.)

17:11:44 From Peter Wasilko : I call this sort of issue (the need to get things and and out of an environment for people to buy into creating contents in it) The Principle of Severability

17:12:30 From Peter Wasilko : I don't have the self cite to the first time I put that idea out handy though.

17:12:47 From Peter Wasilko : I think it was in one of my contributed book chapters.

17:13:10 From Alan Laidlaw : Where can I find these VR books, Brandel? Didn't come up in basic search

17:14:03 From Adam Wern : Re: Money for "this". Also finding the "Values".

17:14:57 From Brandel Zachernuk : They are these: – just a procedural book generator, <https://zachernuk.neocities.org/autobook/>, I made a tweet thread about it here: <https://twitter.com/zachernuk/status/1457767271418327045>

17:15:02 From Frode Hegland : 😊

17:15:20 From Peter Wasilko : Tinderbox would be a great non-groupware tool for us to use, especially vis-a-vis incremental formalization, and its XML format can be scraped for data.

17:16:04 From Brandel Zachernuk : This is the Gutenberg gook one: <https://twitter.com/zachernuk/status/1464699404586151938> – it lets you build interactive 3D models of books from Gutenberg texts

17:16:35 From Brandel Zachernuk : This one is figuring out how to do physically-based rendering from CSS: <https://twitter.com/zachernuk/status/1460809023192645638>

17:17:30 From Brandel Zachernuk : One I haven't posted is this experience of reading "Understanding Media", video here <https://www.youtube.com/watch?v=m7C5yOr2bnI> and experience here: <https://zachernuk.neocities.org/2021/deep-reader/>

17:18:45 From Mark Anderson : @brandel love the Gutenberg book viz demo!

17:19:47 From Peter Wasilko : Amazing work, @brandel !

17:20:14 From borud : The Goodreads app allows scanning the bar code of your books to add them into your "library"

17:20:14 From Alan Laidlaw : Option for short term group library: Good reads. I believe it has an api that Brandel needs

17:20:29 From Mark Anderson : Re books. Often knowing *why* it is in the library might be the most useful thing. 'Like' is often a disconnect with usefulness (e.g. hard to read but has important info).

17:22:05 From Mark Anderson : Thanks for info re Goodreads, I should give it a try. Guess I've always held back by the judgmental naming of the site. (our 'goods' may not align).

17:23:12 From Mark Anderson : Have to see if I can get Bookends (my Ref Mgr) to 'talk' to the Goodreads API.

17:23:52 From borud : Finally figured out how to put up hand. So much for being a "high tech" person 😊

17:24:00 From Frode Hegland : 😊

17:24:05 From Peter Wasilko : 😊

17:25:21 From Peter Wasilko : I am on my 3rd cup.

17:25:46 From Brandel Zachernuk : This is a sample of the stuff my page has extracted (time is relative to the start of my recording, I think absolute local time / UTC would be better)

17:25:47 From Brandel Zachernuk :

15:59:Adam Wern

17:25:56 From Frode Hegland : Very cool Brandel

17:26:46 From Peter Wasilko : DEVONThink is your friend if you want an everything bucket.

17:27:36 From Alan Laidlaw : Completely in the association info camp, Bjorn.

17:27:55 From Alan Laidlaw: <https://twitter.com/DrYohanJohn/status/1480147162348638208?s=20>

17:27:59 From Mark Anderson : Yes, DEVONthink is nice, and well integrated on the macOS.

17:28:19 From Peter Wasilko : And it can do deep links with BookEnds and Tinderbox

17:28:55 From Mark Anderson : Me too , re info assoc. As bourn out by my back-of-envelope storage.

17:29:00 From Peter Wasilko : Err Bookends. Minding my captialization

17:29:08 From Adam Wern : Like this: a sidenote on clipboard & short-term memory: <https://kinduff.com/2022/01/04/the-weight-of-the-clipboard/>

17:29:45 From Peter Wasilko : Does anyone remember Multiclip circa System 7?

17:29:56 From Peter Wasilko : Or ThoughtPatterns?

17:32:05 From Peter Wasilko : The Festival of Artisanal Software ends tomorrow. Best price of the year on Tinderbox. Stop by, and get a great price on The Tinderbox Way as well lots of other terrific software. Bookends, DEVONthink, Scrivener, Hook: tools you need.

17:32:30 From Peter Wasilko : WinterFest 2021: <https://www.artisanalSoftwareFestival.com/>

17:32:39 From Brandel Zachernuk : Max Krieger's 'Voiceliner' is a neat experiment with reconciling utterances and speech with the place it occurred: <https://a9.io/voiceliner/>

17:33:01 From Mark Anderson : Amen, re Software festival. Have/use most of them.

17:35:16 From Peter Wasilko : @Alan great survey of our options

17:37:31 From Peter Wasilko : @Brandel, introduce us to your cat!

17:37:41 From Alan Laidlaw : Thanks!

17:37:51 From Alan Laidlaw : And thanks for the links, Brandel

17:40:05 From Mark Anderson : n the notion of different scripts, this came up in another convo today: <https://ide.wy-lang.org/?file=clock> Not for what's being done but (as a non-Chinese speaker) the degree of separation this creates.

17:41:19 From Frode Hegland : Please Alan 😊 Miro!

17:41:55 From Brandel Zachernuk : Pick-and-Drop (UIST'97, CHI'98) <https://www.youtube.com/watch?v=rFw9aMubL-Y>

17:43:23 From Alan Laidlaw : On that note, currently reading Creative Selection. Love it! Thanks for the suggestion

17:43:49 From Mark Anderson : My copy still in post...

17:46:59 From Frode Hegland : Works in VR: <https://miro.com/blog/miro-for-meta-quest-2/>

17:50:27 From Brandel Zachernuk : That recognition of other people solving something or having a problem elsewhere is called "Lead user research", popularized by the Sloan business school at MIT, though it's a stretch to say that they invented them: https://en.wikipedia.org/wiki/Lead_user

17:50:40 From Peter Wasilko : There was some interesting hypertext work on Visual Parsing back in the day.

17:51:16 From borud : BRandel: what was the OCR technology you talked about?

17:51:39 From Peter Wasilko : Zotero Group for citations

17:52:04 From Brandel Zachernuk : It's Tesseract, running locally on the browser: <https://github.com/naptha/tesseract.js>

17:54:20 From Peter Wasilko : I'd also recommend Eric Von Hippel's work. <http://web.mit.edu/evhippel/www/democ.htm>

17:54:53 From Peter Wasilko : A static landing page with links to any live systems we use

17:54:55 From Adam Wern : Was the .info domain the only one available?

17:55:11 From Frode Hegland : No... didn't check others...

17:55:11 From Adam Wern : .org .com at reasonable price?

17:55:18 From Mark Anderson : BTW, my earlier comments weren't meant to sound dismissive of Miro – lest they sound otherwise.

17:55:34 From Adam Wern : .lab, is that a thing?

17:55:46 From Frode Hegland : Could not find one

17:56:11 From Brandel Zachernuk : .io has been used to mean that as well, implicitly 'experimental'

17:56:26 From Frode Hegland : True

17:58:05 From Adam Wern : Personally, I'm interested in doing a minimal metaverse/
docuverse – linked spaces in 3d

17:58:39 From Frode Hegland : YES Adam indeed!

17:58:55 From borud : Brandel: ah. I've used Tesseract from Go. Funny story. Had many
thousands scanned contracts for cell tower land lease contracts which a bunch of lawyers
were going to go through manually to categorise them. I spent 2 hours writing and running
the code that sorted them into N categories

14 January 2022

14 January 2022 Video

<https://youtu.be/0Iu8fGrntGM>

14 January 2022 Transcript

Note: Accuracy of transcription and the assigning of speaker names cannot be guaranteed.

Please refer to the video in case of confusion or concern.

Mark Anderson: [00:00:00] The number of books I can say is that nuance is quite hard. More than more than saying, I've got it. I sort of find difficulty anyway. So there is no it was here, I'll go and find, I'll put it in the chat anyway, my good reads Earl. And these these are all things if I haven't lent them to somebody that I have.

Rafael Nepô: [00:00:28] There's a there's a printer I saw they're getting smaller and smaller, but basically it's a it's a little it's a printer. You know, the size of pretty much this wall from from here to here, and it's a print on demand service and you just choose the file. It doesn't matter if it's out of print or anything, you select the book and it prints a book and it comes out, you know, a real physical book. And oh, wow, okay, those those would be. I'm going to see if I can find it here, but it's it's on demand printing for four books, and it's pretty incredible.

Mark Anderson: [00:01:09] Well, I did find that sort of slightly sprung to mind when I was doing this good read stuff the other day because, you know, and it was saying, well, what version of this book is so well, it was published in nineteen ninety three. But now Springer have worked out how to remake the second hand market by, you know, only only offering digital reprints on demand and charging you, you know, 90 quid for an out of date book for which you want one article. It's become a bit difficult, so I've just pasted that URL should take you to ignore the cookery books and stuff. That was a mistake in the way I went, but most of my sort of quasi academic reference bookshelf is there. Far too much state of this stuff, which intrigues me tremendously, but I have absolutely no skillet and I'm rather an observer in that field.

Frode Hegland: [00:02:06] We have to Brandels, and this is quite fascinating. But now we only have one, that's not enough.

Rafael Nepô: [00:02:11] We need to for VR Brandel

Frode Hegland: [00:02:13] Demand stereo vision.

Mark Anderson: [00:02:17] We're going to we're going to get a Lawnmower Man.

Frode Hegland: [00:02:22] The reason I was late today was immersed as one of those apps that I have been playing with, and some of it's absolutely mind blowing. But I think they're on onboarding is absolutely mind blowing the iPad. And, you know, I'm sitting there working with my screens and because my hands are tracked. I can actually press buttons on my screen, which is cool. However, I mean my actual computer screen. However, I so easily just destroy my whole setup because they have these yellow bars around and you're supposed to do this for that and this for that and whatever it is literally playing a new instrument. So I'm learning it slowly frustrated. And of course, that's a great opportunity for us. But it meant that I've taken over my sound and vision, so I had to restart to get immersed away. So Peter, what you saw there in the beginning was basically me and VR looking completely flat.

Mark Anderson: [00:03:16] So you stuck you basically you got stuck in the metaverse and couldn't get back.

Frode Hegland: [00:03:21] I don't like the term metaverse. I don't want to use it. Cyberspace was just fine.

Rafael Nepô: [00:03:29] I was stuck in my imagination for a bit.

Frode Hegland: [00:03:33] So I'm going to share my screen with you guys because there is something we do need to discuss jointly, group. Just make sure I can see you. So if you want to please feel free to go to our website as well. And we now need to decide what that means. I'm going to turn quiet mode on because people. Right. So we have to decide all of us what we want this to be and how we want to work together. This is a very casual, happy group. But

there will be some more stuff happening and we have to decide what to put on or not. Alan and I had a brief chat this week. I think it was yesterday actually where we decided that, Oh, there's Alan I can speak from for us anyway. So we just started the whole looking at this and how we have to decide on things together, and one of the things is under publications, we have a book, journal and newsletter. We decided it's probably best to have a journal. A newsletter separates because they serve very different purposes. The Journal is intended to be mostly transcript from our monthly guest presenter meeting. Plus any articles that we write and respond to. So I'm trying to make it like an academic journal. Of course, we don't have academic credentials or anything like that, but that's the model, just a casual one for this community newsletter. Alan will speak about in a bit, but that's going to be more brief. And so I'll do the journal as an editor. Alan will do the newsletter and these things will talk to each other. The journal will be PDF, which I think is important because the extra affordances and that can be part of our experiments. Then we go down to events. We have our annual symposium and monthly guest speaker. I should put annual in the title, I should know, because I have monthly. That live WordPress editing. Are you not impressed? Please, I know

Mark Anderson: [00:05:40] If you did it in times, Roman, it would look like a very senior computer science professor's web page because there is no formatting at all.

Alan Laidlaw: [00:05:50] Yeah, and I would have been I would be really impressed if it was 2012. Yeah, I mean,

Frode Hegland: [00:06:00] I'm a bit of a minimalist guy, but we can always talk about the design

Alan Laidlaw: [00:06:03] And know the look and vibe. I mean, for for just doing something without. Hemming and hawing, I dig it like it's awesome.

Frode Hegland: [00:06:19] So then we have thanks. These two bits here worth mentioning. One is projects I've always had a problem with how I connect my supposedly commercial, even though we're operating at a huge loss but is still a commercial company with all these other things because I don't want you guys to think that suddenly your stooges for my sales pitch and vice versa, I don't want you guys to feel that you cannot if you're doing something that's relevant to this listed two. So we'll discuss that at length. But that's why that's there now, of course. Visual matter. And then finally, the community, one thing that seemed clear

when and when I learned I were talking, and I hope you will agree, and I'm very happy to talk at length about that. I think there is a difference between us as an end crowd, and we shouldn't enlarge too quickly because even my good friend Bjorn, when he was here, it was a hugely relevant guy to get him into the community takes time. It was a bit of a kind of a wake up call for me and we would love to have more people. But it can't just be random people who don't really care about the subject because it's a it's a huge overhead when new people come in. So therefore, all the stuff above community is for everyone. This stuff is more for us. However, we do put all the video transcripts and chat blogs on here, so we operate in an open manner. So someone is interested about being serious. They're welcome to it. And within that, I have this link to our resources. All I have here is Brandel timeline. And the way that I posted it was, well, first of all, why I did it is when you're in VR, space to type in URLs is boring and difficult.

Frode Hegland: [00:08:01] So this is, I think, where we can all just add anything we think is cool and say why. And the only structure is it's in the VR resources. So it's intended to be used while we are in VR space. And here I've tagged it by Brandel so anybody can tag his work so he doesn't have to do everything and vice versa for all of us. And very, very. Finally, there's also this thing called discussions. This is where I think we should post what would normally be a blog. I posted a link here to a data set and a sentence just saying this would be amazing if we did it in VR and that kind of stuff. And also. Similar things. So I'd like your comments very much, and I would also like you guys to think about how you want to be a part of this. You know what benefits and what are you willing to put into it? Because that needs to be then you? Yeah, just a second. And I'll hand it over to you, Alan. It needs to be a continual open discussion because, as I've already said, any one of us with commercial interests, we have to be careful that everyone's happy with how that's dealt, but equally the opposite of being part of too many Californians sitting having coffee in the evening, saving the world, and nothing ever gets done. So I'm hoping we can find a ground that we're all happy to put in whatever level of effort and everybody understands everyone else. Over to you, Alan.

Alan Laidlaw: [00:09:31] Yeah, I don't I don't want to like obviously like want to open this up to the group, but before diving at all the feedback, I kind of want to present the other end of the spectrum, right? So in this is based off of what Fred and I talked about yesterday, right? So like one sense, we want to keep what we're doing right now. You know, the same and not fuss with it, right? Because it's great. I like it. It's my security blanket. Or something? Might my pillow that I cry into after a bad workweek and actually I'll share my screen a little bit just

to help go through the some of the points? It won't take long, I swear. Let's see. Where are we? Right here? Ok. So there's that, and I don't want to mess with that. I've sort of been calling. That just, you know, for for sake of ease, like the weekly whiteboard. Right? Just our jam session. On the other side, there's the the hey, we all are here for a reason. There's something that bothers us. There's something that interests us. How can we move that forward? Um. And it seems a theme that we've had from the beginning with Adam, the interfaces you've made, you know, a theme is, Hey, we we can use what we're doing right now to create the core material to create a set of experiments or projects.

Alan Laidlaw: [00:11:25] Right. I personally really dig that too, and I want to actually contribute to that. So there's actually this weird like triangle or something of of different interests, and I think if we do it right, we can do it in a way that doesn't take a whole lot of freaking effort. On the newsletter side, I sort of feel the opposite of frode in that I don't want it to be PDF. I want it to be almost automatic based on things that we found or talked about or popped up. I don't want it to be a transcript. I don't want to be a deep dive. It can point to that stuff. But mainly, I just want to be a friendly entryway for people. Hopefully, that friendly entryway will also be a revenue builder, we could do something with patron, maybe that can help us perhaps fund some experiments. But even if that doesn't work out? I love the idea of people doing their own thing and being able to kind of. Turbo boost it through future of text and. Fantastic ability to, I don't know, knock on people's door and say, you know, like, become interested in this. So if Adam Brandel, you're working on something and you know, it doesn't like you do anything with touch or text, but still kind of want to channel for it, I think.

Alan Laidlaw: [00:12:51] Personally, I think that would be awesome. I mean, same with everybody else. And then the final thing with the newsletter like. I don't have I have some ideas, but I am not highly opinionated about where that goes. So if you guys want to do a newsletter together. Awesome. If you have no interest in it and it's just going to be my little thing that gets shot out every couple of weeks. Awesome. All right. So that's that's about that's about it later on. I do want to show you guys some of this and how it does tie into. I think a good way to figure out like. How these meetings could be more efficient, you know, like I was just adding in some things to talk about if we weren't talking about all this and you guys are all welcome to add to this and also I can send this email if you ever find interesting tidbits, articles, whatever, you could just mail this to me. It will pop up in my things app and I can add it to this area. Ok, I'll stop talking now. Would you say wrote your own view?

Frode Hegland: [00:14:13] What software was that?

Alan Laidlaw: [00:14:17] That I had on the screen. Yeah, that's Kraft, OK.

Frode Hegland: [00:14:21] It's just when you said things, there was a to do list called Things a while back and I just wanted to.

Alan Laidlaw: [00:14:25] Yeah, yeah, that's things is another app that I use. Kraft doesn't have an email for ingestion, but things does, which is why I love it. So I'm going to give you guys my things email address. Thank you so that you guys can email it and it'll show up in my. Like list that I can then pull into here. Well, so what if you guys are interested in that, you know, whatever? Cool.

Frode Hegland: [00:14:54] Peter.

Peter Wasilko: [00:14:55] Well, I think we should start to make up a list of affordances that we want in a dream unified platform. Probably all of these tools were built using open source libraries available through the node ecosystem or the other primary distribution platforms and whatever programming language they were developed in. There's no reason that we can't go through and find all of those. Labelling. Housing and utilities is out there and start tying them together well with a single integrated platform where we won't need to go off and deal with a thousand login accounts because what seems to happen is each one of these systems comes up with their own little web based tooling. And then you have to get an account or you have to show your credentials from one of the other big platform things. And this account proliferation is starting to drive me absolutely mad. The number of passwords that I have in my password manager is absolutely staggering. God knows what happens if the Apple password service ever fails or. If they were logging in with a Facebook account and then Facebook decides that you said something in the blog post that Zuckerberg doesn't like and suddenly find some deep platform from that world. And not only do you lose your Facebook world then, but you lose all of the connected tools and applications and you end up losing access to your data. It's all very, very scary. That's why I like the idea of pushing some of the groups out there. They're trying to separate your data from the services that are manipulating your data. I think that's sort of like the critical use point there. We're just so dependent upon Big Tech blessing us with accounts and tying them together with a pit.

Frode Hegland: [00:16:38] I think that's a worthwhile and important point. If and when we

decide to to build something together, I think it would be really good if we can now just decide on a little bit so we don't spend too much time on it because the community forever defining itself is also really, really boring. But if you guys just want to say

Peter Wasilko: [00:16:59] What I say, there is just simply start making a list of enabling technologies that we just simply list. What if one says we want something? On let's let's have one so that when we see something that we want, like email and just we add that to the list and have a list price of

Alan Laidlaw: [00:17:15] One hundred percent. We have an expedition called like dream machine and start to make a list of those attributes. I think it's perfect to to. It's awesome to break it down into pieces and put it somewhere where we can talk about it. But that is a lot of what you mentioned. I agree with you, but it's part of the death strangle that we seem to be in with Big Tech. There's there's not a foreseeable way out of

Frode Hegland: [00:17:39] It, but this does assume that we are building something together, and I don't think that's. No, it doesn't. Well, OK, we're still OK, for instance, Adam Belt, a citation view for the web based on Mark's data. That's something that I would like to put on this site as being our project. But that depends on what Adam and Mark thinks about that. And also, I would like to go and try to get some money for this, some funding that we would, depending on what is possible or not. We will either. I mean, it would be great if we could all pay ourselves, you know, simple. But if we want to pay for some external programming, whatever. But at this point, I need to hear from specifically Adam and Brandel, how much or how little they actually want to be in this community in that sense, before we talk about affordances and big companies and all of that stuff. So I'm going to go with Adam because he has to pay.

Adam Wern: [00:18:49] How do you mean be in this community, I didn't really get in in terms of of the activities we discussed today, do you mean the newsletter and the resources section and so on? Or do you mean the building prototypes together for something more than a dream machine or a part of it?

Frode Hegland: [00:19:10] All of the above. And to be more specific.

Alan Laidlaw: [00:19:14] Does anybody stand out or was any part problematic? Go ahead.

Frode Hegland: [00:19:18] Yeah, I mean. I have to decide now that I've finished my PhD thesis. A lot of you know, that was my big excuse. I'm working on this oh, rest of the world, you know, that kind of stuff. So I have to look at where I'm going to go. I'm going to focus on this community and my software and a few other things. So I would like to invest a lot in this because first of all, our Monday and Friday chats are really both pleasant. You guys are very nice people. And it's also very inspirational. But it's but, yeah, one of the things I would like to do is actually to run a proper normal research lab where we get hired. We decide we're going to do this, we're going to do that. But there is a lot of overhead for someone running a research lab and raising money that is not my favorite activity in the world. So that's why at this point, if we do decide that this is only a chat Monday, Friday for all of us or some of us, absolutely fine. But if we do decide that we're going to do something in VR as one project? Fine. But it's just that we have to be very honest with ourselves and each other. So we get going with this stuff. It's just super, super important because I don't I don't want to lose this community. I think it's incredible. Right? So Adam, the questions for you then is do you want to spend some time outside of Monday and Friday? Do you want us to be one of the places to list your code? How do you feel about your level of investment at this point?

Adam Wern: [00:20:55] So it's a bit hard to answer, but I'll answer what I can right now. My main priority. What I feel is most meaningful and interesting is making. Prototypes or or some or maybe something even closer to a product, it can be free, it can be a research prototype that you can download to actually use for something real. But if I could choose how I use my time here with the community, I would prefer to do as much of that as possible and as little of the newsletter, resource gathering and the admin stuff. Not because I don't want to do like administrative work, but I don't want more more admin than needed. So I want to fly a travel lightly and do prototypes discuss it as as much as possible, come up with many of them and maybe combine a few of them into something useful. If I could do that, I would be happiest, I think. But I would also alternatively, I would if that can't happen here, if it's more general here, I would like to discuss text in text in general, what it does to us for us. And it can be combined, of course. But the ideas with the embodiment or how we work with text and the future texts and the nature of text and and the boundaries of text and such things are more a bit more theoretical, maybe and or or process oriented, but not tools or tech. So that is one first answer.

Frode Hegland: [00:22:50] I think that's a great answer, and I'll give the mic to Brandel in a second. But I just wanted to say one thing I've kind of tried in the past is to separate what

Monday and Fridays are. So I think that maybe once we get past this, this is basically our dating game. This is insanely boring for everybody outside of this, right? Once we have a settlement like you just said, then maybe we do Monday's discussions. We try to be not product or not feature centric. We talk about text, for instance, as you suggest. You know, on Fridays, we talk about more what we're building, something like that. It's just a thought. Anyway, we'll decide on that later. But Brandel, you seem to be saying, ditto a lot.

Brandel Zachernuk: [00:23:35] Yeah. So I really like thinking through doing and so I very much enjoy being able to to to to make stuff or make ideas about stuff, so, you know, I would. I would also add that I'm not. Uh, I don't think that it needs to be sort of the tyranny of those developer and client in terms of being able to sort of dictate the terms of a discussion. People who describe applications are just as useful as people who who build them. And in fact, a lot of the time one of my favorite things is to take because I like working in the abstract. And then I like working on the concrete, and I don't I'm not very good at the stuff in the middle. So. So one of the things that I like doing is wallowing in the theoretical. Then somebody makes a sketch, and then I turn that into something, something a lot more tangible and real. And I do that with visual art, as well as with sort of prototypes and software and stuff like that. In terms of my time and what I would tend to devote, like I do sort of software development, programming, sketching more or less every night as a hobby. And some of those involve text and some of those don't. I would be I totally comfortable either hosting or linking to, you know, anything text related that I am comfortable sharing publicly through future of text, as well as having that as a forum for discussion of it.

Brandel Zachernuk: [00:25:05] And I would be overjoyed for any of our venues to be sort of devoted to the introspection and discussion of those things, because too often people see very, very little of what it is that those sort of sketches and interventions are in terms of being devoted to a longer term project or a specific thing that we all are building together. I just don't think we have clear enough site toward a thing that makes sense to devote that level of effort to. Like I said, one of the things that I like doing is thinking through doing, but one of the things that requires is a commitment to throwing a lot of stuff away, which is another thing that I I'm happy to do and I encourage people to do until I actually get their plan, right? So, yeah, so. So in terms of actually embarking on a project to build a large thing, I'm I'm pretty reluctant to do that until until there's been a lot of prototyping and wasting of of little bits and pieces of one to two day one to two evening sort of software development. And that's one of the beauties of the web, is that it allows you to prototype, iterate and throw away and move on and have a seemingly relatively modular components that you can kind of pick up

and reuse along the way.

Frode Hegland: [00:26:27] Yeah, that was really oh, as Alan has had you, OK? Go ahead. I'll put my hand up as well.

Alan Laidlaw: [00:26:33] No, that's fine. I was, you know, three chairs hands up, but I've already talked a lot. I can bring it up later.

Frode Hegland: [00:26:40] Ok, just really briefly. Then let's just I know more people to talk about. Let's just say this year, Doug's anniversary 9th of December. We want to have a demo of something, and it's really important that we spend a lot of time trying to figure out what that might be. So we don't consider that waste of time. And if we end up in the ninth of December with nothing to show but a very good description of what we went through and why we failed. Equally good. Ok, Alan. And then over to Rafael, maybe.

Alan Laidlaw: [00:27:11] Ok. Sure, yeah, OK, so to touch base on all the various points, I feel like I'm in alignment with a lot of it or at least the way I see it. Prototyping over full product because full product is part of my day job, too, and the thing is, is that once you get past the interesting bits of solving the problem, everything's a long slog of bugs and cause and that kind of garbage. And it's just until we get funding. Like if we made a thing and then got funding or built a startup to actually bulletproof it, that's awesome. But I don't see that right now in the charts and things that we're having. I do see a great place for prototypes, for the public to see with low barrier of entry. I see a multiplicity of them. Not a single interface, but hey, here's a here's a little stab at a way to do this, and here's a way to do it in VR and and so with the newsletter, the way I was thinking about it is that it's my own kind of like sifting through what we talk about and what we're inspired by in these talks in in such a way that we might be able to use it for further projects, right? Which is what I'm doing in craft. And that's why you guys are all welcome to jump in there and screw around with it, because it's sort of like a concept abstract first down to, you know, individual ideas. And. I personally want to make some prototypes. We talked about that yesterday. What was the other thing? I forgot the other thing.

Frode Hegland: [00:28:57] I'm going to take you to the other thing then. Sorry, Rafael, just one second. I am really, really excited by the journal, and I'm really happy that I don't have to do the newsletter because the newsletter is a very different thing. What I want is for, let's say

Adam, who doesn't like to write. He likes to do stuff right. At the end of the month, whatever date, we agree, I take some screenshots. I had no time the URLs. I write whatever Adam has said about that thing, and that goes on in the journal Simple. You know, in five years, we will have a cohesive set of journal entries where somebody spent some editorship. I'll do the donkey work, but you can always put on WordPress in whatever categories stuff for me to put into the journal. So it's not just a WordPress site that'll Roth one day. So I think, no, I'm really excited by the idea of, I mean, the future of text book is nice, but it's a complete scattershot as it should be. This is much more step by step. Ok, I'll try to shut up for a few minutes. Rafael.

Rafael Nepô: [00:30:08] Ok. So I took some notes here also to to answer a couple of questions that were thrown regarding the website and both how I see the future of text and how I can collaborate or list of possibilities. So I think the future of text in this whole project that Frode started is quite important, especially now that we've had it for 10 years already. I've been following the presentation since 2013, and I've always been fascinated by all of the different ideas that were presented and how we're still talking about these things, and they haven't yet been solved. So I see it continuing into the future and it truly will be, you know, the biggest survey ever taken. Talking about text and this compilation of both the books journals newsletter, pretty much everything that that is being published will keep getting added to this to this big library on text. So I think it's quite an important project that Frode started, and I think I want to keep being part of it. But I'm not a builder, so I'm probably not going to be prototyping things like like Brandel or or Atom has been doing with code, you know, turning an idea into a quick prototype. I'm also on on Alan's point of view of prototype over product because product is my my day job with my company and I don't want to have another one of those.

Rafael Nepô: [00:31:52] So I'm all hands on for testing prototypes. Even when you know, when Adam made his version, I made a quick, a quick mockup to visualize the information in a different way as well. So basically, on the collaboration part, I try to join the conversations as much as possible because I this is, you know, it's it's one hour of kind of free time that I managed to sneak in. But doing things outside of this one hour conversation, or now it's it's on two hours in the calendar, so it's a little bit longer. It's a little difficult because of all of the other schedule things. So I don't see myself participating on my, you know, outside of of the conversation here because I simply don't find a lot of time for that. Even replying to emails, it's difficult because I read a skim over the emails, but doing a deep dive and giving a reply worthy of the email is something that also takes time. So I will be I will keep collaborating. I will keep doing whatever I can do on the time, but for it to become a full fledged product or a

full fledged project.

Rafael Nepô: [00:33:10] You know, that's where a little bit of complexity and logistics kicks in. And then, of course, investment is necessary to get people to build the code on the day to day basis, but even to have, you know, a date for things because once we have, you know, we always do things on on Doug's anniversary, which are it's always in December, it's always a celebration for for fraud and for the projects that he delivers. But even then, breaking down a project to reach a delivery date on that date, you know, that requires structure. And then that structure we don't have we have conversations every week. So I think it looks like future effects is 10 years old already. So it's growing up. And as it grows, more complexity, more infrastructure, more people, more resources, all of these more and more and more things kind of kick in if we want to reach another level of of the community. If not, then, you know, just having weekly conversations, it's totally fine by me. I always learn different things. I always meet different people. I'm OK as well with how things are. And that's a little bit of my point of view regarding the topics.

Frode Hegland: [00:34:31] That's really, really nice, unexpected knowing you, Rafael, the things you said regarding the whole kind of December launch thing. I agree on everything you said. It's just the book has to be annual and it's usually on. Well, the first time it was on Pins available day and then this last year, we did a bit different. But I think, yes, it does require structure, but I'm already spending too much money on transcripts and so on for some tests and then for my own stuff, I simply can't afford to spend money. And I know, you know that then you're happy with it. But if we can, if we start, I mean, like this website now, I would like for all of you to please make your own page like little about me thing, because one of the things that'll happen with that, I will put it into the newsletter as a glossary term. So, you know, that's the PDF newsletter with visual media is, of course, my little sculpture. I'm very excited to build that and make it more and more valuable for us. But I also hope that, for instance, you would add, you know, under VR resources, for instance, you know, just keep adding and keep tagging it.

Frode Hegland: [00:35:43] I know tags can be problematic, but you know, we keep doing that. And then every month, it's my job to take it from there. Put it in the newsletter. And then one of the key things is Alan just mentioned the ownership in the article that I sent around and he didn't get it, which is, you know, a very good position. That discussion happened via email and the people who replied are now in the journal. So and whatever medium we can keep the discussion going when it comes to releasing the book, we will also have a

compendium of 12 issues of the journal. So even if we don't have a software product or software environment, we have a thing and that does not in any way negate your point, it makes it even stronger. You and Laura helped to do the social media before last year's events. At some point, maybe we talk about it again around Easter. We need to decide if we have resources to do some kind of planning again. So I get you. We just have to wait a bit. Mr Anderson.

Mark Anderson: [00:36:48] Just a minute, I put my hand down. I just thought I'd sort of chime in on the round robin and in terms of input. But a quick thought before it passed from mine and you said, Well, you know, what might we be showing at the end of the year? To my mind, one of the things really we want to think about showing is the journal, albeit in different ways. So it might be the interpretation of it, maybe, but in a sense, and given the anniversary, it would be on. I think that's the real term because a conversation about how afraid it is we sort of bridge between us was the fact that, well, we often mention Nelson the journaling. But can you actually go and look at a copy of that journal today? I think not. And that's just as it is. But so to a certain extent, we have no model to follow other than the general concept. So I'm actually quite interested in the sense that all the things that we're talking about in some way shape or form feed into into the model. So perhaps the journal as an idea is the tent pole to what's being demoed. And that sort of gets us also off the hook of feeling we have to build a specific thing because it might be in essence a number of suspects on the on the common dataset that is the journal.

Mark Anderson: [00:38:04] So that's the demo just going to contribution stuff like others. I mean, I know enough about coding to only be dangerous, so I'm unlikely to do stuff in there. But I probably what I bring to the table is, gosh, 15 odd years of working as an information plumber, which is an odd trade, but it's basically fixing the stuff that other people would rather wasn't broken and, you know, don't want a fix. And that's fine. So where I think it helps is things that I'm quite happy working on are things like data sets. So, you know, all all the year of work or certainly it took to make the data that I made earlier was made worthwhile by the visualizations and Adam made with it. It took him not much time in comparison. It's just part of life pageant, as far as I can said. But genuinely, I mean, so it's a sense of, well, if we want to do, you know, if we're looking at a certain thing, if this is sort of a PR thing view we want to make and we need some data for it. I'm quite happy to sort of put in the time to make that because I do realize how important it is.

Mark Anderson: [00:39:14] Just all too often, just taking something that's free and available

you can scrape from somewhere looks really cool and sexy until you actually sort of take it apart. And then it's too GAAP. So sometimes it, you know it wants to work on the other way. The other aspect of that I'm thinking about and this comes back from, I don't know again, sort of 20 odd years of writing documentation on projects. I mean, you know, I think the tinderbox stuff I've been doing since I was nine. Everything is against a moving target. Us changes. The world changes what people do with the tools, change the affordances of the tool. I've been documenting change, so I'm quite used to documentation in that space rather than the more fixed thing of I built this thing. This is how it works. And one of the things that sticks with me is this thing of finding ways to break down the sort of the onboarding into a knowledge area. Now, whether it's just providing a sort of translation of vernacular, whether it's providing different sorts of demos or different metaphors to understand what we're doing, that's an area I'm quite comfortable with. And another thing is this thing where, you know, take one of the tools say that Adam or Brandel has made or the demos is the thing where someone simply said, That's really cool.

Mark Anderson: [00:40:31] I'd like to do that. The code's there. What the bit. That's normally not explained to the comparative novice, especially if they're not a programmer, is what data do I need? What does the data have to look like? And I know it always seems self-evident that it isn't, and the best place to see that is to go to the D3 site and look, there's wonderful visualizations. The only thing it doesn't explain is it doesn't even show you where the data is. You actually have to work out how on earth the data got into that picture. And it's it's a sort of it's a generic blindness, but I think it's one thing again, we can address as a way to make our discoveries more more, more accessible and portable. So someone says that's really cool, but I want to go and do it in Portuguese or I want to go in Japanese or I want to do it, you know, using a different, a different data set. So I have a data set that looks roughly the same. But what structure does City anyway shall have at that point? But those are some ideas where I say, Oh, interesting, I'm I know enough to be dangerous about testing, so I'm willing to do that.

Alan Laidlaw: [00:41:41] I'd like to just touch on something. Rafael brought up. Which I really can't stress enough. I think we're here because Frode mentioned this last week, maybe the week before, you know, like I like that if I can't show up for a month or two because work is slammed. That's OK, right, I can jump back in and I can just sort of hear where it's going. I can contribute where I, you know, have availability, but the the. The part about dedicating. Time or commitment outside of these touch points is is really tricky, and it's it's the it's the blessing of the group, right? And it's also kind of kind of the curse why I brought up the craft

approach a couple of weeks ago, days ago, who knows? Is that for me personally, the most important thing is passive, easy, low friction capture. You know, if I'm on the subway, I can reorganize, restructure a little bit, get a thought down, and then I'm building towards something bigger, right? And that's great. But it's only because it's so easy to get to and pass it right. So that's probably not going to happen on WordPress, not to dog on WordPress. That's like I can get in the habit of like putting some stuff there, but I think a lot of people can't. The thing I wanted to stress is. Um, the support group aspect of this, the buddy system sort of thing that could be here to right, like there are invisible parts that could be just as helpful, right? Like, Hey Mark, can you can you tell me how I should go about a testing paradigm for X, you know, or or book shares or whatever, right? So. As want to put that out there by. Go ahead.

Frode Hegland: [00:43:48] Whoever else? Yeah, me, of course, because I'm obnoxious. I think it's worth taking a brief detour into that article thing that I sent on ownership and B.R.. The reason it is really, really important in this community is for us not to be in a VR headset for at least part of the discussions at this point is a bit absurd because of all the new dimensions of possibilities we have. But the problem is the rooms. Right, and the objects and what I mean by that is we can't just meet and, let's say, VR horizons or whatever the Oculus branded room is. And then Adam says, Oh, I did this thing, open it on your browser and we have that object in VR in front of us. That's not possible. But we will have to leave that room through the Firefox browser or something. Click on View and VR and then we're all in our individual things and this a huge amount of effort has been invested as far as I understand to have another room for us. So that is really, really bizarre to be able to take the document into a shared room as not a flat document that can be done. It is currently not possible, right? That is hopefully going to be resolved, that the problem is what company will own that, you know, we come from the Mac and Windows world Linux, of course, too. But even having the Microsoft Office suite on both platforms, there were issues there and and all these things, this is really scary. Apple had opened many years ago where the document was the thing and you put in the tools. And when I met with Don Norman and I asked him what tools were being there by default, he said, it's a marketing option.

Frode Hegland: [00:45:32] That's when I instantly realized it would be a complete and utter failure. There was a wonderful idea. So one thing we have to fight for is whether, you know, like Marc and Pete are currently for good reasons sitting on the fence about Oculus. They should be able to interact with the thing in 2D. And we should be then be able to go in 3D if we want, and then they can change their mind. Whatever the objects and the things and the

interactions and the data must absolutely be owned by the user. We cannot afford the bullshit we've had with the previous generations. And finally, just to close this thing, the little experience I've had with VR over the last few weeks, and I don't spend that much time on it. Plus, writing that piece made me feel that what I'm seeing on the screen right now is a flattened version of the environment. It's already happened to me. It didn't take very long. It's really, really bizarre. So, you know, it is just why am I viewing the world through a pinhole? And you know, something, severability, that's exactly. Peter, you said that before, and that's exactly brilliant. Brilliant term for that anyway. That's why that was so important. And if we're going to have a demo at whatever day, we need to at least look at this issue, even though we may end up for practicalities, just having completely free standing move things around kind of demos over. I'm sure there are comments on that. Oh, hands are up.

Mark Anderson: [00:46:57] A quick one. I was just thinking of that. Well, and just flying through my mind, she meant that last thing. So, you know, one of the things with the with the journal in terms of showing it to people, you know? Well, I think it is solving something. I think it's for us to to actually work out and express more clearly what it is solving. I mean, if in a sense, it is a linear descendant of what Doug was doing back with any less and we think there was a value there and this whole thing augmentation, then that's one of the things that during our discussions, we probably want to tease out. I mean, so if there's a value in recording this stuff, so we have to make it more more tangible sort of both in terms of access and intellectually, then if I store lots of stuff, you know, underpants gnomes, if I store stuff, cloud, good thing happens. And so that's another thing that we can perhaps unpick in coming months because in a sense, otherwise, why on earth are we making all this effort? I don't think any of us are sitting here thinking it's not worth the effort, whether any of us can articulate it in a very short sentence immediately, I'm not so sure. And so that's maybe something for us to rummage through Brandel.

Brandel Zachernuk: [00:48:10] Rafael, did you have your hand up? All right. So in terms of the ownership base, in terms of the way that all of that stuff is sort of being hashed out, unfortunately, while on one level, it still is the tyranny of Big Tech. You know, the World Wide Web Consortium has has something called the Special Web Working Group, and they're involved in working on the web specification, which is sort of done at the level of sensors and input. There's also also a proposal for the model tag. There's very serious discussion about making sure that that has the ability to construct a scene graph, which is the ability to to reach in and identify, manipulate different parts of a 3D thing that exists semantically as well as right now. As you've probably noticed, WebGL, the 3D stuff on the web doesn't really

have much to do with web technologies. You can't put images of text in it without a great deal of difficulty because some people can, but most people can't. And so that's a big problem. So in terms of the things that ownership would be kind of viewed out of in terms of the building blocks that people would be able to construct transportable transmittable sort of document fragments or reliable ways of saying this sort of source of truth should be hydrated should hydrate this kind of spatial data structure.

Brandel Zachernuk: [00:49:41] None of the work is there yet to show the urgency of those issues. And I think over the coming years, as more serious companies who are seriously devoted to people doing stuff more so than the meta is sort of enter that market that I'm surprised that Microsoft isn't more present in it then than I believe. It's not so much that it's just an access problem, but that there are studies, bodies and participants who will help to make those things clearer. For my part, I mean, I try to avoid talking about where I work, but to some extent I am part of those groups. And that's one of the things that I work toward resolving is making it clear to the people who are actually building safari. And to the extent that I can bug them about it, the people building Chrome, what it is that that I think that various sort of interests need to need to have served within the context of those things. So, you know, Google is all keen on making it so that you have this massively deep tool challenge for doing fancy graphics. And I despise that because I don't I don't use any tools.

Brandel Zachernuk: [00:50:52] I just use the text editors and I call my stuff using a belt like that. And so I sort of try to prop Apple up in front of that face and say, no, Apple believes this when it's when it's really me, and thankfully they do. But yeah, so so to the end of ownership being worked out, I think that there are actually places and people who are working on those things, and I encourage people to to to think about what to take a look at the output of those entities to to see the way in which their work product is resolving some of those questions. And if there are particular perspectives that need to be brought to bear against it, then considering actually trying to pipe up either by influencing the people who are basically part of it or actually jumping in on their own behalf in order to advocate for those positions, because there aren't actually that many people around the table. And and so anybody who has constructive sort of feedback about what should happen with those things will probably be listened to irrespective of their sort of credentials and background, because there's a lot of people don't don't know a lot about what they should be making.

Frode Hegland: [00:52:04] Right. Yeah, right on that on spot on. Do you all know about the Knowledge Navigator video from Apple back in the day? If you don't? For those who may

not remember, it's absolute rubbish. It was a visionary piece, but it was all about the eye doing everything. You know, you speak and I have the rainfall in Brazil over the last year. It's just. Anyway, it was visionary, which is the point where there was a useful vision as something entirely different. When it comes to this, I can so easily imagine our Knowledge Navigator VIDEO And it would be one of us going into our office or desk or whatever it is, sitting down, working with a flat document and then, oh, there is meeting time. This is pretty much what I wrote in the document. Sorry for repeating myself. I just realized and then something in the document is of richer value. They literally pull it up through something like this. It's in the space. Do manipulations where that someone puts in, someone puts in and then it goes back in at the end. That in itself, because that knowledge object can be anything that we're interested in.

Frode Hegland: [00:53:07] It can be a citation timeline, can be a knowledge graph. It can be all these good things. But if we can manage to do that round trip, it will be amazing. And if for our little future text lab, if we decide to add some of our projects like Brandel, please feel free to just add whatever you want in an article and I'll put it on the front page, or you can do it yourself. You all have admin access. There's no difference in access. Then if you want, I can get advisor's official advisors to the team. Vint Cerf will be very easy because he believes in the core vision. Not so much the VR, but he accepts the problems. You know, we can have some hefty people into this, which will give us some sort of a voice and outside of someone watching this particular video right now today, you know, people won't necessarily know that we're not actually anybody substantial, but you if we believe in something, it's not faking it til you make it. It is standing strong until you get something done right. Just made that up, by the way, that last sentence, Mark.

Mark Anderson: [00:54:11] Now, I was just I was just thinking, as you're speaking and you were sort of describing, you know, what would have been our video and I think. And I immediately thought, Oh God, no, not another glass wall corner office, please, you know, as much. Rather, it was sort of coming from, I don't know, the middle of the Pampas or something. And I think in recent conferences, I've spoken to someone who is on a balloon Wi-Fi relay from the middle of the Masai desert and somebody else who joined in a joined in a seminar from a car, which we discover because some of the background noise coming back and it transpired they were just doing it to see if it works and in fact, it did. Apart from the feedback, but I mean, what I take from that is this sort of thing that, you know, in a sense, well, if if we're if we're solving something that looks good set in a wheelchair in the C suite, I'm wondering if we're doing the right thing. I mean, I don't think that's where we're going,

but I think it's something to bear in mind and in the way we're positioning it.

Mark Anderson: [00:55:08] I mean, the uplift we're trying to give is everyone. I mean is to, you know, make text, still sing for us as a society. So I mean, to a certain extent, you know, in in our in our placing in our discussion of where these things happen or our assumption where these things happen, happening in nice, clean white, shiny sort of rooms is something to which I think we're all prone and I think we should draw back from it. You know, I do. I much, I think, Well, how would I, you know, how would I do this in a disaster zone? Or how would I do this in somebody who doesn't have full on 24 access to something? Because that's, you know, a bit we just all too easily look past and I'm not suggesting that. That's not to sort of find fault in anyone here. It's just I think it's a way in which sometimes we're all a bit blindsided by our own thesis and to make stuff go. Rafael.

Rafael Nepô: [00:56:08] Yeah. So I watched the future mundane video that Brandel mentioned, and it was quite nice, and it reminded me of these two books that I shared both Supernormal by Jasper Morrison and the Fukushima and the design of Everyday Things by Dan Norman and all of these three things both the future mundane and these two books. They talk about the same things of daily objects, everyday things in our daily life average boring, mundane, you know, just the daily Basic Life, right? And I like to think about that a lot because if we kind of break down, you know, our our day to day activities, we usually do the basic things more often than we do specific things. That's why they're called specific things. So when we think about that text as well. I love to think about, you know, the foundations of text and how we can make that even better, because that's what we do pretty much every single day. We read more than we write. We write more than we publish. We publish more than, you know, we're so it goes into a funnel of specificity, right? So I think a lot of my interest in in has to do with the everyday. So if I'm reading something just a regular article on a regular website, I want to be able to extract things from it. And that's not easily done. So why not? I mean, we have the capabilities and we have, you know, ways of doing things. And like Brandel mentioned, there are standards from the W3C that they have to approve things and implement them and put them in the pipeline to be developed to be, you know, in different browsers.

Rafael Nepô: [00:57:57] And then these big companies have to, you know, have to end up developing and putting in their platforms as well. So all of these things are kind of interconnected in this mesh of people and standards and programming and everything. So even something as simple as having an interaction in an everyday browser, in an everyday

website. It's it's it's complex. It goes through so many different hands that it's kind of complicated. But that's that's where I would go towards because I see things like either VR or academia as things that are more specific. So a regular Joe or a regular Mary, you know, they use the web, but they're not academics. And then they they they might consume some news here and there, but it's not in VR. So it's kind of like the the base equalizer of how can we argument text the most amount of people through the simplest means possible of where we can achieve. And I think everybody in in these sessions, I think we know, I think we know too much. That's why we go into the specifics. So if we try, if we try to take a couple of steps back and try to argument things for for for basic basic consumption, I think that goes a long, long, long way to starting the snowball effect of making everything else better.

Frode Hegland: [00:59:31] Well, I get a thumbs up, I mean, I don't mean that, I didn't mean that I meant stand up. Ok.

Rafael Nepô: [00:59:36] Did you not like it?

Brandel Zachernuk: [00:59:38] I'd be happy. I'll throw the thumbs up. Yeah, that's a really good reminder and something that I'd love to comment on as well. Go for it. And yeah, so so the the sort of the aspect of the future mundane that what it is that every day sort of entails is a really important motivator for me. The reason why once I found virtual reality as a thing that was interesting to do, I immediately went to to text was because if you think about what it is that most people do with computers, most of the time it's not solving petty crime. It's in a very brief terms. The the beginning of that my word reality talk is that people. It's obvious that that architectural visualization, tele surgery, all of these things are amazing for VR and future technologies. But in order to make the most impact on humanity, it needs to be focused on the simplest things that people do. So that's that's reading and writing. And even if you were going to get more, more specific, it's still not super specific. It's excel. I think I've mentioned that people say people estimate there are about 50 million programmers, but more like seven hundred and fifty million Excel users in the world.

Brandel Zachernuk: [01:01:01] And if you're going to talk about just reading and writing or relating documents to each other, then then that that number rises easily into the billions. Unfortunately, 90 percent of people don't know how to use control F. And so that means that the that's that's it's routinely sort of repeated that that's that seems to be about the appropriate figure. So it means that anybody trying to get expert tools has the odds stacked stacked against them. But I think that that the most transformative sort of capacity comes from being

able to be cognizant of the sort of, to your point, Rafael, the technical and the technological wherewithal of those people in terms of what they have access to, but as well as the sort of the conceptual models that are going to be capable of contract. That said, what I want to work on is the future of of of those things. And that's why I've chosen to have relatively obscure and arcane kind of peripherals as part of my my work set using eye trackers that you attach to the front of the screen using using hand trackers that are able to to identify your hand and 3D space.

Brandel Zachernuk: [01:02:13] Not because I think everybody will have them tomorrow, but because if I come up with a good enough reason, maybe everyone and yes, everyone will have them in 10 years. And so that's why I work in those those areas and why I think that it's important for the future. But I agree that that it's essential and very valuable to go further. You've mentioned to the BBC and other places that your your vision of what author does is for a relatively sort of constrained place in terms of the kind of person who needs it and the kind of person who derives benefit from it. And I think that's also completely fine. And in fact, one of the things that people say startup world is find a person with a problem and solve their problem because if you get one hundred people who say, Oh, I can see how this would be really useful for somebody, but not for me, then you just don't have a solution for a person. And what you need is somebody who will walk over a broken glass for what you do and then you can abstract from there, but you have to solve a problem. So, yeah, that's stuff.

Alan Laidlaw: [01:03:22] Um, I'd love to jump in here. Thank you. Brandel, so to cover a couple of points, starting with the mention event, and I think and I put this in chat, so I don't really need to go into it too much, but that's that's another one of those invisible attributes is the network that Frode has is something that I think can be converted into other materials, right? Be it an audience or passive income to cover costs, et cetera. So I see the newsletter as a path of conversion on the plus one to everything, Raphael said. And. And. I was going to say about that, yeah. What I like, what attracts me to the text and the kind of the space that's there is that it's it's small and free, like there's a book called The Whale versus the reactor. I have some more I'll pull it up, and it makes a comparison of technology and its inevitability, right? So on one side, you have nuclear, which seems inevitable, and if you go nuclear, it actually changes your government, it changes your structures. Nuclear means central maintenance, right? High risk, high reward. On the other side, you've got solar, which is decentralised, right? It may not be as efficient, but you can. You can do it on your own. So I think a VR is almost like nuclear, right? Like it requires a kind of centralization and bundle. Currently, currently, meaning currently in the next five years, whereas text is like solar, right?

As a technology, we all own it and we can all manipulate with it.

Alan Laidlaw: [01:05:18] So I am really interested in where text fits in with VR and that space. But throw in another metaphor. I was thinking about this the other day. There are activities that we do that don't mesh well with other activities when we're climbing a mountain that is not the time to cook a gourmet meal. Right? And it will never be the time to cook a gourmet meal. Right. So you've got like climbing and cooking. Um, and and to tie that into the what we're talking about, in some ways, I see VR is like climbing where it might not be the place for word processing in the sense that we're familiar with 2D word processing today. But it could be the place for complete data immersion and finding points, you know, and understanding the texture in a way that you couldn't do in 2D. And then that gets ported into something if it needs to be processed word wise, right? You can do that in another modality in the kitchen, but it'll be interesting to see how that works out, right? Like maybe it will be the place to do all these things, but it may just be natural to its material that you like. This is where I find stuff. This is where you make sense of it. And over and over here back in 2D land is where I. Format it in different modalities for the, you know, for for other people anyway. I had some more stuff, but I'm going to stop talking now.

Frode Hegland: [01:06:58] Ok. Right now, it's because I'm going to talk now. So this is really, really horrible and difficult. This is probably the most important conversation this group has had so far. When I did, my expert interviews are showing reader and author this kind of stuff came up. And one of the worst comments I got, which was from someone praising the software to high heaven, is that people who really will succeed in academia just won't need it. They will use later, can reference managers. They'll be fine people who like me, who are more on the artistic side of the spectrum. It won't help them enough to succeed in academia, and they won't care enough to find the software. So that was basically a big shutting everything down. That was awful, but there is a great truth in that. Doug was only ever interested in augmenting pioneers. He was. He didn't care about the average user. But at this point we have Donald Trump and we have Boris Johnson, not at the same time. And in America, you have Sleepy Joe better than Trump. But all our political leaders are complete idiots at the moment, right? And that must be because most people are idiots and include us respectfully in that we're idiots in different areas. Right. When it comes to if we are truly going to save the world and not just play with our favorite toys, which is really shaming myself, we probably have to do what you guys have been saying, Adam and Brandel.

Frode Hegland: [01:08:25] We probably have to find that average person in this context and

find out that one moment where they have a little bit of question about COVID or climate or whatever it is that we provide an environment that's ready to jump in and say, this is the best interaction, you could possibly have to get a useful thing in your head about this. Right. Which is really, really hard, so basically. Yeah, it's a complete different target user, it's completely different psychology, but the worst part of this problem is if we were to do such a thing, this person wouldn't want our stuff. Because it's almost done in. They don't know they have a problem. We all don't know what we're ignorant about when we're ignorant about it rights. And I'm not going to say we'll simply have an A.I. thing watching you in the background, saying, excuse me, you should consider. I think that's a bit of a cop out. But yeah, let's really consider who we really want to augment because it's a very difficult choice.

Brandel Zachernuk: [01:09:36] And on on Alan's point about whether there is the right right, right thing and that it's sort of nuclear, I think one of the things that that sort of led with where he was talking about the way that after being in VR for a while, you start to see this computing as simply different. I think that that sort of points to a vision for what computing is that understands that it necessarily needs to be more encompassing than than all of the computing happening in a pixel grid like this. So, so you know, that's that's why if you talk to people who are in VR now or have been in VR for a while and are serious about it, they often use phrases like spatial computing to talk about what it is that they think that computing should consist of and certainly in the professional communities. I'm aware of that. They do that because because for me, I'm actually not interested in VR. I'm not I'm not in headset VR in the sense that it's not the exclusive domain of what I think matters. I've got the projector, I've got the lights and the idea of being able to have a large environment where you have a lot of screen space, but also an ambient awareness of where people are pointing and stuff like that. I think that's that's a critical perspective that will be opened up by virtue of virtual reality becoming more mainstream. And so far as the the sensing and the display passing that that threshold, that means that it's viable to understand and be able to use beyond the sort of the frustration levels that are that that that academics have had to struggle through through the, you know, the 80s, 90s notwithstanding today because it was really hard, it was sickening, it was low resolution, it was low refresh rate.

Brandel Zachernuk: [01:11:34] So it didn't have enough of the appeal to be able to do that. Now that it is, you know, it does a few things. One, it is actually a prototyping platform for other experiments, for other things. So if you want to do much more lightweight glasses based, you know, every walk around in a whole day kind of augmented reality, we can't do that right now in real life, but we absolutely can. In virtual reality, you can make a virtual

reality world of real world scene and say, like, I'm on the street, this is what I'm doing. Oh, I got hit by a car. And so you can you can prototype. You can think about what it is that that future looks like now because the tools are good enough for being able to do that. Likewise, if you just want to be in a kitchen with a couple of screens, maybe a projector that's able to kind of move around and stuff like that, you can also do that in virtual reality. So that's why I think that it's essential, but not because of the technology itself in and of itself, but because it gives rise to the perception of the flexibility that computing, I believe, must necessarily sort of be accompanied with as we start to realize that pixel grids in a single computer screen frame.

Frode Hegland: [01:12:44] So yes. And another interesting thing that actually questioned first in the successful, very, very successful franchise battlefield. It's no Battlefield 2042. Can any of you tell me how to get more ammo for rockets, missiles and that kind of stuff? Neither can I. And I play it about half an hour every evening, most evenings. I haven't figured that out. And I think that's really, really relevant because I figured out a lot of other things. You know, I can customize my rifle. I can run around, shoot, fly a plane, whatever. The key thing is, there is a huge market out there for people who really invest time and effort and learning software tools and their gamers. Right. It is absolutely untapped, so is there a way that we could possibly say, Hey, gamers, this is basically your knowledge game, not gamification, that's an entirely different yes.

Alan Laidlaw: [01:13:48] Now, sorry, I thought I was on mute knowledge game, yes,

Frode Hegland: [01:13:54] But not knowledge gaming, right? I mean, because I noticed even in 2D Battlefield with some of the good ones, you pick up a different rifle. It feels different, right? And the controls are a bit different. Is there something we can do? I mean, when I designed author, I first decided on an iPad, so it was iPad and a Bluetooth Apple keyboard, and I had it with that tiny little twelve south tripod. You're probably most of you know what it means. So when I took a picture of that on a table, it was such an elegant work environment. I want to build a Montblanc pen. I want to build a piece of software that feels like a physical object of beauty. Right? That's my personal thing. So I'm just wondering, can we build something that has such an appeal to gamers that all the little elegance is all the affordances? All of that just feels almost like a game, but you just happen to be in Wow. I can actually deal with my knowledge better that that is how we sell it, so to speak. Adam, Adam Adam.

Adam Wern: [01:15:09] I've been trying it out. You saw that library circle. I did a week ago or so. And I've been playing more with it for. Further back, I thought the Earth really was a bit yeah, a nice way of presenting things, but not as useful as having like the infinite canvas or zoomable user interface. But the more I step into that circle, it feels like my element. Actually standing in a 3D representation, even on the screen is very, very rich. And suddenly many of the problems you have with long lists you can if you watch a long list in perspective. You get a sense of it, do you get the sense of the length, even though it's larger than the screen because it's in perspective, you can see the whole thing and standing in a cylinder of your whole library and watching it all together without start and end of the library. Just looking around on the screen is very there is so much to gain from being in 3-D because we are in 3-D all the time. So in a sense and also the books are in 3-D, so I don't think it's a step towards some sort of. Entertaining or or or a visual icon, the only it's a real for me, it's much more real being in 3-D, being in a 3-D library, even though it's just thumbnails in a circle around me instead of being on an Amazon page with book listings. It's really, really feels. Good to be in there. And so I think it's worth exploring it much more with a very open eye towards the because when I stand there, it feels right for me and I usually follow that instinct.

Brandel Zachernuk: [01:17:12] It's super exciting, I'm really glad to hear that.

Alan Laidlaw: [01:17:15] That is awesome, yeah.

Adam Wern: [01:17:16] And also one thing the hands, when I try having OK, I like the kind of a laser pointer thing. The point in point where you can point to it, where things were far away, it's useful in. But having seen your own hands there and taking things especially working close distance with things in the air, it feels so real to move those cubes and things or spray paint in 3D. And we're making sculpture just before your eyes, and I think there is something for texture actually taking words and moving them aside and moving them around or combining things because it feels so real. And I only get that sense on paper. Working with the pen. And so this can be. Something very similar to paper or even better in many ways. Yeah. Oh.

Alan Laidlaw: [01:18:18] I love that. Yeah. Plus one on all that, I just got back on Oculus and updated everything and the the hand-tracking was. Such a delight. That is great and. One of the points I wanted to bring up to go back to. Um. I am. It. Completely behind. And I think the intuition is good there to think of these even the prototypes, while on one side, I want to solve particular granular problems, painful problems like the example in creative selection,

where the only thing they were demoing at the end of the day, I mean, they did all this work, whatever, for this demo to present to Steve Jobs. And it's literally just a single button, you know? But I love that. And that is how that's how you do it in grown up world. But but for the for the VR stuff and for the the knowledge, yeah, I think approaching the. Approaching it as games and play is far more in the spirit of Doug Engelbart and the earlier pioneers. And I think that's actually where we can get our innovation. So yeah, like. Where it becomes difficult is I want to see I want to solve real problems in the VR space, right? Like enterprise, like I want lists to be blown apart and find new possible affordances and interfaces, right? Because even. Yeah, yeah. Even seeing like your your health tracking and you see, you know, like. Just a full list of your of your metrics, and it's meaningless to see it in list form, it doesn't feel right. But on phone, that's the only option that you really have. The gaming side is great because it even though it doesn't solve a problem. It can solve a problem that a person might not even be fully aware of yet. Right? If I could pull in all the things that I found on Twitter over the course of a week and then start to just glue them together, you know, not not in a game sense of like winning a game, but a game sense and just a sandbox of playground. Um. That would be awesome. At some other things, but I am very forgetful today, so

Frode Hegland: [01:20:55] Right, I'm down, that's what I do. I write them in the chaplain. I delete them. So question Brandel. Is it relatively easy today to share a 3D object with us as a group without having the work? Excuse me that the voice and all of that, because I'm thinking very often when I go into VR, I leave my normal computer on. Have a normal music on and I do things in there. It's not separate. And if I go into immersed, for instance, which I both love and hate, I am working on my normal computer with my normal things, which is very good. But the example that Alan said, which I think is a great example, just a basic list, like if we could have an export from our WordPress sites so we could do the stuff we talked about many times. How difficult is it for us to be able to, let's say, six seven eight people to log in to a thing and share that VR object experience? While we're not there in any other sense, sorry for repeating myself, it's hard for me to state the question properly.

Brandel Zachernuk: [01:22:02] No, no, that's fair. So, you know, the substrate that sticks Google Docs together so we can we could all be in a Google Doc in VR together and use it in Oculus Quest, but that's not special. Like you mentioned, I'm not aware of. So, so so in principle. But given that you can do that, there's no reason why that can't also facilitate the construction of some kind of shared thing. I'm not aware of. Maybe, maybe, maybe that workspace was a of workspaces or whatever that that may have the ability to do that. But I'm simply not aware of a of of an environment where people can create like that and and be co-

present at the same time. You've got Gravity sketch, you've got tilt brush, Google abandoned TED thresholds now open source. I think so. I'm not sure how people get hold of it on Oculus Quest these days. But yeah, I'm not aware of multiplayer and those kinds of environments because I don't think that people are aware of the sort of the transformative impact of having multiple people involved in making those things, especially perhaps Frodo.

Adam Wern: [01:23:16] Or are you looking for for a thing where you can watch the same object kind of a day thing, a document object or a collection without manipulating in in real time? Or do you mean where we could edit it or update it together without being there as avatars or anything?

Frode Hegland: [01:23:36] I think both, and I think Zoom is a good model. You know, one person shares a screen at a time, so we could have one person handing off control to another person. That would be OK in the beginning, but I'm making the assumption that Apple will announce a VR headset in roughly a year and Brandel you haven't said anything on this. So this is purely for the record that this is my perspective. I may be wrong, but that is strongly what I feel because of Monterrey and other Apple innovations recently. So I think when they release, they're going to rely on FaceTime. We will be in FaceTime, in VR. Clearly, I think, and it will be connected to all the other devices. So it will be you still keep your laptop or your phone or whatever, and then you do other things with your VR, AR glasses. So I think that is really important and useful for us to try to develop. I mean, if it's expensive, maybe we if we can really clearly specify what we're talking about, maybe we can get some funding for this where specifically Adam and Brandel, because you're the most making person at the moment, you can have a thing you have made and you can share it with us in VR. We play with it. And then maybe for the rest of the conversation, we go back to 2D. But it for one of us to go in one at a time in a Firefox cobble together. Yes, it's really nice for hobbyists, but to get it to the next level, this infrastructure is key, right?

Brandel Zachernuk: [01:25:06] Yeah, I think you can cast in Quest, certainly you can cast to a phone or a local TV and display devices, so I haven't I haven't tried to cast to my to my computer, but but that's certainly an option in terms of getting other people at to debut of one person's special stuff. So, so yeah, we we can I can definitely take a look at that. My my, my goal this year, one of the things I'm trying to figure out how to do and how, how I can not be obliged to do all of the learning to make it happen is is to get a good boilerplate. So Adam, I'm not sure if you've used my extra boilerplate, but it's the basis for all of my experiments. But what I want to do is get a good multiplayer boilerplate so that I can can, just, as you say,

free to spin up any, any dumb thing that I want to have multiple people. And that slow mirror thing that I've been doing is sort of toward that end, being able to kind of play multiple hand figures with multiple tracks of data.

Adam Wern: [01:26:16] Yeah, I'm looking into that right now how to make, I think, going just by a web socket and not doing the whole web or whatever. There are PC thing, but just be a. Sending that mandate and head data over could be a first step, I think. Yeah, yeah, yeah.

Brandel Zachernuk: [01:26:40] Then you at least get back and if you because you can use any other audio channel, things like we could actually be on a zoom for audio and have headphones that aren't in the quest and then would at least be able to get that motion data. Yeah, I'd be totally on board with that. That would be really interesting. Yeah, because because yeah, I think you're right, Frodo, that that should be easy and that that would be really valuable and transformative to be able to kind of prototype with that environment and have multiple people kind of observe it at the same time. I'm not aware of a of a of a commercially or otherwise available solution at this point, nor am I aware of other people recognizing the need for it sufficient to the point where it'll land and anytime soon. Just deeply, deeply disappointing. But I'm very, very relieved and glad to see you're at it at a mature.

Adam Wern: [01:27:31] Yeah, I mean, I think we could bolt something together here having a small server that pings our activities together. And also if it's few use or I think we could, we don't need a very fancy structures for having like multicast. Yeah, yeah. And editing and editing things together. It could be like old school multiplayer where you could step on other's toes and there is no good merging, but you just see where they work and don't work at the same place at the same time. And that could be good enough. Yeah, yeah, I can. Like in real life, you can't you can't just step into someone's base and fix a dinner. They will be angry and they they do their thing and you'll see that they work there very clearly because they occupied that physical space. You can take a step back and work on other things. So it's similar to a kitchen with VR.

Brandel Zachernuk: [01:28:31] Yeah, yeah. I don't know if everybody saw a slow mirror, but this. That's the YouTube video that I linked last week, but you can use it yourself and sort of playback, but also save those files such that you can open them in Blender, which is quite fun for being able to kind of do that. And it useful for understanding what might be transmittable in order to to be able to get somebody else's live playback. Live performance

playback remotely because it shows what the data manifest needs to be. It's just a bunch of numbers which that it's the numbers on how to rehydrate it.

Mark Anderson: [01:29:05] Do most of these things? You're pacing Brandel. Do they need chrome or will they work in Safari?

Brandel Zachernuk: [01:29:11] So love their quest.

Mark Anderson: [01:29:14] Oh, I see.

Brandel Zachernuk: [01:29:17] It's so I mean, if you if you get somebody's performance file, then you don't think either you should be able to just click on a disk and then open it up and see it. Similar to that, put it in sketch. So, so the end result is something that looks like this, which you should be able to see in safari or whatever is missing here is just a performance summary and moving their hands. My hands around. Ok. But you get that that kind of data such that you can kind of. So the vision for that is once I know, once I knew how to do that, save record load, play it, play out of spacial, remove play.

Mark Anderson: [01:29:55] Every time I see I see this, I was think that thing that in principle area where the guy sort of taking over the chips, going on on the emplacement and he says, you know, just getting my hands. But the reason I put my hand, I was just, I just in passing. It looks back right now when I was listening to and talking about lists and being able to sort of decompose some and or in a sense, being able to have a tactile interaction with their information. And this speaks this immediately speaks back to me, to the community I've been in it and knowledge tools which people know things that tinderbox. And one of the things is people love. There are the open ended maps, you know, because if you've only ever known a graph, make a mind map. It's quite liberating. But the the and the explanation I sort of always give to people is, well, think of it like a jigsaw. You know you you may you may have the picture, you may not. You have box. You probably got all the pieces. You may not well, you tip out the pieces and you start sorting, you know, probably sort them. The pictures are on top kind of thing and the patterns emerge. And I and I and and that sort of behavior seems quite natural and it's interesting a lot of people in Leicester never use the jigsaw.

Mark Anderson: [01:31:09] At that point, the metaphor works quite strongly for them, and they can map the entire thing. And I I can already see that sort of behaviour of sense making.

Within a 3D space, and it doesn't really matter, particularly what the objects are, because the way that you will effectively construct your workspace, the objects that you use will have a meaning for you. You know, that's an implementation problem. But but you know, I can I can see that working. But this ability, therefore it frees what it frees this up to do is to do the bit that we still find hard to simulate programmatically, which is the the associative linking that we do seemingly rather well and haven't yet sort of worked out into algorithmic terms. So I find that I find it a really another strong reason because right now, as you say that although the game is the interesting part of what people see at the moment, it's the ability to interact with the information, the text, the ideas that I think is the real growth space in due course without, you know, which doesn't undermine the recreational value. But I just think the societal uplift that will get out of there will be more in these other features.

Frode Hegland: [01:32:32] Right. So on the website, I've added on the front page at the bottom there, it says VR resources and then you can go by by Brandel and by Adam. We haven't done anything by you yet, Adam, but it's there ready for you to be tagged. So just to by Adam as one word, and it'll be the same you. And I also have a as you can see in the chat, I link to what Brandel just said. So whenever you're in an Oculus, just click and go. So then I have the bigger issue, which is what I wrote above and only just now entered. So what we are actually inventing is not a metaverse that is purely a branding term. We are reinventing the internet. That is what we're doing, right? Because what? What is what is internet? Internet is a network of networks, right? That is what we're doing. So I'm wondering if this is something I should more aggressively talk to vent about his perspective, not just for headset VR, but as Brandel points out, really? Well, this is a multiple way of having multiple dimensions. That's just one of it. And if we can, then maybe I don't know about Vue spec. No, no. Ok, let me get this very, very clear to my very dear friend, Marc Marc. We have to get you an Oculus.

Brandel Zachernuk: [01:33:51] Oh, yeah, yeah, yeah, you have you at least have to try it, I mean,

Mark Anderson: [01:33:55] I think there are practical issues, but but

Frode Hegland: [01:33:59] We'll solve the practical issues because you're a super clever person and I love you dearly. But when it comes to the emotion of this, it's like a ten year old talking about sex. Right, and that's a year ago, so I'm not being arrogant by saying that, you know, it's just a prescription.

Mark Anderson: [01:34:15] Mine. Oh, I'm just I'm about plus two and a half, so I basically, you know, middle aged reading distance degradation that's used to have in my young seem lost their 2020 eyesight. Certainly that's settled. But now I'm a bit of a stigmatism. But nothing, nothing. Nothing expensive, thankfully.

Brandel Zachernuk: [01:34:36] Yeah, that's good. So you can put four glasses inside, but you can also get prescription drug pens as well. So so in practical terms, if that if those are the issues, then that's not it.

Frode Hegland: [01:34:48] That's something to look at. I'm researching that mark. I'm not sure what I'm going to do, but what I'm what I'm saying is like, Adam pointed out, sitting down and being moved in VR is more nauseous than yourself moving in VR. All these different things that you just I. No, no, no,

Brandel Zachernuk: [01:35:08] I don't I don't see much of a future part. I think, you know, a Half-Life Alyx, you know, the top rated absolutely hands down best sort of entertainment experience in VR by default has Blink Teleport, which is where you you move by, by, by instantaneously moving from one location to another of your own choosing, and you're able to free move to the extent that your space provides for you in that. But you don't. You never moved. And they have the options there, but they should come with flashing warning signs for how sickening it is, and I don't think that will ever go away. Frankly, I think I think the room scale VR is the answer to that where you have traversable spaces that you're able to slide that over effectively for it through blinking to one place, to another to another. I mean, there are some, some there's some really interesting work wisdom draft where if you if you constrain the effective field of view for a person while they're actually locomotive, then it reduces the amount of motion sickness. But I think, yeah, it's such a deep problem because of how tightly wired our vestibular apparatus are to our to our visual motor system that we effectively won't get a solution to it that I can imagine until we can do crazy gross things to stimulating, directly stimulating parts of our our nervous system in ways that we're not comfortable with today.

Frode Hegland: [01:36:33] Yeah. And that's the kind of things that we're learning as a community that you just until you're there, you just don't feel it. Adam.

Adam Wern: [01:36:41] Oh, that is why I think it's good. A good starting place is kind of doing the sphere around you thing. Yeah. And and that has other benefits as well, because it translates pretty well to both AR and VR. You can step into the VR world completely with whatever background you want, but also at some point, if we have heads up display or or area glasses or anything we could like, overlay that sphere in the real world and and have us quite similar interface. And that also works quite well on the on the flat screen as well, where you don't have to navigate far and walk away, just zoom around or look around. That is. So I think it's a good starting point to do that kind of near near interaction.

Frode Hegland: [01:37:32] Oh, absolutely, Adam. I have to go in a few minutes. I have to pick up the family. It's a bit cold here. I see you have your hand up again, Mark. But yeah, very quickly.

Mark Anderson: [01:37:42] Just to explain, the reason I use the term view spent was to make an angle Barton sort of take on this. What I really was thinking of is that picture where it's Tim Bale and Vint Cerf and one saying I didn't invent the internet. I said I didn't invent the web. I mean, for a lot of people today, the web is the internet, and the only distinction I was really making was, I get I get where you're going. I just I was perhaps just being slightly pedantic in that. So it's valid, but it's it's what it's doing is it's opening up another aspect. So it all sits atop the internet. So it's it's more that it's an, you know, you could say it's an enhancement. I mean, you know, whether we want to call it new and different or

Frode Hegland: [01:38:24] I would call it much more. I think we're

Mark Anderson: [01:38:26] All on the same page.

Frode Hegland: [01:38:28] I think we are and I don't think anybody is trying to sell anyone on anything. It's just it seems the shift for me is this like the platonic ideal? Or you could call it the natural world. I think it's much more natural in VR. But I also completely agree with Adam's set down. You know, when I'm in VR, when I'm doing work, unless I'm building a ship, I don't want to walk around. I want to set. I want to have my normal interactions with my laptop and screen because that's what the body is for. Yes, things up here. So having the spherical thing completely agree. Yeah, it makes absolute so much sense.

Adam Wern: [01:39:04] All right. But standing, I really feel liberated by standing in a spot,

working with my yeah, leaning a bit, working with my hands a bit more freely. I think I don't think we should constrain it to sitting, but not just moving around in worlds too much, much I think standing, it's over and I think it's good for us as well. I really felt that it felt liberating working with a computer and not staring at a small phone or sitting in front of a computer. I felt that liberating, standing up and moving.

Frode Hegland: [01:39:41] Oh yeah, I agree with you, Adam, both for depending on what kind of work and this is what we really have to experience. But also, of course, you know, like the health games, we have to do this stuff. Hang on there in Wimbledon already just off the tip. Sorry.

Mark Anderson: [01:40:05] I'll just say I remember the first time I managed to get a really long telephone cord because I do find it easier to concentrate on the call standing up. I used to be able to when I found I could buy them from the states where you have this phone, where you can walk half way through the house on the way before we had wireless phones. That's such a liberating thing. Plus, the only place in my house where there seems to be no cell phone reception is that at my desk.

Frode Hegland: [01:40:30] Bizarrely, the guys I got to go, I'm going to let this run you. I want to spend another couple of minutes.

Mark Anderson: [01:40:41] We better let him get it.

Frode Hegland: [01:40:44] Oh, hang on. Edgar says he wants to use the bus. So OK, I'll come down a little bit. That's the fun thing about that age.

Mark Anderson: [01:40:53] Things that you've trained him well.

Peter Wasilko: [01:40:56] Well.

Frode Hegland: [01:40:58] I think his mother trained him extremely well with, Oh. What do you want for dinner? Well, what do we have? Right, OK. That's right. It's not pizza, pasta. Let's go out.

Mark Anderson: [01:41:12] That's right. That's.

Frode Hegland: [01:41:15] Right, so, yeah, please do some bio stuff on the website, I can't remember if you all have log ins, you should. It's so, so many issues. Let me just say.

Peter Wasilko: [01:41:30] The email, the login passwords to us or how does that work?

Frode Hegland: [01:41:37] It's the system should have done that. Oh, Brandel, I don't think I know. Do you not have? It's so awful. There's some kind of a bug in WordPress. When I try to make a new user, it's and I type in, I suppose, the initial password that says they don't match

Mark Anderson: [01:42:02] This is how you can tell it was written by a human.

Frode Hegland: [01:42:06] So actually, Peter, you should have been email. They did not get an email and you mark

Mark Anderson: [01:42:13] The short check. Just just just just this recently. Minutes ago? No.

Peter Wasilko: [01:42:22] What was the sending address?

Frode Hegland: [01:42:25] Sometimes I'll think, oh, OK, Brandel, check if you got it, because then you'll be able to say the sending address. Adam, you are not in either, I think, yeah, I'm in. Really? Yep.

Brandel Zachernuk: [01:42:41] Cool. No, it's it's it's word. Oh yeah. Yeah, you probably WordPress. That future tech lab. And it went to my promotions folder in Gmail. Ok.

Mark Anderson: [01:42:52] The wood press at. 11, what we do know came a few days ago, it's probably in my eye. I'll get right on that pile.

Brandel Zachernuk: [01:43:12] Yeah. Cool. No, thank you, I'll put a put something because that is another frustration with my earlier too long to type. I do it, but I do it grudgingly. Or if you you can actually attach you enable developer mode on your Oculus and you can enable

inspection in chrome remote inspection with a USB cable attached so that then you can inspect the page. It's really essential for doing any debugging and things like that, but also very useful for being able to then just type in the URLs on your computer to be able to put in. But you can also connect on Bluetooth keyboards these days as well, which is pretty neat.

Frode Hegland: [01:43:48] Oh, that's interesting.

Mark Anderson: [01:43:50] Also, I'm very happy to put it also pointed to the data set that all the current public. Yes. Yes, it's a data set that I gave to Adam. Also Brandel. If you want that, I have more information because I did things like we actually gendered all the authors because we were we were trying to report on, you know, destroy some, debunk some myths about things. But obviously things like that and data sets are a tad careful about who I share with because although it done with the best of intent and I think fairly accurately, it's the kind of thing that can get, you know, escalate out of hand. Absolutely.

Brandel Zachernuk: [01:44:27] In this world. Oh, this is not about your books that you're Oh, no,

Mark Anderson: [01:44:31] No, no, this is sorry. This was about the data set. So the stuff that Adam did previously, those JavaScript visualizations. So basically, I manually gone and taken what was in the ACM DLC for the Hypertext Conference, which wrote about 30 years. And what I've done is I've taken, I've abstracted all the anomalies and all the authors. I have done all all the in conference citations because it's not accurate within, you know, because basically what what the what the ACM has got and that's not, you know, to speak ill of it. They have got 30 years of the best the OCR could provide, and it's a bit flaky at the beginning, and it's not actually that great towards the end, to be honest. So what I've done is taken that and then I've done it all in tinderbox that it happens, but it doesn't need to be done there, done that. I've also got all the so I've got all the authors as individuals, I've got all the key author keywords, which are interesting it over, I think 60 percent and nonce terms, they occur once. Well, that tells us that humans are pretty bad at key wording.

Frode Hegland: [01:45:39] So now I do have to go and that dataset is really cool and useful. So that has to be shared. Please put something on the website and a discussion thing about that mark so that we kind of go via that. If you want

Mark Anderson: [01:45:53] To, you know, I'll it. I'll email Brandel Brandel. Some slightly better, better copy of it because a bit more data so good.

Frode Hegland: [01:46:02] And then also, I'm about to put a sentence into chat here. Tell me if you agree with the sentence. So we have agreed to work on a quote unquote manifesto of access for how VR environments and objects should be transportable and shareable. Is that right? Because if we work on a little document like that, then I can send it to Vint and others and say, we think this is important. We are working on aspects of this and then we can sign up some really interesting people to be our advisors, to actually be our advisors and to lend their weight to this.

Mark Anderson: [01:46:38] Yeah. I didn't. In passing a word to leave her in there, if it isn't, there is internet because what we're doing is we're except if in doing this, we're expanding the ability of the existing system, which I think is something that

Frode Hegland: [01:46:54] I completely agree. I've added it. Brandel, Adam and Peter, do you feel comfortable that we should try to write something like that? Or don't you think it's useful?

Brandel Zachernuk: [01:47:02] No, I think it's useful. You said the environment as in virtual environment.

Frode Hegland: [01:47:08] I just put it in chat so we can edit that sentence together if you want.

Brandel Zachernuk: [01:47:18] Yeah. So rather than the environment, I may lean more towards spatial or or multidimensional. Just because it's, you know, virtual reality at this point refers to headset VR. Back in the day, there was such thing as fish tank VR and various other kind of manifestations, caves and. And I don't think that they died for for reasons that are inevitable. I think that that could come back on the scene. And I think that that what I like is dimensions and human scale and all of those kinds of things. So so, so changing that to, yeah, spatial is good. Objects to be transportable and shareable by the yeah. Yeah, yeah, I mean, I think I think that's

Frode Hegland: [01:48:09] So for those sorry.

Brandel Zachernuk: [01:48:12] One thing, as you were talking about about the the web, you said that we we weren't making the metaverse, but we were talking about something. We're actually trying to make an internet for rich worlds. I think that the the fact that what we are, what we are considering is a little bit more opinionated than that is a useful point in our IT to consider in terms of what that means. The discussion should be should be centred around and if it's to do with the capacity for information processing or relating text to itself or each other, then those are those are meaningful sort of places to plug in there as well. Because the web site is a platform that has so few opinions about what it is and what it's for, that it means that it's very difficult. You know, it's like I've talked to a bunch of people about what is better word processing, and they've all concluded that because word processing sort of facilitates so many different tasks, they can't see a way for it to be better. That means they're lacking in some measure of imagination, and maybe I should get better friends. But the broader point is that until you start talking about a more specific set of writing, then it's difficult to envision a better set of tools. If you're talking about screenwriting, then final draft does a good job. Scrivener does a reasonable job, as I understand for fiction and some other things. But, but yeah, so like if we can, we can winnow that down to something that's a little bit more specific to what we really we really care about. Then I think that that's all the more meaningful and we'll be all the more powerful to the to the advisors and the mentors who are aware of the value and benefit that this comes from that specificity. You know, the venture capitalists are replete with are awash with people who are reinventing X writ large rather than the really specific thing that they ought to be actually after. So, yeah,

Frode Hegland: [01:50:01] I think that is great and very useful. So if you can all consider over the weekend writing something and just put it in a discussion blog thing, we can then spend a few minutes on Monday, maybe putting it into a singular piece and then we can link to your original pieces if they are longer than what we have in the brief piece. Then we have a bit of a mission statement because I think the object that goes into this that we're talking about could be if we talk about a multidimensional graph. I mean, remember, the web was initially a phone catalog, right? So if we talk about something as specific as you're saying, here is a new way to view lists and relationships, keep it really specific and almost boring, and then explain how it can go into many things. So it's not just vague talk. Does that make sense? Yes. Ok. My family is on the bus. Very traditional, but it is multidimensional. This is wonderful. I look forward to Monday. Bye, guys.

Brandel Zachernuk: [01:51:08] Thanks, everybody. Fun.

14 January 2022 Chat Log

- 16:09:01 From Mark Anderson : <https://goodreads.com/mwra>
- 16:10:14 From Peter Wasilko : It looks like it need one to set up an account to view the list.
- 16:10:20 From Peter Wasilko : *needs
- 16:11:36 From Mark Anderson : Argh! Another reason why we can't have nice things.
- 16:12:13 From Mark Anderson : My earlier Amazon 'likes' based lists has the same content.
- 16:12:16 From Peter Wasilko : I think a Zotero Group might be the way to go.
- 16:12:37 From Peter Wasilko : At least vis-a-vis sharing citation until we get our own back-end datastore in place.
- 16:17:48 From Peter Wasilko : We should think about a typographic look and feel to make the cite more futuristic feeling: <https://typesetinthefuture.com>
- 16:18:30 From Frode Hegland : VERY concerned about messing with Wordpress look and feel at this point. Hopefully we can figure out useful functionality first...
- 16:24:07 From Mark Anderson : I like a pared back presentation - let the content and ideas shine rather than cool viz design.
- 16:25:34 From Mark Anderson : For late joiners, my 'research books' list on goodreads: <https://goodreads.com/mwra> I've since discovered that apparently you need an account there to read it. Oh FFS.
- 16:25:44 From Brandel Zachernuk : Ooh thank you Mark
- 16:25:57 From Alan Laidlaw : Lol mark
- 16:27:06 From Mark Anderson : As I used Amazon ingest to GR, it includes all my trashy Sci Fi reading. Oh well. Privacy is so 20C. 🙄
- 16:29:51 From Peter Wasilko : Web Components are our friend on the prototyping side.
- 16:30:18 From Alan Laidlaw : Agreed Adam. I see newsletter as more fodder for further text epxeriments
- 16:37:48 From Frode Hegland : Getting ice for coffee so walking and listening...
- 16:39:09 From Peter Wasilko : @Frode, we could just pick a more distinct Google Web Font than the WordPress default and drop it in via css, no heavy lifting or anything we can't swap out in a second.

16:39:19 From Alan Laidlaw : Pls help me w newsletter, Rafael?

16:39:38 From Peter Wasilko : <https://fonts.google.com>

16:40:21 From Alan Laidlaw : Excellent point

16:40:36 From Frode Hegland : What fonts would you prefer Peter? I think many can easily be a bit of a gimmick...

16:40:42 From Frode Hegland : I like Times and Helvetica !

16:41:20 From Alan Laidlaw : I didn't quite grok the VR ownership email

16:41:37 From Frode Hegland : We'll have to discuss in group then Alan! :-)

16:42:18 From Alan Laidlaw : But can't devote time to crawling through email. This sadly applies to most all other media. Haven't read FoT book at all. Ive listened to half of digital planet

16:42:47 From Peter Wasilko : I would go for one of the "Super Families" with Serif, Sans, and Mono variants, so if we want monospace code we can use the mono version, and the sans version for menus, and serif for body copy.

16:44:10 From Peter Wasilko : Recursive is a really interesting variable sans font that has the same character metrics across unsettled, bold, and italic variants allowing you to use CSS to animate font weight without it disrupting any line breaks.

16:44:32 From Peter Wasilko : <https://fonts.google.com/specimen/Recursive?query=recursive>

16:44:49 From Peter Wasilko : <https://www.recursive.design>

16:45:11 From Peter Wasilko : I am using it for all my menus and button labels in my web projects.

16:45:38 From Frode Hegland : I'm not really ready to look at fonts and design yet but we will :-)

16:46:37 From Adam Wern : Re: Journal. Will there be any off-the-record/journal discussions? Will email replies go in there unless you say no?

16:47:03 From Alan Laidlaw : Yes 100%

16:47:04 From Frode Hegland : We'll have to decide Adam.

16:47:24 From Frode Hegland : Might be posts on Wordpress and comments and if you comment on Wordpress rather than email then it goes in

16:47:24 From Peter Wasilko : <https://fonts.google.com/specimen/Alegreya+Sans?query=alegreya> <https://fonts.google.com/specimen/Alegreya?query=alegreya> <https://fonts.google.com/specimen/Alegreya+Sans+SC?query=alegreya> <https://fonts.google.com/specimen/Alegreya+SC?query=alegreya>

16:47:24 From Alan Laidlaw : Person opinion. Much of it should be off-record.

16:47:27 From Frode Hegland : What do you think?

16:47:46 From Rafael Nepô : @Alan Let's have a quick 1 on 1 to talk about the Newsletter?

16:47:59 From Alan Laidlaw : Yes, great

16:48:00 From Peter Wasilko : The Alegreya fonts are my go to for Print projects because they integrate very tightly with LaTeX.

16:48:15 From Frode Hegland : Peter. From Hamilton: "Not. Yet". ;-)

16:49:57 From Frode Hegland : What projects should we list on the site people?

16:53:08 From Peter Wasilko : Ah whither CyberDog

16:53:54 From Mark Anderson : "That's just a [....] issue", said all too often.

16:53:55 From Peter Wasilko : My Principle of Severability!

16:54:27 From Alan Laidlaw : I love VR/XR/etc but I'm wary of, say, porting the journal to Vr. There's a ton of interesting doc experiments on the way to an (abstract, ideal) VR experience without limiting ourselves to a very early industrialized version of VR space

16:54:57 From Alan Laidlaw : 100% mark. What are we trying to solve?

16:55:12 From Peter Wasilko : Here is a relevant blast from the past: <http://www.moocows.com/docs/>

16:55:39 From Alan Laidlaw : This also speaks to the \$\$ friction. money spent should lead to a problem we're trying to solve

16:58:09 From Rafael Nepô : Bug Keynote people about SVG support! XD

16:59:23 From Frode Hegland : Seen the Knowledge Navigator video from Apple way back?

16:59:34 From Rafael Nepô : Yup

16:59:40 From Peter Wasilko : https://www.researchgate.net/publication/226766649_On_the_linguistic_nature_of_cyberspace_and_virtual_communities

16:59:50 From Rafael Nepô : Siri

17:00:55 From Peter Wasilko : Each selection in the document should be an entry point into a shared collaboration space.

17:01:40 From Peter Wasilko : I feel rather substantial.

17:01:50 From Rafael Nepô : https://www.amazon.com/Super-Normal-Sensations-Naoto-Fukasawa/dp/3037781068/ref=sr_1_1?crid=6NNLN038TA4M&keywords=Super+Normal&qid=1642179679&srefix=super+norma%2Caps%2C198&sr=8-1

17:02:07 From Rafael Nepô : Super Normal: Sensations of the Ordinary by Naoto Fukasawa and Jasper Morrison

17:02:23 From Rafael Nepô : https://www.amazon.com/Design-Everyday-Things-Revised-Expanded/dp/0465050654/ref=sr_1_1?crid=2BY89YZTLU5ER&keywords=Design+of+everyday+objects&qid=1642179737&sprefix=design+of+everyday+object%2Caps%2C172&sr=8-1

17:02:32 From Rafael Nepô : The Design of Everyday Things by Dan Norman

17:02:36 From Frode Hegland : Think I bought that one Rafael, at least like it

17:02:41 From Frode Hegland : Super normal

17:02:46 From Peter Wasilko : It would be interesting to think about what would could do with a forearm Gauntlet form factor.

17:02:52 From Peter Wasilko : *what we could do

17:03:40 From Alan Laidlaw : Point about Vint and larger network. That's another invisible attribute we have and why I'm on the side (just barely) of doing a newsletter. Its a way to convert some prestige into leveling up social credential which can be converted into demo audience, passive income (to cover costs, etc)

17:03:50 From Peter Wasilko : <https://3dmixers.com/m/170016-predator-gauntlet-right-arm>

17:06:30 From Mark Anderson : RE Rafael's point, we now read *far* more than writing. That inevitably affects how our (collective) facility with writing evolves. It's something i'm reflecting on having just finished Fischer's 'The Future of Writing'.

17:10:41 From Frode Hegland : I find this very difficult. Waiting for Alan then I'll comment, not sure about all of this... Gamers?... Yes, but also people who don't know they have a problem, in terms of fake news etc.

17:10:42 From Peter Wasilko : <https://softhruf.love>

17:11:05 From Rafael Nepô : Mark, It's a trio! History of Reading / Writing / Language!

17:11:55 From Mark Anderson : Rafael, yes!

17:12:39 From Frode Hegland : Arabs tried to sell paper to the west for a long time, they didn't take until they re-discovered 'science'

17:12:43 From Frode Hegland : It's a big issue now

17:13:30 From Rafael Nepô : I have to send you a photo of my brother climbing a mountain and cooking salmon. XD

17:13:37 From Frode Hegland : I would LIKE to augment the 'caring knowledge worker'. But I think it's more important to augment the average person by being their for their

curiosity sparks

17:13:42 From Brandel Zachernuk : Bill Buxton says “Every interface is best for something and worst for something else”

17:13:50 From Frode Hegland : indeed

17:14:21 From Mark Anderson : @Frode - yes.

17:16:51 From Alan Laidlaw : Ah yes, that was the other point. About product, solving big pain problems and granular specificity. I loved the story of the demo at the opening of Creative Selection.

17:17:01 From Alan Laidlaw : Such a tiny tiny affordance

17:19:20 From Alan Laidlaw : To Brandel’s point - agreed. its also fair to say that ML is a totally different (non-pixel) kind of computing. That is to say were on the cusp of several radically different kinds of computing - in many ways taking us back to conversations from 20s-70s

17:19:30 From Mark Anderson : I also like the aspect of an N-dimensional view of data, which VR offers access towards.

17:20:07 From Rafael Nepô : https://miro.medium.com/max/700/1*3PPfr1EWNUit6BTg4XOFRQ.jpeg

17:20:15 From Alan Laidlaw : (B Russell > Shannon & Turing > Norbert W > V Bush > D Engelbert > R Stallman)

17:20:16 From Rafael Nepô : Reminds me of this photo 😊

17:20:26 From Adam Wern : Using virtual hands has made me much more positive towards AR/VR

17:20:38 From Frode Hegland : GAMERS!

17:20:49 From Rafael Nepô : <https://www.researchgate.net/profile/Katina-Michael/publication/260582329/figure/fig12/AS:296698678136838@1447749885849/Self-portraits-of-Mann-with-wearable-computing-kit-from-the-1980s-to-the-1990s-Prof.png>

17:21:15 From Mark Anderson : ML scary now as it is way outstripping our ability to mechanically understand the semantics of the (text) data from which we are ‘learning’.

17:22:24 From Alan Laidlaw : I want to BUILD THAT

17:22:29 From Rafael Nepô : Totally want to talk about games, but I’m going to have to leave. 😞

17:22:31 From Peter Wasilko : We might need to co-design a game with that!

17:22:35 From Rafael Nepô : See you all on Monday. 😊

17:22:42 From Alan Laidlaw : Re ML: <https://twitter.com/ZachWeiner/status/1481375696349970435>

17:22:46 From Mark Anderson : Bye!

17:22:55 From Alan Laidlaw : Rafael, I'll email you

17:23:26 From Mark Anderson : @Alan, just clipped that to my drive earlier today.

17:24:03 From Alan Laidlaw : I'd love to reimagine lists in VR. phones have collapses all interfaces to lists and it kills me

17:25:23 From Peter Wasilko : Have a look at this: https://infovis-wiki.net/wiki/Perspective_Wall

17:26:11 From Brandel Zachernuk : Oh I haven't shared this here - too long to go through now but check it out: <https://www.youtube.com/watch?v=bXGmoH5vIwg>

17:26:16 From Peter Wasilko : <http://delivery.acm.org/10.1145/110000/108870/p173-mackinlay.pdf>

17:26:40 From Brandel Zachernuk : Frode has seen it I think - hand poses for different modes of interaction

17:31:11 From Peter Wasilko : We had that sort of collaboration in MediaMOO back in the day.

17:31:41 From Peter Wasilko : There were Gopher pads and shared editor slates.

17:32:40 From Peter Wasilko : Of course it was just pure text, but the sense of shared immersion was quite compelling.

17:32:46 From Frode Hegland : Brandel, is it 'easy' to share a VR space 'object' at the same time, while we talk on 2D screen zoom?

17:35:16 From Alan Laidlaw : I must be off

17:35:20 From Alan Laidlaw : Cheers all!

17:35:24 From Frode Hegland : Bye for now!

17:35:30 From Peter Wasilko : There are so many dead research links on the web. :-(

17:35:56 From Peter Wasilko : I wish we could track where things go when they move.

17:35:59 From Brandel Zachernuk : <https://zachernuk.neocities.org/2022/slow-mirror/>

17:36:55 From Brandel Zachernuk : <https://sketchfab.com/3d-models/performance-from-oculus-quest-webxr-cf6dd1a24955474f9f034cd43271>

17:38:20 From Frode Hegland : We are not talking about inventing or creating a metaverse but we are actually trying to make an Internet for VR/AR rich worlds. Should we get Vint and more on board? Meet with him here for this?

17:38:21 From Frode Hegland : <https://futuretextlab.info/2022/01/14/slow-mirror/>

17:39:13 From Adam Wern : No, but we may be about creative a Docuverse, and perhaps in 3d

17:39:22 From Adam Wern : create

17:39:43 From Peter Wasilko : @Adam, exactly!

17:41:03 From Mark Anderson : or a new viewspec for the internet?

17:42:19 From Peter Wasilko : I have a funky astigmatism layered on top of my nearsightedness.

17:46:50 From Peter Wasilko : What about external volumetric displays?

17:47:21 From Brandel Zachernuk : Peter: Yes exactly - once the need is proven there are a stable of speculative technologies waiting in the wings

17:47:29 From Mark Anderson : I normally stand and walk when on non-video calls. Oddly it helps concentration

17:47:50 From Brandel Zachernuk : <https://zachernuk.neocities.org/2021/deep-reader/> has the least worst implementation of my text-to-VR library in it too

17:48:08 From Peter Wasilko : https://www.opli.net/opli_magazine/eo/2017/the-voxon-vx1-3d-volumetric-display-now-commercially-available-july-news/

17:50:32 From Brandel Zachernuk : wordpress@futuretextlab.info

17:54:30 From Frode Hegland : So we have agreed to work on a 'manifesto of access' for how VR environments and objects should be transportable and shareable via the Internet

17:54:45 From Frode Hegland : So we have agreed to work on a 'manifesto of access' for how VR/AR environments and objects should be transportable and shareable via the Internet

17:54:56 From Frode Hegland : So we have agreed to work on a 'manifesto of access' for how VR/AR/Spatial environments and objects should be transportable and shareable via the Internet

17:56:32 From Peter Wasilko : I am into the WordPress system!

17:56:42 From Frode Hegland : :-)

17 January 2022

14 January 2022 Video

<https://youtu.be/vaurwpNz04Y>

17 January 2022 Transcript

Note: Accuracy of transcription and the assigning of speaker names cannot be guaranteed.

Please refer to the video in case of confusion or concern.

Alan Laidlaw: [00:01:05] Hello. Sorry, I couldn't get the record, except acknowledgement before I could unmute. That's funny.

Frode Hegland: [00:01:15] Oh yeah. I'll pause for a bit, actually and not rehash so.

Alan Laidlaw: [00:01:21] Ok, great. So I was I was thinking about why I hadn't read the email exchanges or any of your emails. Sadly, I mean, I'll read some of them and I'll read them in skin. But what's my hesitation? So many hands up with reading, and it made me think of Dorian Taylor's article agile as trauma. And it made me think that that actually, in some ways, reading is. Kind of like trauma or could be could be framed that way. When you ask someone to read something that you wrote in some times you are asking them to put more effort in than you put in to writing it. And this is where I think something like slack or async channels become really valuable, and maybe it hasn't been expressed. But that mode is understood to be conversation rather than right. All right. So when you're talking and using channels, it's like just go for what is being imagines, come out of my mouth. But an email format, it feels like, hey, here's the thing and the manifesto, perhaps specifically, here's a thing that has been composed now. I must deconstruct my thoughts on the have represented. You know, there's just a whole lot going on there to an unspoken request. So.

Alan Laidlaw: [00:02:49] A guessing maybe. All Adam was saying there is just like or what I think I should say is these things can be might be better suited to be worked out in a more conversational channel like the one we have right now or something that's async and then can

can lead to something that you can ask other people to to read and reflect on, right? But yeah, that's that's a that's what I wanted to share there. I think it's also why I haven't read so much of the material that's come out of this group. You know, the book and it's a it's a thing to think about and perhaps some of my. Devil's advocate devil's advocacy when it comes to the speaker series is that I'm working my way through Barbara Trevaskis book and I adore it, but I still put it down at times and let it kind of the concept sink in and I'll pick it back up in a month or two. You know? I'm not going to read a full transcript of of what these talks are about, and I know that's not the point. The point is to have something in the archives. But those are. Those are the issues I want to bring.

Frode Hegland: [00:04:13] Ok. I think I see many hands, but this is really important. First, a detail you all are you happy with the invitation email? Yeah. Ok. Where's that? I I think I invited you, I'm not sure I should have. And the other point is. Hang on, let's just. Actually, Peter, Peter, please go ahead.

Peter Wasilko: [00:04:38] Ok. I wanted to note just slightly before when Alan was talking that his comment about thinking about ways that we can be more effectively develop and code together and not email really resonated with me. And I also want to note that I've been thinking about responding to your email vis a vis the legal issues, but it didn't seem to me that email was the right forum, and I wanted to be somewhere between the formality of a formal journal piece and the informality of an email piece. And I'm still not sure exactly how to balance that. But the response should probably come as an author document with its own little visual media attached so that it could get slotted into the journal at a later point. With respect to law, a key consideration is that ownership isn't an all or nothing thing. The greatest invention in the area of intellectual property was the notion of being able to break up and fragment right along a bunch of different dimensions so that you can have distinct rights for reproduction reproduction in different media. You can have separate rights for building, follow on derivative works, and you can parcel out those packages of rights and subdivide them and sell them off in different chunks, either exclusively or not exclusively. So there's so much that you can do once you realize that you're not dealing with a single atomic, right? But really a spectrum of options. And that's why I find the Creative Commons licensing approach be particularly appealing because it does break out those different right elements as opposed to the monolithic licenses that are used in the open source community.

Frode Hegland: [00:06:23] Interesting. On the invitation, you're all OK with that invitation, because then I'll just send it. I should have sent that last week, but. One, two, three.

Mark Anderson: [00:06:41] Yeah, we're seeing for those who have not seen it, I don't think there's anything controversial. It is just basically the people asking to come to Bob Rose.

Alan Laidlaw: [00:06:48] Okay, yeah. By the way. Ok, good.

Frode Hegland: [00:06:52] Oh, Brandel is here. Good to see you. Relevant things. Mark has something and then just a couple of quick things.

Mark Anderson: [00:07:05] Throw in. Just I was thinking another another factor that I mentioned Fred, which is entirely due to our sort of global settings and quite apart from quite apart from our time zones, is the fact that especially at the end of the week, if we do something and sort of send something out after it, that's the beginning of the weekend, which means different things to different people. But it may. What that may effectively mean is that it's going to get answered on Monday, earliest and possibly on Monday in a different time zone. And that's kind of that's really difficult when you're on the sending end because you sent it with the thought that, yes, really in reality. I mean, that's just something I'm I'm reminding myself as much as anyone that know that that sort of thing. And I think I put up the article. So I put that back in for Brandel. Allan mentioned a guy called Dorian Taylor.

Alan Laidlaw: [00:08:09] That was the correct one. It was did I throw the link into the air about the four channel approach that I lost? It looks like I skipped that.

Mark Anderson: [00:08:16] Sorry, was that the wrong one that I put in?

Alan Laidlaw: [00:08:18] No, no. You're right, you're right.

Mark Anderson: [00:08:20] And I think I I sort of my eyes fell on the collaboration is yet more trauma. I thought, Yeah, hey. But one thing I I just sort of by way of partial summary of a of something that Fred and I kick back and forwards is I was trying to work out how to how to sort of slot in the things that we can practically do into the umbrella of the sort of higher level aim that we have. I think I'm probably of the camp that I thought I I think we are effectively making manifest. I know that word is sort of potentially toxic. And also it may also sometimes apply a bit more involvement than it's meant. So but I think we've we've we've crested that rise, so we'll leave that alone. But I was having an it's an interesting sort of

chicken egg argument with with Fred about the fact that so we're talking about, you know, how how we exchange in order to own something and move it across. You need to have something. And I might just the perspective I was coming from, we're different that I sort of think, Oh, well, okay, do we actually know how these things are defined, which sort of means in terms of their data format in a fairly lucid way because I'm assuming at the moment that pretty much every big player in the field is probably doing it differently just because no one told them they had to do it a certain way and they all have their their will have their side different aims.

Mark Anderson: [00:09:52] But that's one of the things that will constrain effectively the the implicit matter format or sort of VR matter like the visual matter we would give for text kind of thing. I think we're working towards because to a certain extent that that that's where it hits, that's where it hits reality. If the thing I've defined. You can't understand. Then no one knows anything because it's not going. And that might sound flippant. I don't mean it that way. It doesn't mean it doesn't. But I also totally. It doesn't mean the opposite, as it may appear that the data is anything that matters. I was just thinking about. It's this subtle interplay between the tools and the data, which which got me thinking about well, as well as exploring the some of the environments which, you know, Fred's been getting into and actually shared with me earlier, which is really interesting was, well, what sort of. What sort of data, to wit, TED textual data, because we are the future of text, can we and should we be playing around with to expose some of these edges? So when it comes to me naturally, because I think that's one thing I'm quite happy doing is sort of digging up globs of of information and getting them into a stand.

Mark Anderson: [00:11:22] My my, my, I suppose my task to myself is that I want to give something that they can use without breaking everything, which is not much data as you come to it in the first place. So they use one of the useful things I can do here. I may not be able to do anything with the data myself, but I hopefully I can give somebody something. They can tell you it so. To wit, today I found an amazing database basically compiled to stop people desecrating war graves. But it's every naval ship that's been sunk since, I think fifteen hundred up to the current day. So massive timespan really, really got. You can imagine around about nineteen forty somewhere it gets a bit heavy and there'll be lots of events and it's all it's all in locations. So there are reasons, things. So we've got temporal stuff. We've got Latin long and we've got other things, and I thought that might be interesting to explore. And also, it's sufficiently so far from what any of us do that it gets us out of worrying about whether the point is not, do I understand it? But when I look at this, can I make sense? And it

sort of speaks to me as exactly the kind of thing I imagine that VR might offer as something to do.

Mark Anderson: [00:12:31] Otherwise, I can look at a table that comes out of a spreadsheet. I might be able to make a graph, and if I'm really lucky, I might be able to make an interactive graph. And the other, the other. And then I'll show up. The other thing that came to me from that is that this to me now speaks really strongly of something that Freud spoken eloquently of in the past, which is sort of living documents. The data might not be in the document. Maybe the data might be referenced from the document, but in a sense, so I might try and say, Oh, look, I can look at the data underneath this and I can look at it in all these ways. And so part of that from the from me, for instance, growing data as well is what's there enough are there are the things that are needed if I want to play with a table, you know, an Excel spreadsheet in 3D. Are there more things are actually needed or not? And I don't know. And again, so I just thought that's another thing that we could usefully do, and I willingly offer myself up to sort of do some slave work on the data for that give over to frame.

Frode Hegland: [00:13:33] Ok, so earlier Alan was saying the long emails or the articles, why should he read it? I'm paraphrasing you, Alan, because I think that is actually a central issue of text, right? If you are talking about Wittgenstein or somebody famous and an authority, yes, you should invest the time and effort. But if you're talking about a colleague, why in the world should you do that? I think that's really, really important. I think I mean, I just submitted my thesis, which is, you know, many words and all of that. It's a ridiculous document. It is intended only to show other people that I can do stuff right. If I was going to make that useful, I would have to make it in many smaller bits and make it more hyperlink than all of that stuff. So that is why I don't know. Brandel Did you see the email that Adam replied to me this weekend?

Brandel Zachernuk : [00:14:26] Yes. And I read the parts of the amount of special, but it has disappeared at such point as I had managed to get the time together to read the whole thing. Yes, I saw the thread and I read, I read everything in the thread.

Frode Hegland: [00:14:41] I'm going to go off recording for a bit so we can discuss how kind of our workings in private. So that was a bit of housekeeping, and now we're back on, Alan wanted to talk about how he says as we started a good rhythm for us to to move forward.

Alan Laidlaw: [00:15:02] Oh yes, sure. And but does anybody else? There's been some hands up that have gone down.

Mark Anderson: [00:15:12] It's, you know, it doesn't need to be sequential. You crack on and pick up the earlier point and then we'll pick up the rhythm.

Alan Laidlaw: [00:15:16] All right. Thank you, Mark. You're a gentleman and a scholar or one or the other in whatever order. Yeah, I was thinking about the, uh, the nature of our conversations and the difficulty it is. That's understandable to sort of pinpoint what it is that we're about. And so an orthogonal approach to that might be to elect kind of mascots or rallying points that we can say, yes, this is one thing that we really love. We identify with this. We want more of this. And so in that vein, like, for instance, the book Creative Selection with Ken, I can't remember his last name. Cassandra, thank you. Evokes a lot of you know. I think the feeling of the group, the idea of the value of quick demos, quick impact, and that you can't solve all of the problems all at once. So so you actually I even think it would be worth going through, and I've been highlighting parts of it that are like, Hey, here's a lesson, here's a separate lesson. So we could spend more time discussing what goes into a demo, as well as the meta of a demo, as well as coming up with stories and what good things would be to either crystal ball or or it truly build. And the final point about that was. On the other side, on the on the other end of the spectrum. There's the VR, which in my mind's eye and I mentioned this in the email to me, VR and climate change are like, they're so close together in my head, which I know sounds absurd, but they're both inevitable. They're intertwined. We don't know what direction they're going to go. We don't know how it's going to land, but we know it's going to happen. And so. It limits a lot of what we can do, like we can't say, I think climate change is going to do this and therefore we need to do this. It's very like I feel helpless when I'm sure we all do. When it comes to climate change, what we can do is talk about it, come up with different ways to to break it down. Yeah, that's

Frode Hegland: [00:17:31] Ok. Sorry, Mark. And Peter, I just have to jump in there. Two of my closest friends, one was Doug. One Vince, right? And this is not me saying, Oh, brag brag. I was very lucky to get to know Doug and hence meant they could not have afforded to think like that. That's right, when the internet happened, there was a bunch of students making it there were always expecting the adults in the room. They never appeared. All right. Doug always talked about himself as this farm boy from Oregon, that's going to be a lot of stuff with Apple and Oculus and all these fancy things are meant to. Fair enough. But we

have an absolute obligation to do this because don't forget that the only people who will do stuff is people. We are people, right? It isn't out of our control. Of course, we have almost no say in this at all. But if we look at jumping five years ahead and looking back, we could have a really good discussion of what we should have done and what we should have done. We all agree in this group we need to write statements to clarify and inspire. So by the way, Brandel this new version of the article, please read it and I would love for you to contribute pieces of specific we need to do this. That would be amazing. And also, yes, we need to do demos. We need to. At this point, I think it's 50 50 demo and politics. The politics of it is to inspire and warn and get lots of famous people to say, Holy Moly, VR is going to take over our lives. We all need to do blah blah blah and the blah blah blah is going to dialogue. We're holding up. That's all. I hope you're not too offended by me saying, Alan. I think we have more power. No, no, no.

Alan Laidlaw: [00:19:09] I. I love that, and I have something to add to that, but I'll throw it in, chat everybody else. Go ahead.

Frode Hegland: [00:19:15] Yeah. Mark, sorry. And then Peter. Sorry, guys.

Mark Anderson: [00:19:18] Ok. Time to write things down because of course, we loop around nicely. I was going to say I think about the journal and something that's always struck. I was never lucky enough to meet Doug, but something there was sort of an interesting and I thought underwritten part of the story was the journal. Because can you look at the NHLS journal now? No, you can't. Yes, you can write well, you have

Frode Hegland: [00:19:44] The original hardware. That's an important thing. He kept it going to the very end. I think it's still available, but it hasn't been ported, so your point is still very important.

Mark Anderson: [00:19:53] So one of the interesting things that we're doing is just as a sort of matter activity almost without intending to. That's to be unkind to actually defrayed. He's made an awful lot of the running in terms of this, but it is the recording of what we're going along. It's fascinating to me because we are without even without intending. We are sort of we're going back to this in recreating the journal and part of the thing, you know, I find myself thinking, OK, so what needs, you know, what needs to be in the journal? How is it useful? And we've had these conversations, for instance, about things like the degree of

needing transcript or the degree of fraternity. You know, how much effort is, is it actually worthwhile spending just saying, Well, we can store everything doesn't necessarily help us find stuff. We just end up with more stuff. So that's just one point at the very beginning of this conversation. You're talking about the conversation that I happen to sit in with you and Dave and the Small University Group this morning and about what the the lab, as it were, could do. And I think acting as a gateway to a, you know, a wider group or wider audience is a really useful thing because, you know, to has a wonderful set of contacts and has spent.

Mark Anderson: [00:21:05] How many years have you done? Now I've lost count, but good few years. And so there's that back as well. That also is sort of Washington beneath us. And that's quite I think that's really useful because one of the other things that we can do on top of the sort of more hands on stuff in in terms of demonstrating things is effectively having a something. Well, in flippant terms, a brand to push this out to people. And that's where actually the newsletter activity and we talk about is another really useful thing. So it's an opportunity to help keep this to the fall. So it's not necessarily about what we're doing now, but what we've done or what we hope will be to come on the other. The other. I mean, one other thing because you were talking about, I'm reading the book at the moment, and he talks about the Lombardi Trophy. So I pulled out this piece of paper to remind me which I keep stapled up everywhere. Forget that it's about matters, Marshall. But it was basically it's, you know, these are the rules when you're writing operational people in the service top to selection and maintenance of the aim. No. Two Maintenance of morale. Your biggest asset of the people.

Mark Anderson: [00:22:21] And I, you know, that's something that you know, it's always good to remind ourselves of. So yeah, if if things go a bit wobbly from time to time, well, that's the nature of people. But the main the wonderful thing here and in the diaspora around of the those who are close to and associated with future text, is this wonderful range of inputs? And just one other thing I see on a practical level, one of the things I've been sort of trying to think to do is where to pull together some of the pieces of the existing puzzle, right? They are such in terms of, in a sense, the known knowns and without trying to turn it into a massive sort of library, but it's almost to say, well, here is here is a sort of rough. Here is what we do or don't understand in without being, you know, without deep technical terms, because that's the edge. That's the edge of the thing we're nibbling at, I think. And, you know, in an area, I'm sort of happy to try and help with because it doesn't require any particularly specialist knowledge in computer terms, but it requires sort of attention to detail. I'm quite happy to do so anyway, as I thought.

Frode Hegland: [00:23:40] Thanks, Mark. Peter. Are you muted still, Peter Stand?

Brandel Zachernuk : [00:23:51] I think your comments on

Frode Hegland: [00:23:53] The image has gone.

Brandel Zachernuk : [00:23:55] I think it's cameras on and his laptop has shut.

Frode Hegland: [00:23:58] Oh, OK, well, while we're waiting for Peter to reappear.

Alan Laidlaw: [00:24:03] Yeah. Oops. Sorry, I didn't even realize it. Oh, OK. And say, Oh, what happened to my picture there? That's weird, it took off my photo. That's very odd.

Brandel Zachernuk : [00:24:17] I should as your camera on perhaps, and your webcam is covered. Hmm.

Peter Wasilko: [00:24:25] There we are much better. Thank you. Ok, so what I wanted to say was, I think maybe what we need is to have a research statement as opposed to a manifesto, just a separate discrete piece talking about the research side of the focus as far as politics go. I think our strongest angle is arguing for interoperability of systems and exchange of data across VR world and let applications for things like climate change be moved off to the periphery. Otherwise, it's not really playing to our strength. We don't have any climate scientists in our group, and that has us dabbling in areas that were visibly weakened. But we have a much stronger claim to the system interoperability side and the technical dimensions of it in terms of making sure that we don't get stuck in a siloed world where we can't merge models from meta versus Apple systems, and we get forced having to pick one Big Tech player and bet on that. And consistently when I pick one player's technology, it winds up getting shelved. I had so many ways deeply into cyber dog and open dunk, and then they went away on me and they were always the best of breed technologies, and almost invariably they got sidelined because of corporate internal politics. So we don't want to get trapped in that. As far as taking ownership of things, I'd like to take ownership of the idea of trying to get a shared programming test bed so that we can start plugging our code together. And I'd like to take partial exception to Frode notion that we shouldn't be providing any guidance to the programmers among us. I'd be actually delighted to have Frode come up with the

description of here's the kind of a widget that I wish I had. Is it feasible to do this, something like that? And that would help give a little bit more direction to the coding experiments that I'm taking.

Frode Hegland: [00:26:26] Yeah, absolutely. I was just writing and chat a little bit of a summary, but first of all, I have sold this to you guys again and again, right? The reason I'm highlighting it again today, I was reading yesterday a section on fish and fish are much more interesting than I realized, but the strong relevance here is when you're in liquid hearing and feeling so touch and hearing is basically the same thing. And that, to me, is like 20 years into the future with VR, where through whatever means, we will have complete body immersion by not taking the brain out like Elon Musk wants to do, but by using all this stuff we have, right? So I really think that one of the one of our jobs is to evangelize the power of VR and highlight the dangers of VR and by dangers. I don't just mean social isolation and that stuff. I really mean opportunity cost of not investing in productivity. That's one thing. The other thing is exactly that sharing data. That's politics and infrastructure. And then it is a matter of building stuff and finally talking about all kinds of issues. In other words, we have very separate things in here that relates. We don't have to choose one thing, right, guys. Uh, Overture Brandel.

Brandel Zachernuk : [00:27:53] Yeah, I absolutely agree with that. The sort of recognition that that the human sensoria is an essential thing to be able to kind of talk about and draw people's awareness toward. Yeah, I mean, when one issue with using virtual reality at the time that that it is such a buzz word is that it doesn't say include as much holistic consideration of that sensorium as as potentially using a term that is explicitly picked for that purpose. But also in terms of climate change, one of the things that I it occurred to me is that all of this work has been here and before has been motivated by other existential urgency in the past, not just not just Doug, but and not just Vancouver Bush actually, but also Lianne La Fontaine, who are arguably, you know, very, very central figures as well. Everybody knows the land like the mundane and people like. So so just the simple fact of the complexity of the modern world and the difficulty in navigating it sort of necessitates the perspectives that are actually not just central to the the sort of demands and concerns that we have, but also from a. From a historical perspective, the most common sort of line of argument and reasoning through what his future of tact has been, not just from this year, not just from these past ten years of your symposia, but also since the beginning of the concept, that text could be more meaningfully technologically augmented in the way that the mundane I am sought to do.

Brandel Zachernuk : [00:29:59] So yeah, I think. And, you know, while climate change is an important existential risk, it is actually no, it's it's distinct from sort of some of the other informational existential risks that we we sort of exist within today in terms of misinformation and the spread of those things like they're related, but they are. But it's a distinct one. We would have it even if we didn't have climate change. And so, so it might may be helpful to actually broaden the field to those just to say that the those dire. And but neither of them are any less dire and existential than the other, like they threaten the very practicality and viability of the human project. And so being able to kind of talk in general about what it is about climate change and what it is about text that can be brought to bear against it, maybe a better mechanism for focusing what it is that the future of text does to a problem like that, because you're quite right, we are not climate scientists. And to that end, like the climate, part of the climate change question is not something that we have a great deal of force against, but what we do is information processing and communication.

Alan Laidlaw: [00:31:34] Can I jump in on that and say two things? One will be a meta of the first thing, but fantastic point and a clarify where I came from. I was I was writing about this maybe two days ago, my own thoughts on, you know, where? Where I think future effects should focus and stuff like that and a surprised that in the writing, I started thinking about climate change. Not as comparing VR to climate change, I misrepresented it a little bit there. What I actually stumbled on was. You know, we don't know much about climate change, but. It's highly likely that we'll all start spending way more time in our homes. And that say, for instance, because the weather will be so erratic, we'll rely more on a system of drones or people delivering things to us because it'll be so weird to go outside. And if that is the case, then it'll be even more important that our homes start to represent way more than they currently do. And in that case, I could see the timeline for VR adoption actually being much more soon than previously expected, because it's like VR is suddenly the only place where I can have an extra house in my house, you know, a house for working. And so that got me excited and I was like, Yeah, this is inevitable. This this path, if any of those statements have any truth to them, then the path to VR is certain and not simply for games or for metaverse. Right. So I can make this a core principle of mine now a meta statement on that. So I was thinking one thing too, and this absolutely should not be recorded, but whatever it's going to be recorded and I'll embrace it.

Alan Laidlaw: [00:33:24] This is a funny part about where we're at, I think with with language and technology. I was just required to do a self-assessment performance review of myself at my job. And so I answered some things, and then I got angry at the questions

because. They were asking of me to in one moment in time where I am situated right now to try and make statements about who I am, as if I was like an entity in a whole graph, like I could be that objective, right? So like, what are your career, short term career aspirations and long term career aspirations? I wound up saying, I'm a peacock. I got to fly, which I know is going to get me in trouble. But the point is that at that moment in the in the orphaned way that these questions were given to me, there is no way I could provide a sufficient answer. You know, I could in a conversation with someone, I could be much more honest and forthright, you know? But it's weird that we're we're put into these situations. That's why I wanted to stress and it is it is part and parcel. Maybe it's impossible to get away from. But I think it applies even to the manifesto. Talk is like, you know, we create in moments. And then those moments and then what we create extends and blends into other contexts, and in some ways, that's very unfair. And in some ways keeps me from even publishing, right? Because it's like. It's a funny, it's a funny. Experience to touch on later. So that's all I wanted to say.

Frode Hegland: [00:35:15] Ok, my turn again. Two things. One of them, please, I will tweet today or tomorrow about Friday, please tweet by yourself or retweet or something. We need some people there. But in terms of when I have further up their priority sharing data on all of that, we need to agree on a list. We put it on the website. Feel free to write them in here or blog about it or whatever, and we'll have it. It'll be useful. But the thing that really makes me so completely. Kind of I right, I've gone through I've been very lucky in my life. I have I have a wonderful parents, my well, my father left a few years ago when he died. And I have also had, you know, I come from a rich country, Norway. I live in the best country in the world, the United Kingdom. We have a health service here that has ridiculously impressive, et cetera. So I have basically missed a privilege on every single level as far as what has externally been given onto me. One of the benefits of that is I've had some clarity of vision. Many others have too. But I've had clarity of vision that has been removed from current realities like, I haven't need to worry about losing this particular job and so on.

Frode Hegland: [00:36:38] That meant that I've been going through several stages of, Oh my god, this is going to happen. And that's always been correct. It's been mostly Doug. Like, you know, I'm only a small part of Doug's vision, but it's been that kind of stuff to save time, so you guys don't have to listen to it. The big thing now is, and this is going to sound patronizing. It's purely for clarity because you all, I'm sure, agree. Imagine if we take our entire lives and we say, No, you're not allowed to live in a house, in a box or an apartment. You have to live in an actual box and we're going to cut a sled out and you're going to have a straw for food. That is all you're going to be able to do in the future. That is actually where

we live now compared to VR. The current VR is awful. You know, I had an almost an hour meeting with Mark today. It was shit. You know this much better view. And you know, it was a bit heavier my nose and all kinds of things. But it is comparing quick time, you know, 320 by 240 being useful, 640 by 480. Can you believe it's possible? You know, when we look at what all of us here are, relatively mature people have lived through the fact that VR is going to unlock so many senses so soon.

Frode Hegland: [00:37:51] There's just no question. But in order to have the imagination of what that will be, it's actual work like, you know, somebody came into Doug's office and he said, Doug, the problem with you is, you know, you're just a dreamer. And he said, Well, dreaming is hard work. We in this group, we are doing that dreaming work. It's really, really important and it's really, really difficult. It has to be one of the things we do. So I therefore ask all of you in order to set the world on fire for everyone to realize that holy moly VR can offer mature VR like one or two years old can offer up the most incredible mind space. I think that everything we do should be let's. Whether that's doing demos, working on infrastructure, politics, whatever it is to open up the extreme potential that we are of VR and by VR, you know, I mean the whole gamut, I say Brandel is shaking his head like crazy. Do I have other head shakes or what's the feeling? What's the temperature of the room?

Brandel Zachernuk : [00:38:56] I'm excited, Mark, if you if you were if you were in VR, I'd be eager to hear what you thought of not just your head, but also your hands.

Frode Hegland: [00:39:06] Well, Mark zoomed into the horizons room. He was in Flatland.

Mark Anderson: [00:39:11] Can I can I? I'm sorry. Where do you think? Well, everyone's waiting. Briefly, yes. So I was I was in TED flatland watching it. But but I thought, actually, funnily enough, despite Fred's observation about its cruelty, I was actually pleasantly surprised and sense. It was a lot better than I thought the speed might. The moment I enjoyed the Masons were, they turn round and bite by sheer dint of time, he said. I think I've got a problem and I was thinking. You sure have. You got nothing from the waist down? And they were thinking, But why? Why do I need to see that? And I think the thing that I really took away from that session was one thing that the designers have got, really. I thought interestingly, right is with the hand movements were very good, but also the the facial gestures. So what I, as the 2D viewer noticed was, you know, I as you would in a conversation, so my eyes went to the face. So the fact that the body stopped at the waistline was hidden by, well, it's hidden by the desk anyway. So there was no wasted effort there. And

these are suitable and sensible and pragmatic illusions at this point of the technology stage. So I have to say, but bearing in mind, I'm coming from behind. I didn't think it was a half bad experience, even though I wasn't actually as it were in the room.

Frode Hegland: [00:40:33] Mark, you just wait till you get to the point where things in the world interfere with how you see this. It is a perception changer. It's just very strange, but thanks for those words. Mr. Peter, who we can't even see the face of normally who we look forward to seeing as a avatar puppet and VR soon. Please go ahead.

Alan Laidlaw: [00:40:53] I'd also like to note that some of what we need to build is really orthogonal to the fact that VR is offering a 3D experience. The key affordances of being able to lift something out of your laptop and put it into another environment doesn't really even matter that the other environment is a 3D environment. What matters is that we build the infrastructure to be able to extract something from one display context and move it to another context, or to receive manipulation commands from one environment across environments in another one. And again, it's completely orthogonal to the fact that one display is a 3D display. I also think we could probably do a lot of interesting things in 2D land with a 3D controller. I have that space mouse device, and if I could just get that to be talking to the JavaScript world, then I'd be able to be doing 3D manipulations, even though I'm only interacting through a 2D screen.

Frode Hegland: [00:41:54] Peter, you got to try it. There's a lot we can do, absolutely, and there's no question that it'll be very useful to, you know, once every once we've made the future and everything is nice to go, sit in the park on your laptop and work on a flat screen and still have a 3D environment. Of course, that'll be useful. No question about it, but it's such a completely.

Alan Laidlaw: [00:42:18] Basically, I'm basically I'm sort of leaning to holding out for Apple's headset with prescription lenses snapped into it. So I don't have to worry about physical glass frames underneath the headset. And I have 8k. I need each eyeball as opposed to the current standards, assuming that those rumors are relatively likely to track out. I know the Brandel can't talk about it, but hopefully it's coming down the pike very soon.

Frode Hegland: [00:42:42] Peter, I ordered prescription inserts today. I went to buy opticians and had them fill in the form. So that's that's very interesting. I mean, all of this stuff is going

to happen. You'll have lasers going into your eyes. You don't need a prescription. The lenses will fold automatically. All this amazing stuff will happen. But for us, as pioneers and inventors, the fact that there are so many niggles is absolutely amazing. That's why we need to just feel this stuff. Mr Henderson.

Mark Anderson: [00:43:09] Yeah, I just reflecting again on the fact that I mean, the more I listen to some more I'm I'm so convinced that, you know, I think one area where we can definitely offer something that is needed and other people won't have the incentive necessarily to do, but will gain from would be to be effective, begin to make the the something akin to visual matter for for VR and whether that's moving in and out of or augmented virtual space or between different spaces within virtual space. Because I see no incentive apart from someone who's got enough megalomania and money to want to capture the entire space. And hopefully no one will get that powerful because I put a big wall around it. But otherwise, you know, people will be making best effort to make something and they're fine. But they will all, as these things do at any early stage, they'll wander off in slightly different directions and they will look, you know, they will feel rather similar, but they will not talk to one another at the level where we really need them to. And you know, and this very much feels like a reprise from the middle of last year when we were banging our heads on on Visual Metron. Well, can we get anything? And although what came out in that instance seems laughably simple is perfectly extensible. And but we have something that's there and in place and can be built off. And I think getting that sort of bedrock in place because it's, you know, it's a kind of infrastructure that no one ever asks for. They just don't. It's just not sexy, but it's tremendously powerful and useful. And the great thing is, there's an opportunity to do it now because there's no one to tell us not to.

Frode Hegland: [00:44:49] Yes. Brandel, please, please.

Brandel Zachernuk : [00:44:53] So. Something that has struck me about computing from the inside over the last 20 years, and I'm not sure if I brought it up, I might have brought it up here. Doesn't matter too much is that unlike the, you know, the great schism in the church after Luther, that at least people noticed that. But in fact, in computing, there is. There has been a schism done right down the middle of it since the very beginning between, I think the best names for it. I called it AI and control theory, but it's it's data processing and control theory. And and, you know, Doug is firmly on in the in the latter camp, I would argue. And VR as a sort of as a platform is the is the current sort of most radical manifestation of control theory. So by those terms, I mean, you know, data processing is where you do some non-

interactive computing, mainframe computing style, run a job on some stuff and get some brilliant insight. But the mechanism through which it happens is more or less kind of closed from the from the start, whereas control theory is where you do stuff and you're tightly integrated in the loop. And. Really virtual reality. One of the reasons why I actually encourage people to seek other terms in virtual reality is because it sort of implies that virtual reality is is good enough or that it's sort of encompassing of all of the capabilities that that like or the people who are talking about virtual reality are in agreement with you about it.

Brandel Zachernuk : [00:46:41] Whereas I think terminology like spatial computing or embodied computing give a clearer sort of indication that there are a number of sort of faculties and capacities like you are talking about this sort of a tactile sensory on Friday. The fact that there is a there's just a whole plethora of things that simply aren't on anybody's radar to really kind of address in any meaningful sense. I think those are actually at least as important as virtual reality and the visual like the spatial visual sort of models that they they seek to kind of kind of merry, merry up with because, you know, frankly, from what I've seen of the industry, so many, so many people believe that they'll simply be done once they have, once they'll have virtual reality and that nothing could be further from the truth. We all have this vast array of of sensory modalities, capacities that are sort of both direct and kind of.

Brandel Zachernuk : [00:47:47] Amalgams sent a synthetic synthesized from the combination of it, you know, the way that our thermos and our tactile perception combine in order to give a a higher level sets of wetness which can be hacked and broken through various things by sort of picking the exact right pressures and temperatures to make it seem as though something as water and the thermal conductivity and stuff like that. So. So like there's there's a lot more to do, and it's I think it would be valid just in the same way as you're aware that trying to pull people into the fold of what virtual reality affords the same job needs to be done on the people who are zealots for virtual reality to realize that their job isn't done yet. Once they get that, they must do that, but they must be finished after it. So yeah, that's one of the things that that may also help because it pulls it out of a buzzworthy sort of hype train kind of bandwagon into something that is. Clear that that it's fundamentally about what we get out of our senses and being people and what we can do with computing. But yeah.

Frode Hegland: [00:49:09] That's you are obviously dead, right? That's exactly what needs to be done, and you know, I've ordered Jaron Lanier, his book should be here, should have been up today. Maybe tomorrow we're going to read like mad to make sure I'm not repeating anything, but we do need to like the example that Alan just put in the chat. And also, when

you look at recent movies like Foundation, you know where they have these hologram things, whether it's a AR and VR, in one sense, is irrelevant. The point is that the environment can be whatever the heck you want it to be. And the amount of imagination the amount of experience is absolutely insane to get to where we need to go. So when it was actual, literal music to my ears, what you said because having been a text person for so long, all I've gotten is I will do it. Vr will do it. Excuse me. We'll do which fit and just huh. Right, so it has to be built and, you know, that's part of the discussion. Mark and I had earlier where we're furiously fighting each other over the same point. Things in this space needs to be built and we need to know why we want to build it and what the potential is. So yeah, we need to evangelize this. So the question then becomes, how do we do that? What are we going to do in terms of, Oh, I don't know which one of Gerrans book. I think it's called VR or something. So, yeah, so so what are we going to do? I'm going to go through a list and you are going to shake your head if you don't agree, this is stuff I think we've agreed on.

Frode Hegland: [00:50:46] Number one, we'll keep doing an annual symposium. It'll be more leaning in this world. Keep doing the book. We'll have a monthly journal that we're all going to figure out together what it means. I'll be the head of that. I'm very excited for any feedback, including articles in it. Similarly, Alan is going to do the newsletter under the same kind of a model. We are also going to build demos. Brandel and Adam should feel free to do that. And of course, as much or as little feedback as they want will happen. Maybe at some point we need to find money to code for other people to do what is more boring. Within that, we have to work on some sort of a visual metaphor for VR because the insanity of not sharing information is scary. But we also need to basically write poetry. Right, we need to get this like, you know, like Adam is so angry at Ready Ready Player One. I think it's a fun little thing, but every reason to be angry. I mean, this little chapter, I just read about fish in here. That's where it's really at, you know, when you're properly immersed in an entirely new environment. But I'd really like to hear specifics from you guys what you want to do. Yeah. Dawn, of the new everything, yes. Oh, the book wise, yes, he's got a good title there, but also.

Frode Hegland: [00:52:14] Mm-hmm. On Friday, one, I don't know how many people will be there for Barbara Pope, a few. It will be nice for me to do a one minute introduction of her, but I also want to do an introduction of us. And what it would be nice to point to our Web site and say, this is our community now and we are kind of the core or staring or whatever you want to what? No. Peter. Anyway, distracting me like mad here. But please have a look at the websites, please. If there's something you want me to add or remove, tell me. But also you can write your own stuff. It would be really good if everybody writes a really brief bio. And I

think that in addition to logging into Alan's crafts, I think it would be good if we had a resource page. All we have now is VR resources, and most of them don't work. So specifically Brandel. Can you take a little time to add resources to the kind of VR things we can use an Oculus that you built? Yeah, OK, that would be fantastic. Oh, here is a specific question. So today, Mark was in a flat screen interacting with me and horizons. But let's say that you Brandel have built a native Oculus thing in. You send it all to us and we look at it. Is there a way to live costs that to someone else could, for instance, until Peter and Mark jumps ship, could they view it?

Brandel Zachernuk : [00:53:49] So live, I'm I'm less certain of I know. I know that I can. From phone you can cast. But you can you can cast from your quest to your phone like this. And so that I could do that. It might be possible to. So if it's if it's quest negative, then you wouldn't be able to do it, but on on on a Windows machine, if anybody has those, I have a couple lying around. You can use a quest as a. As a PR, as an Oculus Rift, so that tethered and it's making use of your computer's graphics card, which is great because most people who do gaming have a fairly beefy graphics card these days, and so you can you can you can get a lot more out of it.

Frode Hegland: [00:54:54] That's PC only, right?

Brandel Zachernuk : [00:54:56] That's correct at this point. Yeah, I mean, I'm not part of any discussions, but I would hope that given the power of Apple Silicon in particular, that it would be on that company's roadmap to make sure it happens. But I'm not aware of any specific plans. But yeah, so to that end, you would it would be a much easier task than to stream that to Zoom because it's being generated on the machine. And then you'd have the ability to direct it off. That wouldn't work for anything. That's Native Quest. But I don't write anything which neither I write everything in web. So so it might be possible to grab that mirror and transmit it over Zoom. I would not on my privacy at the moment, but if I did that, then that would be possible. Otherwise. It might be possible again in Webb to build a virtual participants similar to to the Flatland participant that Mark was able to to occupy with a horizon. But that would need to be a consideration in the architecture of that system, but not a particularly difficult one. Beyond getting multiple participants in the first place, once you do that, you just say, Well, this one is just to do so. Yeah, I'm not aware of anything out of blocks other than being able to. So it requires no coding, no no particular interventions to do the screencaps stuff. It's just gross. But yeah, beyond that, I'm not. I'm not aware of any other solutions that are available.

Frode Hegland: [00:56:27] So, yeah, that's interesting. I see your hand mark, but I just wanted to say on the website I posted on a recent post Graphics of the Future. That's Nvidia's presentation. And yes, it's all graphically nice and everything. But to see what is it? Scene description, language or something like that, to see some of the formats that are being used today as

Brandel Zachernuk : [00:56:51] Universal scene description. Yes, that's what Apple touts for augmented reality. Quick look and what what Apple is promoting very strongly for the model HTML model element that I mentioned in the past.

Frode Hegland: [00:57:05] Ok, so this is important.

Alan Laidlaw: [00:57:08] So that display on M1 Macs, even if you don't have a VR headset.

Brandel Zachernuk : [00:57:13] Usd, yeah. Oh, yeah, no, it's built in to find it right now, so if you if you if you download a used file, for example, the ones on the Apple developer website of the 10 soldier and all that kind of junk, then you press space, they open up in quick work and preview. And if you have Xcode, then it'll open it up in Xcode and you can kind of manipulate, modify it. There, at least, was in the past an application called reality converter that allowed you to sort of pick it open and export it to other formats. But yeah, it's very it's very much a format that Apple is committed to for the representation and trends and transmission of 3D data.

Frode Hegland: [00:57:55] Could you please post that on the website?

Brandel Zachernuk : [00:58:01] Yeah, I mean, in terms of the publicly available resources from Pixar and Apple on on mobile and on on our quick look and stuff like that, I'm happy to do that. Yeah.

Frode Hegland: [00:58:13] Ok. Fantastic. I'm just going to do a thing here. Resources links. But OK, so I've just on our blog World WordPress, we have one thing that called resources in brackets, links, books, et cetera. That's where you probably want to do most of this. But we also have one called the resources brackets to view and VR. So if we can start populating some of that stuff, they'll be really, really useful, especially the view in VR. Ok.

Brandel Zachernuk : [00:58:49] That's a pain.

Frode Hegland: [00:58:50] So then I have to ask the question of such models. Are they? The descriptions very verbose? Or do you think they could be hidden inside visual metaphor? Smaller models? Um.

Brandel Zachernuk : [00:59:06] So models are if you're talking about things like model geometry. Unfortunately, model geometry is incredibly verbose. You run megabytes and megabytes describing the 3D position of all of the vertices within a given 3D shape. And there are plain text formats representations. So the USD, as it's defined by Pixar at this point, has two variants USD, ASCII and USD create USD and UCC. And ASCII has the ability to provide a more basic text descriptions of primitives like like spheres and cones and circles. But for the most part, people tend to be describing geometry. That's also because the centre of mass of work, particularly in public that has been done with USD, has been by Pixar. And Pixar is in the business of moving billions of triangles around for the purpose of entertaining your children and developing the next great toy franchise system. So they're sort of point of view on what USD is for is heavily, heavily biased towards those. That said, you know, there's nothing to preclude USD being used primarily for its kind of informational relations. And in fact, it's it's a it's a sort of a multi file format in the sense that you can create directories that nest into each other for relationship to each other. And there's a concept of a USD prim or primitive that you can put all sorts of information. It's sort of mandatory that it carries forward and respects any any additional data that it sees but doesn't recognize in any given viewer. And that's because from within Pixar, where it was made, they have a number of different applications that do a number of different things.

Brandel Zachernuk : [01:01:00] And just because one doesn't use X doesn't mean it's allowed to strip that data out. So it's amenable to a lot of the sort of the broad stroke format questions and concerns that people have in a way that's much, much greater than the GL transmission format, which is the sort of the current format of choice for throwing 3D models around on the internet right now. So if you look at sketch fag, for example, you can pull down all of the VR previews that you'll see in Quest are facilitated through Gildea. Gildea is, but is very much considered to be a last mile format, something which is the end of the line for a piece of information such that if you really cared about it, you would be retaining a separate kind of representation of it for the benefit of being able to do your HD remaster. So what have you? So, yeah, USD is very, very valuable right now. Nobody is considering it from a

perspective of informational provenance or relations because of the the work that people are doing. And to the extent that I would comment on Apple as a company because people work there on graphics and technology, they consider it in terms of that graphical technology and vertices and shaders and stuff like that, rather than informational context, content and context that we think is probably more important. But I would say that it's probably amenable to it. So very much worth looking at how concepts like visual matter can be brought to bear against what's already present within USDA as well.

Frode Hegland: [01:02:29] That is really, really interesting. I see there are many hands up, but I have to ask this question. When you're in, let's say, VR work rooms, just to take an example, you have your monitor there. Can you imagine a way where you touch something on your screen and then something on the screen? There's some kind of a hook that that data now becomes accessible in the room. Is that a complete pipe dream, or is that something that can

Brandel Zachernuk : [01:02:51] Be worked towards? Do you mean where you can pull a model out of a page and then it becomes some artifact distinct from a page? Yes. So I mean, in a web browser, if you click unless people have done nefarious things, which for the most part do. Unfortunately, at this point, if you click and drag on a picture within a page, it drags out and you can put it onto your your desktop in the 2D sort of parlance. Is that the sort of essentially the equivalent functionality you're imagining?

Frode Hegland: [01:03:24] Yes, but enter the VR 3D space.

Brandel Zachernuk : [01:03:28] And that's not a capability in Oculus, it's it's a sort of a basic tenet of web usability that I would expect most people would would would aim to include within their systems. It's certainly not something that should be impossible. I mean, generally speaking, people will break that on the web if they feel like it. You know, in the same way that when when Facebook writes Advertisement Advertisement in the feed, it's actually a discontinuous letter so that you can't find it and use that as a as a basis to hide that component of the page. People will ruin your experience. But generally speaking, I think the expectation would be that, yeah, you should be able to model that and and take them where you want.

Frode Hegland: [01:04:13] So currently, the way it works is you send me a URL. I go on the

web browser and Oculus and I get a normal thing and then it says, View in VR. I click that button and it goes out. But that is only something that can be done from there to there. I can't do that into, let's say, horizons work room or immersed or anything like that. And that is, of course, part of the goal we want for the future.

Brandel Zachernuk : [01:04:39] Right, right. Yeah. So that's you know, I've said in the past, I'm sure other people are aware and agree that the software is bureaucracy sped up, and bureaucracy always encompasses and is a crystallization of a value system. So to the end that if it's simply not part of something its value system, then it's not going to be. It's not going to be preserved as a capability within the context of web. That's a little bit more open ended than the sort of the values of of the web are much more sort of radically inclusive and considerate than anything that a specific vendor will create. I guess we were just not talking about you, but we're talking about Facebook and and applications and commitments to things like drag and drop and the preservation of artifacts that that that might be present within spatial documents and stuff like that. Yeah. So there's no particular reason to expect that that would be a mandatory part of any third party application that people have the ability to like, determine sort of the response from whatever user actions and inferred various intents for better or worse. So there's there's very little that anybody could do in that context, in the same way that people will also be able to ruin web, they can ruin their own native apps by default. But but I would hope that that same defaults will prevail within the web context as it moves into space as well.

Frode Hegland: [01:06:15] Thanks, Brandel Ike. Ok, Mark.

Mark Anderson: [01:06:19] Listening to Brandel, I just I was thinking I was when you were describing the two forms of us. I was thinking, So is this a bit like saying, Well, you could if you really knew PostScript Well, you could. You could read it and read it as text. But that's not what humans on the planet, if any. Whereas we have other forms. So that's pretty interesting to see because I think one of the things that I'm sort of happy to help put a shoulder to is to try and put a circle around maybe the number of formats, which hopefully are far fewer because I come with Eleanor or Peter. Carnley posted a page from 2015 about someone who said, Well, here we are. These are the 72 graphic formats we found, you know, or sorry, it might have been you. And I thought, Yeah, well, that's sort of something we might usefully do in this space of, you know, it's a place where other people are looking because, as you rightly said, that's not where people's focus is now. They're just building stuff, you know, to make nice movies or make better experience. They're not necessarily thinking about who

owns what or where it goes. And just what my how is that actually for something early? We're just saying when we went through this list of things, I'd just drawn some threads together as saying and just us keeping an eye on when we're talking about sort of demos in the sense of within demos, what what things that we might actually be doing in the demo.

Mark Anderson: [01:07:48] So in a sense, there's the manifestation of the demo that makes something that is what you see in the demo, I guess is another way of putting it. So, you know, it is it is no small matter work often to make the demo in any way, shape or form. But it's an also interesting question. Having having, you know, got to the top of that mountain, what do I actually see? What's the view? I see what? What are we doing inside this thing we've created? And that's something I think we're collectively between us. We could help hone that because I do know my sense is that sometimes I've often found it's much easier to implement somebody else's spec because I don't have to worry about the constraints if the constraints in some way stop me doing well. I can go back and say, Look, I can't do that or I need I need more flex, but otherwise I just don't have to worry about those things. All I have to note I know is I need to make one of these at the end. And that can be perhaps helpful as well as useful in terms of, you know, what we want to do at the very sort of demo end of things. Peter?

Alan Laidlaw: [01:08:55] Ok. One of the points that was raised in the cyberspace. First Steps book was the notion of having cyber decks that would be able to view the models and having different levels of hardware looking at the same model. So if you were on a really low fidelity device, you could just simply pull in again, maybe just a textual representation of the 3D scene for someone who's only working on an old style BlackBerry connected to the net. Whereas if you were in a holographic suite somewhere, you might actually be able to walk around with goggles, free, full, immersive VR, and that would be a function of your local processing power independent of the model. And I think as we move forward, we want to get away from detailed descriptions of the models themselves and abstract out the description of what kinds of objects we want and how they relate to each other, so that our description of the scene we really don't care necessarily about the. Shader, on the back cushion of the chair, what we want is an end user would be to say, OK, there is a Victorian chair in the back left corner of the room and then let the system decide how it's going to represent that.

Alan Laidlaw: [01:10:12] So we have to get away from the notion of everybody seeing the exact same representation of the object and move more to the object in the abstract. And that would let us have very compact visual matter representations of things that, again, your

visual matter might just say Victorian chair, and then your cyber deck would decide how it's going to represent that in whatever environment you're currently working in. We could put the actual geometry in the Interplanetary File System based upon content hashes, and then the visual data would be very compact because we don't want all that raw data in the visual matter. A system could go and retrieve that all of the visual media really needs to have is the core notion of what kind of an entity is and the relationship among the entities and then push off all the work and how to render that to some client application that we don't need to care about.

Brandel Zachernuk : [01:11:01] Yeah, so in terms of in terms of the ability to represent something as canonically this particular chair and then seek alternate representations based on what deck, so to speak, that people are kind of running it on, that's also something that's sort of a responsibility that I would I would say USD is dimly aware of in the form of what are called USD variants. Having the ability to say under some circumstance, you can use this under some other circumstance. You can do that again, though, because because it's it's been sort of birthed from the center of Pixar's data flow formats, the mechanism through which they they are considering what kind of determinations might give rise to this being the the choice for us that are relatively coarsely defined. In contrast to if you're familiar with web, we have things things like media queries and people do various breakages on on detecting aspects of the user agent. So those are sort of at some level actually distinct from the the system for doing. The choosing is distinct from what the contents of those choices are. Whereas in USD, because they have had total control in a context of total trust over those things, those constraints aren't those considerations aren't as well thought out within the context of like, what is it safe to choose? Where is it safe to choose it from that are absolutely necessary considerations at every level, at every moment within the web, because it's simply such an untraceable computing and executional context.

Brandel Zachernuk : [01:12:52] So there will be a number of additional concerns that need to be brought to bear against it. As people become more aware of how valuable it is to be able to pull these model files down these UCSD's and other things. Yeah, so so to the extent you mentioned the APFS right now one, the expectation is that model variants would only be reloadable from a subdomain of the location that the root asset is at. And that's just because you can't trust things on the internet, and hopefully you can trust things under the directory. You host your file up. And and if you can't, then that's very sad for you and we shouldn't trust you at all. But yeah, so so those things are part of those considerations. There will need to be additional thinking and additional constraints put on it as a consequence of how dangerous

the internet is.

Alan Laidlaw: [01:13:56] I suppose we can trust things that have a content hash on them, though, so it shouldn't really matter what domain it floating from. As long as the hash agrees with the hash that you're looking to find.

Brandel Zachernuk : [01:14:06] Uh, that's not always true, I mean, the thing the fact is that RSA is I have been have been broken, people have managed to create collisions. Cryptography is on is one tool in a in amongst others, as as a mechanism for determining truth and trust. So theoretically, I I wouldn't trust it.

Frode Hegland: [01:14:30] So this is obviously a really core and important discussion, but also an ongoing discussion. Definitely something I'm super passionate about. I say Allen has his hand up.

Alan Laidlaw: [01:14:46] Yes, a couple of topics. One. And I'm just throwing this in, Craft is perhaps another demo prompt, which is a section of creating. I have a possibly a bad habit of whenever there's an article that I want to read and applies the email as well. I immediately send it over to some reading service like Instapaper or Matter, and that is where I've become used to processing a thing. And it's almost as if these days I can't read anything, and this applies a thousand percent at work. Emails come through and threads come through, and I'm just copying and pasting it. So I know that I can read it in whatever else, right? Because I can't process it unless I sort of own it, you know, and know that there's a version there, and I'll sometimes link back to the actual Gmail thread the source of truth. But that that makes me wonder about, Oh, hello. It makes me wonder about that. What does that look like in VR? And and separate from the VR, putting that aside for a moment. The fact that that has become a a normal behavior that we all have is really interesting in its own right. It's as if it's a new technology that we don't have a word or term for yet, but it's definitely something that I think I'm not alone to say. It feels nice to take X article, put it in your station and tinker with it, and I pinpoint or frame it that way to say like, I think that's different than personal knowledge management than obsidian in Rome.

Alan Laidlaw: [01:16:34] I think that those swallow that that portion, but it's a different thing. So I wanted to bring that up. And then also at some point, just getting to the the tactical brass knuckles stuff. I love to either use craft obsidian or someplace where we can do async

work and dump the stuff I think is critical, and I think we should talk about that. The channel link the the four varieties of channels that when teacher came up with and working with students remotely, I think is a really good start and explanation of the value of async workshop assignments, et cetera. And then with that, I think that, you know, there should be some rules that go along with it, right? Like not to not to call you out a little bit fraud, but. Like, wherever we wind up doing our work station when something's posted. It should stay there, right? Whatever, it's whatever it's called. So if we start with like. You know, innocuous locations and names or whatever. Just knowing that, hey, it's going to be there, it may find a it may become curated, push down and pushed out, and that'll be something different. But once once we share something with each other, it should like, stay in that rough location.

Frode Hegland: [01:17:52] You're referring to the discussion over the weekend that was taken up for political reasons, but it's being re-edited. But I take your point completely, completely, completely. And so this

Mark Anderson: [01:18:07] Is the journal essentially, isn't it? I mean,

Frode Hegland: [01:18:09] It should be the journal, and we're kind of having a little bit of a reset on that. But first of all, it would be really nice, Allen, if you could share that Kroft access to us again. And also in terms of the journal, you know, a lot of our chat here is internal chit chat and random things. But there has been a few things that Brandel has talked about towards the end. One of them kind of document formats that's really valuable to real people. So that's why I'm so happy to take the transcripts entirely into the journal. I don't expect people to read them through unless they have absolutely no life. But it should make things findable from there. Yeah. Also the issue that you said, Alan, earlier on today.

Alan Laidlaw: [01:18:57] How can you even remember, by the way, we need to stay high. Well, Leah, oh.

Frode Hegland: [01:19:05] Oh, we've been typing high in the chat, sorry, yes.

Brandel Zachernuk : [01:19:08] Oh hi, everybody.

Mark Anderson: [01:19:11] Hello. Hello.

Alan Laidlaw: [01:19:14] Yeah, thanks.

Brandel Zachernuk : [01:19:16] Let me just go whether it's light so they can see my face.

Alan Laidlaw: [01:19:20] Oh oh oh. Where are you in the world? I see you now. We can see you. Yes. Yeah. Am I good? I'm fine.

Frode Hegland: [01:19:31] Oh, we'll hear you very well now. Where are you?

Alan Laidlaw: [01:19:35] Thank you. Yeah.

Brandel Zachernuk : [01:19:40] Oh, I am privileged to be here.

Mark Anderson: [01:19:47] I just burst by accident. You know,

Brandel Zachernuk : [01:19:49] I was reading the email that

Alan Laidlaw: [01:19:51] Was sent to Nigeria. All right. Oh, wonderful. Hey. That's that's fantastic, I hope. Oh, I hope you can hear us. I didn't want to interrupt you, fraud midway, but I just wanted to say hello and I'd love to hear more about you.

Frode Hegland: [01:20:13] Yeah. I'm so glad that Wally is there, he's in and our book as well, of course. And yeah, no, all I wanted to say is, you know, it's so strange once you get into any kind of an interest group, people are that interest group tend to be a bit obsessive. You know, just look at Keith and typography. He will know every detail about every front in the whole world, which is great, but also not in the kind of future of text community. There is this reverence of text, as we should have. But also, I think we have to accept that most text, we just don't have time to read. So your comment earlier, Alan, is really, really crucial, and I think that at least part of what we tried to build should be a way to get rid of texts. So that we can have really good collaboration between us, really good ways to to to put useful text together, but not just to keep making bigger text mountains.

Brandel Zachernuk : [01:21:15] Agreed. I would say that one of my goals is not necessarily less text, but also more ownership over text in terms of what what we get to do to manipulate

it. The main things. One of the things that is problematic for me with the overflow of tabs, which is actually a relatively recent phenomenon for me to say, is that there are these were all paper documents. I'd have the ability to arrange them in stacks and piles, and they'd be able to kind of dominate my perceptual field, my sensorium as my word of the day in various ways, for various reasons. So if I had a whole stack of things that related to each other, then I could put them together and pack them next to me. Whereas when I have a browser with tabs, they are all only they're arranged in that one dimensional space. But I'm not allowed to, and to some extent I'm allowed to pen and scale those representations in order to have itemized. I quantified versions of it on the left and stuff like that, but it's an incredibly poor cousin of the kind of spatial relating that I have the ability to do with real artifacts within a real space that I get to own, you know, and that's that I get to own part of it is just as important because, you know, there are various things that people have done in Finder and File Explorer and Microsoft and Apple that have taken or taken away or or given various kind of relational capabilities.

Brandel Zachernuk : [01:22:43] You have the ability to move icons around and in other places. At other times you don't. And sometimes those things are allowed to have semantic significance and other times they aren't sometimes remembered and sometimes they're not. And I think one of the things that's important for us to be able to do is recognize the totality of the semantic significance that people will be able to imbue things with as a consequence of preserving, honoring and transmitting that the relational and organizational kind of priorities that are specified through those things. And again, not something I have a great deal of confidence in the current generation of virtual reality and spatial computing sort of developers and researchers to recognize the significance of. And I would hope that people involved in the future of text have the ability to kind of convey just how much is important about all of the other aspects of information to those people so that they know that it's not just about polygon count and shader model.

Frode Hegland: [01:23:47] Indeed. Oh, Alan's Scott, to signed up.

Alan Laidlaw: [01:23:53] Oh, no, sorry, that was a legacy hand. I'll drop it just quickly.

Mark Anderson: [01:23:58] I'm by dint of pressing the right dropdown. I am now seeing the craft stuff, so I'm definitely in. I've got I've managed to, I've managed to claw my way and the mistake I made. So I did all the on boarding stuff. I got the app. What I didn't realize is when I logged in, it had my name at the top and I basically had to click and drop down and

go into the effect of the shared space. But it's all showing now.

Alan Laidlaw: [01:24:22] Ok, great. What you'll see in there is just a real garbage fire of my thoughts at any given time, please don't read any of it. You know, maybe, but it's open there. If you do wind up reading it, I don't I won't defend any of it because a lot of it, they're not even complete

Mark Anderson: [01:24:39] Your garbage far. I to be in mind. So don't worry.

Frode Hegland: [01:24:43] You cannot but subscribe to it, so to speak. And the app. Is there a link or is it only on the web page or how does that?

Alan Laidlaw: [01:24:49] Yeah, if you if you are in craft, apparently. You have to go to the top right sidebar and pick the dropdown, and you should see future of Tex Labs as an option. And it's the kind of thing where at least I've just been putting my thoughts over the course of the day is, ah, during meetings, and I'm happy to do another format, specifically one that doesn't matter only, but just having a place that's sort of open and can can hold thoughts as they come up and be organized passively like books, mentioned VR formats, et cetera, I think is going to be essential to moving forward. Personally, where I this is where even though it seems like a small deal to just log in to to WordPress and find an area, I find that an unfocused workstation is far more useful to just capture information.

Frode Hegland: [01:25:47] So I can't log in. Alan, I can't see it.

Alan Laidlaw: [01:25:51] You are craft account.

Frode Hegland: [01:25:53] Yeah, fro dot dot com.

Mark Anderson: [01:25:56] So top left.

Alan Laidlaw: [01:25:58] I think I sent it to liquid.

Frode Hegland: [01:26:02] Oh yeah, please send it to you.

Mark Anderson: [01:26:03] Thank you. When you're logged in, you'll see probably your name top left next to the three open minimized close buttons

Frode Hegland: [01:26:11] On the market's top right.

Mark Anderson: [01:26:13] Oh well, on my Mac, it's top left. I'm using the native client.

Frode Hegland: [01:26:17] I'm using the native client, so they're well here.

Mark Anderson: [01:26:20] I will send you a screengrab of what I mean.

Frode Hegland: [01:26:23] My screen grab is better than yours.

Alan Laidlaw: [01:26:27] Very good. I've got to jump, though. Maybe next time we can walk through some of this, but great conversation. Yeah, we're getting well, still around. I'd love to hear more about Oh yeah, he's back. Maybe next time I'll have an introduction or get to know you a little bit more. Unfortunately, I have to. I have to go.

Frode Hegland: [01:26:54] Yeah, we're close to the top of the hour. Bottom of the hour, depending on how you look at it. Look forward to seeing as many as possible on Friday. And then we will, you know, please comment on what's on the front page of the of the sites. Please post whatever you want and.

Mark Anderson: [01:27:13] Afraid I stuck up, I stuck up a screengrab of my clearly different and inferior aircraft client's UI, but because when it opened up, it had my name and when I clicked that dropdown, I saw the the magic stuff.

Frode Hegland: [01:27:35] There it is. Yeah, it was it was awesome. Very good.

Mark Anderson: [01:27:40] So what you meant was the it was the other right, was it not?

Frode Hegland: [01:27:44] Alan said. Left, Helen said, Right, this is on the left. You see you do the same thing anyway. Yeah. See you later, guys. Peter, any last things and then Keith, any first things before you go. We haven't heard a single word from you. That's because I've

Alan Laidlaw: [01:28:02] Been on mute. Apologies for dropping in late, sorry, I got distracted writing,

Mark Anderson: [01:28:10] Which is not a bad thing to be distracted by.

Frode Hegland: [01:28:12] No, it's not. Are you also joining us on Friday for Barbara, who will be here? Yeah, please do tweet and tell people to come. It should be interesting to have a medium size group. All right, thanks for today and well, I'm glad you're here. It's good to have you guys. Thank you. Have a great week. Bye bye.

17 January 2022 Chat Log

16:13:32 From Mark Anderson : In think this is what Alan referenced <https://dorientaylor.com/agile-as-trauma>

16:14:20 From Frode Hegland : I think this is a central issue in the future of text: Expecting someone to read full works

16:14:42 From Frode Hegland : Also about roles: Authority or colleague

16:14:59 From Frode Hegland : All approve the invitation?

16:17:25 From Mark Anderson : Invite - OK with me. Don't think there is anything controversial in it. 😊

16:18:44 From Peter Wasilko : Previously: I made the point that we should eschew using the term “manifesto” because of its political overtones, opting for something warmer like “principles” instead. I then noted that for my own Founders’ Quadrangle project, I’m branding my nascent community an “unincorporated association” to avoid the regulatory time-sink and financial costs that come with the formal incorporation of a legal entity.

16:19:20 From Mark Anderson : In think this is what Alan referenced <https://dorientaylor.com/agile-as-trauma>

16:19:30 From Alan Laidlaw : <https://twitter.com/GalaxyKate/status/1480330155487014916>

16:20:10 From Peter Wasilko : Full thumbs up on the invitation draft.

16:25:00 From Peter Wasilko : Here is some deep but relevant CS theory vis-a-vis how to define data types to be passed between systems: <https://www.cs.cmu.edu/~fp/papers/>

popl99.pdf

16:40:40 From Frode Hegland : We should have a discussion of what to build

16:40:49 From Peter Wasilko : Here is a paper on bringing Dependent Types into the Javascript ecosystem: <http://goto.ucsd.edu/~ravi/research/oopsla12-djs.pdf>

16:42:50 From Alan Laidlaw : Excellent point, Frode. Love the conviction.

16:45:26 From Frode Hegland : For the article for comments please: <https://futuretextlab.info/2022/01/17/thoughts-the-immense-immersive-and-immediate-impact-of-vr-ar-xr/>

16:45:38 From Frode Hegland : Especially adding specifics

16:45:58 From Alan Laidlaw : In comparing CC to VR, I guess I mean that there are plenty of avenues to “affect climate change” but that includes chastising govt policy and recycling. Much of what is done regarding climate change is performative and makes zero impact. Articles included. However, I just scan across an excellent framing of CC in an article and have shared it with some of my adversarial ken. That one article could make a difference in my immediate circle.

16:46:22 From Alan Laidlaw : Scan = ran

16:46:49 From Peter Wasilko : And one last type theory piece: <https://tiarkrompf.github.io/notes/?/dependent-types/> so I don't lose its context!

16:52:00 From Frode Hegland : Priorities: Sharing data (politics and infrastructure). Evangelise size and potential lack of work augmentation, demos and dialogue

16:52:58 From Frode Hegland : We should agree on foci to work on

16:54:49 From Peter Wasilko : And sheer information overload.

16:57:15 From Frode Hegland : Oh, please tweet and invite people to Friday people!

16:58:39 From Peter Wasilko : Frederico Tomassetti just dropped this piece: https://tomassetti.me/so-much-data-so-many-formats/?utm_source=newsletter&utm_medium=email&utm_campaign=onboardingsequence

16:59:05 From Peter Wasilko : It addresses data format conversion and interop.

16:59:28 From Alan Laidlaw : These are great, thanks Peter

17:02:14 From Peter Wasilko : @Alan, intuitively I think there might be a sweet spot to combine dependent types with description logics.

17:08:04 From Alan Laidlaw : Id like to understand that more. And want to make sure I get all these links you dropped. Have you been able to join the Craft space?

17:08:31 From Peter Wasilko : I wonder if Elon Musk will jump into VR, he has the ego and funds.

17:09:37 From Frode Hegland : De-augmentation. Brick around pencil.

17:09:45 From Frode Hegland : Links also not Wordpress Alan!!!!

17:10:00 From Frode Hegland : New category of non VR resources maybe?

17:10:58 From Peter Wasilko : Starlinked metaverse headsets anyone?

17:11:15 From Alan Laidlaw : I'm reminded of something that I want. I have a physical book open (Unflattening) and I'm looking for a section. I think this section is where he mentions Understanding Comics. I badly want to open a search box and type Understanding Comics and have a arrow pop up over the book to guide me to points in the book where Understanding Comics is mentioned.

17:11:43 From Frode Hegland : THAT IS SUCH A LARGE PART OF WHAT THIS IS! :-)

17:12:03 From Alan Laidlaw : Let's build a demo of it

17:12:05 From Frode Hegland : Alan, VR is essentially holograms...

17:12:06 From Peter Wasilko : I saw an AfroFuturism anime last night with an intriguing premise that nations would agree to wage war in VR: <https://www.imdb.com/title/tt4714032/>

17:13:07 From Peter Wasilko : They logic was that RL economies couldn't function without their digital twins, so control of VR would equal control of real life.

17:13:14 From Alan Laidlaw : Which Jarod Lanier book?

17:13:39 From Mark Anderson : I've got into Craft, logged in (I think) but I don't see any docs. Should I?

17:14:22 From Alan Laidlaw : Yes, I'd like to debug if you have a moment

17:14:30 From Mark Anderson : Aha! Found FoT (dropdown, top-left corner). There at last!

17:15:06 From Brandel Zachernuk : Information Is an Alienated Experience, Basic Books, 2006, ISBN 0-465-03282-6

You Are Not a Gadget: A Manifesto,[63] New York : Alfred A. Knopf, 2010, ISBN 978-1-84614-341-0

Who Owns the Future?, San Jose : Simon & Schuster, UK : Allen Lane, 2013, ISBN 978-1-846145223

Dawn of the New Everything: Encounters with Reality and Virtual Reality, New York: Henry Holt and Co., 2017, ISBN 9781627794091

Ten Arguments for Deleting Your Social Media Accounts Right Now, New York: Henry Holt and Co., 2018, ISBN 978-1-250-19668-2

17:15:14 From Alan Laidlaw : Ah thanks!

17:15:16 From Brandel Zachernuk : Oh, that looks bad - those are Lanier's books

17:15:27 From Brandel Zachernuk : I'm guessing the 'dawn of the new everything'

17:16:13 From Peter Wasilko : Did you see the goldfish driving the mobile fish tank robot over dry land?

17:17:08 From Alan Laidlaw : I want get this book but having trouble finding it

17:17:46 From Frode Hegland : Jaron Lanier

17:17:58 From Alan Laidlaw : Right, I'll find it somewhere

17:18:16 From Frode Hegland : https://www.amazon.co.uk/Dawn-New-Everything-Journey-Through/dp/178470153X/ref=sr_1_6?crd=1LHKCRB2H98X5&keywords=jaron+lanier&qid=1642439887&srefix=jaron+lanier%2Caps%2C93&sr=8-6

17:18:21 From Frode Hegland : Found it!

17:18:34 From Peter Wasilko : I should still be able to write 3-D Code while exiled in 2-D.

17:20:05 From Peter Wasilko : And I'll probably get more immediate benefit from an Apple Silicon Mac than a headset.

17:23:42 From Peter Wasilko : But we could put data hashes in VM to get the data from a content-addressable store.

17:24:47 From Peter Wasilko : "Green Cube off center left relative to viewer on top of a blue cube half its size."

17:25:25 From Alan Laidlaw : List of completing formats just mentioned?

17:27:11 From Peter Wasilko : Put the geometry in IPFS

17:27:49 From Peter Wasilko : Bind each model to a human sensible name and incorporate THAT in VM

17:28:16 From Brandel Zachernuk : The two formats are glTF and USD / USDZ

17:28:58 From Peter Wasilko : See <https://en.wikipedia.org/wiki/SHRDLU>

17:31:58 From Brandel Zachernuk : glTF is presented by the creators as 'the jpg of 3D,' so it's expected to be allowed to be lossy etc

17:33:48 From Mark Anderson : ^ Interesting

17:39:19 From Peter Wasilko : I open a new browser tab, hence often having over a 1,000 open at once!

17:39:32 From Mark Anderson : Arrives, flagged ... and done!

17:39:44 From Peter Wasilko : My New Year's resolution is to properly archive and close them all!

17:39:52 From Frode Hegland : Hello Waliya, nice to have you here. We started quite a while ago but we are here a little longer

17:40:10 From Frode Hegland : Next meeting is Friday 1 hour 40 before the time is now
17:40:23 From Peter Wasilko : Hi Keith and Waliya!
17:40:41 From Waliya Yohanna : Hi Frode! I just come in by accident and found you people here
17:40:55 From Waliya Yohanna : Nice to see you this year again
17:40:55 From Frode Hegland : Can you add a link to Craft space to the Wordpress?
17:41:02 From Frode Hegland : :-)
17:42:33 From Waliya Yohanna : Hello.Peter Wasilko, it seems I cited your work before
17:43:27 From Frode Hegland : Can't hear you well at all
17:43:35 From Brandel Zachernuk : https://twitter.com/waliya_y_joseph
17:43:41 From Waliya Yohanna : Nigeria
17:45:15 From Peter Wasilko : Wow, I just had to "prove" I was a human or AI trained on traffic light images.
17:45:22 From Frode Hegland : :-)
17:45:46 From Waliya Yohanna : Hmmm
17:45:57 From Waliya Yohanna : Fortunate to be here!
17:47:06 From Peter Wasilko : Maybe we should be designing a cyberdeck abstraction.
17:50:33 From Peter Wasilko : @Alan can you reinvade me from peter@wasilko.info. ?
17:50:39 From Peter Wasilko : *invite
17:50:46 From Alan Laidlaw : I will reinvade anything.
17:51:01 From Alan Laidlaw : done
17:51:15 From Waliya Yohanna : Walsiko
17:51:34 From Waliya Yohanna : I've vote u I think

21 January 2022 : Barbara Tversky

21 January 2022 Video

<https://youtu.be/KqdlcxHbviE>

21 January 2022 Transcript

Frode Hegland: And here is Barbara. Bang on time. Okay, so many messages. I'm going to go all kinds of focus mode now, in case. Unless someone has a problem joining. So, I'll look out for that a little bit. But I think we're quite good, actually. I just hope no one goes to our normal "Zoom" weekly meetings, because that's a different link. I decided these monthly ones should be slightly better protected.

Mark Anderson: Frode, would it help... Is the other one open? I mean, if you want I can duck off and just go check and see if anyone's... Actually most of the faces are all here. So, yeah.

Frode Hegland: I should get a message if someone joins, so I'll leave it on the side. So, Barbara, who needs no introduction, we'll get an introduction. Very brief one. But in a moment when we have a quorum. I have no idea what that means in this context, but whatever. But Barbara, before we properly start, you're, let me guess. East Coast? West Coast?

Barbara Tversky: I am in New York. East Coast. In Manhattan, Greenwich Village.

Frode Hegland: Well, it's a really special time in the village. This is the only time in New York where it doesn't smell, right? I say that lovingly...

Barbara Tversky: It's always a special time. New York has so much to offer anybody. A good friend used to call it, "The ultimate adult playground."

Frode Hegland: Yes. I would agree with you, and you're getting thumbs up from Alan who is just up the road from you.

Alan Laidlaw: Yes. I would love to... Yeah. You're around Columbia, is that correct?

Barbara Tversky: Yeah I am affiliated with Teachers College at Columbia. But at the moment, I'm living downtown. I'm teaching by "Zoom." (INDISTINCT) has a very new meaning in these days.

Alan Laidlaw: Oh, that's great. Once we get through all the safety, I'd love to buy you a

coffee. I'm in Brooklyn right now. But I was in Chelsea in 2019.

Barbara Tversky: Well, Brooklyn is the hip place to be now. Manhattan is more and more old people. So, the young people, the new movements, they're in Brooklyn.

Alan Laidlaw: It's easier to have a dog in Brooklyn for sure.

Barbara Tversky: You know, there are times when I walk out at night, and there are more dogs than people in Manhattan. That's because some people are walking two or three.

Alan Laidlaw: That's very true.

Frode Hegland: And right there, with the entry of Ben Schneiderman, my arbitrary screen has filled up on the side here. And so, I think this is a good time to start. We're only two minutes in. I don't think there's that many more people. Why don't we do one of the nice things we sometimes do before Barbara properly starts? There maybe one or two more people. Randomly go through, and say where everyone is. Alan, Brooklyn. Barbara, New York. Bob Horn?

Bob Horn: San Francisco.

Frode Hegland: Ben?

Ben Shneiderman: Hi. I'm in Bethesda, Maryland.

Frode Hegland: Maryland, wonderful. David Lebow?

David Lebow: Tallahassee, Florida.

Frode Hegland: Karin Hibma?

Karin Hibma: I'm in Oakland California.

Frode Hegland: So cool. Oh, what the thing is moving about here. Peter, we know where you are. New York, right?

Peter Wasilko: Yes.

Frode Hegland: Dave Millard, somewhere down south in the UK. Where are you, David?

David Millard: Hi, Frode. Yeah. I'm in Wiltshire, in the UK.

Frode Hegland: Sounds so fancy when you say it. Brendan?

Brendan Langen: I am in Chicago.

Frode Hegland: Oh, I didn't know that. Should have known that. Adam, you are in (INDISTINCT), right?

Adam Wern: No, Stockholm, Sweden.

Frode Hegland: Oh, Stockholm. Sorry, I got it backward. Dave De Roure?

David De Roure: I just changed my background to reveal my location of Oxford.

Frode Hegland: Ah, yes. Now I can see that. David (INDISTINCT)? You're muted, David (INDISTINCT). He must be muted. Chris Gutteridge, you're in Southampton, right?

Chris Gutteridge: Yep of mayflower fame for the Americans.

Frode Hegland: Mark Anderson? Southampton?

Mark Anderson: Portsmouth. Just along the coast. I'm from Southampton.

Frode Hegland: Pam, where are you?

Pam Drouin: I'm in Columbia, Missouri.

Frode Hegland: Very cool. Rafael?

Rafael Nepô: São Paulo, Brazil.

Frode Hegland: Brilliant. Patrick?

Patrick Lichty: Winona, Minnesota.

Frode Hegland: And Brandel?

Brandel Zachernuk: Sunnyvale, California.

Frode Hegland: And I think, finally, my list keeps moving about here, so I don't want to waste too much time. I think we have Lorenzo. Where are you in the world? Lorenzo is muted. Okay, Barbara...

Ben Shneiderman: Thank you, Frode, for bringing this illustrious group together. It's quite wonderful. And thank you, Barbara, for making it possible.

Frode Hegland: Yeah, I mean. I'm just super thrilled. The world is such an interesting place now. I'm sitting in Wimbledon, South London. Lorenzo, Italy, I just saw. You know, for us to be able to meet like this, is incredible. So, without further ado, Barbara. Everybody, I'm sure, has at least read... Actually, in the chat, while Barbara does her intro, can you please write if you've read the book? Or if you're currently reading it? It would be really nice to have a bit of a (INDISTINCT). I will have to write, of course.

<https://youtu.be/RydjMrG9sDg?t=714>

Barbara Tversky: So, thank you for inviting me. I have far too much to tell you. And I'm trying to tell it through visuals not in the book. The talk will be like pieces of hors d'oeuvres, so a bit disjointed, but they're meant to set up talking points so that you can ask questions, or discuss things. I should say that you're more punctual than my students, but my students are far more geographically dispersed. Kazakhstan, China, Korea, Japan, just everywhere. And so, "Zoom" does enable that kind of interaction in one class. Okay, I'm going to share a screen and I want to, before I show pictures, I just want to say a bit, without a picture, of how I got into this field at all. I'm a bit of a contrarian. When I was a graduate student, people were reducing everything that people thought about all representations of the world to something like, language, or propositions. And my feeling, looking at that, and I did look at all the research at the time, is language is efficient, decomposable, it has all kinds of advantages. I rather like it, I'm using it right now. But it seemed to me that language couldn't

begin to describe faces, scenes, emotions, all kinds of subtleties. And then, I started thinking that space is half the cortex. So, spatial thinking must be important. And by special thinking I mean the world around us, and the things in it, including our own bodies, other people objects, scenes. And that special thinking evolved long before language, which occupies a rather tiny bit, but important place in the cortex, but came much later, and is in less connected with the rest of the cortex. And then you think, anyone who's been a parent, or owns a dog, that babies, and other creatures think and invent so many marvellous things without language. And for that matter, so do we.

So, I got interested in spatial thinking. This is some of the early ways that we communicate. Gesture arises in children long before language. And in fact, children who gesture quite a bit, speak earlier. Games where we're imitating each other, taking turns, alternating what we're doing, this kind of interaction in games, rolling the ball, rolling it back, it builds trust. It sets up conversation, which is, you say something, I say something. So, it sets up cooperation, conversation, and many other things. This is done early on and communicated by action, not by actions of the body. And reciprocal expressions on the face it isn't communicated by language. So, I'm going to jump lots of jumps, and I want to talk now, because you're interested in text, about kinds of discourse. So, one important kind of discourse is a description, which is a state of affairs in space or time. Explanations build on descriptions, but add a layer of causality and reasons. Stories add on descriptions and explanations, they include both, and they add a point of view. The author, or authors, they add emotion, drama, there are a whole set of elements that stories can and each one isn't necessary. And there are deep arguments about what a story is. But I wanted to make those distinctions, and check with my colleagues in discourse analysis that the distinctions reflect the field. Stories are studied in so many disciplines. Then we have directions, which build on explanations, but give you just an "A" to a "B." And we have arguments, which bring together a set of stories, explanations, and descriptions to make a certain point. So, I'm not going to labour that. I want to jump again, I already talked about how communication begins in humans and other animals as well. Through the body, through the face, through actions. And I could talk, at this point, about mirror neurons, but I'll skip that, just leave it as a teaser.

But the earliest human communication and probably human includes Neanderthals and other hominids goes back at least 40,000 years. It keeps going back, as this was a discovery in the last few years. You can see hands there, there are animals there. It's from Sulawesi. And, as I say, these are being discovered everywhere. This is the former oldest map, 6000 years. It shows two perspectives, an overview of the paths and rivers, and a frontal view of landmarks. Linguists don't like this. Geographers don't like two perspectives. But people seem fine with them. This is the current oldest map, it's about two inches by one inch. A stone. It shows the

surroundings around the cave where it was found, some 13.000, 14.000 years ago. And it's tiny. So, it could be taken with you, to guide you on going back. A map of the sky going back 5000 years. This is a valley in Italy, it's a drawing of a petroglyph. Again, two points of view. Eskimo maps. They were carved in wood, very beautiful, carried on canoes, they showed the outlines of the coasts. And they floated, in case they fell in the water. South Sea Islanders Map, probably familiar to you. Shells representing islands, bamboo strips, the ocean currents, which are like the highways of the ocean. And at least some of the people that were trained and carried these with them, 2.000 miles on the open ocean, at least some of them returned home. A map by North Coast Indians, showing the various settlements on their hands. Now I'm jumping again to depictions of scenes. Again, going back 40.000 years. Chauvet. Going back even farther in Sulawesi, although I'm not sure. This one I especially like, it is in the book. It's a petroglyph on the left, and the drawing of it on the right. And it's showing two suns in the sky. Quite remarkable what could account for that. An Indian astronomer did some history on it and found that, at about the time they could date the petroglyph, there was a supernova. And it was such a remarkable event that someone inscribed it in a stone. Stones were, in a way, the newspapers of antiquity. Here's another example from the U.S., a whole valley full of these. It's called Newspaper Valley, and it has many of these petroglyphs showing events. So, events in making bread in a tomb in Egypt. Events in the Trajan Column. Now we have calendars, they also go way back. Some circular. Some tabular. All these forms become important, but I won't be able to talk about them. Then we have number. We have tallies. Again, you can find them all over the world. It's not clear what they're representing. But having a one-to-one correspondence from a mark, to an idea, to an object, to people whatever they were counting, moons, is a rudimentary form of arithmetic that was again, inscribed in stone. A more advanced, you know about these. So, ancient visualizations represent space. They represent people, objects. They represent time, and events in time. They represent number. These are all important concepts, and you will find them in the newspapers, journals, magazines of today. And they're so important that the brain has specialized areas for processing them. And what's extraordinary about all of these is, they can be spatialized. So, this is part of my argument that is, spatial thinking is foundational to all thought.

So, early communications began as pictographs. In some way, you can still find... Well, there was a civil war colonel who collected these during battles and then, Dover later printed his findings. They're quite remarkable. This is a love letter between the two animals. On the left are her totem and her lover's totem. And it's a map leading him to her tepee, and she's beckoning him there in the map. In the 18th century, the age of enlightenment, we finally get graphs. Because the early visualizations, that ones that I showed you, except for time, were

more or less things that were actually in the visual spatial world. But more abstract concepts, like balance of payment and graphs, developed only in the late 18th century, and they began to blossom. So, Diderot, I would love to walk you through this, it's a way of teaching diagrams. The top half is a scene, which would be familiar to 18th century eyes. The bottom is a diagram. It differs from the top, and things are arranged in rows and columns. There's a key. Lighting is used not naturally, but to reflect the features of the objects. The objects are sized. So, you can see them in the diagram, not in their natural sizes. So, this is a visual way of teaching people what a diagram is. In fact, by now, we've diagrammed the world, and we've set up where different kinds of vehicles, pedestrians can go, where they can't go, where they can park, when they can go, and it moves us through space in an organized way. But we've really diagrammed the world.

So, graphics augment cognition, they record information, convey information, promote inferences, enable new ideas. This is a lot through sketches, and I won't be able to talk about that. But can answer. They facilitate collaboration. They're public, so we can both, or all of us, revise them, make inferences from them, enable new ideas from them, see them, and point to them. Gestures are important. So we can distinguish two kinds of graphics. Those that are inherently visual. Maps would be a prime example. They're ancient. And visualizations of metaphorically visual. Graphs, charts, diagrams. And again, they seem to be a Western, at first, production of the age of enlightenment. Good graphics schematize. This is a prime example. They also annotate. They're multi-modal. Graphics consist of elements and relations among them. And my argument is, these can convey meaning directly. But they don't have to be learned. In many cases, they're quite natural. One of my claims is this visual spatial way of communicating is much more natural. Pointing. Pointing draws a line from my finger, to the object that it's pointing at. So, it guides your eye to that object. And that's very natural. We saw babies use them. Chimps use them a bit, but other chimps don't follow them. So, it shows what the chimp is thinking, but it isn't taken as a communication by the other chimps. Those can be separate. And then again, we've done a lot of work on gestures, showing that many of them are really helping us think. But they can also help others think. So, graphics consist of elements, spatial relations among them, they convey meaning quite directly, and they represent thought directly, by using elements and spatial relations on a page, a virtual page, or a page in the air, as gestures do, and they represent elements and relations in the world. So, elements can resemble what they represent. Iconic. They can bear a conceptual similarity to what they represent. We call them figures of depiction. Metaphoric. And they can be schematically related. Elements can be iconic, metaphoric, abstract and symbolic. Early writing began as pictographic. And the alphabet was invented only once and took over the planet. Not everywhere, actually. Probably half the planet is still using some descendant of

the pictographic language. So, meaningful marks. Our claim is that icons, dots, or depictions, lines, arrows, containers, can represent ideas quite directly, and we have some empirical evidence for it. And I'll show you those in a minute with a detour to a minimal diagram, or could be called a minimal diagram, a line and a dot namely points representing ideas or places in a real map, and lines representing relations among them. And this minimal diagram, a link between two points, is the building block for many. This is the internet, in 1987, you could still draw it. Family trees. Social networks. These are social networks produced by some of our participants. Phylogenetic trees. Art. This is Mark Lombardi, no longer with us, who made beautiful networks representing where the money went, and other political, economic ideas. And people scrutinized them for hours. So, the meanings of these abstract forms are simple, efficient, neutral, and abstract. Some of the meanings come from Gestalt Principles, some just from gestures, some from the way we behave in the world. Like the paths on the ground are the lines that people make from place to place. So, we've done empirical work on each of these, showing that people produce them from verbal meanings, and they understand the graphic meaning from the verbal. And I'm not going to be able to go into that. Spatial relations, again, can be literal or metaphoric. The general inference that people make is, proximity in space represents proximity on any dimension. We use this in gesture and language. We say we've grown closer to people. We've grown far apart. Place, centre, periphery. Again, language represents that the centre is the centre, and the periphery is the periphery. Directionality is also important. The vertical. Anything that goes up is good in general, except the economist thought inflation going up, and unemployment going up. I could say they're perverse, but it's probably because of the numbers. We often get conflicting concepts wanting to go up. But this is gravity. Fighting gravity takes strength, health, wealth. So, anything going up is usually positive, and anything going down, like hell, is negative. The horizontal is pretty neutral. It's neutral in our lives, in our motion, in our world. But there are cultural constraints on it. Writing order that are quite strong and cross-cultural. There are cultures and languages like Hebrew and Arabic written from right to left. Originally the columns in Japanese and Chinese went that way. And many of these concepts get reversed in right-to-left languages. So, just to show you, we looked at diagrams in books, all in many disciplines. And the present day, or better things go up. And I should say, in evolutionary trees it's always man. Who gave birth to man? So, another thing we've looked at, and others of you have looked at going to graphs, now to information graphics is inferences. This research needs to be done more. That different displays lead to different kinds of inferences. And the reason really is the underlying visual spatial representation. Bars separate. They say there are a bunch of "A's" in this container, and a bunch of "B's" in another container, and therefore, encourage discrete comparisons. Lines connect showing a relationship. They say

"A" and "B" share a value, but "B" is higher than "A." And we've shown these effects in a number of different contexts. Despite what the statisticians would recommend, the visual form of the displays override it, and people tend to make discrete comparisons from bars and trends from lines. So, this kind of research is ongoing, of how different displays, depending on the visual spatial characteristics, lead people to make different inferences.

Animation. People ask me about animation. Animation is something that's relatively easy to do now. There's tons of research showing that people don't understand animations the way they're intended. The Muybridge experiments looking at, whether all four legs were off the ground at any point when horses were galloping, as an instance. You can't see it when horses are galloping. But the stop gallop photography showed that, yes, all four legs are, at some point, off the ground. But the art museums of the world are filled with horses legs incorrectly aligned when they're galloping. Here's an example of how hard it is to perceive. So, animations are compatible with thought, in the sense that, they use change in time to convey change in time, but they're hard to perceive. They show but don't explain. And most of the things that are animated, when we talk about them, chemical processes running, climate change, we talk about it in steps. So we think about these things in discrete steps, not in this continuous way. Which, as I've tried to show you, is difficult anyway. I'm sure good animations can be designed, but it's trickier than some people think. And obviously, animations appeal to the eye. We're all, in one way or another, addicted to movies and music.

Comics. I want to jump to comics because they show all kinds of lovely ways of expressing meaning that are rarely seen in traditional graphics. Whether they're infographics or graphs and charts. So, one thing comics artists can do, is use space to segment and connect time and space. Here you get an overview of the scene, and then you get the action superimposed on it, in frames on it. This was used by the ancient Aztecs, not just modern comic artist. Visual anaphora. You can get from one frame to another following this red book. The "New Yorker" cover is not just showing writing, but it's a visual story and a pun. So the book ends up in a trash can being burned by homeless people to keep warm, and the verbal name is "Shelf-life." But you can follow it because of the anaphora provided. Something from frame one is preserved in frame n plus one. And so on, so that you can follow the continuity. As for good stories and good movies, often you want to break the continuity to create suspense. I'm going to skip that, it's lovely. Here, following the eyes, and the pointedness of the frames allows you to go back and forth and understand the David and Goliath. This one's a little harder. It's a beautiful book called "Signal to Noise" by Neil Gaiman and illustrated fantastically by Dave McKean. It's showing an aging director, and he's actually dying of cancer, and he's got photographs from many of his productions on the wall. You can see he's thinking. And it shifts perspective to what he's thinking about. He's looking, and you can see the perspective

switch between the man in the blue coloured shirt and what he's thinking about, as he watches, looks at all of these frames, and then finally, he can't stand it. "Stop looking at me!" So, he's both reviewing his life and haunted by it. And again, it's conveyed visually. Steinberg, the master, a conveying peeping toms through a mirror that reflects the guy watching from the opposite apartment. More Steinberg. A pun, "Time Flies." More comics. So here, there are so many devices, visual spatial feed metaphorical, or figures of depiction. You have puns here, polysemy, figure/ground. I want to draw your attention to the old-fashioned telephone cord, which some of you, at least, will remember. So this woman is drawing those other people into a conspiracy by calling them on the phone. So, the phone cord is a literal phone cord, it's a metaphoric phone cord, drawing them into the same conspiracy. It also serves as the frames of the panels. So it's doing triple duty. It's something kids can get right away. Like gestures, you get it almost without thinking. It just pops out at you. So, a beautifully crafted device.

Figure/ground. You're seeing the murder, and the noise of the murder is coming through in those black figures that are superimposed on the actual scene. And the black and white drawing is emphasizing the stark brutality of the punctual murder. You light out a life in a second. More Steinberg. "Canceling Thoughts." Again, I don't need to tell you. Visual juxtaposition. This is another Gaiman, McKean cooperation. A child is at a birthday party. You can see on the right, they're playing musical chairs. Here, the child is not interested in the birthday party. So, goes out, and talks with an uncle, who told the child the story of the Saint Valentine's Massacre by Capone, where he tied his enemies up on chairs and killed them. Shot them one by one. So, you have the chairs there with the men chained to the chairs juxtaposed with it with the birthday, which is a little bit of a brutal game because one child is eliminated at each round from musical chairs. So, that juxtaposition of chairs, again, is a stark reminder of the comparison between brutality of children, and brutality of adults. Okay, metaphor pun. "Puppet Governments," Feininger. This is Winsor McCay, a brilliant comics artist. This is from the early 1900s, New York. Parts of New York still look like that. And this is, of course, the rat race, running on a treadmill. This is a dream, another one of his where a dream transports the child and then dumps the child back in bed, the way dreams end before they should end. This is onomatopoeia rhythmicity. It's showing a chase. And by putting the panels on a diagonal, showing the speed of the chase. "Coming out of the frame." The first pig, whose house was blown up, comes out of the frame, and talks to this second pig inside the frame, and says, "Get out of there. It's safe out here." And then, the pigs all go berserk. They get out of the frames. And the frames are on the floor, and they're stamping on them. So, this version of the three little pigs is a riot. And again, kids can get it. So I'm going to end with another Steinberg. Steinberg drawing himself. Again, a visual way of understanding

drawing portraits and so forth. So, I've raced through a lot, and I haven't covered everything that Frode wanted me to talk about. So, I'm open now for questions and I will stop sharing. I think you'll moderate the questions, because it's hard for me to read the chat and answer at the same time.

Frode Hegland: Yeah, absolutely. That was overwhelming, but in a very good way, of course. And I think the way we should do the questions is quite simply clicking on the reaction hands. I know quite a few of you have had questions from before we had our presentation today. So, who's going to be the first for the digital yellow hand up in the air? Brandel, please unmute. Yeah, there we go. Perfect.

<https://youtu.be/RydjMrG9sDg?t=2603>

Brandel Zachernuk: Hi, Barbara. Thank you. This is brilliant. I've been doing a number of your talk tonight. I love the fresh ground and the emphasis on the text here. So, my question is not about animations per se, but about progressively recomposed images accompanied by illustration, via the speech of the illustrator. The actual drawing of lines along with narration. Is that something that you've ever studied, or that you would expect to have any particular effect from, in contrast to seeing the completed image of its entirety?

Barbara Tversky: That's what we do in classrooms, right? I mean, that was the oldstow, I know I have many mathematician friends who still insist on going on the board as they speak. And watching it unfold, and the rhythm with which it unfolds, and the verbal accompaniment at the same time, I think is very effective. So, what you're pointing to is one way that animations can be made more effective. They unfold in time with narration and explanation. And they add a bit of drama. What's going to come next? So, I think that's great. And at the back of my head, when I was thinking about this is: What can you do on text? And it will amplify it. And that is exactly the sort of thing that one can do. And it is like a comic, combining language, and symbols, and sketches, and so forth, all at once. There are beautiful examples on the web. Just lovely examples of people using that technique. And I've been teaching comics for probably 20 years, on and off, not quite. And I see a younger generation, growing up with that medium, and drawing and writing at the same time. So, I think people will get adept and talented at doing that, at illustrating what they think, while they're thinking it. And I think that's just great. It gives people an extra way of expressing themselves that's quite poetic, or can be quite poetic, but it's also wonderful explanations. So, yeah. I'm a real fan of that.

Brandel Zachernuk: I'm curious, have you ever seen Ken Perlin's work at NYU around at being able to draw in Virtual Reality?

Barbara Tversky: I was an orally fan. And Ken, as a friend, and I was an early fan of his, exactly on chalk talk. And in fact he and I and Steven Feiner, whom I work with, and Hiroshi

Ishii at MIT, the four of us put in grant, after grant, after grant to expand, and NSF didn't like it, and didn't like it, and didn't like it. So, a real disappointment for all of us. Because classroom teaching that way is, again, natural and what Ken's animations did is, you're talking about a pendulum, and then it could animate the pendulum depending on the length of the string, and so forth. So, being able to speak, and use mathematical mathematics driven animations, I thought was super! Just a super way of understanding. So, yes.

Frode Hegland: Yeah, thank you very much Brandel and Barbara. Bob?

<https://youtu.be/RydjMrG9sDg?t=2847>

Bob Horn: Oh, hi Barbara. Of course, the question I will ask will not be a surprise to you. I'm very interested in, and wonder the degree to which you've done research on the textual elements intimately integrated with the spatial elements. That is most of what you've just presented has been the spatial aspects of the kind of visual language communication that we are all using. In addition, the diagrams and comics rely, it seems as much as maybe, 50/50 or even more sometimes, on the words, and how the words are integrated with the visual elements. And that's been something that I've been very interested in, particularly in diagramming. So, I'm wondering if you've gotten your research to go in that direction, to analyse, and find out how text is integrated with the visual elements?

Barbara Tversky: We've done a lot of work that skirts around that. We've shown that you can go back and forth between visual descriptions of maps, or many kinds of diagrams, and the visual spatial. That the same underlying concepts are driving both of them. But that the visual form, for example, root maps is usually not for everybody. But usually a more effective way of communicating that. It's a long story. But I agree with you that in many comics, what's going on is in the words. I think they're poor comics when they're talking heads. I talk about them as talking heads. If you look at Larry Gonick's science and history, if you look at his comics, they're cheap, 10, 12 dollars each. They're absolutely wonderful. His book on statistics is used as a textbook in many places. At one time, even Stanford. And he's a neighbour in San Francisco, and his books are absolutely fabulous. He was all about dissertation mathematics at Harvard. A self-taught cartoonist. And he began doing, essentially, visual spatial textbooks on different forms of math, science, history, sex, environment. He's got bunches of them. He always works with a domain expert. We've appeared together on many occasions. And once I had the temerity, stupidity to ask him, "Larry, what do you put in pictures? What do you decide to put in pictures? And what do you decide to put in words?" So, he's very tall, I'm not, and he kind of looked down at me, with his full height and said, "Barbara, I do everything in pictures. What I can't do in pictures, I do in words." And he's incredibly inventive of what he does in pictures. I have my students go through one of his books, they each choose one, and they go through looking for the visual

spatial devices, and every year they come up with things that I haven't thought of. They see things I don't. And it's usually the visual spatial telling the story. So he's an excellent example of that. There are others. And Scott McCloud and his book "Understanding Comics" is a gem. It's a gem about stories and narratives, not just about visual stories. But he does talk about the roles of language. And here you'd have to add symbols, like arrows and mathematical symbols. You have to add in comics the way the font, the size of the font, and all the squiggles that are added that give you information about movement, and mood, and smell, and sound. So, you can enrich the depictions in so many inventive ways. And what I've been trying to do is urge people who make charts, and graphs, and infographs for science books, to learn those techniques. And, as I say, I'm just pleased to watch younger people. I have a sample of eight grandchildren, and the grandchildren of many of my friends, and watch them latch onto graphic books, and see the graphic books that are doing so much in the depictions besides text boxes, and I'm very optimistic about people coming up with really creative ways to do visual storytelling. So, long answer. Sorry.

Frode Hegland: That was great. Thank you very much, Barbara. Ben?

<https://youtu.be/RydjMrG9sDg?t=3189>

Ben Shneiderman: Thank you, Barbara for a wonderful, intense, movement through all the space of these wonderful ideas. I think it aligned very well with Bob Horn's visual language thinking, which has been an inspiration for me as well. But one of the charms of your book was that, it went beyond the spatial and the visual, to the idea of mind in motion. And could you say more about dance and body movement? You talked about gesture, you talk about hands and how people communicate, express themselves, learn by being in motion. Tell us more about that side of the story.

Barbara Tversky: So, it means speech is in motion. And speech is accompanied by prosody. I emphasize certain words, and de-emphasize others. I can give you my mood by, I can sigh, I can sigh short or long, and that's motion, and it's just in our voices, and it's communicating so much more than just the words on page. Although, text again is words on page. And there are ways of amplifying text by putting "dot, dot, dot, dot," that capture some of that. And sure, our bodies indicate, I mean, I said gravity, if I'm feeling good, I'm standing straight and strong, and if I'm in a depressed mood, I'm down, and we can pick that up in others in a second, especially people we know. We can pick it up from hearing their feet behind us. What kind of a mood they're in. Who it is. We know these cues. Again, they're active, motion cues to people. They're very simple, not as complicated as dance. But really creative, and wonderful dancers, and choreographers can create absolutely amazing displays of emotion, human interaction, human non-interaction, individual feelings from the way they do dance. They're uncanny. And you see that in theatre, they often hire choreographers to orchestrate

how people are moving, and talking, moving their arm, agitated or smooth. So, yes. Huge amounts of human meaning gets conveyed through the motion of the body.

Ben Shneiderman: I do think really that deserves on a much-expanded part, just the idea of walking together, being in a forest, moving forward, sailing on an ocean, flying through the air, walking up a mountain. All of those to me, they're not just physical experiences, they're cognitive experiences as well. And they enrich us. And I found your book really opened my mind and thinking to the realization of, how much the body plays a role. Which your book adds so much to enrich the dimensions of analysis, which have been, as you point out, largely linguistic moving towards spatial, and visual, and maybe auditory. But the idea of moving towards body motion that was really, to me, a highlight.

Barbara Tversky: Thank you. I was limited in the book by what there was research on. This is the problem of being a scientist. You don't want to go too much beyond research. I use a lot of examples, but the examples are all founded in research findings. But I couldn't go off the way until now. But really, if you think about it, every organism, even a virus, needs to move in space to survive. And the basic movement is approach or avoid. And those are replete with emotion. You approach things that you're attracted to, that might do you good, that you want. You avoid things that have negative valence. So that, from the get-go, movement is for survival. Even grasses have to move toward the sun or away from rain in order to survive. Even things rooted in the ground. So, we all have to move in space to survive. The basic movement is approach or avoid. And those come with emotions, which I think underlies some of Damasio's claims, although he's got brain there too, without emotion nothing happens. And emotion and motion in English and other romance languages have the same root. I don't know about Germanic, or Chinese, or other languages. But they do have the same root. And we talk about being moved as an emotive response. So, I do think anything that has to do with life, really does derive from motion in space.

Ben Shneiderman: Exactly. But look at how they impact on design, or even the "Zoom" in front of us. Some people have just their text name. Some people have a frozen image. Others are live and animated. I like to be Zoomed standing up, so I can be freer to move around. And I think I express myself better, and I can reach out, or I feel the other person better when they are animated, as well. Anyway, thank you.

Barbara Tversky: Yeah, absolutely. I'm frozen in place in a classroom, I can't stand. But when I move around the classroom, I'm going the whole width, and sometimes the length of the classroom. So, I can't do that on "Zoom," it drives people crazy. So, I plant myself in a chair. And when I'm listening to "Zoom," it's often on my phone, walking. So, a longer story. "Zoom" has advantages and disadvantages. Like anything.

<https://youtu.be/RydjMrG9sDg?t=3585>

Frode Hegland: Yeah, absolutely. You mentioned the question of other languages like Germanic languages. In Norwegian, "*følese*" is the word for feeling. But that can be, you can touch, it's also touch feeling, as well as an emotional feeling. But the funny thing is that, "*bevege seg*," which means movement, is also what you would say if you were emotionally moved by something.

Barbara Tversky: Yeah, nice. I should ask my students who are in Japan, or China, or Kazakhstan, or Malaysia what their languages do. Yeah, thanks.

Frode Hegland: Oh, absolutely. Peter?

<https://youtu.be/RydjMrG9sDg?t=3627>

Peter Wasilko: Yes. Have you given any thoughts to the evolution and interplay of note-taking? And I was recently reading "Lines of Thought," (INDISTINCT) typesetting and textbook design. And also, do you have any thoughts about interactive fiction systems?

Barbara Tversky: I'm having trouble understanding you. Did someone understand him better and can tell me what the question is? The mic is bad, my hearing is shut.

Frode Hegland: Well, I got the last part really clearly, Peter. You asked if Barbara has any comments or perspectives on interactive fiction? Can you please repeat the first part? I also had some problems hearing you.

Peter Wasilko: Yes, the first part was whether she had any thoughts about the evolution of note-taking and textbook design?

Frode Hegland: The evolution of note-taking and textbook design, as well as how they interplay. Thanks, Peter.

Barbara Tversky: I don't really know much about the history of textbooks. I do know there are a huge number of experiments trying to compare text and diagrams or graphics in one way. And many of them are unsatisfactory, because you can have good text, or poor text, and you can have good graphics, or poor graphics. And I think people in the info design graphics community have been developing standards, or best practices. For good graphics is complicated, because it depends on your audience, and what you're trying to convey. You can't have absolute principles like you can for font size. And there's a little bit of work on textbook design and what it should look like in good text and poor text. But the range, in both cases, seems so great. And studying it would take an historian of sorts, to know the evolution, the development of those things. And it would have to go across cultures. What happened in the East, as well as what's happened here. So, I think that's way beyond my expertise. but I don't think I answered all the parts of the question. Probably I can't answer them.

Frode Hegland: The second part was on interactive fiction.

Barbara Tversky: Ah, interactive fiction. I don't know whether people have done research on it. I know my kids, who are now parents themselves, loved it as a kid. They weren't around when I was a kid. But my kids loved it. And then, of course, the computer games that are built on storytelling. People get incredibly involved in. So, probably those designers know a great deal. They have a lot of heuristics and rules of thumb for that. So, the one kind of discourse I didn't put up is conversation. And that grounds interactivity. And conversation isn't like a lecture, it's two or more people speaking and no one can dominate. As I'm dominating now, in a normal conversation no one can dominate. What you get in that kind of interactivity also, is little bits of information. Bite size. That you can consume, and it arouses a question, and then there's another bit of information. And interactive graphics do that. They allow you to involve yourself in it, in little bits, where you can get background where you need it, or where you want it. Not all of us want, you know, there's that old joke about a book about penguins that told me more about penguins than I ever wanted to know. So, different people will want different amounts of information. And that interactivity allows me to have a conversation with a graphic, where I'm asking bite-sized questions, and getting bite-sized answers that lead to something else. So, I'm building up my own knowledge that way. And I think the interactive fiction can do that. And also add the suspense to it. We started at one point trying to compare comics with traditional graphics, or traditional graphics plus text. Too many things were going on at the same time. Too many uncontrolled variables. And as a cognitive scientist, it's those crucial variables that we're after. When you're a designer, or an educator, it doesn't matter to you what's doing it. The combination is probably doing it. It's in the interaction, amongst those elements. So again, then finding guidelines for creating good ones becomes difficult, because there are so many moving parts. I mean, like building a city. But nevertheless, we can judge which ones are more and less effective and why. There are times when I want to lecture or a book. There are times when I want that interactivity. Again, I'm not sure I'm getting at your question, but.

Frode Hegland: I think that was very useful. Alan?

<https://youtu.be/RydjMrG9sDg?t=3979>

Alan Laidlaw: Sure. I've got so many questions. Thank you so much for giving this talk. And I had the childish desire, which I still may succumb to, of showing off every reference you made. That's somewhere behind me because I'm a nerd. But that's great, I used to be a cartoonist, it's where I got started and a lot of that came from reading "Understanding Comics" and that was my first entry to like, "Oh, this person thinks like me." And I've never had these thoughts. But enough of that because could go on with many questions. So instead, I'll throw one that just popped up while you're giving the talk. This may be out there, and feel free to dismiss it. The thinking in context of cave paintings, and sort of where we got started

in scribing. The commonality, seems to me, that it's always the physical act of resistance against a surface. And so, I'm wondering about that in context to where a theme has been trying to probe into VR, what that'll be like? Is there any research around how that resistance, that pushing against something to create is different than, or I don't know, is it a class? Because with VR, we could say at least, there's nothing to push against at the moment. But in dance, there's also nothing to... Well, there are motions, there's creation that doesn't involve resistance exactly, not in the same sense of pushing against something to. Does any of that make sense and is there any work on it?

Barbara Tversky: Yeah, thank you. And I could probably learn a great deal from you, as a cartoonist. I absolutely agree with you. I don't know about research, but it's one of the complaints that people in architecture schools have, that people no longer know how to draw. That drawing on pixels is just very different from using a pencil, or a pen, or a brush. And artists, and calligraphers, and so forth talk about what the thing is, how it's held in their hand, what are the motions they need to do. Cooks. Any of you who cook knows you have certain knives that work well with your hands, and others that don't. Resistance and dance is gravity. And your own body, what it can do. will it stretch enough or not? Does it have the strength? So, that feedback to the body is huge.

Alan Laidlaw: I guess I put it... Sorry to reframe that, the aspect of us versus surface is what I was kind of trying to... The creation always seems to have a surface that's separate from us. Anyway, continue.

Barbara Tversky: Yeah. I mean, I'm trying to generalize that to resistance, and feedback to the body, and the feel that it is when you're dealing with a surface. And again, different surfaces. Just writing, paper makes a difference. Which kind of paper you're writing on? Or doing charcoal on, or watercolours, all of that. And that, I think, it's more than the resistance, it's the subtlety of your hand movement, and wrist movement, and our movement on that surface, what it takes. And in calligraphy, they practice for years the strokes, and how they make them, and how they twist the brush, and the kind of paper. So, all that interaction with the medium, what it gives your hand. And artists, I worked with a bunch of artists interested in drawing, and some of them had done doctoral thesis, and one of them looked at professional artists, and accomplished artists, and novices on drawing, how much they're looking, and how much they're drawing, and what are the time spans of the interaction. And in artists, it's much longer. They can look and draw a lot. And look and draw a lot. Novices are going back and forth. So, for artists the knowledge is already in their hand of how to translate what they see, this is life drawing, into their hands. And they talk about it as a conversation between the eye, and the hand, and the mind. And if you try to get them to talk words at the same time, they can't do it. The words get in the way. It's a visual, spatial, motor

conversation that the words get in the way. And architects say the same. They can talk afterward. Explaining what they were doing from a video, but while they're doing it, they're deeply engrossed in this feedback loop. Does that align with your experience?

Alan Laidlaw: Yeah, to play off of that, that's actually great. And got me thinking that now we have keyboards as our main interface. Which is a sad state compared to the richness of the ideal, the nostalgia, for calligraphy and whatnot. And yet, we have translated our focus into the simple clicking of buttons at a repeated pace and moving a mouse around. We can still get to that flow state, right? Coders do it, etc. So, that gives me hope in the VR space that, even though we wouldn't have a surface to push against to create, we would still find a way to translate it through, I guess, just mainly the feedback, and the style of feedback travesty. The style of feedback would still come through, and we would still have that feeling. I was just wondering if there was something haptic, like in the way that we have gestures. I think Darwin said that, "Every culture does this." Some version of this to say, "I don't know." And if there was something about the creation of man that is pushing against something, and that equals the brain does something different then?

Barbara Tversky: Sure. I mean, the feedback, and the kind of feedback, and the mode of interactivity, and some of that, I mean, VR is trying to add the kind of haptics feedback. and you certainly need it for surgery. And the VR surgery does try to add haptics, because anything you do, as a surgeon, you're relying on that. And anything a cook is making. And it's how it feels, you need that feedback. And the interactivity that comes from touching and moving, you need it for taking care of babies. When you pick up a baby and the baby is tense or relaxed, you feel it in your hands right away. So, yeah. We need that level of interactivity. Smell is another thing. When I cook I'm relying on the smells to know, I got three or four pots going and I'm relying on the smells to know, "Is this butter about to burn? So, I better lower the heat." Or "Is the rice bubbling too much? Better lower." I'm monitoring those activities with many senses. And some of it, we become completely unaware of. We just respond. The way walking, right? Walking or running. We're not aware of all the movements. Or typing. Once we had to be aware, but by now we don't, it's automatic. And there are benefits and costs to that, as well.

Alan Laidlaw: Great, thank you. I'll cede my time to the other questions.

Frode Hegland: Yeah, I'll hand it over to Luc in a second. But I just wanted to say, I think that interaction was really nice to hear because, for so many decades, we have had this nonsense that interaction should be invisible. They should absolutely not be invisible, depending on when you need them. If you're walking on the ground, as you said, even with shoes you can tell what kind of ground you're walking on. That is really useful, especially now in winter, when it may be icy. So please, let's highlight how we use our bodies and

interactions. That was wonderful. Luc, please go ahead.

<https://youtu.be/RydjMrG9sDg?t=4554>

Luc Beaudoin: Hi, Barbara. I've got a number of background projects. They're just background projects in spatial cognition. I'm associated with Aaron Sloman in Britain. I don't know if you know him. He has a project on spatial cognition, the evolution of spatial cognition from an AI. Aaron Sloman, you know him? There are two Aaron Sloman, one is the psychology guy, and the other one is the philosopher.

Barbara Tversky: No, I... The psychology guy was a student.

Luc Beaudoin: No, this one is technically a philosopher, but he is an AI person. But anyway, I'll jump to something that's not with Aaron's project, but another interest of mine is mnemonics. I've been doing visual-spatial mnemonics myself from a scientific perspective, I miss the beginning of your talk but I take it you've argued for the primacy of motion. Basically, motion coming before language and evolution. And there are various arguments for that. So, that makes a lot of sense. I see, as you do, the spatial cognition, spatial and movement cognition being fundamental. So, as such, I would think that for mnemonics it would be helpful. So I, myself, when I'm memorizing lists, you know that lists are the hardest thing to memorize. But if you can turn them into a visual-spatial sequence. And I'm not a dancer, so I'm not very good at the visual-spatial motion thing. But I found that if I can use a gestural mnemonic, then I can remember these lists. So I remember, Jordan Peterson has these 12 rules in his first book and I thought, "Okay. Well, how do I memorize that?" I'll turn it into a little bit of a dance and the whole thing came out within two repetitions. It was quite powerful. But I haven't actually delved into the science of this. But it's something I thought, "Well, if nobody's done this, I want to do it." Are you aware of research on using gestures for mnemonics? For remembering? Apart from drawing, I know that there's research on drawing, how that helps remember stuff. Actually, I'm more interested in imagined gestures, because I don't think you need to do it. We know that in sports, athletes often will imagine themselves doing things and that helps them execute the behaviour and practice. So, there's your question. Imagine gestural mnemonics.

Barbara Tversky: So, a visual practice, or visual-spatial practice, visual motor practice for divers, golfers, or whatever does help. It helps mainly in sequencing. It doesn't help in the fine aspects of the motion. Real practice is better than imagining practice. But imagine practice is also effective in the absence of real practice. You can do it on the train. I remember, it has happened to me several times, on the New York subway, I see singers with scores in front of them, and they're imagining the music. So, the part of the method you're describing is one of the oldest in the world. It's the method of loci, that was invented by the Greeks, Romans to remember their long orations. They would imagine themselves on a walk

through the Agora marketplace and put a portion of their oration at each of those places and then imagine that. So it links things together in an organized way. You still have to form that association between the place in the marketplace, and what you want to remember. The same would be true of gestures. When I was learning Latin ages ago, there was a whole set of what essentially were cheerleader exercises for remembering "*amo, amas, amat,*" and you could go through it for real, or you could go through it gesturally. So, those things can work for some people, and it's usually for meaningless information. Meaningful information it's better to link through the meaning, but images will work. This famous mnemonist beautiful book by Luria, "The Mind of a Mnemonist," he certainly remembered himself going through walks and placing images. Again, you could place gestures in the same way. I mean, it can all be effective, what works for one person. And people rediscover these mnemonic devices. Every 10 years, write a book, it's a bestseller, and 10 years later, the field is ripe for it again. Diet books tend to come out a lot faster. I think more people are worried about their waistlines than their memories. But there are those advice books and they would include motion and gestures as well. We've done a number of studies, many on people learning complex material, like in how a car break works, or an environment. And as they're learning, they're reading text, they're gesturing. And the gestures are making a model of what they're learning. So, they're putting down dots and lines for the descriptions of the environments. And when they go to recall, they make those same movements again. So, it's clearly helping them recall as well. And if they gesture both at learning and at recall, they remember much better. And these are spontaneous, the people aren't even aware, really, that they're gesturing. We don't tell them to gesture. The gestures come from their body. Everybody learns them in different ways. Gestures, unlike words, aren't decomposable. And you could see that with conductors. You go and watch the same concert with different conductors. They're gesturing very differently. The orchestra can respond in similar ways. So, that visual-spatial language of the conductor can be quite different. We went to the opera two nights ago, the guy was dancing up and down and he was a joy to watch. And there's research showing audiences respond better to conductors who jump up and down. There's a famous video you can find of Leonard Bernstein conducting, I think Mozart, some classical piece, with his eyebrows. He had very expressive eyebrows. Nothing but his eyebrows. Now, they were well-practiced. But (INDISTINCT) and if you want to watch a really gymnastic conductor, watch him. I haven't seen him in years but he was a master. And there were (INDISTINCT) using the motion in very complex ways to guide the music. And it makes a huge difference.

Luc Beaudoin: Okay, can I squeeze in another question? I've often thought people who learn pictorial languages, or languages with calligraphy, that they would basically have better memory for concrete words, as well, because they can actually go through the gesture in their

head, so it kind of adds to it. Do you know of any research on that?

Barbara Tversky: There's research on having more than one code for memory. If you have a verbal code and a visual code, you're going to be better at remembering something, because you have more retrieval cues. And if you add a motor code, which could be gestural, you'll have even more. If you get too many you might get confused, and it might be hard to construct them. But having more retrieval cues for the same bit of memory does work. So, drawing, imagining what something looks like, imagining how you would interact with it, all of those things can enhance memory, and there is plenty of research on that.

Luc Beaudoin: But not specifically on people who know calligraphy, or who do calligraphy?

Barbara Tversky: Some of that is going to be content-specific. Radiologists, who are trained to look for one kind of thing, like breast cancer, might not be good at broken bones. So, some of it is going to be quite content-specifically. The particular patterns of pixels that tell you that there's cancer, are going to be different from the particular patterns of pixels that are going to tell you it's a break. So, the movements for calligraphy are to make characters, they aren't to make images of people. Although, plenty of calligraphers could do both. Some of it is going to be content-specific, and some of it is going to be more general. And there you need to look at the specifics to know the answer.

Luc Beaudoin: Thank you very much. It's a pleasure meeting you. I cited you in my 1994 thesis, I counted four times.

Barbara Tversky: Okay. Thank you, thank you.

Frode Hegland: Thanks. Thanks for that. Brendan?

<https://youtu.be/RydjMrG9sDg?t=5171>

Brendan Langen: Hi, Barbara. Thanks so much for the talk, this is really neat. And as a funny aside, I've recommended your book to pretty much all of my friends who've recently become parents. I think there's so much in the first few chapters, where you just lay out how children learn, and how to create trust. You mentioned some of that. I'm really curious about how some of your findings can come to life in some of our software tools? So, there's quite a movement going on in some of the knowledge creative tool space. You can think of things like "Notion," or maybe "Sigma," or even "Roam" research and other notebooks. What opportunities do you see for embodied cognition and spatial thinking in our knowledge tools?

Barbara Tversky: Oh, so many. And then, they'd be specific. But thank you for the recommendation. I keep thinking and saying to publishers, "Somebody needs to write a book for new parents, and what to watch for." From new-borns, because until children speak, I think parents aren't aware of the huge cognitive leaps that children are... Because they're just too subtle. And if you learn what to look for, it adds to the already thrill of having a baby.

And I don't really have the tools and the background to do that, but other people do. Yeah. I think there are so many opportunities for adding visual-spatial and embodied, what your body is doing. I mean, gestural interfaces have already done that. They've ruined my thumb. And I take pity on the people that have been exercising their thumbs from very young ages, because of what's going to happen to your thumb when you get to be my age. And voice interfaces may help them, but they have other disadvantages. And sometimes people ask me, I have worked with people in HCI, and computer graphics, in AR, VR, and I'm really enthusiastic about all those media. Some of the work we did with AR was trying to make people's interactions within finding their way in an environment, or repairing, or assembling something, as natural as finding your keys and opening a lock. So, there were ways of guiding your body to the right place. First, by having a virtual tunnel to guide your body to the right place, and then guide your head so that your eyes are looking at the right place, and then guide your hand to where you should make the motions. And then, it becomes as natural as doing something that you've been doing a thousand times other than doing something new. And so, that's one example, but I think there is a huge number, and I'm really excited about what are the things you guys can do, and how they can make them more natural and comprehensible on the input side to people. Maybe you have thoughts. Because there are specifics you're working on.

Brendan Langen: Yeah. Well, you just kind of hit on something that might make sense. There's been some talk in the chat about these findings for education. And I can almost imagine a crossover with a tool like "Figma," a design tool for early-stage designers. And if you can guide them through the process, that is helping them create something that's more stimulating or sound in its interaction design. I could see that being a huge advance. Really curious to keep seeing where this research leads. Thank you so much, I appreciate the time.

Barbara Tversky: Yeah. Probably in the late 80s, early 90s, there was a Shakespeare scholar at Stanford, who was designing something that would stage Shakespeare for students. And that was prescient but close to what you're saying. And, yeah. I think you can go a long way. One problem is scale. And in there, maybe VR is better because you can get things at scale. I mean, same with architecture. But, yeah. Tools that can allow me to imagine things that would take forever to create. And therefore, create better. Would be phenomenal, absolutely phenomenal.

Brendan Langen: That's really interesting. Almost like bringing along a "now" sentiment into the mix, where something that takes so long to build, is often outside of the reach of what we can comprehend. That's really neat.

Barbara Tversky: And on education, I want to just put in a small plug for some research we did with Junior High Science Students. We had them learn molecular bonding, and then half

were asked to make visual explanations, and half were asked to do the normal thing you do on a test. Make or take notes someone raised at verbal explanations. And first, we tested them after they learned it, which was several days in the classroom. And the two groups were equal, we divided them into two groups. After creating it, all the groups improved without new learning. So, the process of making an explanation consolidates the material, and makes you question, "How could this have happened for an explanation?" So, both groups do better. But the group that made the visual explanation did way better than the group that made a verbal explanation. So, this is natural for science, because science is so visual-spatial, chemical bonding. But their diagrams were so different. Some had sharks grabbing electrons. Some had stick people giving them. They were adorable. And you can do it for history, you could do it for a Shakespeare play. What are the relationships of all the characters? What happens over time? I discovered my father's old version of "Anna Karenina" and I stole it from him many years ago. He didn't mind. The first thing it has is the family tree. He made it to understand all the familial relations amongst the characters, and then all their nicknames. Because Russians always have tons of nicknames. So that helped me reading it, and he made this. My kids doing "Dungeons & Dragons" years ago, the first thing they did was make a map. Again, from language. And that helped them with keeping track of where they were going in the game. So, education. Yeah. Creating visual-spatial representations of women's drawings is one form, they're easy, they're cheap. But doing it in a computer interface might work as well. Sometimes I ask, "What does all the technology add over pencil and paper?" And I think it's an important question to ask.

Brendan Langen: Without a doubt. Well, thank you so much for the exploration there.

Frode Hegland: And there I go. Muted. Thank you. Peter, please go ahead.

<https://youtu.be/RydjMrG9sDg?t=5648>

Peter Wasilko: Yes. Do you use any mind mapping tools? And if so, how do you approach building a mind map?

Barbara Tversky: I'm sorry, what was that? How do I put what on a map?

Frode Hegland: He asked if you use any mind mapping tools and if so, how do you go about building a mind map.

Barbara Tversky: It probably depends on the content. I mean, you're going to start with a network of sorts. The trouble with the network is usually that the lines aren't labelled. The relationships, you're just labelling that there is an association between "A" and "B," or "B" and "C." And you probably want to do something more demanding, and specify what the relationship is, and then you can cluster things. But it really, in many ways, depends on the content. And you can see those of us who remember learning sentence diagramming, which was essentially a mind map, and I loved it. Or logic. You could visualize in one way or

another. So, to some extent, it depends on the concept. But I think, just making networks, you want to go beyond that and talk about what is the nature of the lines. The representations. Are they inclusion? What are they? And then, go about grouping them perhaps, clustering them along common relations. And then you can go hierarchically like a phylogenetic tree. And even a phylogenetic tree has been the basis for a great deal of controversy in biology. Where do different creatures belong? Is there another life form? And of course, one eukaryote and whatever, it was long after I learned biology. So, that particular way of visualizing really helped. Bill Bechtel did great work in an actual laboratory, I think looking at diurnal rhythms. And they were diagramming for themselves almost every day what they were finding. How did they do uncertainty? This is a big issue and a big question. They put question marks. So, they put in relations, the best they knew, and where they didn't know things, there were question marks that meant, "That's an open problem, let's look at it." It really depends a great deal on content. But certainly, there is research showing that kind of mind mapping helps people organize their thinking, and learn, and communicate.

<https://youtu.be/RydjMrG9sDg?t=5808>

Frode Hegland: Thank you very much. So, I have a question. And that is based on my current passion, or what I think is a realization, but I may be wrong. I feel that, within five years, we'll be living a lot inside VR, AR, those kinds of spaces. And that's kind of a subset of the bigger cyberspace. But a lot of this seems to be about being disembodied, walking around with an avatar that's like a Lego situation. I know, Brandel, I see you're going crazy there. So, my question for you, Barbara, is: How do you see VR with full-body immersion where we really use our senses to the full, in the context, not of necessarily social interaction and gaming and play, but more in the relationship of work?

Barbara Tversky: Five years seems to me, very optimistic. Partly because people get fatigued in AR situations. I get fatigued. There is an uncertainty about moving around when you know you're not really in that space. And so, a lot of that needs to be worked through. And like "Zoom," they're going to be advantages and disadvantages. And we'll see them as we go. The... I'm blocking on his name at Stanford, the guy doing VR in social situations. There are going to be, I mean, we're going to have to do it. There are cross-national teams doing design, and you can't fly everybody all the time to be together. So, it's going to happen. Yeah. Jeremy Bailenson, who's done wonderful work on social interactions, and those might be the most important for people. If we found that the internet was used to send emails to friends, children, and other people that we love, that was an early use of a massive. They're going to be early uses of VR to be with people we love. And "Zoom" isn't sufficient. I still can't have a grandchild sit on my lap and feel the closeness. But I do think they're going to be increasing uses, they're going to be difficulties encountered and some of them will be

overcome. I doubt that we'll all be living in the metaverse, although again, I could be wrong. You need to talk to the 20-somethings that are already playing multi-person games. And it is a bit of a drug. And Yuval Harari imagines that AI is going to replace huge numbers of humans in the way that, the rest of us who are useless will exist as in this metaverse where we'll be, and it sounds a little bit, to me, when those people talk about it, like somebody's conception of heaven. You can have avatars of all the people you love. But then your interaction with them might not be taking place in their metaverse. How do you reconcile them? What age will they be? So, there are all kinds of cognitive and engineering ideas that need to be worked out.

Frode Hegland: I'm not going to let you get away that easily, Barbara. And first of all, Brandel is up after me, and he has an extensive, deep understanding of a lot of this. But let's forget about the "Oculus" and that kind of current stuff. And let's forget about timeline. Let's say that we have a future where we can, like the "Holodeck" in "Star Trek," we can go into it, whether we're wearing something or not, this is very secondary. But there are two things that we can change. The external stuff, the environment, and the things we interact with. But also ourselves. So, even though we do take advantage of all this VR, with our movable hands, a movable head, and all of that good stuff. With your deep knowledge of the human body and the human mind, and completely free of technical constraints, being completely fantasy, what kind of situations, or opportunities, or issues do you see for how we work together on important problems?

Barbara Tversky: First you talked about the individual, then interpersonal. As an individual, I could imagine situations, interactions, environments, objects I'm trying to create. I can imagine them. But until I put them in the world in some way, my imagination isn't complete. And this is why designers draw. They can't hold the whole thing in their head. So, they put it down with tokens or a VR in the world. And that gives you feedback. It makes you see things. It expands the mind in ways that your mind can't do. So, that power of technology is awesome as ways of expanding the mind, so that I can create better fiction, better buildings, better interactions with people. I can imagine role-play. So taking the things that we already use for augmenting our imagination, like role-playing, like creating prototypes, scripts, stage designs, whatever it is, and turning them into technology, and making it easy to do those things, and explore them, could be awesome. In molecules, combining them in just games. A deep mind has changed the game of Chess and the game of Go. People are now interacting with those machines, studying the games that AlphaGo can do. So, I think that is mind-blowing, absolutely mind-blowing. The social interactions, I don't know how much we want to replace them. Now, there are times when I wish I had interacted with somebody differently. But I can't redo it. I can redo it in my mind, but I can't redo it for real. So, the social

interactions, it seems to me, have to be in real-time. Space, we can change. We can all go to Machu Picchu together. Explore it together. Enjoy it together. But we can't replay and redesign. If I had an avatar of someone I'm interacting with, and I could interact with that avatar in different ways, and try out different things, that might help me in my interactions in the future. But I can't replay a real interaction in the way that I can replay a fiction. So, am I getting closer to what...

Frode Hegland: It's wonderful, and very deep what you had to say. Very unexpected, which is, of course, what I was hoping for. Thank you very much. Brandel?

<https://youtu.be/RydjMrG9sDg?t=6311>

Brandel Zachernuk: I'm trying to decide which of the two questions I want to ask. I'd love to get you to go to both but I'll start with just one. Have you done any work on the cognitive differences between writing script with a pen, versus typing, versus dictation for the purpose of producing text? What sort of internal cognitive impact there is in any distinctions that you would draw? Or do you see them as equivalent?

Barbara Tversky: Again, I would think it would depend on the person's adeptness with each of those and the content. One of my former students, Danny Oppenheimer, who does very innovative research, tried to show that taking notes in classes with a computer wasn't worse than writing. And the work didn't replicate. Unfortunately, that happens to a great deal of our research, and I think the failure to replicate means, probably, it works sometimes for some people, and it isn't a general phenomenon. But what I thought, at the time, is when you write it takes more time, so it makes you summarize. And when you type, the temptation to type down words in a row way is probably not the best way of learning. You want to wait, summarize, write down little telegraphic notes. And the other thing that writing allows you to do is array them in space conceptually. In that sense, I think that could help, but it depends, really, on what you want to learn. So, as a learning tool, the only research I know of is Danny Oppenheimer's, and he did find writing was better than typing on a computer. And there, I think, it really does have to do with how you attend to the lecture. But that work didn't quite replicate. But I have a feeling that those... I'm now in an ed school, I was in a psych department where you try to get the minimal features that are accounting for something, and in ed school, you throw the whole kitchen sink at something and you don't care about what works. But nevertheless, people are asked, Are animations good? Is writing good versus typing? And people want a blanket answer, and then we say, "It depends." And people don't like that answer. But I'm afraid that is probably closer to the truth. I mean, we're living in a Covid world now, and it's how do you give advice, and when the target keeps changing, and the disease keeps changing, and people are left with the old ones, and then complaining they can't give coherent, clear advice. So then, they toss everything out. Which is the wrong thing

too, because there is good advice, it just keeps changing.

Brandel Zachernuk: Douglas Engelbart had a famous thought experiment of attaching a pencil to a brick and calling that a "de-augmentation" because of how much more difficult it would be to write with a whole brick on a pencil. But it occurs to me that, while it would be definitely slower, the words that you would tend to write, as a consequence, would be significantly more momentous and important for you. Only because you remember the effort that would be expended in it.

Barbara Tversky: Right. Any learning method depends on that. How much are you putting into it to learn it? And you're going to put different things in depending on how you're going to be tested. How you're going to use the information? How you're going to retrieve it? So, you want your encoding to anticipate your retrieval. What information are you going to need and when? And that's a more subtle set of considerations. I'm afraid I'm exhausting people.

Frode Hegland: Quite the opposite. I have two questions. But first, I'd like to ask, we have a few new people here today, Karin and Lorenzo. Have you got any questions or comments?

<https://youtu.be/RydjMrG9sDg?t=6609>

Karin Hibma: I am just typing my goodbye now. This was brilliant, Barbara. Thank you so much. And thank you for the invite, Frode. I am a name or a language creator, and I'm always thinking forward. So, it really helps me to understand the antecedence of these kinds of understandings. And I love the aspect of mapping as a place locator for putting words together. And thank you. I am still absorbing. So, really brilliant.

Frode Hegland: Karin, you said you are a language creator. First of all, I obviously pronounce your name completely wrong. What is your preferred way of saying your first name?

Karin Hibma: I'm Karin Hibma. People get the Himba, and there's a tribe in Africa. But that's not me, as you can. Hibma is a region in Northern Netherlands, a lot of last names with "ma's" in them. I think probably means "by the ocean," "by the sea." But everything in the Netherlands is. I'm responsible, with my husband who's deceased now, for naming "Kindle" and "TiVo" and a few other little things in the world. And I work with companies doing strategic identities. So, a lot of times we're either creating names for new products or helping them define their language and their story, to get from where they are, to where they want to be. Which, of course, goes with (INDISTINCT) and the wonderful concepts you've done. So, I don't have your book, but I'm certainly going to be getting it and studying it to cover the cover. And the "Babies Build Toddler's" book that I mentioned is really brilliant. It's a Montessori method, but very often, as I think Brendan said, "New parents don't really understand the math." I mean, they're suddenly given this human being, which we don't realize is going to come to its full awareness over a period of 25 years. And really being able

to have some kind of guide rails for parents to be able to actualize that, is pretty wonderful. So, thank you.

Frode Hegland: Karin, I have to ask you with that amazing background, if you would like to consider writing a piece for The Future of Text Volume III coming out this year?

Karin Hibma: I would love to. I am the worst writer, Frode. I like to interact, but I find, sometimes, putting words down... But send me a note at karin@cronan.com.

Frode Hegland: Yeah, we met through "Twitter." Thank you. We met through "Twitter" so we'll continue there. But what you say there's very interesting because Barbara was talking, just a few minutes ago, about writing in space. Yes, that's something really worth drawing out, because, in one sense, that's not really true, unless you're writing on sand or a huge piece of paper. Because writing, very much, is linearizing. A sentence has to be linear to have grammar. And, of course, with software, you can write a little bit here, a little bit there. But then, at some point, you have to, and I just finished my PhD thesis, and the hardest bit was not writing, that's easy, but kind of blocking it into a thing is impossible. So, I'm wondering if Barbara has any advice for all of us, including Karin, maybe in how to consider this? And by the way, Karin, for the book, don't be intimidated with how you write. Please consider looking at the previous two volumes, it's all over the place, which is a good thing. Anyway, Barbara, any thoughts on that?

Barbara Tversky: Say what that refers to again?

Frode Hegland: Yeah. What I'm referring to is, when we talk about text, there is this kind of idealized notion that you can write it down in space. But unless you're working in a free-form mind mapping software, you're not writing it in space as such, you're writing it in a line. It is one single line. It happens to wrap, but it is still a linear line. And in our community here, we are trying to do many things with that. Putting it here, putting it there. I see Bob's put his camera back on because this is, obviously, very much his field too. But from your work, and your understanding, Barbara, can you talk a little bit about, how we should be writing in space in an ideal environment?

Barbara Tversky: There's the writing for yourself when you're working through the ideas, and that should correspond to your ideas. Then you have to put it in a linear form for other people to understand, and organize it in a way that other people can understand it. If you want to communicate directly, like give directions for getting from my house to your house, or understanding how molecular bonding works and thereon. And there, one of the principles of InfoViz of giving a context, and then the details do go for text. And we found that a little bit in some of those experiments, where we go back and forth between a depiction and a description, that you want to give an overview, and then, fill it in in some systematic way. And the systematic way should be conformed to somebody else's conception to make it clear.

But that's for writing clear prose. If you want to do poetry or art in drawings, then you're free to go all over the place. And that ambiguity and openness allow many interpretations. And the ambiguity is what makes it beautiful. It's what makes you come back to it, and come back to it. Because you see new things in the same painting or the same poem. Because you're bringing things from you back into it and that's a bit of the interactivity that people like and talk about in music, in art, even walking the city, you're seeing new things, because you can't completely structure it. And that adds. But if you really want people to grasp scientific, or historical, or arguments in law, then you have to be more systematic in getting in a way that people will understand it. And creating a context, and then relating the details back to the context it's a general principle that goes for good writing and good diagrams at the same time. So, does that get it your question a little bit?

Frode Hegland: It really does, despite being distracted by Edgar, who just came here. Do you want to say hi?

Edgar Hegland: Hi.

Frode Hegland: So, Edgar is four and a half, and he's learning reading and writing in school. And to watch that process is endlessly fascinating. It's exciting.

Barbara Tversky: Yeah. Endlessly fascinating. When you think about it, reading is a cultural artifact. Cultural inventive. And one interesting fact in the brain and letters is, many letters, say in English, a small "B" and a small "D" are distinguished by their mirror images. And the visual cortex for recognizing figures, objects, whatever object like things, has many different parts to it that do slightly different computations. There's only one tiny area that is receptive to mirror images. Otherwise, the visual cortex ignores mirror images. So, flipping faces doesn't matter, same person. And for many objects, that's true. Letters depend on which way they're facing. And every culture, even cultures that read ideographic languages, like Chinese, and Japanese, use that same area of the brain to read. The one that distinguishes mirror images. And on branding which, Karin talked about earlier, we have icons. Do you want them symmetric? Not symmetric? I mean, they become extremely recognizable. Fonts become extremely recognizable. Letters are harder to discriminate. But, as anyone learning a new script knows, they can be hard to discriminate. But ideographic letters, faces were graded at millions of them. Millions may be an exaggeration, but thousands, certainly.

Frode Hegland: Thank you very much. Lorenzo?

<https://youtu.be/RydjMrG9sDg?t=7169>

Lorenzo Bianchi: My question has been partially answered. It was about writing in space. Because, it occurred to me, when I was learning Mandarin, so Chinese characters, what happened to me is that, even if I was using an App like "Skritter," where you can actually trace the character with your fingers, I noticed that the movement, the range of motion wasn't

ample enough. So, I started experimenting and I noticed that, if I increased the range of motion if I started to use my whole body, instead to trace the person, the character of a person, I started to do something like that. It was incredibly more effective. But just for me. I don't have any more data about that. So it was that curiosity. Because I'm a student of cognitive linguistics. I have an interest in body cognition. And I noticed that. And instead of reading and writing the characters, I was just actually living the characters with my whole body. It was incredibly more effective.

Barbara Tversky: Very interesting. And you know, the great calligraphers use their whole body. And it's the motions and not what they see. It's really the motions they practice, like the piano. And they are large motions. I don't know quite what would happen to them, or anyone, when they get to be small hand motions instead of the whole shoulder and upper body. And it would be interesting to look at that. And if you ever get to Xi'an, which I highly recommend, there's a calligraphy museum that has blocks of granite with calligraphy, mostly ancient. And they are just stunning. Stunningly beautiful. Without knowing you or someone that knows the characters, they will appreciate it much more. And from my understanding, people who look at calligraphy make the body motions. Miniatures of them, this is the mirroring. The mirror motor idea. So, when they see the calligraphy, there are feeling in their bodies, the motions that it would take to make them. And then your pleasure is enhanced. The same thing happens with dancers. When ballet dancers watch ballet, their motor cortex is more alive than when they're watching capoeira. And the opposite happens to capoeira dancers. But when you know the motions well, your motor cortex is activated just from the visual motion. There's more to say on that, and there's a bit in my book on recognizing. If there's time I can tell that story about the point life. But I see there's, at least, one more question.

Frode Hegland: There is another question. But before Brandel's question, Barbara, please, actually say this story. I'd rather go over a few minutes than lose out on something.

Barbara Tversky: Do you want me to do that before the question or after?

Frode Hegland: Yes. While it's still fresh. I hope Brandel has written his down.

Barbara Tversky: This is a former Stanford student who did a rather brilliant work, Maggie Shafar. There was a technique that was invented by a Swede, Johansson, in the 70s, of dressing people in black, and putting lights on their joints. So then, when you take videos of the people, all you see are the joints moving. And if you look at a static display, you can find this on the web, on "YouTube," point light. And if you look at static people you can't even recognize that it's a person. But once the person starts moving, you can see if it's a male or a female. You can see if they're happy or sad. You can see if they're old or young. You can tell that from the body motion, from the pattern of lights. It only works for upright, upside down doesn't work. Although I bet for gymnasts it would. I don't know. But what Maggie did was

take pairs of friends, have them come into the lab, and just walk, dance, run, play ping pong, all sorts of motions that they would do with the point light. And she had several pairs of friends. And then, three months later had them come back into the lab. And look at the point light and identify them as, "Are they my friend? A stranger? Or me?" So, they could identify friends better than chance. But what was most surprising is they could recognize themselves better than friends. Now, they've never seen themselves do these motions. Unless you're a dancer, or a gymnast, or a tennis player you don't watch yourself doing these motions. So, they've never seen themselves dancing, playing ping pong, and so forth. Yet, they could recognize themselves better than their friends whom they had seen doing these things. So, the explanation is that, watching it activates your motor system, and it feels right. It's like trying on clothes, they fit me. So, you're watching that dancing movement, or the ping pong movement, and it's more effective for the more vigorous movements, than just the simple ones like walking, that you recognize yourself. Your body is resonating to what you're seeing. And when it resonates to you it says, "Yeah, me!" So, that I think is fascinating. How much the human motor system or mirror motor system acts to understand the motion of others. And we've taken those ideas into understanding action, static pictures, and so forth, so we've taken those ideas further. But the basic phenomenon, I think, is fascinating. My guess is, with calligraphers would be a similar thing. They could see their own calligraphy. But as far as I know, no one's done that.

Frode Hegland: Edgar just wanted to show he has a real bus ticket. He thought it was worth showing to the community today. Thank you. But I have to ask you, just really quickly. Who here has seen the movie "Hero?" The Chinese movie "Hero" with Jet Li? Oh, a good couple of hands. If you haven't seen it, you have to see it. Randomly it was playing in Soho when it came out, many years ago. I was there with Ted Nelson and my brother said, "We have to see this." We sat in the front row. Literally, after two minutes in the intro, they both went to the side and said, "Thank you." It is basically about, I love "Hamilton" because it's about American being written into existence, "Hero" is about China being written into existence. That's the worst summary you could ever imagine. It's the most beautiful movie. If you haven't seen it, please do. Brandel?

<https://youtu.be/RydjMrG9sDg?t=7638>

Brandel Zachernuk: Thank you. So, the question is a little all over the place, but I'm really curious what will you do with it. So, first of all, it occurs to me that, I'm not sure whether it's psychologically this is the case, but that there are sort of two motor systems in the sense of there being a gross motor system, and a fine motor system. Certainly, the way that I seem to sort of marshal my actions reflects that. So, I'm curious as to whether you have research on whether, the points of light sort of study is clearly about the gross motor system, people being

able to understand the movement of large-scale kind of limb alternation I'd be curious whether that...

Frode Hegland: Is he frozen? Or is he just playing with us?

Barbara Tversky: I know. I think he's frozen. He's somewhere in the cyber space.

Frode Hegland: At least he's frozen at a very engaged moment.

Barbara Tversky: Yeah, right. But I can answer the questions, sort of, anyway. And that is, I think people when they see handwriting, imagine how it would be written. At some point, many years ago, I needed to forge my husband's signature on many documents. He was out of the country, and I needed to forge his signature. And I sort of went through the motor movements that it would take to make his signature. And he couldn't tell the difference between mine and his. So, I don't know of research that's directly looked at fine motor. But my guess is that the same phenomenon would happen. I do know that when, this is again, years ago, more than 20, a friend was working on a pen whose writing could be recognized by a computer. And for English, at least, there were 13 strokes that underlay script writing in English. And with those 13 strokes, they could read handwriting, and you could pick it up with a pen by where people stopped and started. So even processes that we think of as continuous are often truncated. So, my guess is that... So, we missed you, Brandel. You froze at some point. But maybe you heard. Maybe I anticipated your question and answered it?

Brandel Zachernuk: Well, I'll have to go back and watch the "YouTube." But I look forward to doing so. The next part of the question that I can't imagine you got to was, in linguistics, and in information theory, we have this concept of Levenshtein distance. The number of permutations that it requires to move from one word to another word. And to me, it occurs that the number of points of difference within a word are the things that make it differentiable and distinguishable from another word. The more different something is, the lower the amount of information required to distinguish it. In terms of action, what are your thoughts on the way that different motions are distinguishable and differentiable in terms of their cognitive impact? I'm thinking that when we use computers, it's all the same stuff. You were just using a mouse and a keyboard in exactly the same way. So, browsing "Facebook" is the same as writing a thesis. At least in so far as the forms of the inputs. Do you see it as possible or beneficial to draw some of those activities apart from a physical perspective? Even if it results in individual input modalities being less optimal insofar as they then have the capacity to be cognitively separated?

Barbara Tversky: That's again going to be a complicated answer, I think. And even your question about language, is that hearing or reading? The distinctions that you have to keep in mind. Because my hunch is, they might not be the same. And the Roman alphabet, with some variations, is used all over. And that's visual discriminability. Fonts vary. Handwriting varies

in what's distinctive and what isn't. What's important to one language as distinguishable might not be important to another. Hearing would be something else. And their expertise is going to matter. And redundancy. One thing Tufte always recommends, he has contradictory recommendations, but he likes to eliminate chart junk. But ultimately doing that, eliminates redundancy. And we need redundancy to understand. Because we're going to be missing things. And have redundancy is an error correction in part. On the visual side, similarly, what I need to watch a football game is minimal. What other people need to watch it is, again, going to be varied on the motor side. And same with dance, or music. I go to the opera a lot, and I love it. But my sophistication is at a kindergarten level. There are things I like and don't like. And I rely on critics to tell me what to watch, what to attend to, to distinguish one singer's... So, a lot of that is going to depend on my expertise. How much I can distinguish? A radiologist, we talked about that earlier, they're going to see things in clouds or in points on an image that the rest of us won't be seeing. And you need a lot of training to see. So, I don't know if that completely addresses your question, but.

Brandel Zachernuk: I think it's excellent context, thank you.

Frode Hegland: Aaron, have you got any comments or questions? Nice that you're here.

<https://youtu.be/RydjMrG9sDg?t=8060>

Aaron Sloman: Well, since you asked. This conversation has reminded me of a strange experience I had many years ago. I always liked music, and at one point, I did play the piano, and not very well, then I learned to play the flute somewhat better. And then, I started trying to play the string quartets with friends, using a flute to play the violin. Which didn't work very well, but I then, thought I should learn to play the violin. And I really struggled. And I remember on one occasion when I was trying to get the kind of tone quality that I knew, my wife could get out of the violin, I couldn't do it at all. I put it down and I started watching a television program, in which, the Israeli violinist Itzhak Perlman was playing something, and I felt as if something had changed in me. It was a very peculiar experience. And the next time I picked up my violin I could do vibrato. And I've never heard anybody else reporting a similar experience. And I have no idea whether any neuroscientist has any idea how that works. But it seems to be relevant to what you've just been talking about.

Barbara Tversky: Yeah. And I've had that experience as well as a small child. I skated a lot without any lessons at all, and watched people twirl, and couldn't do it, and couldn't do it. And then I learned what you need to do, and it was a state change of competence. And I agree that sort of thing happens. And a good coach will often use metaphors to get you to do that. Telling you, for a tennis serve, how to hold the racket and how to swing. You have to have a metaphor for it. And the right coach, or right music teacher, or even the right artist, the art teacher will give you the right metaphors to set you up to do the set of actions properly. And

again, it is that cycle of listening, and doing, and listening, and doing that I talked about earlier with the artist. That is a conversation of the eye, and the hand, and the page. So, for music, it would be your ears and your hands. And that cycle. And then, you could have, all of a sudden, this insight that you often can't articulate. That changes the whole frame of reference.

Aaron Sloman: I felt it was not my eyes and hand, but some deep ancient part of my brain that I hadn't been using, suddenly got turned on by watching paramount in a way that I don't think anything else could have changed me, not in that space of time. It was a matter of just seconds and then I felt different, and the next time I picked up the violin, I knew I was different.

Barbara Tversky: Well, presumably you saw his arms hands bowing, or?

Aaron Sloman: Yes, I saw something. It was very abstract. I mean I could try to imitate the hands and I wouldn't be able to do that. But there was something else about both, what he was doing, and also the sounds that were coming out, which together, drove something in me. But I may just have misremembered, or misdescribed, and I've never had any other experience like it.

Barbara Tversky: You know what I have, and some of how you learn a new language, and how to pronounce words, "R's" are always a problem in different languages and all of a sudden getting the insight in how to make that sound that you've been hearing. And I'm not an adept linguist at all, but there, when I go to a country where, at least once I knew the language, I just listen to it. I'll turn on the radio and just listen to the sounds and that helps me go back to that way, "maybe I can do it," to make it sound that way. And there I think some of it is the motor resonance. From the seeing or the hearing, it transforms into motions of your body, in one way or another. But you're absolutely right. It needs to be studied. It really needs to be studied. Yeah.

Aaron Sloman: And it has to make a permanent change in the brain. What that change is? I don't know.

Barbara Tversky: Yeah, I wonder if you go back to the violin. I go back to try gymnastics. That was effortless when I was a kid. The muscles aren't strong anymore. The joints don't work. Better not.

Aaron Sloman: Semi-permanent, I should have said.

Frode Hegland: So, Aaron. I just did the thing of looking you up on "Wikipedia." So, obviously from your voice, it's easy to tell that you're from the same island where we're sitting. I'm in Wimbledon. And I'm wondering, first of all, how you came across our presentation today, our meeting? And also, if you might have perspectives around the notion of The Future of Text, which is tangentially and deeply what Barbara has been talking about

today?

Aaron Sloman: I'm in Birmingham, in the United Kingdom. I was born in Southern Africa, in a little town called Kwekwe, in what was then Southern Rhodesia. And then I had a lot of my education in Cape Town, because my parents were misinformed by a teacher. They persuaded my parents that I'd get a better education in South Africa than I would in Rhodesia. I later discovered, when I had fellow students who'd done their A levels in Rhodesia, that they knew all sorts of things and had competencies that I didn't. So, it was a struggle to catch up with them. But anyway. So, I had a collection of different backgrounds. I came to the UK in 1957. I was going to do mathematics, but I had got interested in philosophy, and then I discovered that most philosophers said things about mathematics that I thought was wrong. I thought wrong and I read that Immanuel Kant said something that I thought was right. So, I switched to philosophy to defend Kant. And I'm still trying to defend what Kant was saying in 1781 or thereabouts about the nature of mathematical discovery, which has to do with being able to see possibilities and impossibilities in structures and processes. Which is totally different from what's currently going on in AI systems with neural nets. Where they collect lots of statistics, and then, derive probabilities. And you can never get an impossibility out of that. You can just get more probabilities. So, you're asking me to say something about where I'm coming from, and what I'm doing, and that gives you some of a feel for it. And I now feel that there's a whole lot going on in different disciplines, in various branches of biochemistry, microbiology, and developmental biology, which I'm trying to put together in my head in a way that will enable me to explain, first of all, how something in an egg can produce a bird that has all sorts of competences that it hasn't learned? Like they can go and pick for food and then paddle in the water and other things. But not only birds but there are also all kinds of things that go on in eggs of different sorts, which produce different sorts of competencies. So I'm trying to see if I can assemble enough information from different sources to explain how that works. Because, at the moment, I don't think anybody knows it. I don't think anybody understands it. I don't think I will be able to explain it. But I might inspire some of the very bright younger people, who are working in different sub-fields, to talk to each other, and come up with the new senses as they'll answer my questions. That's what I'm hoping for. Sorry, that goes a long way. Well, it's partly related to this because I thought there might be something relevant in this. But I couldn't get here in time. But at the end, I think, what you were talking about is relevant.

Frode Hegland: Yeah. So, thank you, Aaron, very happy to have you here. So, this talk will, of course, go up on "YouTube," depending on my Wimbledon internet access speed. And we will also have a fellow do the transcript. A human, who is very good. He'll make sure he gets our names and all that good stuff. Barbara, do I also have your permission to do screenshots

of your slides interspersed in the transcripts?

Barbara Tversky: Yeah, it's okay. My caveat is, I've been swiping slides from all kinds of sources for 25 years and I no longer know even where I've swiped them from. And I worry about that. I obviously don't have copyright. And my understanding is, it's okay to post things that have no copyright. But I'm not absolutely sure. So, that's my only concern. And that said, there are plenty of "YouTube" recordings of my slides in different situations.

Frode Hegland: Yeah, no. That sounds fine. And that's an interesting question. I mean, the journal we publish is non-profit, and all of that good stuff, or completely open access. So, if someone has a problem with it, that's not a problem. We take it back. So, thank you for that.

Barbara Tversky: Yeah, I know. When I wrote the book, I had about four times more images than my publishers would let me use. So many I got Wiki creative comments. But even then, there were doubts and so forth. And I was dismayed when the Metropolitan and other museums released all their images without any demand to copyright, only a tribute or no payments. And that was too late for me because I wanted to use, instead of quotes, I wanted a depiction at each chapter. I'm glad to see, at least, some places are releasing copyright.

Frode Hegland: That's very good. I'm just going to post them in the chat here as we wind down. futuretextlab.info, that's where we will be putting all this data. And this is where we carry on our dialogue. Now that it's been 2 hours and 20 minutes, which is quite poetic in terms of numbers, I'd just like to say, thank you, Barbara. Thank you, everyone, who was still here. Thank you, everyone, who was here earlier. And thank you, everyone, who will be listening in the future. And I hope we can continue the discussion. You're all invited to our general weekly meetings, as well as of course, our forthcoming special monthly sessions. Which I hope will be even a sliver, as good as today, in order to be successful. So, thanks very much and have a wonderful weekend everyone.

Barbara Tversky: And thank you for your excellent questions and thoughts, it was a pleasure.

Frode Hegland: Yeah, it was a wonderful group. All right, take good care. Bye.

21 January 2022 Chat Log

15:59:49 From Peter Wasilko : Good Morning All!

16:02:38 From Alan Laidlaw : Do we need to set up that chat/notetaking app?

16:04:38 From Lorenzo Bianchi : Hey there, connecting from Italy

16:05:02 From Lorenzo Bianchi : On my mobile

16:05:14 From Frode Hegland : Read it!

16:05:15 From Patrick Lichty : In process

16:05:15 From Brendan Langen : read!

16:05:15 From Alan Laidlaw : Yes, halfway in.

16:05:26 From Pam Drouin : Haven't read it yet! But it's very high on my list 😊

16:05:34 From Mark Anderson (Portsmouth, UK) : Currently reading.

16:05:34 From David Lebow : Have read journal article

16:05:40 From Adam Wern : I've read two chapters, and watched two seminars on Youtube

16:05:41 From Rafael Nepô : Still trying to get my hands on it :)

16:06:21 From Alan Laidlaw : Love the framing. This transcript will be freely available, yes?

16:07:01 From Frode Hegland : Yes, the transcript will be on our blog and in our monthly Journal, human-made, from <https://futuretextlab.info>

16:07:21 From Peter Wasilko : Can we get a copy of the slide deck after the program?

16:07:50 From Frode Hegland : We can ask her after I think. If so, I will also interest into Journal Transcript

16:09:10 From Brandel Zachernuk : (Read it)

16:32:18 From Alan Laidlaw : Love all the visual media references. I keep wanting to pull the ref off the shelf and show it off

16:36:24 From Pam Drouin : My brain grew 3 sizes!

16:38:11 From Peter Wasilko : I never thought of chalk board notes as animations before. Brilliant!

16:39:45 From Patrick Lichty : I love to animate in VR with Quill

16:39:56 From Patrick Lichty : Ishii'z great

16:40:01 From Patrick Lichty : Question.

16:40:39 From Patrick Lichty : Do you see a different modality between comics, animation (2d) and vr animation (3d)

16:43:35 From Frode Hegland : Alan, please write his name in full

16:43:43 From Frode Hegland : Nor Groening?

16:43:47 From Alan Laidlaw : Larry gonick

16:43:52 From Frode Hegland : Ah, thanks :-)

16:43:59 From Frode Hegland : Good for the transcript

16:44:04 From Alan Laidlaw : Great stuff - but very seventies looking

16:44:30 From Alan Laidlaw : So not popular now. The ideas are brilliant but bound to a particular aesthetic

16:45:01 From Alan Laidlaw : Which is an interesting friction to bring up.

16:45:08 From Frode Hegland : Indeed

16:45:26 From Rafael Nepô To Frode Hegland(private) : Understanding Comics is on my top 10 books :)

16:45:29 From Rafael Nepô To Frode Hegland(private) : Oops

16:45:30 From Alan Laidlaw : Like trying to get someone to what a brilliant silent film. This primarily does not work

16:45:37 From Rafael Nepô : Understanding Comics is on my top 10 books :)

16:45:41 From Alan Laidlaw : What = watch

16:46:01 From Alan Laidlaw : Yes, UC changed the course of my life

16:53:42 From Frode Hegland : følese feeling bevege move

16:54:24 From Pam Drouin : I need to leave a few minutes early, thank you so much for this session!

16:55:22 From Luc Beaudoin : has BT talked about mnemonic systems involving motion already? I missed first half hour or so

16:55:33 From Frode Hegland : You are welcome Pam :-)

16:56:04 From Frode Hegland : No, feel free to queue up that question Luc

17:00:04 From David Lebow : Interesting to noodle on the implications of Barbara's perspective for school learning. (e.g., the problem of transfer and inert knowledge).

17:05:50 From Frode Hegland : Kind of is a depravity

17:06:17 From Brandel Zachernuk : "Travesty": a false, absurd, or distorted representation of something.

17:06:26 From Frode Hegland : Sounds about right

17:07:07 From Frode Hegland : Maybe this is why spoken interfaces don't feel all that great for building something, since you are in a way speaking into the void?

17:07:40 From David De Roure : Apologies, need to go teach - thanks for discussion!

17:07:47 From Frode Hegland : Later Dave

17:09:49 From Frode Hegland : Please write his name here in chat Luc

17:10:36 From Brandel Zachernuk : https://en.wikipedia.org/wiki/Aaron_Sloman is the “philosopher and researcher on artificial intelligence and cognitive science”

17:11:05 From Frode Hegland : Thanks Brandel

17:12:24 From Brandel Zachernuk : David Kirsh has done a bunch of work on assessing modalities of gesture, different intensities of dance rehearsal and their cognitive impact

17:13:56 From Alan Laidlaw : What is that term she mentioned? Leaving orations in places in agora?

17:14:58 From Frode Hegland : Alan, feel free to butt in and ask

17:15:37 From Mark Anderson (Portsmouth, UK) : @alan. Loci (places: locus, pl.)

17:15:55 From Frode Hegland : Thanks Mr Mark

17:16:59 From Frode Hegland : Brandel, eyebrows in VR...

17:17:20 From Brandel Zachernuk : I made an eyebrow video game for Google once! We called it “Browzilla”

17:17:22 From Lorenzo Bianchi : @Luc, I did something very similar to your "kinesthetic mnemonics" to memorize Peterson's rules when attempting to learn Chinese characters, especially their stroke order.

17:20:07 From Frode Hegland : That’s a great point Brendan: How this can help children ‘be’ in the world

17:21:33 From Karin Hibma : ‘Babies Build Toddlers by Marianne Bissonette just came out last year

17:21:55 From Frode Hegland : My son changes what leg he uses on the scooter. I guess we should look at similar for later stages.

17:22:40 From Frode Hegland : Thanks Karin. Recommended?

17:23:00 From Luc Beaudoin : @Lorezo . And it helped?

17:23:17 From Karin Hibma : Yes! Has been very helpful with strategic identity work...

17:23:17 From Luc Beaudoin : sorry, "Lorenzo".

17:24:23 From Alan Laidlaw : Interesting. I like to remember a collage of thin connections and assigning an image for it. Ex: “The Manginot Line” is my keyword to unlock the connection from Jan 6 to knowledge graph approaches

17:25:41 From Lorenzo Bianchi : A lot. I experimented with speed and range of motion

17:26:59 From Lorenzo Bianchi : Slow, ample movements proved to be the most conducive to long-term acquisition

17:29:05 From Luc Beaudoin : Interesting. One of the benefits I think is in elaborative

reasoning about the information to remember. But there's also some intrinsic about mapping it to motion. There's something special about the underlying unconscious steps

17:29:55 From Mark Anderson (Portsmouth, UK) : Knowledge tools do offer ease to place semantic meaning on links but link types in diagrams seemed to get put aside.

17:30:13 From Luc Beaudoin : It would be nice to do interviews and develop a compendium of gestural mnemonics with video.

17:31:14 From Lorenzo Bianchi : That would be really interesting. Also, AR/VR could be an incredibly useful tool here.

17:31:23 From Luc Beaudoin : I'm particularly interested in lists because they are hard to remember (due to cue overload) and they also involve component abstractions

17:32:03 From Brandel Zachernuk : Jeremy Bailenson

17:32:56 From Brandel Zachernuk : (The Virtual Human Interaction Lab site covers this well- <https://stanfordvr.com/>)

17:33:28 From Frode Hegland : Yuval Noah Harari yes :-)

17:33:34 From Alan Laidlaw : Right. The conceptual power of simple shapes is still unexplored. The Manginot Line has a history lesson but the value for me and my memory is the line, the trench, the tunnel, the bifurcation, the friction. That ritual trace of a shape's course unlocks the many other narrative "shapes" I've looked that starting place. (Pardon if that doesn't make much sense.)

17:35:13 From Lorenzo Bianchi : Makes a lot of sense, actually

17:35:53 From Alan Laidlaw : Hooked (instead of looked)

17:36:05 From Alan Laidlaw : I must be off. This was great!

17:36:16 From Frode Hegland : Later Alan, see you Mondat

17:36:22 From Frode Hegland : Monday

17:46:31 From Karin Hibma : This was so stimulating! Thank you for the invite Frode and thanks to Barbara for a brilliant

17:48:51 From Karin Hibma : Sorry to leave – will be in touch! karin@cronan.com

17:48:59 From Frode Hegland : Thanks for being here

17:53:43 From Brendan Langen : I also need to head out. so great to talk with you, Barbara! thanks for putting this together, Frode. i'll see you Monday.

17:53:52 From Frode Hegland : later

17:57:25 From Frode Hegland : Hi Aaron, we started two hours ago so sorry about the timing but if you have a question for Barbara please feel free, we have a few mins left

17:57:42 From Brandel Zachernuk : <http://nwkpsych.rutgers.edu/roar/reprint%20pdfs/>

Pinto%20&%20Shiffrar%2009.pdf covers it

17:58:01 From Brandel Zachernuk : Covers *

17:59:06 From Aaron Sloman : Very sorry to be so late -- I triply overcommitted myself. But I've arrived at a wonderful time -- bring reminded of the moving lights demo.

18:01:03 From Lorenzo Bianchi : I must be off, but thank you thank you thank you everybody

18:01:12 From Frode Hegland : <https://youtu.be/MgsddFEe9Oc> for HERO trailer. Caligraphy WRIT LARGE! :-)

18:01:19 From Mark Anderson (Portsmouth, UK) : Bye!

18:01:21 From Lorenzo Bianchi : Very compelling session

18:01:22 From Frode Hegland : Thanks for coming

18:01:30 From Frode Hegland : Stay in touch :-)

18:01:41 From Lorenzo Bianchi : Bye! lorenzo.bianchi@outlook.com, if you want to stay in touch!

18:01:59 From Lorenzo Bianchi : Take care, and thanks again Barbara!

18:02:47 From Frode Hegland : Barbara is reflecting on your comment Brandel

18:02:51 From Frode Hegland : Sorry we lost you for a bit

18:03:03 From Brandel Zachernuk : Yes my internet died! I'm tethering to my phone now

18:03:16 From Frode Hegland : Silicon Valley eh!

18:04:22 From Mark Anderson (Portsmouth, UK) : https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjSnb-Pt8P1AhUNYcAKHVePCPwQFnoECAoQAw&url=https%3A%2F%2Fen.wikipedia.org%2Fwiki%2FLevenshtein_distance

18:04:37 From Mark Anderson (Portsmouth, UK) : sorry - https://en.wikipedia.org/wiki/Levenshtein_distance

18:04:53 From Frode Hegland : Levenshtein distance https://en.wikipedia.org/wiki/Levenshtein_distance thanks Mark, here the link is resolved

18:09:46 From Frode Hegland : Panda, Adam, questions or comments?

18:10:18 From Panda Mery : Just thank you for such an interesting conversation.

18:10:27 From Frode Hegland : :-)

18:10:40 From Frode Hegland : Not soho at midnight, but similar :-)

18:11:19 From Panda Mery : (When I saw you drinking I was wondering if it was your usual special coffee order)

18:11:24 From Brandel Zachernuk : Curious if you've ever come across Thad Starner's

work on passive haptic learning to that end

18:11:34 From Frode Hegland : No! Today it's a strong mocha!

18:15:00 From Frode Hegland : https://en.wikipedia.org/wiki/Aaron_Sloman

18:15:27 From Brandel Zachernuk : I need to drop for a brief call but will return if you're still there in ~10 mins!

18:15:38 From Frode Hegland : Ok. Likely not but let's see Brandel

18:18:55 From Frode Hegland : <https://futuretextlab.info>

18:19:15 From Peter Wasilko : Thanks So Much!

18:19:47 From Panda Mery : Have a nice w/e. Bye.

24 January 2022

24 January 2022 Video

<https://youtu.be/KqdlcxHbviE>

24 January 2022 Transcript

Note: Accuracy of transcription and the assigning of speaker names cannot be guaranteed.

Please refer to the video in case of confusion or concern.

Frode Hegland: [00:02:05] Hey, Mark.

Mark Anderson: [00:02:09] Hi, sorry, my clock's running slow, so a bit late, I'm just going to get a cup of coffee in a second, but I'm here and anyway, we're the good thing is we're also sorted out the Oculus thing. Sounds good.

Rafael Nepô: [00:02:26] Yeah. So adamantly backing just

Frode Hegland: [00:02:32] Yeah, sorry. No, no, no, not nothing.

Rafael Nepô: [00:02:35] Go ahead.

Brandel Zachernuk : [00:02:36] I'll be back on.

Peter Wasilko: [00:02:38] Good morning. Just get in from digging out. It was only a dusting this.

Frode Hegland: [00:02:43] Hello.

Rafael Nepô: [00:02:46] Recording. Hey, gentlemen. Hello, hello.

Frode Hegland: [00:02:54] Hello, Rafael. Have you got your books yet?

Peter Wasilko: [00:02:59] Yes, they have arrived in my my brother's house, thank you so much and sorry for the trouble of keeping them company.

Frode Hegland: [00:03:07] So they're only that far, huh?

Rafael Nepô: [00:03:10] Yeah. So far, they don't. They're going to stay in Spain, probably, I mean, in Switzerland for a while.

Frode Hegland: [00:03:17] Yeah, that's fine. Um, hi, Brenda, and I haven't seen you in a while. Have you been? I saw you on Friday, but that was so busy

Brandel Zachernuk : [00:03:25] And that piece and

Peter Wasilko: [00:03:27] Make a billion dollars

Brandel Zachernuk : [00:03:29] Is a lot. Well, I know that

Rafael Nepô: [00:03:32] You know

Frode Hegland: [00:03:33] Who's talking.

Rafael Nepô: [00:03:34] It's very wonderful. This is. Oh, sorry.

Frode Hegland: [00:03:38] Oh, right. That was really confusing.

Peter Wasilko: [00:03:41] Didn't sound like, how do we make a million dollars?

Rafael Nepô: [00:03:44] I'm also curious. I'm doing well. It's good to see everybody.

Frode Hegland: [00:03:48] By the way, Peter to make a billion dollars is easy. You just start with two.

Peter Wasilko: [00:03:57] Two billion, that is right.

Frode Hegland: [00:03:59] Two billion not. Sorry, Brendan, you're about to update and you know, there was that thing. You're saying you're doing well.

Rafael Nepô: [00:04:06] It's all good. Yeah, I'm doing well. I'm sorry. I have not been around. I also owe Mark an email. I owe many people emails. I'm going to cut back up to life. But yeah, doing well and a Friday chat was awesome. Lovely. Barbara could join us and share so much insight.

Frode Hegland: [00:04:25] Yeah, that was. It was. It was nice. It was like a focused annual symposium. Kind of. That's that's what it felt like to me. So we have Dave Maillard here and now that I've handed in my thesis that's safe is my main advisor is actually number three in the list of three, but he is quite clearly the one who actually advises the other two were excellent, but for entirely different reasons. So I'm hoping Alan will join us in a minute. Adam cannot due to things, and Brandel will hopefully be here, usually enters a bit late, which is fine. But for the record, and these other guys can listen to it later. So don't waste time. I did say in Twitter chat that we were not going to go over 15 minutes of this kind of stuff that is OK. Brandon, I'll be talking mainly to you because, you know, the least of this kind of background stuff. So for all of you, it's for clarification. I have fallen head over heels into this situation. Oh my goodness. If we don't sort out VR, we're screwed as a species. I think it's that big a deal with you. I'm with friends. I can be honest, and I don't have to be too careful with my language. What I mean by that and what Marc and Dave and I talked about this morning that I think it's really, really important.

Frode Hegland: [00:05:48] When we had the PC happened, Microsoft Word and the early word processors defined what we expect from a word processor. Once it's in the public's mind, it is defined that the thing that it is is what it is. It becomes self-reinforcing. So now with VR, I expect Apple to announce a headset in a year, roughly release a bit later, roughly. So therefore, I think it is beholden to us as a community and again big language to become the TED Nelson and multiplied by Doug Engelbart, multiplied by Jaron Lanier of this to produce something in writing, you know, hyperbole but rooted in reality. Also, demos and maybe most importantly, infrastructures, so that the people who get inspired when they get these. And by the way, the reason I think Apple is going to be a big deal is because they're

very good at the consumer experience. Oculus is fantastic. There are so many niggles. Yes, the Apple one will be expensive at first. Yes, the resolution will be high and all that, but they will get rid of the niggles. That's going to be huge. So that is why I think we have one year to produce a work thing that others can be inspired by. If it's a commercial product, great. If not, doesn't matter, provided it's clearly and loudly screaming. So Dave Millard has suggested that what we have here is a network I called a thing on the web lab, and maybe we keep that name or not.

Frode Hegland: [00:07:19] But in order to get research partners, we need to be the ones who help them get stuff into the world. I think we're relatively well positioned to that if you continue to grow our top level network. So again, big words. I think we should aspire to be the MIT Media Lab of VR plus traditional workflows. I have added a sentence to our website, The Lab, it says our work is centered around hypertext and ECS are integrated with traditional devices for flexible workflows and powerful interactions. So the reason for this long speech is it is crucial that Adam keeps doing demos. It is crucial that Brandel does the same. But we must also work on getting information in and out. The reason I think TED didn't get to be where in the world he should be is TED, and I love him to bits didn't want information to go in and out of his world. Similarly, with Doug, towards the end, we cannot afford that, so that is why I want to have either, Oh, Adam is there. I'll only recap the last minute, don't worry, guys, I'm not going to do the whole thing because Saddam is rushing out the door anyway. Connecting to audio. Still connecting to audio,

Mark Anderson: [00:08:51] There's no sign of black box.

Frode Hegland: [00:08:54] All right, Adam, are you here?

Brandel Zachernuk : [00:08:58] Yep, but muted.

Peter Wasilko: [00:09:01] I'm going by,

Brandel Zachernuk : [00:09:02] Yeah, remotely here.

Peter Wasilko: [00:09:04] I have to watch kids.

Frode Hegland: [00:09:06] No, that's fine.

Rafael Nepô: [00:09:07] I will. I will

Peter Wasilko: [00:09:08] Listen in. I will listen in and maybe I can say something

Brandel Zachernuk : [00:09:14] Short if you ask something to a group, but

Frode Hegland: [00:09:18] Ok. Please. Later on, listen to the intro. So I don't waste too much time. But this is the first initial 15 minutes that I asked for. Talk about kind of what we're doing and I've mentioned because Brendan is here. He hasn't been here for a while. I had a discussion with Dave Millard, my former advisor, who was just brilliant and has a very deep perspective on this. This morning, he jokingly said that what we're talking about, if we do such things as taking the citation timeline that you and Mark worked on into VR, for instance, it's spatial, hypertext and VR. I think that's very, very interesting. But what I've said to the group and what I feel very, very strongly is that and this I'll read you the sentence from the website, which we can edit together, but it is there now. Our work is centered around hypertext and are integrated with traditional devices for flexible workflows and powerful interactions. We're not in any way throwing away normal traditional screens. That is not what I'm saying. And I know, Adam, you're a bit concerned about my kind of language compared to how you talk. But what I am saying is that the demos that you're working on that Brandel is working on is fantastic.

Frode Hegland: [00:10:29] We should support you, and we should also work on ways to get data in and out of this VR environment. I, of course, think that visual matter should be a way to do it. But the more that I'm trying to learn about web VR and so on, there are other ways too. So finally, just to update you, Adam, what we need to do is I repeat myself big language, but try to become the MIT Media Lab of VR work, not VR. Many companies with lots of money are doing that, but there aren't that many that seem to be interested in the knowledge work aspect. It's mostly about meetings and social things. And then you go in and look at a model of a molecule and all of that stuff, and they've started asking really good questions already about what that will be. So if we work at it from an academic point of view, a demo point of view on an infrastructure point of view, I think we may have a very powerful platform to go out and spread our word, get funding and do more work. And I said all that in 10 minutes comments, please.

Peter Wasilko: [00:11:39] Now, Brandel is coming in.

Frode Hegland: [00:11:44] Ok, well, OK. Brandel, you came in at the end of my long speech, but you and I have been doing a bit of email. So what I told the group is we have one year to convince the world that VR work is an important and powerful thing, not just sitting around a conference table and flying fighting dragons, which you and I agree on. The model that I think we should pursue is to be like the MIT Media Lab, but only for VR work. We should do continue you and Adam doing demos like crazy. We should also work on the infrastructure of getting work in and out of VR environments for visual media and other means. My good friend Dave Millard, formerly colleague and sense of being my advisor from last year, is also here today looking at how we can address this from an academic point of view. And he said What we need to do is be a virtual network spreading the word, and that's how other academics may want to come in and help fund this stuff. You.

Brandel Zachernuk : [00:12:41] Oh, yeah, I'm not sure if the sort of shared what I the sentiment that I was sort of supplied to him towards this end, but my sense is that most people do not really understand that VR has utility until they actually get to see it in a real context. And I totally understand that. I think that given the sort of the center of maps of where people work within VR, that the sense is it's primarily for entertainment, be it in a gaming context or a passive media consumption. And that for the most part, technology is understood to be for those things to an extent that that the the fact that Apple was made Apple by way of physical Microsoft has made Microsoft by way of mass docs is kind of overlooked at this point. The fact that utility is boring also means that it's much less visible. And so it's a real uphill battle. It's a challenge even from within the technology companies to remind people that the reason why we all have computers in our homes is not because of battlefield, and it's not because of all of the amazing entertainment applications, but because they have had transformative impact on our everyday lives in the form of expression and information processing. So, yeah, I'm really glad that that is understood because otherwise these things just fall on deaf ears. People say, I think that you have been sucked in on the hype train, and I don't think that's the case. I think that it does have the ability to change the way people do stuff, and it's necessary to kind of pull all of the exciting pieces out of virtual reality, essentially to make sure that that happens. So thanks.

Frode Hegland: [00:14:42] So today is the birthday of Macintosh. I think we should set a date. Maybe 9th of December, Doug's anniversary to say that's when we will have a demo

and I humbly suggest the most obvious demo we could possibly think of making. And that is, think of it now. Knowledge navigator level superficial me talking right? But imagine someone sits down at the desk, has a 2-D document. They do the thing, and now they have access to the hypertext citation database and VR space. So they're reading this document, so TED Nelson, like you can from wherever there's a citation, there is a line to the source. But that whole data set is there in space that can be manipulated in different ways. And then once they're done doing their work, they can leave that environment, but the virtual components are still maintained for them. So when they go back in or share them with someone else, it hasn't just been a one off sculpture with. Something along those lines. Doesn't that seem to be what this community is centered around? For the sake of the transcript, the silence is thunderous,

Rafael Nepô: [00:16:05] I'll say, yes, it does seem like that. Thank you for bringing me up to speed to. I appreciate the. I've been following along with most of the recordings and the series of messages that have been exchanged. So getting the drift that we want to hone our focus. And I'm very happy to play any role I can in that. As a touch of background I have before I jumped into the world of research, I led a product design development team. So a lot of the organization and facilitation around software projects is kind of right in my wheelhouse, so in any way that I can help drive the demo forward. I'd love to be a part.

Frode Hegland: [00:16:51] Ok, Brendan, you may have to be the boss of that taking ownership, maybe from the product design consumer side. Also, do you currently have an Oculus or do you need persuasion?

Rafael Nepô: [00:17:05] I would need a touch of persuasion, but it's not I'm relatively easy to persuade, so I would need to make that purchase. But yes,

Frode Hegland: [00:17:13] Because both Dave and Mark are recent optimists, they have ordered them, so they virtually have their virtual reality headsets.

Rafael Nepô: [00:17:22] We don't need media accounts anymore, right? Like you don't need a Facebook to sign into Oculus. That was the thing that held me back for the longest time.

Brandel Zachernuk : [00:17:31] That's the claim, I don't know whether it's actually been executed yet.

Peter Wasilko: [00:17:35] I was talking to someone who said that that's not actually true yet.

Mark Anderson: [00:17:39] I mean, I can attest that. Sorry, Peter, go ahead.

Peter Wasilko: [00:17:45] Ok, I was talking to a friend who got one and she told me that she still had to have the account, even though they said down the road, you won't need it, but at the moment it's a brick unless you have one. And also, I read a couple of spots. Some people were having trouble trying to set up accounts just for use on the Oculus alone because there's some security bots on the Facebook and that considered a Facebook account with nothing in it other than a person's name to be highly suspicious and shut them down. So whether presumably they will leviathan that part of it out? But there are still issues. And personally, I'm going to hold out for the Niguel free version from Apple with the higher resolution because I am highly susceptible to SIM sickness. And I think Apple's higher resolution would probably cure that issue for me. So rather than jump in now, I'll resist the urge and focus on the interaction of the 2D world with the 3D world. I put a couple of ideas in the side that we should have a person in 2D, have some affordances, provide a desktop client. They would let them interact with the 3D world. So imagine three 2D views the top down a side in the frontal being able to drag things around. Fraction and that would cause a 3D action as if I was actually in the 3D world, able to manipulate it in 3D. And I should be able maybe a palette of virtual screens and be able to drag something from the 2D world onto a virtual screen and then have that particular virtual screen in the 3D world. Get the drop data from my object. And also one other point. It's one other significant birthday today. I just turned 56. So obviously, Steve was holding out on the Macintosh to celebrate my birthday when he released it.

Frode Hegland: [00:19:24] Happy birthday, Peter. That's really cool to know. Birthday. Thank you. Thank you. Photo Yeah. Yeah, sure, they've.

Rafael Nepô: [00:19:33] I other than to say happy birthday to Peter. Yeah, so I was just going to say I there was a there's a famous keynote that was given in the hypertext community back in. I think it might even be 90. So over 30 years ago, it was Frank Hallas, any. He talked about a number of problems that Hypertext sort of needed to overcome. And one of them was called the tyranny of the link, right? So the tyranny of the link is the nineteen eighties hypertext systems and a whole bunch of different structures that they could use. So Trail's

most famous notion is Macs, but also things like virtual documents and those kind of things. Hypertext systems that were being developed at the time seem to have grabbed all of the link and everyone did anything with the link, right? So the tyranny of the link was saying, How can we kind of how can we escape, escape this and do more with it? And I kind of think what we have with with with VR is the tyranny of the screen or the tyranny of the window, right? So we talked about this a bit earlier, earlier on as well. So the earlier, you know, the hypertext systems of the late 80s and 90s were windowing systems. If you follow link, it would often appear in a new window, right? And you have a montage of different things on screen at once. And what the web browser did is it killed that dead, right? To the extent to which, you know, pop ups are now are now considered an annoyance, not a feature. And that's because you have such literary green or even if you have multiple screens that actually sticking within one space has lots of useful affordances in terms of the kind of human interaction, right? You go into a VR space, the temptation to say what we have here, there's no no limit on the number of screens we can have, right? We can have as many screens as you like because we're only windows as you like.

Rafael Nepô: [00:21:20] Whereas what we should be thinking is there's no reason to have a screen. There's no reason to have a window, right? They're entirely arbitrary constructs. And they might well be useful for certain tasks, but for other tasks, they might not. And I think it's playing around with those ideas. And I have a suspicion that what people will do when they think about VR and work is they will jump straight to the 3D space actions that people need to do. So architects who want to visualize their their work, right? I think you even use the example of, you know, a fancy 3D model of a molecule that you could see in front of you. And we're not thinking about the affordances of of of normal knowledge work in that space where you can just destroy those kind of constructs and you can do something completely different. And that's what I think we should be trying to explore and trying to ask ourselves, You know what? What are the new paradigms for interacting with content when you get rid of all of those established ideas? And you go back to these ideas of saying, Well, actually, maybe montage isn't so bad when you have unlimited space, right? Well, almost unlimited space around you, I guess. And thinking about what are the interactions we can do with that? What are the visualizations we can do with that? That's what I'd be really keen to to to see us play with.

Frode Hegland: [00:22:37] I think you've come to the right place. Mark, go on, but I just wanted to say everyone, if you haven't already read this book, it's kind of prehistory. And you know, there is some good insights about VR. Of course there is. But more than that, it's the

poetry of being part of doing this stuff. It's amazing. I'm just chewing this book to pieces, right? Mark, please go ahead.

Mark Anderson: [00:23:03] I set my hand up was actually just to say that I can attest having just purchased an Oculus today and I downloaded the software and before I could stop it, it had found my Facebook account. So thanks already to go. So I think I think it's probably feeling its way there. I'm not unduly worried. I don't know. I've certainly since I stopped the PhD. I mean, I don't use Facebook at all. I'd only had it while I was at the uni because that's how the group stayed in touch. And so I'm not that worried about what it's going to find, but it does seem at the moment to if it can get its grubby little fingers on a Facebook account, it'll want one. And it's interesting to hear actually the difficulty making a sort of hidden one because the first thing I did was I made. I started by making a Facebook account that basically showed absolutely nothing. Whereupon I had a flood of requests saying ladies in Eastern Europe wanted and to get in touch with me until I gave it some real people. And it's not a slacking off a bit, so know there are clearly few issues around their algorithms. The other thing? So that's that. But I would say I've just put in the sidebar, I did a summary. It was actually one thing I made up for the thesis. But had I had about three levels, at least seven issues, things the PDF I put in the sidebar is sort of how they sort of I figure they kind of meshed together and I won't do it while I'm trying to listen to people. But if anyone wants to know where the papers are, that sort of lead to that. I'm very happy to dig those most in the ACM. Except, funnily enough, the keynote that Dave mentioned, which was never recorded, but I did manage to find through the librarian at Texas A&M. So I'm trying to get it, still trying to get it inserted into the record. Brandel.

Brandel Zachernuk : [00:24:54] That would be amazing, I yeah. So I just saw the beginning sort of references to less talk, and I would like to be able to get something closer to a source of truth via the transcript or a video of people had the wherewithal to get it down into hard copy back in 91. I would agree that with David Millard sentiment. Another thing that I would suggest that it's an important aspect of it. Beyond the tyranny of the screen and personally, the almost the more important part is the tyranny of the input. The fact that if you look at what the what the human body thinks of its hands, it's a great deal and that it's absolutely essential that we give people something that is a little bit more immersive in terms of our capacity for manipulation and to the end of waiting for various companies to release things. There are other things you can do in the meantime as well. One thing that that a lot of people have gotten a lot of mileage out of is buying a high-powered PC and and a HTC Vive or or if they have the cash for it, a vario headset.

Brandel Zachernuk : [00:26:13] Those are. Those are really amazing because they just have essentially the best, the best displays that you can you can kind of put together these days and which is really useful as well as leap motion devices like motions are a little infrared based sensor that you can use for hand tracking. And I believe I've linked before with the the hand trap. Yeah, the contract text editing system that I've kind of produced in the past. But to that end, I'm not sure if I believe produce in all of my my examples of VR stuff before, but I would implore anybody to to who's committed enough to this to take a look at my word processor from Twenty Seventeen, my Wikipedia browser viewer from 2019, the text editing stuff that I did not own virtual reality, but with the with the Leap Motion as an input device from around the same time, because I think that they are very useful kind of latency to what's going on. Multiply the length and if anybody has seen them, then feel free to trash talking.

Rafael Nepô: [00:27:34] Ok, I've seen all those, but links very welcome.

Frode Hegland: [00:27:39] Yeah. Also for our website, Brandel, if you could put in some of your resources, that would be really, really good with the tags. So we have something there. So Peter, on a couple of points, number one, of course, there will always be a better thing coming out soon. I'm treating my Oculus as a disposable item. I know it sounds horrible because it's expensive and it's good tech, but it is. I don't I'm not going to put anything personal in there. So Facebook to me for this particular device is always saying Facebook is a public place anyway. Once Apple or somebody does something better, it's a matter of selling this to someone who wants to use it for gaming. So I'm not exactly going to throw it in the bin. But the point is, from my perspective, it's a research device. It's not a it's not a full personal thing. Also, the quality now is very good in terms of the frame rates, and it doesn't have what it used to be. So that's one thing. But also, Peter, while I'm talking to you, would you be interested in helping? And this is a passion of mine, of course. Helping develop something along the lines of here is a PDF with Bjrn. You put it into a web page or something when you are then in a VR environment, viewing that page where there is a button that says View and VR, which can happen now. What it actually does is pass that PDF for visual matter and gives the visual matter maybe the whole document that would be ideal, but at least the visual media to the VR component so that all your references and all your glossary, at least that is there. Sorry, did I break up completely or mostly?

Peter Wasilko: [00:29:25] Yeah, you broke my I for the last little bit that you were saying.

Frode Hegland: [00:29:28] The last little bit was that that this thing plug in or whatever passes the PDF to extract the visual matter. The visual meter is then hand it off to the VR component. So whoever be at Brandel or Adam or whoever in the group makes the 3D thing can use that data. And then importantly, and this is a big dream second step when they're done, that you can then write a new appendix. To that PDF that has all the new spatial data to it so that it is not lost forever, is that the kind of thing Peter you might be able to help with? Because if you can help with that? Actually, just answer the question first. Sorry.

Peter Wasilko: [00:30:14] Certainly, programming and plumbing things are my forte.

Frode Hegland: [00:30:17] So I'll try to just put it plainly. I'll try to get you some money for an Oculus than somehow so that you can do it without risk. How's that? Because that's really a valuable

Peter Wasilko: [00:30:32] Account, though, I still don't want to deal with Facebook accounts, so I'll just hold off and pass on the Oculus step and working going to until Apple comes up with its real high resolution niggly free device.

Frode Hegland: [00:30:44] Fair enough. Ok, we'll keep that in, we'll keep keep that in our minds. But in terms of now that we have Brendan here today in terms of a product and I think product sounds better than a demo, whether it's going to be for sale or not. What do you guys think of the idea that the main thing will be working with is the amazing data set of hypertext conferences? Isn't that the opportunity for that really incredible? Oh, definitely. Brandel, what do you think of that? Pretty cool, right?

Brandel Zachernuk : [00:31:24] I'm sorry, we're just dropping all of this in terms of making use of hypertext as a like making a hypertext about hypertext the subject matter. Yeah, absolutely. It's I think

Frode Hegland: [00:31:38] That also specifically good. Just so I don't confuse specifically, Mark has cleaned up all the conference papers from Hypertext ACM Hypertext so that it can be going into VR in a really clean way where everything connects properly. That may be one of the first visualizations we we should work on. What do you think? I'm not sure if that's what you thought I meant.

Brandel Zachernuk : [00:32:09] Yeah, that does. I mean, it's very good to have clean data to work with. One thing that I am aware of is that the the boring, the boring or the application domain for most technology, the better it's like. So actually helping the the the people understand how to offer the most basic of their emails is a service for humanity far greater than being able to do, say eDiscovery for four lawyers going through a corpus of legal references, despite the fact that there is a significant market for both, the boring one is the is the better one for people. So it is very useful to have a very clean data set. I'm absolutely happy to have that as a as a source, but I would also say that the more baroque or arcane the the application domain, the harder it is for people to identify with the way that that has any impact on the price of bread, essentially.

Frode Hegland: [00:33:21] Ok, so, Mark, go ahead, but for everyone to please think, please think about what you think the let's call it a demo, our thing should be what would have the most impact if everybody has thoughts on that would be phenomenal. But yeah, mark.

Mark Anderson: [00:33:37] I was just reflecting on what Brandel said, I thought I wonder if possibly the tinderbox community, it might be able to rummage up basically a reasonably baroque set of data that, if necessary, we could polarize it in terms of identifiable. Is probably once on this messy enough to be real, but obviously not with such fidelity that somebody basically hanging their actual washing out to dry because there are all sorts of privacy issues. But I'm quite with Brandel. I mean, the flip side of it was with the the the whole concept of the citation database thing was was simply to have something clean enough that one could play with citation relationships without as as adamant, committed, otherwise tripping over lots of broken stuff. So unless you can concentrate on the on the visualization of it, want a better word without worrying about where the holes were? It's also interesting in my mind in that it could certainly be massively expanded. So, for instance, other other elements in there, such as where people work, it broadly would require an element of effort by people competent at working with data, i.e. by which I mean, and I know this is lots of people when faced with the messy stuff, just push it to one side. It needs people with us who just happy to push through that, fill in the bits and put careful warnings around the bit that can't be completed.

Mark Anderson: [00:35:01] So there will be bits you probably couldn't complete. So we we could also extend that. One of things that came up this morning was just the idea that off that off that set, we could do some visualizations of links. And although although the subject

matter might be academic, I could see lots of people in a more business or government sphere could begin to say, OK, what we're really talking about is sort of knowledge, knowledge, knowledge, maps, and I think there are enough people who be able to given given the kick start of something like that. And I think my my experience from past work and stuff is that most of the time the number of people in the room who can abstract that much on their own just from a verbal description is quite low, though once you have an object to show people, it doesn't necessarily need to immediate. It doesn't have to match their needs as much as one might think. It's really just to get them over the abstraction hurdle. So. Oh right. So the thing that I'm thinking about now might look like that, you know, my data could could look like that. And then that's a point where normally they turn around or shut up there.

Frode Hegland: [00:36:13] So I say Adam Brandel, Adam Vernon typing here. Personally, I'm the I'm most interested in the embodiment aspect, input sensing and native 3D tech stocks exploring that. So perhaps what word processor X are is I, you know, we all agree with that. But I would like to add that the first of all, I really see the core user of this being somebody doing research. You know, whether an academic or in business or whatever, but that is the the work thing. But I also think it is absolutely completely crucial to be able to bring in web pages and documents because otherwise we're doing the TED Nelson thing of, you know, build it here or otherwise. It doesn't matter. We need to have an environment where you have a normal web browser. You find data on there for whatever you can somehow put it up do web search. You have a whole wall of web results, but they're shown in a way that you find interesting, et cetera, so that that connection with the real world and doing things completely native is interesting, right? Thinker over researcher for Adam, he says. Ok, I think that's a bit what's the word lofty? I agree with you. But if we're going to have a market and please tell me everyone what you think, then the job of doing some kind of research may be more relatable. I'm not sure.

Mark Anderson: [00:37:47] I think probably getting sort of, in a sense, external support or even funding is probably true in that sense, but I don't think it's antithetical to the sort of thing Annan's mentioning. These will be needed in this space and indeed a really interesting meta problem here is, well, what is the document, what you know, we basically have faux false paper documents on screen know that's so

Peter Wasilko: [00:38:11] Much and all this time. And that should. I mean,

Frode Hegland: [00:38:14] That's not what I mean. All I mean is that if we're asking people

to go into this space. And they have to make new knowledge only that's just not good enough, they have to be able to draw on what the world currently considers to be documents. That's all I mean, it doesn't mean I should state.

Mark Anderson: [00:38:31] Yeah, absolutely.

Frode Hegland: [00:38:35] Brenda and Mr. Product Manager, what do you think?

Rafael Nepô: [00:38:40] I always like the approach of niching down as an entry point as much as possible. So while I see the kind of vision of this being in the hands of anyone who is trying to do thinking work knowledge work, it's probably best to find an angle towards what sort of knowledge work they're doing. So if it is research, what sort of research can this enable most? That's kind of the angle that I'm thinking of. So I don't know. Does that trigger any any thoughts around a potential demo product for researchers or thinkers?

Frode Hegland: [00:39:20] Well, today, being the birthday of my, I saw the ads for the Macintosh office, which is all about connecting and printing and all of that stuff. And I was really shocked because I have a very romanticized view of early Macintosh that they were very salesy. They were very, you know, if you get a printer, you can share it on the network and you can save money and look, it looks pretty. So, you know, we hear we're all about thinking and lofty goals and all of that stuff. Is there anything we can just show that as you go into this space, you do a bit of work. You're so much more productive and look what's at the end of it?

Mark Anderson: [00:39:57] I just get back to the fact that whatever we do is getting something that gets over this sort of it's too abstracted hurdle for people to understand it. Most people won't have deep much experience if any of the virtual space. And going back to what Brandel said earlier and you know that also their perception coming to it fresh is probably more towards entertainment and things for all sorts of good reasons. But but but again, we need to see it that way. So we need to we need to be able to show people something that is understandable to them that allows them to say, Oh, right, I don't just have to go here and play games doesn't mean I can't, but I can actually do. I can actually do other meaningful things within it. So there's a challenge there of just having something that's Real-World enough without being so gnarly that we've given ourselves an intractable problem just to be able to sort of make it make it viewable in any in any way and around the sides of it.

Interesting things like being able to, you know, the inputs and outputs associated with the fact that what Adam was mentioning in terms of, you know, if you need to do word processing of things.

Frode Hegland: [00:41:03] I'm not sure if I agree with you because of the interesting issue that before Facebook, people were much less computer literate. One thing Facebook did, it taught people things like tagging pictures because people did it for fun. And the fact that Oculus now is primarily a gaming machine works in our favor. Because gamers are the ones who are interested in learning the keyboard shortcuts and Eq., they want to get in to really manipulate their world. So I think that if we managed to do a thing where you have a person going into the space, things are flying around and all of that stuff and that's like, Wow, an amazing work product, let's say. Even if the people didn't understand the process, I think because the target audience are people already have the headset, they'll be like, What the heck happened there? That was powerful. I need to figure out what it is. That may also be a way.

Brandel Zachernuk : [00:41:56] Yeah. So another challenge, which is slightly neither here nor there, but it does sort of have an impact on making use of existing and existing copies of documents and things like that or trying to make use of familiar metaphors and stuff. Is that as well as being sort of the first opportunity to break out of the tyranny of tyranny? But is that the sacrifices that virtual reality has made and will continue to make for the foreseeable future is that in terms of being able to to actually. I allow people to complete tasks within those sort of traditional mechanisms. Having a small, very high pixel density despite having a relatively limited but incredibly fine, fine grained input of the very, very excellent wrist muscles that we make use of four mousing. Virtual reality is vastly worse. It's just really bad at making screens and making light making making use of those fine motor controls. And so one of the one of the other challenges that virtual reality of the medium has spatial computing until we get inputs that actually use radar rather than optical head mounted tracking system stuff like that is that any attempt to do anything that is representative of those previous charities is going to fall flat on its face because it's just it doesn't you don't have the ability to create the pixel pitch, you know, the number of the number of pixels per minute out here that are anywhere close to an order of magnitude that you can get in a headset. So it's it also requires being sort of. Considerate of of what you are losing and and essentially accepting and admitting that sort of visibly within the context of how to complete a task. And that's that's, you know, I think one of the things that trips a lot of people up is that they think, Oh, you'll be able to put screens everywhere, you'll be able to kind of pick up a mouse without having to carry it around with you. But neither of those things is true. It's terrible for that, and

nobody has line of sight to to make it any less.

Frode Hegland: [00:44:19] That is really, really important. There is a game. I forget what it is one of those military shoot em ups that I got, and I have some issues with the game, but the handgun? You know, after a little bit of practice like this and, you know, I was in the army, so I do know how these things, you know, feel I can just even without lifting the gun now, I can shoot things far away because of the way it is mapped. So in one area, you have much greater fidelity than what we have. But yes, the whole clicking on a specific menu thing is absolutely as you're saying and trying to to fake. I mean, don't forget what is it called skeuomorphism or whatever where we try to? For a while with a Mac, it had to look like a real desktop that failed. It's going to be the same note. To put a laptop into VR is going to be a complete failure. Dave, any final words before you duck?

Rafael Nepô: [00:45:18] Fries, yes. Sorry to interrupt you. No, no. Well, only one other thing that came up in our conversation this morning that might be interesting is to think about the the stages of when things will happen and when things will be bothered by things, but when people will be bothered by certain features in VR. So it seems to me that the visualization is that is the immediate, low hanging fruit. Right? And I think I Brandel you mentioned that you've done a a Wikipedia visualization and that came up this morning. It was like, that's the obvious thing. Like if you if you wanted to to to get people's attention immediately, then you take a big type of media resource Wikipedia and you demonstrate how it can be praised and visualized differently in VR. Right. But that's like the immediate thing. And I imagine that that's probably what a lot of companies will go to these headsets and marketed as consumer devices. So I think reading will be one of the key things that people will do first. And I think the later things that we might want to think about, that's what we're doing, the knowledge, work stuff. So that's the hypertext spatial hypertext systems and virtual reality. That's where you get to the hybrid stuff. So how do you transition in and out of virtual reality? How do you deal with tangible interfaces? All of that, that's further down the road. Right? So I think one of the key questions for us as a group is should we be concentrating on the immediate stuff, right? Which is also where a lot of the companies interest will be elsewhere. So in a sense, there's a lot of people competing to do that stuff already. Or do you think about the longer term stuff? I think that's that's the that's the key. Interesting question. Right? Are we are we trying to set an agenda for 10 years or two years, right? That's kind of that's kind of the key for me. Thanks, Dave. I have to run, but I'll get with you, and I'll I'll try and join you on Friday. Thanks, all. Hi.

Frode Hegland: [00:47:17] Hi, Peter. Thanks for being so patient. I've seen your heart and sorry.

Peter Wasilko: [00:47:22] No problem. I think we could get a lot of mileage out of exploring textural interfaces to the 3D manipulations, I put in a link to Shirt Lou, which was a famous A.I. program using text to manipulate a simulated blank world inside of a computer. And when we want to use visual data, we don't want visual meta to be loaded down with object geometry and 3D coordinates so much as abstractions that are close to what the end user would have in mind. I don't care about the exact position of the simulated laptop on the table. What matters to me is that laptop one is on top of the table or on the center of the table or on side of the table and expressions like that, which we could then pass and let the computer figure out how that relates to building a 3D model in the world. Then the computer could send that model data in the very terse form of the textual description over the network and in your local machine. On the client side could figure out, OK, when we say in front of a person, what that means is find the point on the table. That's the closest to the center of that person's avatar, then project from that in the width of the object, plus a small buffer and represent the object at that location. Rotated such that its normal would be facing the person that we said to put it in front of them. And again, you don't need all of that work to be part of the jimeta or that you need is the very high level idea of I'm putting the laptop in front of frode on the table. So it's facing. So what we could do work on that, and again, that brings us back into the tech side, and I don't think that other VR players are going to be thinking in those terms they're going to be obsessed about games and 3-D interactions. But if we could work on the language and how we can leverage text to manipulate the 3-D world, I think that would be the strongest avenue for us to pursue.

Frode Hegland: [00:49:20] I think that's definitely interesting, and there will be an implementation we can see how is it actually harder or easier to be abstract rather than quite literal? But Brandel, I'm going to put you on the spot. I have a really specific question that's been bugging me for a while and you probably the most experienced person I could ever imagine asking that is this thing that I'm dreaming about. I have a PDF with visual metaphor. I somehow put it into my web thing. You write stuff. If I view that page with my goggles on, I can click a taken to be. And what gives is the visual matter and maybe the document is that a huge medium or what size project to make experiments to see if it could happen?

Brandel Zachernuk : [00:50:11] And, well, sort of judging from the from the I haven't tried to use the visual metaphor in any measure at this point, but I my suspicion is that it's clean

enough that it would be possible to kind of render into places. So I think that that would be pretty practical. I don't know if you saw my can render fairly large.

Frode Hegland: [00:50:40] Sorry, I saw your Gutenberg, which was a bit shocking. The book?

Brandel Zachernuk : [00:50:46] Oh, yes, yeah, so Gutenberg was interesting in that it wasn't actually only one, only two only four pages exist at the time. I'm sort of recycling those in terms of what I would build it with. It has more to do with the understanding media VR representation where I take all of macaroon and then I render it chapter by chapter into a series of of sort of one and a half meter wide paragraphs that you have the ability to kind of alternate and things. So the issue would be. What do things look like and where do they go in because visual media doesn't provide particular explicit hinting as to appearance than you'd, what I would do is render that into an HTML document. So finding appropriate CSS based formatting and then producing and then taking that and determining appropriate positions for it. So there are hints about where in a document those things lie, or if there's a sort of a linear system or where you want to be able to kind of distribute things and then figure out based on the relative density of them, you know, whether you need to stretch or not, that can affect. So, so yeah, like those are all those are all possible. I've worked. I have at this point, I haven't worked exclusively in the browser I've ever used on other platforms and applications. But my preference is still very, very strong for making use of web as the basis for all of those things. So to the extent that a PDF is something that can be done within web, you know, it can be done in Chrome, I think. But I haven't written an application in VR from scratch because I think it's a waste of time.

Frode Hegland: [00:52:38] Because, you know, looking at the workflow, I have these images of of Doug and TED banging in my head constantly, it has to be able to consume stuff. Visual matter is nice. Of course I like it, but we have to look at how we can take an ordinary PDF as well. And try to extract, but that's a matter of first of all. Ok, so what you're saying is, do you like HTML? So if there can be a converter into HTML, that solves a lot of problems for you, for you, right? I also saw that Adam was talking earlier about how it looks like hypertext. Sorry, ACM is moving towards HTML, which is a good thing.

Brandel Zachernuk : [00:53:15] Hmm. Yeah, and some of the worst transgressions of things like OCR scanning can now be slightly undone by a slightly more opinionated rendering of optical character recognition, all things. I was playing with and I should polish up a little bit

more. The ability to use a web based in browser OCR of a window feed was doing it for the intention of being able to get the the timing of speakers within this very sort of chat. But what that means is that you have the ability potentially to take anything that isn't properly formatted because the other thing is, as you know, PDF can be really terrible in terms of which, which pieces of text sequentially follow other things. If something as multi column, it's not always a guarantee that that a scanning system has determined that and annotation side notes and things like that can come through in the main corpus. So the structure of that document hasn't necessarily been preserved, even though it's sort of staring you in the face. So to that end, even if there is an immediate rich text representation, having the ability to read OCR things and potentially re OCR things with the benefit of some user intervention, a human in the loop means that you can probably get a lot further a lot more easily than trying to build just a singularly intelligent algorithm for doing all of that work.

Frode Hegland: [00:54:53] Yeah, like live text, of course, is doing a fantastic job. That's really good, so Adam's notion of I think, rather than just a researcher kind of brings me back to the Knowledge Navigator inspirational video or whatever we might call it. I could imagine something very, very similar, but instead of chatting to an A.I., we have moving things around in space for this. And also, for the long term, the marriage of AR and VR will be amazing when I can really augment what's in your space, but that is, of course, completely massive discussion. Jaron Lanier, one of the things he writes the transformative thing about VR. It's not to change the environment, but to change yourself. So at some point we will go into that as well. But. So, I mean, if I understand correctly, Brandel, you want to wake the world up to the transformative potential of working in a richly interactive environment, meaning visual in all kinds of ways, right? And I think that's something shared by all of us. And I'm thinking specifically, Adam and Brandel, OK, Brandel, let's say that we suddenly had all the money in the world and all of that, all the technology. Let's say we still had a year and let's say we had a presentation we're going to do on a stage where everybody had their headsets on what kind of things? What would you like to show? What problems would you like to have sold to show? Um.

Brandel Zachernuk : [00:56:41] Writ large, what I want to do is sort of prove that computing doesn't have to be so centrally impoverishing that that we can do things like walk around, we can talk to each other, we can talk to systems and have those have the same digital relevance, the same rich, intertwined business that they have as a consequence of kind of shackling ourselves to a computer chair and staring at a screen without moving our head. Neither left nor right. I think that the the the dire cost that we've paid for those of us who

have done computing for as long as we have to get to the level of skill that we have is is laudable. It's really lovely that people can learn how to use these things. But I think it's done a tremendous harm to be to be locked in this configuration in this relationship. It's really funny to see Bill Buxton, researcher, his videos of because the mouse was invented by English and Engelbart in the sixties, as well as a telephone can actually in Germany. They they just took a rollerball and turned it upside down and didn't consider it particularly important as James. But, you know, it didn't really get much in the way of academic attention until the early 80s.

Brandel Zachernuk : [00:58:12] And Pakistan was one of the first people who identified it as interesting and did formal studies outside of the institutions where it was actually invented. And he had really clear warnings about it that the ergonomics of it and the kinds of motions people were likely to undertake were really harmful to our bodies and our joints. And I think as a musician, he was acutely aware of the harm that can be done, the terrible things that happen to violate the spine of a violinist and things like that. So, so in general, it's that message for me. It's that that computing, we can make computing work for us and for computers, and we can leverage the best of both in terms of really specific things to do. Again, I just think that if you look at sort of a mass time allocation study, essentially what it is that most people do with computers most of the time. If you can make a dent in that, a few of those and that is the most compelling thing to have happen. So, you know, as I live with in my My 2017 video that it's it's patently obvious that architectural visualization, things like tele surgery training. And I can't remember what the third one was at this point, but maybe just 3-D sculpting and modeling those things are really valuable things for computing to be able to improve.

Brandel Zachernuk : [00:59:42] And they have they continue to. But most of us use word and excel. We use email and and that's what we get paid for is is glorified data entry, those kinds of things. And so if we can legitimately improve that experience, if we can, if we can make a clear and unambiguous sort of benefits flow into those domains, then we have the ability to let other people kind of find the more specialized things and recognize that there is an entire trajectory to lead this sort of platform into that that confers more specialized benefits from more specialized inspection into the the fundamental changes that the medium affords. And yeah, so it's that's why I think it's the simple stuff for me. And it's also because I just don't have any confidence that even the people working on it today are aware of where those benefits begin. And what are the pieces of the the sort of compact the agreement that we have with the computer that need to be thrown out the window in order to derive those greatest benefits? So that was lots

Frode Hegland: [01:01:06] That was long and brilliant. Marc, short and brilliant.

Mark Anderson: [01:01:09] Please let me go first because I've been speaking already, so my point was elliptical, so I'll let him speak first.

Rafael Nepô: [01:01:19] Thanks. This ties in with what Brandel just said, and I guess I need a touch of clarification from you on something you said earlier. You alluded to the idea that the most boring or like rote type tasks or experiences are the ones that you should start with in a demo. Can you elaborate on that? A touch? Is it? I think it ties in with what a product that we could build might be.

Brandel Zachernuk : [01:01:43] Yeah. So, so one of the things that was the most exciting for me with Engelbart demo is that he led with the shopping list. He led with the ability to specialize and structured data in a way that was relatable to something that absolutely everybody does, or everybody sort of has an impact on, which is things like shopping that flows into inventory management or logistics of any kind. But it was a really beautifully mundane kind of example of that. I really like fosters the future of day and and I think that it's a really important sort of call to action from the world of technology and technologists who can end up pretty full of themselves and convinced that something that is. Is, you know, fairly arcane and specific in terms of its scope is really important and central. One of the other reasons for that is because I think a lot of the time once we become embroiled in a technology. Complex is that we we lose sight of which aspects of what we are doing are implementation details that are premised on more fundamental values of the way the what should be done in the first place.

Brandel Zachernuk : [01:03:16] And to that end, my wife and I have been trying to work on on thinking of working on a book for about. What communication is, what did the digitally mediated communication might entail? And just the realization that so much of what we do is just has all of these assumptions baked into it that sort of preclude a number of possibilities from from being relevant because if you, you know, it's just like the more specific and opinionated your your thing is the more limited and tied down. It means the parts of that sort of domain you have to play with. Or if you have to make a word plug in, then there's just such a an innumerable number of constraints that are already set implicitly by that. And so, yeah, I think that going for the more basic and boring stuff also provides a basis upon which

to to really reevaluate the way in which some of those more specific domains might actually be. Meaning you had to to look at it in certain ways. It's also a way to be the freshest.

Rafael Nepô: [01:04:45] Yeah, yeah, that's that's helpful and kind of tying in with what you had set around what you were doing with like the chat log during our meetings, I'm going to come back to an idea. Guys feel free to shoot this down or direct it elsewhere, but. You alluded to this idea that if we did a math study of how people spend their time where they're committed to in terms of computing, one thing that would surely show up on the list is this. And I touched on this a few times, but it's the idea of like our meetings, our time in front of a screen, the tracking of the experience, the tracking of the conversations, the threads, the trails that go on are really just kind of lost out. It's like this subtracted out piece. If you go and look back at a video later or if you're recounting in your own head trying to retrieve what happened. Perhaps that's a nice entry point to visualize trails within a meeting of conversations that could be done through OCR, as you alluded to, or even just through kind of the chat logs and anything that we would then have to tie. Like a few of our messages, like Peter's note on Kathy Marshall, there's a few responses there. So those would kind of carry in through this, which there's a lot of visualization background on that 2D, but nothing that I've actually seen in the VR sense. So admittedly, I'm kind of a novice in that area, but that's a general thought that comes to mind something of the idea of a demo as meeting trails.

Brandel Zachernuk : [01:06:24] Yeah, yeah, I like that.

Frode Hegland: [01:06:32] Well, Mark is still thinking, OK, I'll jump in then. No, no,

Mark Anderson: [01:06:35] No, I'm going to say the benign findings are comforting in this is, is it? It keeps reinforcing to me the fact that, well, the strands nicely pulling together. So one of the things is in terms of freeing ourselves to use this sort of new environment. It's it's not so much, it's as much. What do we not want to bring as what do we need to bring? So, for instance, we probably don't need to be making pieces of paper facsimile thereof in digital space, but we do need some things like Pete listening to earlier. We need to know that there's a thing and this thing has a relationship to something else on a totally different level to actually the the fine ones and zeroes about whether it's a green block or a red block. And I find that those those effectively, to me seem like parallel strands going sort of into this because they're needed for very different things. And so your visual matter is another strand that on the face of it has nothing to do with this because where where is visualized and why? But in a sense, it's a data payload that's only unlocked when you get to the far end, but you

still going to have to have a link through it. And we're like also the idea of thinking back to Randall's point about the link sorry, the using a sort of web context because, OK, we get lots of lots of sort of, you know, full starts coming along with it.

Mark Anderson: [01:07:58] But, you know, humanity in one form or another is hammered on the web fairly hard. You know, it's not ideal in all things, but there are a lot of influences that come with it. So people have sort of started thinking about effectively, you know, the permanence of links and dealing with link rot and this sort of thing. So avoiding having to avoiding having to reinvent that, especially as we bridge into a whole new environment seems to me like a really good start. So it does mean something better can't follow. In the same way as Brandel was saying, we haven't really looked at visual matter, but what you'll find inside is some Big Tech Y because it was the best fit at the time. And none of us doing it think that's necessarily what it will be in 10 years time if we're still using visual metaphor or not something better. It's it's just this bridging thing, making sure we don't take too much unnecessary formalism with us that then gets in the way of what we're trying to do.

Frode Hegland: [01:08:53] Yeah, absolutely, there's a lot of interesting threads kind of collapsing here, and one of them is that when I put on my little headset, the feeling that I get is I am now in my own knowledge space. I think that's a really important thing. So I'm very, very glad that we're being dragged up, not down, but up to the mundane. For instance, an actual To-Do list is useful. And you know, I'm trying to not go towards what you were saying, Brendan, about meeting rooms and stuff because I think there's a lot of money in that. There's a lot of work happening. Microsoft and Metta are really investing in that. But then I have to say I'm a complete hypocrite because I do think that Rome and Obsidian and this knowledge building space type things, that is probably where we should go because my deepest dream so far is going to this virtual space. And there are things all over the place, and these things are my knowledge. One of them is the To-Do list. There's a calendar over there and then I have my references here. But with the dynamic environment of VR, I can reorder it into timeline. If I needed to, I can do whatever I want, but it is actually the bits of my knowledge. So you know it it's I'm not talking necessarily about building a knowledge graph. The term that I thought of this weekend is Constellation and Knowledge Constellation, so that you don't feel you have to have it in a specific shape. You put it in the shape when you need it. You know, if you look at that classic Apple commercial, you know, companies, you know, computers have to work the way we work.

Frode Hegland: [01:10:35] In this sense, cognitively in this sense, right, if you want to start

with it to do list, if you want to start with that absolutely fine, if you want it to be skeuomorphic and look like an actual book or something on the wall. Absolutely fine. But this if and now to go into game terms like I learned from the designer of crisis, if the items in the environment know what they are. Then computationally and attractively, we can move them about right. So that's why I'm liking the whole. Let's be as mundane as possible, something every day is possible so that, you know, first thing you do in the morning you put this on, you don't put it on when you're offering a document, which is my pleasure. But that's a bit specialist. How many people write books, right? Or big reports, not everybody. No, I don't I don't mean do whatever I want. Mark, what I mean is certainly, you know, we dream, just dream together. We have look at look behind you, mark, because you have the most colorful background right now. You have all these knowledge objects. Ideally, you would want them in the space, right? Because the thing that surprised me of putting on the headset for the first time recently rather than a long time ago, it's both intimate and large in their. You know, I used to sit in a Japanese house, which is massive. But it's still cozy. So this whole thing, we talk often about this there and that maybe we should try to do that. I don't know how does that jive with people? Oh, their hands up, OK? Hands over to Peter.

Peter Wasilko: [01:12:15] Ok, I put a link to Graham Nelson narrowcasting. Talk in the sidebar and one of his slides going by partway through is a picture of the cockpit of a Boeing 747, showing all the tremendous complexity, and he speculates underneath that slide about how it would be nice if we could have progressive discovery of that complexity in detail in a virtual space. So imagine if you first entered your simulated cockpit and all you had was the control yoke on the throttle. And then after a while, he said flaps might appear with controls. And when to do something like that, also, we can think about really abstract things that don't translate to the real world. And a few years back, I was doing some speculation about what kind of a system we could have to allow children to discover programming naturally. I started thinking, Well, what if you had, say, a wand metaphor where each one to object would actually be conceptually a stack? And if you touch the wand to an object, what you would be doing is pushing the identifier representing that object onto the top of the stack. So you could press a bunch of things. And effectively you could have like a three dimensional real world force with multiple stacks in terms of wands, so you could touch a bunch of items. You could also have some other objects that would represent control operations. And then if you touch the one to the control operation, the data would get pulled off of that stack. It would do its thing and push the result back onto the tip of the one. So the wand would be allowing the wand would serve as your environment and allow you to move data. And that's completely unlike anything that we have in the real world, although, of course, in the real world with the

right. Equipment, you could replicate that physically, but it would be much easier to do in VR because it wouldn't have to worry about actually putting in little Bluetooth transponders and everything to be able to pick up and read identifiers. So that's a completely abstract way, something that would work in that kind of space.

Frode Hegland: [01:14:16] Very much worth thinking about, yeah. Pictures, videos. Absolutely. I agree with both sides. I mean, there Brandel is provocations are still brilliant.

Brandel Zachernuk : [01:14:33] Yeah, I find the thing for me was actually, do you know anything about Bret Victor's dad product? Because there is a president one, it's very, very early Apple employee you met, you met Viktor or is that

Frode Hegland: [01:14:49] No operates only once?

Brandel Zachernuk : [01:14:52] Right? Because there's somebody who by the name of Viktor, who was very early Apple employee and was also a time share with Doug. And and so I'm very curious as to to to to Brett's actual literal pedigree in the sense of what kinds of conversations he's been party to throughout his life and what likely impact that that will have on the way he does his thinking. But you know, for the most part, like I love, I love some of the sort of interventions that he plays with. What I wish is that he was committed a little bit more to implementation of things because I believe the details matter. And yeah, to the point of things like of teleconferencing to you're mentioning earlier, Brendan, there's something that I thought was really fascinating is I don't know if you've heard of a guy, Phil Libin, who makes an application called and he, which is a video chat. It's actually just a video camera, but it lets you perform your slides so that I'd have my points up here and I can kind of point to them whether whether person's style. And it's and it's I think it's brilliant. I think it's genius. And I know if I was in charge of acquiring things, then I would buy that because not just the product, but the company in order to make sure that that thinking is integrated into into the future. But what I was shocked by, and he also started the company called Evernote, where he started Evernote. And so he has a pretty good understanding and appreciation for the way in which the way you manipulate the domain of a Typekit to make it make sense has a has a great deal of impact on how well you can understand things, as well as the bottom line of a company that sort of sets itself itself out to do those things.

Brandel Zachernuk : [01:16:39] What I was surprised by is that he has no truck or interest

in virtual reality whatsoever beyond this kind of flash in the pan entertainment package. And I understand this motivation, but he's actually on record in the podcast about it. And to that end, I think he sees no value in what might be avoided as a consequence of being in VR for teleconferencing. And that's sort of why I sort of I'm so polemic about how much of a challenge there is in convincing people who have been the beneficiaries technology up to this point of what is wrong with that technology because people say these tiny, horrible, impoverishing windows are good enough and they don't understand what channels of information aren't being conveyed. They don't understand, you know, the fact that so many people and this isn't a slight against people who have their cameras off, but don't don't seem to grasp what they don't get as a consequence of not having cameras on and that many people with cameras on don't leverage those channels, either by looking at the chat window at the video windows or by taking the opportunity to perform and emote in them the way that it's possible to as a consequence of the time we spend seeing human beings. Sorry, go ahead.

Frode Hegland: [01:17:56] Just on that point, I see you have your hand up, but it should also be equally possible to not do that. There are several, you know, we have a lot of us face time video on here, and I don't use it very often because when I'm talking to someone, it's actually really nice to be voice only. So within a VR environment, yes, I want to be present, but I'd also like my avatar to just be on a bit of a loop while I'm pacing the room and thinking and listening, rather than being seen to like. Often when I talk to you guys, my eyes are above the screen because I'm looking at my bookshelf as something in the distance. You know, I don't want that to be seen as being not engaged. But anyway, I think your main point, Brandel, is that the level of engagement is a really important aspect and there are different, depending on different contexts.

Brandel Zachernuk : [01:18:44] Right. Yeah, I would also say, though, that even in the context where you are sort of partially engaged, that's a channel of information that computer systems, as they're currently engineered, are very poorly sort of set up to to leverage. And, you know, in real life, when we're talking to each other, there's it's very fairly rarely the case that multiple people are staring directly into each other's eyes as part by way of conversation. What we mostly do is co-exist and perform in ways that are sort of related to the presence of other people within a space, but they're not relating to those people as directly as we are sort of obliged to do in the context where we only have these cameras. It's kind of equivalent to people all standing in a circle and staring into the middle. And you know, that's not very organic until I understand why people don't like it. But what it means is that we're very poorly attuned to what kind of benefits there might be from, from simply being co-located in

a way where we can discern aspects of intent from people's bodily motions that aren't related specifically to performing to one another. And so, so so yeah. I think that while there may be some capacity for Autopilot, I think it would be all the better to be able to see what it is that people really are doing and having those things be more more fluidly sort of representative of the continuum of engagement and and directness of those interactions. Yeah, that's right.

Frode Hegland: [01:20:18] Yeah, I see that. Peter, do you have a quick point because I have something to ask Brendan before he leaves as well?

Peter Wasilko: [01:20:25] Yes, I think that the notion of channels is something that we should add to visual matter, that I can see parallel temporal streams and you might only be interested in one. And one of them could be a very compact encoding of what someone's avatar or their body with an eye or watching the actual video feed is doing at a high level. Leaning back, looking away looks agitated. Things like that. You can have a little palette. If you weren't actually there to make your avatar, do those things, and that could be one stream and that would have timestamps interleaved with other things so we can have a citation stream. We can have the actual conversation stream, we can have a display document stream and we can have the Avatar reaction stream and interleave those individual matters so that you can filter them out. Look at one and then find out, you know, when someone puts up a reference to a book. What are the other avatars in the room doing reaction wise? So you could figure out that this book must be an important book because everyone suddenly perked up and showed interest at the time this particular reference dropped into the chat window. It's sort of a crazy thought there.

Frode Hegland: [01:21:34] I think that's, yeah, very, very good, I mean, yes, that that makes complete sense, that you basically choose what you need highlighted for four different contexts. But I just wanted to ask the question to the group, particularly you, Brandon says. You have to go now when what? What compelled you to put on an Oculus? Let's just talk about that one. The first thing when you sit down to work in the morning. What tasks? I guess checking messages would be one. Of course, meetings are one, and I agree with you, Brandon, it's important to track meetings. But but what are the kinds of things?

Rafael Nepô: [01:22:15] Uh, with the caveat that it's hard to answer that question without the affordances of what exists today, I'll dream. I I see VR as a great tool for spatial. Thinking it's and that's simple and high level, but anything that I do within that context would be beneficial. So from the lens of a researcher, when I am diving through Kathy Marshall's

papers, for instance, and trying to tie them to something else around how a virtual notebook should be structured so that we can gain insight from it. The most useful time that I have is when I can kind of visualize how things might connect, so so that would be a task that I would pop on a headset for if a tool existed to kind of aid me in my research in that way. Beyond that. I don't know, I'll leave it there. That is the most immediate thought that comes to mind, and I'm sure there are other things, but that is like the strongest point which as as you kind of know from my background, this is my world of work right now. So that would be it.

Frode Hegland: [01:23:31] Ok, so the whole connecting things is obviously very, very what is the. If Marshall McLuhan was there, he would have very interesting discussions of what is really VR and what is fake in VR. One of the things has to be the connection thing because you have so many more like moving ahead and all of that stuff, you can see connections much, much better. Should we maybe think going back a little bit that it is maybe a research place rather than a more mundane place just bouncing back and forth, guys to see, do we put your headset on when we want to concentrate to work or when we just getting into general? What are we doing now? Mode?

Mark Anderson: [01:24:17] I think it's a bit of both. I mean, it's interesting hearing Brandel talk is, you know, had an epiphany as you're speaking. He got the thing I do is basically what I do mentally at the moment in that I've abstracted my use of sort of spatial hypertext maps and tinder box into my mind where I sort of use the formalism of what I do on screen. But I'm a slow typist, so I just do it in my head because the bandwidth is better. But actually, you know, the brain isn't. The fidelity is not all I wish. So actually being able to do that decomposition and recomposition of things, which is just insanely hard to do with this sort of stuff. Well, I end up with lots of sketches all over, but it's and I'm a very I also have a very bad hand, so that doesn't help. So this ability to is when you want to step out of something, so it's less to do with writing or something or working on a picture, it's more to do with. It's the sorting and interconnections, and it's probably you want to open them up, sort of reconnect things and then almost put it away again because you've done you've done the bit that you can't do in these other. There's other things. I mean, I could imagine going through my email in VR, but I think it would be as equally awful experiences in real life.

Frode Hegland: [01:25:32] It seems to me that it's also a matter of stewardesses luggage. You know how the rolling luggage was first introduced to stewardesses because they travel and they're seen, you know, and also with children, you don't mark it to four year old the product for four year old, you tell them it's for a six year old. Right. So maybe there is a way

to show this high powered knowledge work environment, but not in an alienating way, but in a way that a more normal office worker would say, Oh my gosh, you can do that. I wonder what I can do with my work with such a powerful tool.

Rafael Nepô: [01:26:05] Yeah, I think that's that's really the idea that that comes to life here is the fact that Brandel idea of the mundane, like the boring task, if you can show how that's actually useful in a specific niche again, because you can't create everything for everyone, especially out of the gate, then. Someone's eyes can be open to what is possible for them, so. I suppose a question of the group that I would just encourage everyone to think on, and it's reiterating what I said earlier. What what are we going through on a daily basis that we can tap into to then create a a different representation of that would enable us in other ways? So how Marc just talked about decomposing and composing information that is a very practical situation that you could put within the frame of researcher trying to publish their PhD. And all of a sudden then you have a market of. And specifically go into the world of HCI and hypertext. So then you have like specific people within HCI or computer science, and those researchers are your initial target audience, which are probably going to be more likely to pick up a headset together if they're more open with tech. And on top of that, they have a practical problem that you represent.

Mark Anderson: [01:27:29] So, yeah, and actually, you know, doing your office work and reading your emails, in a sense, what you are doing is you're doing recon pacing because you get something that links you to something else that's probably not present in the thing that you're reading. And mentally, what you're doing is you're you're sort of making your murder wall of all this. So being able to externalize that, so there is actually quite a common metaphor underneath it. It's an interesting this morning talking with Dave, and he sort of said, Well, we're sort of talking about VR spatial hypertext. So I wouldn't use that term in a in a in a wider context because people wouldn't know what it means. But I think probably here we probably do. You know, it's this ability to have a sort of plasticity to art things and not not in the sense of, Oh, I can make a candlestick that I can bend, but more that no, I can take things for which I actually don't really have a a an object. I would necessarily describe, you know, an eye, an idea, a chapter in a book. You know, things that don't have a sort of a distinct physical manifestation and being able to interrelate those and create or destroy or just simply record the sort of trails between them is something I think this environment offers.

Frode Hegland: [01:28:47] Yeah, sorry. I'm just being a bit rusty because your brain's got again. Yeah, of the time. But I did this little poll. Only 20 people replied to it. But this was me

finding out what part of what aspect of offer to market, basically. And I actually thought export to academic PDF will be number one, its last. But the key reason for you guys is integrated concept map again and again when I show that people really, really like it. So to have a concept map in VR that integrates a lot of the stuff we're talking about, they can, then the work product can be in whatever is probably not a bad place to start.

Mark Anderson: [01:29:25] Yeah. And picking up Brandel points in a sense of yes, and it doesn't want to be a word plug in. The idea is no. What we don't want to do is cluster this onto something existing and take all the legacy problems with it. It's more saying now look, you don't need you don't need some of the stuff you're doing that's really hard to do. You can just do in a different way. That's what it's so let go of the past encumbrances. And I think that's another sort of powerful selling point of it.

Frode Hegland: [01:29:50] So then my last thing to you, Brandon, is can we think of making a shared thinking space?

Rafael Nepô: [01:30:00] Yeah. Yeah, I think that's the the overall goal you had touched on, you said knowledge, constellation, knowledge, space, I like all of that as a kind of a vision behind the just the concept that we're working on right now and thinking through all the Iron Man. Indeed, you're looking like a great Iron Man there. Yeah, I'm absolutely into that thought process, I guess takeaway is what I would want to kind of leave with everyone, as I have talked about is. What would make sense as that initial go, that initial framing, how do you reach down into a specific case that we can really put real effort into, as is often the case in these, you need momentum from just getting something out and getting feedback on that, and that triggers a whole new wave of insight networks, as Dave mentioned and so on. So that would be the takeaway question that I'd ask everyone. And maybe on Friday we can discuss that.

Frode Hegland: [01:31:06] I'll be back in a minute. See you on Friday, hopefully Brandel. So you guys are

Rafael Nepô: [01:31:10] Great chatting with everyone.

Brandel Zachernuk : [01:31:12] Yeah, thanks for having.

Peter Wasilko: [01:31:14] It big here. Yep.

Mark Anderson: [01:31:19] So I think. I mean, is this interesting, the bit that sort of seems to be staying consistently in frame is effectively. So n dimensional maps. So there are a few things in the knowledge space are playing around with it. I think a number of them are encumbered by the fact that what they've mainly done is taken a a graphing tool and glommed it onto some data with good intent. But in fact, sorry, Peter. Go ahead.

Brandel Zachernuk : [01:31:51] Is it? Yeah, I think he's wonderful.

Peter Wasilko: [01:31:55] Oh, OK, I think a real killer app might be a VR email client. The one thing I have absolutely despise all the email clients that I have, the number of incoming streams of communication just totally overwhelm the user interface. I have this one linear temporal list. I wound up with some smart mailboxes. They're not adequate to help me. I have subclasses of kinds of correspondence. For instance, I have a whole set of mailing lists that are law related. I have another set of mailing lists, their information retrieval related. I have AI related ones. I have programming related ones for more than one programming language. I have people in each one of those spaces, they overlap. And filtering through that feed is utterly untenable in the essentially linear temporal view that my mail package gives me, even when all of you a thread for one correspondent. Again, it's not able to relate that to related threads that are on the same and similar topics, and I have no way to just see at a broad, high level aerial view what has happened mail wise over the last three days. What mailing lists are hot? What areas are clustered with new topics? Just show me which emails out of all that are offering me opportunities to sign up for webinars that I need to attend to a whole nother class of email related to product offers that have time sensitivity to them. Winter Fest is going to end in so many days, and that should like automatically bubble up somehow. So I think a VR email client would be the killer app that people would actually be willing to maybe go out and buy a headset for just because there's nothing in the two deep space that can manage that level of complexity currently.

Frode Hegland: [01:33:41] I I see what you're saying, Peter, but I think people use email so much less now, and it's usually used for more official things. I think most people use WhatsApp or iMessage or whatever.

Mark Anderson: [01:33:55] I'm not sure that's true. I think they're just there are there are

just different groups of people. The danger is that marketing makes us want to think so. Yes, all the kids doing this, this group of people doing that. But certainly in some of the work spaces, email is still the main working workforce. The other thing I do constantly see is what's really difficult to do is to generalize from one zone. There's a massively different experience between someone who gets 10 emails a day and someone who gets, you know, 1000 a day or more. And although both are email, the volume almost makes the experience completely different. It's almost like you're not dealing with the same thing. So instead of, you know, your post arriving and there's a there's a there's a card from Granny and will respond to that. You know, it's as if you've got all the stuff for the for the for the parcel office next door. It's just been shoved through your letterbox and you've now got to deal with it quickly and efficiently and drop nothing behind, which makes, I think, looking at email difficult because there is actually not a clear normative experience. And I'm I'm I totally get that lots of people, especially a younger generation, because they're more used to mobile devices, are using other systems. And though they don't look like email, they're often like email just with some of the rappers. I mean, within their system. If I'm sure if you leave it it off and look down into the data structure underneath your effects, are you looking at something like email? I mean, not. It's designed to be, but it the fact that maybe you're getting video messages rather than written text it is is a slight artifice in terms of what's actually going on underneath.

Frode Hegland: [01:35:43] Hello, Alan.

Peter Wasilko: [01:35:46] Hello. Sounds like an interesting conversation. Apologies for missing so much.

Frode Hegland: [01:35:54] I was trying to change the word the world and the word. So you missed everything. Yeah. We're looking at a kind of a demo or presentation or product. However, we want to present it to to build, let's say, in a year to have ready to show in a year and we were going into different avenues of that. It comes down to some kind of a knowledge base, but we don't want it to be too esoteric. It should be something that you really want to put on your headset to go, and you either want to get go in your headset to focus down onto something to build a knowledge thing or you want to do tasks that you do a lot today. Am I saying it right?

Alan Laidlaw : [01:36:38] Um, just to throw a wrench in that and maybe circle when you were. I just jumped in during the talk about email and I would say that email is still massively

used, but uh. Here's the I don't know, a take. I read a post by Dan Mall yesterday and not a post, but just, you know, sort of an update. And he said, my wife is one of this feature on her phone for a while where people have to let you know why they're calling you. So I decided to sketch it out for fun. Currently, tapping a number from a contact details from a contact was immediately, but maybe there could be a new interim screen before the call starts. It prompts you to add a subject for the call. The dialing screen could confirm what you're calling about on the receiving end. You could preview the subject the person entered as a way to decide whether or not you want to take the call right now. And it's it's a brilliant, you know, it mocks it up, and it's brilliant and it's obvious. My first reaction was like, finally, innovation, some innovation in ancient lands, which got me to think that, you know, the old line about the future is here, but it's not evenly distributed. There's a wrinkle in that metaphor in that it's the future is not evenly distributed among technology itself. We tend to have a pattern of disrupting something with a new technology, and then it's no longer sexy and we completely leave it behind. And it seems like it's built up a tougher immunity to innovation than anything else. So we we have no innovation in phone calls for no good reason. You know, telecom seems too tough. The same goes for emails. I've always wanted to see a little tiny feature in emails where you could highlight something in a long thread and then promote that little highlight for yourself to become the new subject line of the email, right? So that suddenly it feels like you are.

Alan Laidlaw : [01:38:47] You're seeing the very last thing as it applied to you. And the same could be said for visual media, which I realized was why I was so attracted to it in the first place is that it's saying, here's this domain. A PDF. And for whatever reason, we've all kind of agreed that it can't be updated and that is false. And furthermore, it's a weird blind spot in our Silicon Valley ethos. We think that we have to to disrupt new areas, and that's where all the opportunity is and all the money. But it's these older areas that have already been disrupted by technology, and they've they've they've evolved from product into utility. That is actually where we should be putting our focus because the distribution channels are already there, making a huge difference in that would would in those in utility products that have become utilities would immediately. Seems like it would immediate. Obviously, there's more detail to that. But you could see immediate benefit from small changes in text messages or phone calls or emails. And and and I think why we don't do that is because there's no incentive, you know, when you've got something new. It's because it's being pushed by a company and they own it. You know, iPhone. And once it becomes a commodity or utility level, no one owns it anymore, like PDF. And so the motivation may not be there. But that is really what's compelling about the future of text to me or visual media specifically. So just

wanted to put that out there.

Frode Hegland: [01:40:36] By the way, I appreciate the fact that you're having a new avatar today.

Alan Laidlaw : [01:40:41] Oh, yeah, it's because I have the Twillio Zoom. Account and then my own now, and I have to remember to switch between them and it's.

Frode Hegland: [01:40:52] I'm talking about your face. Oh, my face looks new. Yeah, yeah, I got or something or hair or what is it? You look very different.

Alan Laidlaw : [01:41:02] My dog decided to get to pay my face some extra attention. She's very old and got confused.

Frode Hegland: [01:41:10] So OK. Anyway, so it's nothing wrong with our cameras, right? As long as you're OK. Yeah. Ok, well, I mean, it is really worthwhile having these discussions into big things, and if we had multiple millions, I don't think we would even dare attack some of these problems. You know, look at how even met up with two weeks ago decided not to do their own meta OS. You know, it's like, whoa, they're staying with the Android base or something like that. Yeah, I mean, to me, it seems obvious that one of the things that has to happen is a research work thinking space, but also a shared knowledge space. You know, the video of Edgar, you've all seen it right? He's got this awful design and it moves them and they go, Oh, there's a physical door in his way, right? It's so easy to move things in 3D space. It's absolutely insane. And hand tracking now is really good. It is not perfect, but it is really good. So for us now, one of my dreams is we leave Zoom running for audio. We all put our headsets on and we move stuff about. You know, if Brandel comes in with a link, we can view it on our little web browsers if we want to. We can file it away. We can do a timeline view. We can do all of that stuff. It's about a shared space that doesn't look like, you know, metal work room horizons or something. It doesn't look real. It's just our thoughts.

Alan Laidlaw : [01:42:55] Um. He. I am missing the context, obviously jumping in later, but

Frode Hegland: [01:43:05] The context is that the Dave Millard, my former adviser, I'm trying to get him to join us and some kind of a change to the world effort. I feel we have one

year to put something out there to the world to really inspire what worked in VR czar can be before the Giants come in and make it blend in. People's imagination is included. I really feel that strongly and it's horrible. I think what Brandel has been working on so hard to really show the interactions and what it is to be in 3D is really important. But if we're going to, I mean, to use massive words, I think we need to try to become MIT Media Lab for VR work with text. All right.

Mark Anderson: [01:43:55] But an extra missing bit to bring it up to speed. That I think was an important thing that Dave raised this morning and reiterated here today, which is, you know, we can either get involved in the the most immediate seeming thing, which is the nature of the visualization. Or we can look a step beyond that because the danger in doing the the stuff that seems most obvious is there are people with, you know, heavier boots and deeper pockets who will trample us to death. And all the work that we may do will probably just be lost in the rush. There are other things that won't be sexy to these people because, you know, the the immediate applications are not so obvious, the immediate sales. But you know, the thing we've just been talking about this afternoon, and it all boils down to this sort of effectively sort of thinking spaces of things where I think we I think we can do all sorts of useful work, even if even if we get no further than just working out what the unknown unknowns are and the known known the known unknowns are, that's actually a massive job in itself because this environment is so unknown. We know there are some lovely things we can do in it, but we we don't yet have a good map as to how, how, how we can use that fidelity to its most. And just the complicated issue of, you know, forget getting something off your laptop is getting it out of here into a visual space. So we can imagine this is to say we can imagine, we can imagine this space, this sort of map space and be able to do things. The the problems in this interim space between and and I'm not sure that necessarily our existing data structures and stuff thus far necessarily help unless we want to be dragging a lot of legacy ideas behind whose time has probably passed if we want to be building 3D paper. Fine. But I don't think there's actually, you know, the best for the future of text. So anyway, I think that it's forbidden.

Brandel Zachernuk : [01:45:54] Totally, totally. And one of the one of the points I think that I've been trying to get across Iraq is that the application represents a value system. And so every data format equally sort of is implicitly sort of reinforces and supports a specific value system by definition. Essentially, any incumbent data formats are going to be best at representing the things that they care about and considered to be interesting and important. And the point that I was saying about the continuum of engagement and direct interaction is

is is representative of the fact that we simply don't have appropriate or adequate and coatings of the things that are the most important and beneficial about co-present or otherwise embodied spatial reality, spatial computing. Those things don't exist. They're not thinkable as a consequence of the way that we work simply with a mouse and keyboard or trackpad. And so the critical point of going back to basics and saying, what are the ways in which our understanding of being a person per state can kind of be brought to bear against what we can either make use of now or imagine can be added as relevant sort of semantic inputs into a digitally mediated system. And that's that's why I actually avoid using virtual reality, even the word computers, because they presuppose so much about what it is that you do and what it is that matters. One of the things that was fascinating to an HCI conference I went to many years ago is the way that they sort of asserted that white space within a numerically formatted sort of set of information was never going to be relevant information. I just thought, I think that probably matters. You know how long the spaces are between the lines of stuff, particularly if it's handwritten. Knowing everything about that gives you an immense amount of context that may or may not be relevant. But but certainly by stripping it out, you're guaranteeing that it won't be.

Alan Laidlaw : [01:48:03] Um. So sorry, I was thinking about the. Yeah, I've started reading that as well. That is pretty interesting. So so I'm just going to paint a little collage between the VR that book creative selection and what I was talking about as far as the unsexy innovation in ancient lands. What I like about creative selection is the is the ethos of the demo culture. The only thing that matters is the next demo in a sense. But also underneath that is saying what is a small thing that I can change, what is a small inflection point that I can focus on and innovate? And that is the opposite of what is this massive, you know, Xanadu utopia opportunity space. I I would be really interested in finding those small inflection points, whether it's in. Pdf or or or email or email to V.R. or whatever. I think that there's more. Rich soil in trying to figure out those small. Uh, interventions then massive, you know? A manifesto for lack of a better word.

Frode Hegland: [01:49:33] Ok. Oh, use the manifesto word, so then I'm allowed to jump in on that. Yep. The thing is, you know, when you watch, I know I'm saying obvious stuff, but for context, when you're watching an animated movie, every single thing has to be designed. So I'm saying that a context of VR is that we can't just fix email and VR, there's so much around it again, stuff, you know? But for context, what I mean is that the thing that scares me is that we cannot just say, let's meet and meet us workroom or whatever Apple or Google will have equivalent and then take a 3D object out of our virtual laptops and share it in the space.

It can't be done right. That is an absolute insanity to me. So that's political. That's where we need manifestos and things like that. But we also do need to do demos this. Clearly, we have to live in this space in different ways. So now we have to decide as a community. What compels us enough other than when we're tinkering and tinkering is hugely important, what compels us enough when we have our own time to put on our headset? Is it to do thinking, is it to do production, is it to do finding out, is it to do social? Is it to do just deal with our everyday life? That reason to put it on to begin with is something we need to get some sort of a shape on.

Alan Laidlaw : [01:50:56] Sadly, I don't have a reason to put on the headset. If it were VR and not Oculus or Metaverse or going into this OS, you know, if I could just put on the headset and suddenly be in a space, you know, that would be more compelling. But the truth is that I also have to go through the software layer this this this walled garden.

Frode Hegland: [01:51:17] Ok, but Alan, here is a really big thing. Have you all seen the movie? Don't look up. When I started watching it. Ok, so you know, the premise, right? I look at it this way. They happen to have a meteor, which is a really clear thing to see in the sky. If you look up, it's there, it's going. We have many issues that we are all here concerned with climate change, et cetera. And we have an incredible tool, the resource. We could think of this as being nuclear power or something that is now about to be unleashed. And the corporate interest will be for the corporate interests. Apple will try to own this base, metal will try to own this space. None of these commercial entities will try to do this to save the world. It's just not in their corporate interest. It's about ownership of the whole package for them, all of them. All right. So we have to decide now and this is what's so important we have to be and this is what I said to the other guys. Earlier, the TED Nelson multiplied by Doug Engelbart to have an amazing demo, a presentation of something that shows that thinking in VR is so compelling. Everybody has to do something else.

Frode Hegland: [01:52:29] And as far as Oculus is concerned, it just happens to be the tool that's closest to our hands, you know, in the Battle of Stalingrad. Russian soldiers were being sent across the river with no weapons. There was a war on. You were expected to find someone else's weapon who just got killed. You had less than a minute to live. I feel we're in a similar situation. The Oculus has got tons of issues, but it's the only weapon at hand, really. That's easily shareable, you know, get some feeling for what it is in there and then just sell it to game players once the real stuff comes out. But we have to live there to to understand. I mean, Brandel is light years ahead of all of us in terms of understanding of living in this

space. You know, be there a little bit and we got it. We've got to find the sweet spot of. This is the thing that I will put on my headset to do, and it's not Jim, and it's not meditation and it's not games, and it's not just a meeting, it is thinking we can be the MIT Media Lab for virtual reality knowledge work. And I'll have to reply to a message,

Mark Anderson: [01:53:38] Just quickly say that I sent slightly, we're going round in circles and I think I think twice, if not three times in today we have actually worked out what people would find interesting and this is actually making sense of stuff. And I can't understand. I don't know why we need to go on talking about it. I think we know what it is. And and that's something we can actually get some traction on and start exploring, you know, because as Brandel shown

Frode Hegland: [01:54:06] Us, I had to reply to that urgent message Can you please repeat what you said? I'm so sorry.

Mark Anderson: [01:54:10] Yeah, I just said and I'll say it again, but I'll preface this. I say without without any implied critique at all. But we do seem to be going round in circles, certainly because at least in this talk today, we've twice been through the same nexus, the same. What's interesting and the thing that's tractable and interesting is is basically since making knowledge construction, construction and deconstruction, your concept constellations, they all fit together. They're all basically different descriptions of the same thing. So I actually think we do have something and there is there is some discussion as to how you scope it. And I think according to our different sort of approaches to information in our own experiential backgrounds, we might see that differently. But actually, I think the thing that there isn't, I haven't sensed the difference of opinion in. There are lots of things that we all find interesting, but something that we all seem to sense that we could do is make sense of things. And the interesting part to me of that is that the one thing that doesn't involve is having lots of geometric shapes. We don't. In others, we don't have to start with things that we have to make the symbols to do that we can almost take anything abstract because what we're doing is we're using it as almost, you know, Johnny Mnemonic. It's your mind expander. You're turning your mind up to 11. You're having a space so you can do it in a in a space that actually has some memory. In other words, it's some persistence, which are human memories, depending on how lucky we are or is is somewhat lacking the fidelity in that area.

Frode Hegland: [01:55:48] I'm embarrassed to agree with you entirely, and I see a Brandel as his hand up. I just want to say, when you get the octopus, please download Nodal and Odel

as soon as possible, because it's such a weird little interaction for some of that Brandel. Please. Sorry?

Brandel Zachernuk : [01:56:05] No, it was very, very useful interjections. And I agree, like the mechanics of actually getting in and seeing what some of these things are like would be extremely valuable. Be really interesting to see if any of cordials work. You know, the Amex's demo that I've linked a number of times is available for manipulation or interaction. If not, I'm sure that I can build a version of it that that that sort of is at least representative of some of those things so that we have the ability to see his videos as well as play with some things that bear some resemblance to the interactions that are implicit within it. One of the things that I wanted to bring up while we because I, well, 20 minutes I've got is that the encoding of spaces for significance is something that within computing has been colonized by computers. To the extent that we don't have many, many times that we do information spaces that aren't sort of in this tiny rectangle, but one place that that that has had a sort of a history and a pedigree of creating and coding is the military. And so I would be really interested to think about that. So, so one of the things I do as a lead in to why information spaces is important is to talk to people about woodshop and cooking as to places where we have these, these workshops, these environments that are engineered to have positions in space and tools with specific mechanical and sort of visual affordances associated with what you do with them and they reinforce what it is you should be doing with them or for that specific task not being a military person myself, I.

Brandel Zachernuk : [01:57:48] My familiarity is limited, but my expectation is from what I've seen, as well as from people like Engelbart. Sort of what he appeared to have gleaned from it is that the military must have encoding sort of put into spaces for purposes. If you look at videos of people on nuclear subs than there are, there are environments that that it occurred to me. It must be the case that there are people who imagine how people need to think about things at certain times in certain places. And so that's a very important sort of reference to draw from in order to think about what it is that that purely digitally mediated spaces where instruments dials. Reports and reporting structures can be represented without any. But at any sacrifice to the physical reality in terms of making sure that these could be made, it reinforced glass or this needs to be separated by that much in order to make sure life doesn't catch fire. So, so within within that context, I think the military is an especially interesting and valuable reference, and I'd be very eager for those who served to think about it where they can pull from.

Frode Hegland: [01:59:11] I served as infantry in the Royal Norwegian Army, which was an experience I got arrested at the end. Let's not talk about that part. But when I discussed this with Doug, one of the things he really liked was the military's notion of weapon system. The military doesn't have weapons, they have weapon systems. There's not a rifle is nothing without the ammunition, the training, the logistics, the carrying and the target and all of that stuff. So that hugely goes towards this thing. The other thing he got a kick out of is the notion of force multipliers. So if you have a guy with binoculars, it doesn't actually shoot anyone, but he tells you what to shoot. And these go into more sophisticated systems. And in the article that I'm trying to write on VR that I've shared, I think with you, Brandel was the tabletop diorama as a kind of a way in to persuade vents of the validity of what we're doing. So the idea is you first imagined just a physical table that has a bit of Afghanistan. One of my friends, that intelligence for the military in Afghanistan, and he's given me, he can't say much, but you know, I'm beginning to learn some of his thinking of how they do intelligence.

Frode Hegland: [02:00:19] But anyway, let's say it's a battle battle of Eastern First Gulf War. So you have lots of little vehicles and all that stuff pretty simple. But then you can do all the magical stuff. You know, you can show communications channels, you can have movements in time, and at a certain point, you can get rid of all the visual stuff that represents vehicles and people. And purely have information shapes, running abodes. So to take inspiration from the military, it's a very good idea because the military has they deal with geography so GPS can be mapped in real world spaces. It deals with time. We have time, as you know, that's really useful for us. So of course, someone who is well funded should do climate change modelling and VR. There's just no question about it. So, yeah, you made me go off on one there, Brandel, because we can learn a lot and we can teach them a lot in that area in terms of imagination.

Mark Anderson: [02:01:15] Well, this shouldn't be going on. I mean, I, you know, as the next watch keeping, you know, I was tactical officer at sea and you locked in a tin box with I. I can't remember how many things you knew you'd be listening to when one set of headphones, you're probably listening to four, possibly five circuits at once. I know it sounds impossible, but you sort of get used to it, and there's a whole thing of dialing in and out and that's relevant to me. I think people get very excited about. I mean, military spend money because actually at the end of the day, they either win or don't if they don't get it right. But that's that's not really the important thing that we do in a wider sense can take away from it. And I think also business tends to get very excited because they make it. They think it makes them feel big to do military things. But but the insights that people bring out of it, I think, are

really quite interesting. And people do do ask some interesting thoughts. I mean, I sense at the moment that everyone's rather bet the farm on AI because it just sounds sexy. I think it's stupid myself. There is some good stuff in there, but it's not the only way. And and thinking more about more about how we work and how we sent to me is actually much more interesting. And it's particularly true. Just some of the other days she was on secondment at Harvard, actually got sent to Harvard to sort of sop up information, but it's really actually actually worse for our Foreign Office.

Mark Anderson: [02:02:39] You're trying to actually work out how to make sense of stuff. And it sounds so trivial, but it's just it's just the problem we've just been talking about so amped up in terms of sort of pucker factor where you've got a lot of you've got a lot of strands that don't necessarily make sense. They have connections. The problem is, you can't you either don't know what the connections are or the the connections are mistyped or a factor we don't have to deal with. But we could map onto the privacy aspect, you know, do I have the right to know this because they're often the problem is it's leaking source because at the end of the day is a human being being put at risk, but you could use the same again if you map it out. So this is like, well, I do, I do I own this. Do I get to play with this or not? Even though I know it's there and I want it doesn't mean I can necessarily have it. So I think I mean, where that information is, often often it's not necessarily out and published because it tends to be published into, you know, what is published. You know, not not to open space, but if I come across anything added to the Bible.

Frode Hegland: [02:03:47] So I have to tell a little brief story about when I was in Singapore at a cyber cafe. And this is many, many years ago flirting with someone only to find out she was sitting next to me. And the cyber cafe thus started a bit of a chat. Someone else in the cyber cafe. They turned out to be fighter pilots from the USS Carl Vinson. So because of this, everybody started talking to each other and the whole cyber and real world was was an interesting thing. I was invited to visit the Carl Vinson, which, you know, when you're invited by the pilot, everybody is nice to you. It was amazing to walk there and it all felt old and new and all of that. So we went to the command room, whatever it's called. And I was shocked to find that the way that they model what aircraft is in the air and what aircraft is on deck, and all of that is by wooden models on a table. And the reason for that is twofold, of course, one is amps electromagnetic pulses could cut their computers off, but also it gives the commanders a visceral I'm moving this away. You know, it's like the reason we have care leavers and aircraft and all of that. But that is also the aircraft carrier that I believe was the first one to have a hypertext system installed for manuals. Yeah, yeah. Right. So it was just

that little story of if we are on an aircraft carrier and we're designing their VR environment, what do we do? Right. It's some of it's physical. A lot of it is about non representational things you have to design a space for. But anyway, I think Mark caught it well earlier when we talked. I hate the term, but since making, we really are somehow trying to build sense making spaces, right? I would like Adam to have a big reaction to that, because I think that speaks to his heart. But he may be busy with Oh OK, not too busy. Good. Right. So let's keep going forward thinking in many different ways of how to do. Oh, thanks for that mark.

Mark Anderson: [02:05:47] Just try and I'll send Brandel you because you might like I'll try and find some links on Sorgen. Yeah. It was kind of it was a frame based hypertext system. So text replacement thing. Sorry, back to you, Fred.

Frode Hegland: [02:06:02] No, no, no. That's it. I'm just trying to close because we're over time and it's really wonderful. I'm I'm, you know, overly excited by this stuff. But one aspect we need to do is how to get real world data in and out documents and web pages. The other thing is to how to share this stuff and how to manipulate it. It's coming along. Coming along right, are thinking is going along Brandel what in terms of the community? I'm going to ask all of you, but starting with you, how do you see your role? How do you want to be listed on the website, if at all?

Rafael Nepô: [02:06:38] Of.

Brandel Zachernuk : [02:06:40] And I think I'm happy to be listed. I. Uh. I'm a prototype, I think yeah. I like to think that I'm thinking about this, so maybe I think here in a prototype, but yeah, I don't know that I have any other. I mean, unless you have a specific thing that you're angling at, then. That seems like it's descriptive to me.

Frode Hegland: [02:07:11] I think that's great. But what I would really like if you all write one article about who you are, even if it's a single line bio. Because what I have to do next, I mean, I'm going to do it in agreement with everybody is. We have to. First of all, at the end of this week, I expect to have a transcript from last week's Barbora meeting human transcript, which is important. So at the end of the month, Mark and I because Mark now is helping with a lot of the stuff to do with the journal, we're going to publish the first issue and that means we have a thing. And moving forward what I need to show potential partners and funders with our dream of becoming some sort of a VR media lab is we're doing we have a great

network of influential people who are thinking in this space, we're producing something of value, which is the journal plus demos, and we're working on a unique aspect of VR. We're not just trying to do meeting rooms. So the more you put into the website of a few links and about yourself, all of you, please go ahead. Peter and Adam, do you want to type or say or just think about how you want to be on here? Because also it's really important that we are all happy. So if somebody is completely unhappy with the whole lab thing, you don't need to be on it. You can still be on the chats. And if you want to be there in a specific way, you know, we'll just figure it out, we just as you all said, I think we can't spend these meetings just talking about who we're going to be because that's a waste of time. That's why we did it first 10 minutes today, right? And the rest of it has to be what to build in how. I guess, Adam and Peter, maybe you also want to be prototypes for protein prototype resin thinkers, something like that.

Peter Wasilko: [02:09:05] Well, I'll give a title a little thought. Please do something to jump into.

Frode Hegland: [02:09:10] Yeah, no, absolutely. And also happy to report we saw Hamilton again this weekend and it's invigorating if you haven't seen it in a while. Watch it. It's just what we're talking about. They wrote America into existence. We can write VR work into existence.

Peter Wasilko: [02:09:28] Oh, and have a look at that latest link. I dropped into the chat.

Frode Hegland: [02:09:30] Well, the oh yeah, yeah, yeah. I'm very familiar with that from research, including the article.

Mark Anderson: [02:09:37] Actually pizza, do you? I'm sorry. Do you happen to know one bit of the subtext? Jigsaw I'm still trying to put together is how Hypertext got into wind help. So not not the HTML help, but the original Windows three hub text help. And I think I think it was Owl of Work Limited, which basically commercialized guide and I don't think went directly, but I think that was the nexus. But it's one of those things that that gets really commented on. But I always remember, you know, long, long after I sort of come to hypertext, Oh, these are those clicky links in even in Windows three help. And it was it was essentially hypertext system, and it was all it was all in a sort of proprietary and semi binary format. But nonetheless, at the heart of it was was effectively a hypertext your system. But it

just seems to be missing from the from the public record somehow.

Peter Wasilko: [02:10:32] Yeah, I don't recall reading anything about that snippet of history.

Mark Anderson: [02:10:36] Well, oddly, Ian Ritchie, who was part of our was briefly the chairman of my fledgling start up in the 90s by some weird random coincidence, but I've tried putting a. He's obviously not interested in any of us anymore, but because I've tried to put the fly over him, but because I took took over public, they decided to commercialise guys initially on the Mac and then the windows. Then they opened a US office because no one would speak to them in those days unless they were in the states. So they opened an office in Seattle of all places. So that puts some sort of in roughly the same place as Microsoft. And I think I think there is a link there somewhere. It's a story somebody obviously has yet to write because all the stuff about when broadly talks about it from a coding and textual standpoint, rather than actually from the the knowledge and hypertext standpoint,

Peter Wasilko: [02:11:31] My guess would be is probably a chat over beers at a local bar.

Mark Anderson: [02:11:33] Yeah, may well have been. Absolutely. Yeah. Yeah. Sorry about that diversion down the rabbit hole,

Peter Wasilko: [02:11:43] Yeah, because the Wagon Wheel was the source of a lot of informal interactions between different research groups, so I'm sure Seattle had an equivalent.

Frode Hegland: [02:11:51] So on the on the history, that's important to get down, and I just wanted to read out what Adam said. I want to experiment much more on air to understand more of the medium first like coffee. Yeah, I completely agree. Which is why demos and just playing with software is so absolutely crucial. But it's good that as we try to build who we are, we also speak loudly outside as we go into our tunnels inside rights.

Mark Anderson: [02:12:15] One thing just briefly in terms of a short range target in case anyone's got anything is that there will be. I'm pretty certain there will be another version of the Human Workshop at Hypertext Conference this year, which is about July, and I will bet my bottom dollar that the two people that run it would be interested because even if it doesn't appear to be hypertext, I think one of them works. What it basically one of them works in special hypertext, and the other one is working with collaborative systems using certain

knowledge spaces. So this this ought to take the fancy. And I'm just thinking if there's an opportunity to just put something out and have it in a sense because it will be published, it'll at least be in the factory, the proceedings of that workshop, if even if it's not in the formal conference proceedings, but it's useful. And I'm not thinking so much in a kudo sense, but just actually getting something that we can then link to. I don't think it's necessary to design for, but if the within the window when it when sort of the call for papers comes up, there's anything that we might put towards that, that that might be interesting. And it's it's a it's a sort of mixed. It's a mixed conference. So it'll be partly attended. But nodding to where we are now, it'll also be part virtual, so it wouldn't be necessary to necessarily have to attend in order to present.

Frode Hegland: [02:13:42] Could you please email relevant links to everybody, Mark? And then we talk a little bit about this on Friday because deadlines make things happen.

Mark Anderson: [02:13:49] Yeah, absolutely. Well, I don't know for humor, but I'll

Frode Hegland: [02:13:53] Also a hypertext twenty two as well. I know that that one is there. But if we can say we're going to do this, that or the other, whether we fail or not doesn't matter as long as we're

Brandel Zachernuk : [02:14:01] Making an honest effort.

Mark Anderson: [02:14:02] Well, one thing I'm one thing I'm starting on at the moment is actually is a short paper that may seem tangential, but that's the fact that it's quite clear that view specs, specs and what you will don't really have much backstory. There, if you look, but they're not really talked about, and they were often seen as just an implementation aspect of technical systems. So the humanist element of it is missing.

Frode Hegland: [02:14:28] We have to we have to finish all of us, but let's spend a little bit of time on that as well on Friday. Thanks, everybody. Have a good week. Bye for now. All right. Thanks.

16:05:33 From Peter Wasilko : Mourns for the Canon Cat!

16:05:35 From Mark Anderson : Happy to do routine stuff later so as to make best us of Dave's limited time window.

16:11:42 From Peter Wasilko : We should be able to let people in 2-D have affordances for seamlessly interacting with the VR world. So give me a top down, frontal, and side view of the "Room" and provide high level commands like grab 'object', point it at person or named 3-d location in the world

16:12:01 From Mark Anderson : Oculus en route here. Frode has convinced me!

16:13:36 From Peter Wasilko : Or have a virtual screen pallet I can drag and drop to that will place the drag data onto that virtual screen in 3-space

16:15:19 From Peter Wasilko : Another pallet would let me position and gesture with a 3-d avatar in the room.

16:15:52 From Mark Anderson : ^^ interesting!

16:20:58 From Mark Anderson : My summary of Halasz's "7 issues" (he covered it several times:

16:21:18 From Frode Hegland : Thanks Mark

16:25:50 From Frode Hegland : Oculus is now 120 frames a second Peter BTW

16:26:28 From Peter Wasilko : Hand tracking sounds very intriguing.

16:27:39 From Brandel Zachernuk : This is "word reality - the 'word processor'" - <https://www.youtube.com/watch?v=LxviGskApew>

16:27:47 From Brandel Zachernuk : The timeline viewer: <https://www.youtube.com/watch?v=DeKdDatIItU>

16:28:13 From Brandel Zachernuk : The leap input-powered text manipulation: <https://www.youtube.com/watch?v=bXGmoH5vIwg>

16:28:46 From Brendan Langen : 🙌🙌

16:29:24 From Mark Anderson : Halasz ACM HT 1991 keynote talk (*not* in DL.ACM):

16:30:00 From Mark Anderson : Original 7 issues talk: <https://doi.org/10.1145/317426.317451>

16:30:37 From Mark Anderson : Oops, sorry last was Reflections on Notecards.

16:30:40 From Brandel Zachernuk : Smaller stuff - this is a demo of a really quick-and-dirty analytics view: <https://www.youtube.com/watch?v=vuzXwZD0EHc> and the 'slow mirror' demo of seeing oneself in VR and understanding how we are represented to one another: <https://www.youtube.com/watch?v=AodOTyXRyEc>

16:31:02 From Mark Anderson : "Seven Issues": Revisited <https://dl.acm.org/doi/proceedings/10.1145/122974>

16:31:25 From Mark Anderson : Reflections on "Seven Issues": Hypertext in the Era of the Web. <http://dl.acm.org/citation.cfm?id=507328>

16:31:40 From Peter Wasilko : And a reminder on the centrality of "Cyberspace: First Steps" which I've mentioned a few times.

16:32:45 From Peter Wasilko : eDiscovery has been the death of innovation in all other facets of Legal Tech

16:33:10 From Peter Wasilko : It just sucked up all the funding and mind-share

16:33:53 From Adam W : Personally, I'm most interested in the Embodiment aspect (input/sensing, ...) and "native" 3D text/docs - exploring that

16:34:33 From Adam W : So perhaps what a the word processor of XR is

16:35:54 From Frode Hegland : Researcher at desk. Corpus is documents since then all current knowledge is the work stuff, not asking for VR-Native only.

16:36:31 From Adam W : Thinker over Researcher for me

16:36:44 From Peter Wasilko : <https://hci.stanford.edu/~winograd/shrdlu/>

16:44:21 From David Millard : I have to duck out, but great to meet everyone, and ill try and join again on Friday

16:44:38 From Brandel Zachernuk : Thank you Dave, it was great to have you on board!

16:44:49 From Mark Anderson : Ah, so we need to elucidate where the 'new' environment gives an improvement on the non-VR status quo.

16:46:48 From Mark Anderson : Listening to Dave, another aspect is the form (format) of the data needed for rich interaction. I feel it can't just be dismissed as an 'implementation issue'.

16:46:59 From Frode Hegland : Absolutely

16:51:58 From Peter Wasilko : <http://inform7.com/talks/2020/06/07/narrascope-ii.html>

16:58:59 From Peter Wasilko : I wonder if Cathy Marshal has given any thought to VR.

16:59:36 From Frode Hegland : We should ask her

17:00:04 From Brendan Langen : agreed! would love to hear her thoughts on implied structure.

17:01:39 From Frode Hegland : VR to to list is VERY interesting actually

17:01:47 From Frode Hegland : VR Notes of course as well

17:04:43 From Peter Wasilko : BTW. I won't be available Friday.

17:05:38 From Mark Anderson : @Brendan and richness even lost of there in the

(physical) present too.

17:08:16 From Frode Hegland : I think at core we are building a ‘knowledge space’

17:10:38 From Mark Anderson : “Do whatever I want” can also be a trap. Do I actually know what I want, or more relevantly in this space, how to communicate—to human or computer—our desire/intent.

17:12:16 From Brendan Langen : fyi - hard stop for me at :30 today.

17:12:26 From Frode Hegland : k

17:12:59 From Brandel Zachernuk : I highly recommend watching all of Bret Victor’s videos about this - <https://vimeo.com/worrydream> - as time goes on I disagree with him more and more, but his provocations are still brilliant. I started chronologically but there’s enough overlap you could probably go through them however you want

17:14:20 From Mark Anderson : Peter’s point about decomposing to greater detail, reminds me about Chris Gutteridge’s ideas about discoverability via glossaries (nested layers of re-direction to wider/deeper info).

17:17:59 From Mark Anderson : Reflecting on the fact we’re much better at collectinf (Evernote, DEVONthink, Roam, Flickr tags, etc.) than making sense of what we’ve collected.

17:20:47 From Mark Anderson : More parallel data streams/trails.

17:27:39 From Brandel Zachernuk : I’m a big fan of David Kirsh’s thoughts on this stuff - <https://www.youtube.com/watch?v=rnipRmR9RJY> - his distinction between ‘epistemic’ and ‘pragmatic’ actions. VR lets all our epistemic actions have pragmatic implications

17:28:01 From Peter Wasilko : There is no candle stick, it is your mind that bends!

17:28:32 From Brendan Langen : btw @peter - really like the layered arsenal of options you mentioned with the wand a few minutes ago. i’m visualizing playing an RPG with the wealth of moves, armor, tools, etc. someone can call upon.

didn't want to lose that trail!

17:34:12 From Peter Wasilko : Thousands a day for me.

17:35:40 From Mark Anderson : As Peter talks I’m imaging my email stranded like the raw Matrix (partly as I was rewatching the original movieyesterday)

17:36:43 From Mark Anderson : “... I don’t see the email anymore, I just see Winterfest’s closing, or this forum’s blowing up of [something]....”

17:37:53 From Adam W : Or ebooks

17:38:37 From Mark Anderson : ^^ oops “imaging” → “imagining”. Otherwise slightly

changes the sense.

- 17:41:17 From Peter Wasilko : The should have used Plan 9 !
- 17:41:55 From Peter Wasilko : <https://9p.io/plan9/>
- 17:42:30 From Peter Wasilko : *They should
- 17:56:52 From Mark Anderson : Noda: https://www.oculus.com/experiences/quest/3916601848368970/?locale=en_GB
- 17:57:09 From Frode Hegland : Yes, thanks Mark
- 17:58:12 From Mark Anderson : Sense-making and situational awareness are key in (text) military/intel activities.
- 17:59:17 From Frode Hegland : Weapon systems and force multipliers Afghanistan, table diorama
- 17:59:46 From Alan Laidlaw : I must be off!
- 18:01:45 From Frode Hegland : Carl Vinson wooden aircraft and hypertext
- 18:02:13 From Peter Wasilko : Roger Schank commenting on twitter on AI hype: “Winter is Coming”
- 18:03:07 From Frode Hegland : Cybercafe meeting
- 18:05:01 From Mark Anderson : ZOG was in USS Carl Vinson c.’82-’84.
- 18:05:09 From Brandel Zachernuk : [https://en.wikipedia.org/wiki/ZOG_\(hypertext\)](https://en.wikipedia.org/wiki/ZOG_(hypertext))
- 18:05:13 From Peter Wasilko : I think there may have been some work on that back in Negroponte’s Architecture Machine period.
- 18:05:33 From Brandel Zachernuk : Looks very PLATO
- 18:06:16 From Mark Anderson : ZOG and the USS Carl Vinson. Computer Science Research Review, 901–906. <https://www.interaction-design.org/literature/conference/interact-84-1st-ifip-international-conference-on-human-computer-interaction>
- 18:06:47 From Peter Wasilko : <https://www.theverge.com/2012/5/24/3040959/dataland-mits-70s-media-room-concept-that-influenced-the-mac>
- 18:07:12 From Adam W : Sense and Senses making —embodiment
- 18:08:08 From Mark Anderson : ZOG was akin to GUIDE in terms of node replacing node, rather than a sense of following a link (i.e. a sense of traversal) but that partly reflects the tech abilities of the day.
- 18:10:57 From Adam W : I want to experiment much more in XR to “understand” more of the medium first - like half a year
- 18:11:43 From Adam W : Like virtual “hands” alone is new to me
- 18:11:44 From Brandel Zachernuk : On hypertext: Charles Simonyi was both PARC and

veery early MS, https://en.wikipedia.org/wiki/Charles_Simonyi

18:13:41 From Brandel Zachernuk : I've got a meeting in 2 mins so I'll have to drop for that - this was very exciting, thank you!

28 January 2022

28 January 2022 Video

<https://youtu.be/aLO5jNj8AJQ>

28 January 2022 Transcript

Note: Accuracy of transcription and the assigning of speaker names cannot be guaranteed.

Please refer to the video in case of confusion or concern.

Frode Hegland: Was just going to text you a playlist. We just have to hold the meeting like this. Yeah, hang on, I to turn off the blur.

Mark Anderson: That's your music not mine. No, no, no, no. It is. I'm going to stop. That's too much like. So not that I can never get the lighting work in this house. Yeah, it's interesting. I had a good, actually good session yesterday. The one thing I can't do is I can't make it work with any of my glasses. There's not room to fit them with back on. And funnily enough, if I hold the head, if I hold the headset really close in, I can get in focus. So I find I need to do it in small chunks and then I get. It's not. It's not sort of the thing Peter mentioned. It's not the motion. It's it's actually just reading stuff that's slightly out of focus gets a bit.

Frode Hegland: I've had a problem with that, too. I ended up getting the click in lens things.

Mark Anderson: All right.

Frode Hegland: And they cost £100, which was obviously both studied. But that was annoying. And it helps a bit. But it doesn't help 100 percent because it's still a little bit about where. Yeah, it's maybe a focus. And maybe not.

Mark Anderson: This will also I, where I basically wear what they call computer glasses, which are the sort of it's like the sort of gateway version of very Focals. So there's a slight difference. So basically, this and this are different, but I mean, they're not insurmountable, but

I'm rather recording. It's logging these things as I go in a sense, because they're not. I think it's a takeaway. I learnt from the years working on on systems that see that we're in a set, you might say incomplete designs, and that inside this beast was something that did what it was supposed to do, but it did it most horrendously. Human unfriendly fashion was a sharp bit sticking out. And it's that sort of thing of because I know what happens is, well, we'll sort that out in Mark too. And of course, they never do, because that's now another department who don't care, either. And it's one of those marvelously somebody else's tasks.

Frode Hegland: Yeah, this is, of course, what's going to be a big deal with the Apple device, this stuff.

Mark Anderson: You see, I mean, I I carry these around where you've seen them before, but these which are they're French and then they do them in half half steps from one to three. So but that covers most of the people. We're sort of late middle age, you know, reading a reading distance degradation, you know, as you can get these out in the tube or something just to read a notice. That's what they're there for. Or reading labels on the back of tins in the supermarket. But I do what they are. I mean, you can get them. You can get them in other shapes and things. But you know, there are 10 Typekit apiece. So why you can't, you know, in a sense, why you can't get cheap reading glasses now. If you're wildly stigmatic or something, that's a whole different ball choking you and my mother, she's plus or minus TED. But you know, my wife's eyesight is really bad. And yeah, you wouldn't expect most things to cope with that. But for a majority of people, basic basics are reading, you know, basic reading, distance correction. I think it's something we've had cracked for years. So, you know, it's the kind of thing where that's a really interesting design oversight because it wouldn't have been possible. It wouldn't have been difficult to build a bridge to literally just drop in some corrections, which probably would have increased the sort of standing audience by a significant proportion. But, you know, all public service.

Mark Anderson: Hi, Adam.

Frode Hegland: Hey, Adam, do you have perfect vision or something, Mr. show off with no glasses?

Adam Wern: Nope. I use lenses. Contact lenses.

Mark Anderson: So we were discussing the inability to get this to work with these, you know, which on one level, it's the first of all a problem. And you know, this is early stage, but I was just musing on the fact that you can easily buy up these marvelous French readers because they're even smaller than those spend and they eventually break in the middle. But for, you know, a few euros. That means I can read the labels in the supermarket if I forget my real glasses, and I would have thought that would have provided because there's uncorrected there, you know, they do between. They do between 0.5 and three and a half degree steps and you know, there's no different eyes or that kind of thing. But for a lot of people, it's pretty good enough because I find that in the very limited of use I was getting eyestrain, I wasn't feeling any of the nausea, but I can quite understand that some people do. But then again, I spent a lot of my youth at sea, so I probably pass through that stage. Because actually, funny enough and pertinent to this, I remember going to a tinderbox weekend in Hanover and someone kindly took us to a they have a ship simulator where people come to learn how to basically drive super tankers and things. And one of the programs they have is coming into Hamburg Harbor, which they like Rotterdam places is big, complicated and busy. And one of the programs he has is for TED drivers. So we were stood inside this thing and it screens all the way around and you stand on a little dais which is affecting the bridge and you see, right? Well, let's turn the weather up to a level. So we were in a snowstorm in Hamburg in failing light, and some of the people with me clearly were beginning to feel sick, just watching the screen. So I totally get that there is a graduation of that effect.

Frode Hegland: Indeed.

Adam Wern: So did I get it correctly, Mark, that you have you have an Oculus, tried it now.

Mark Anderson: Hmm. Yep, so I'm yeah, and I've got it all working. Another interesting thing was I had because both bits came together, I opened it, I happened to open the box that was on top, which is the smaller one, which is the battery pack. And I'm very nearly ripped part of it off because the instructions no one had thought about that because the the diagram of the back headpiece looks not dissimilar to a face mask. So you said basically I was trying to remove this when I was. I should have been removing that, which was something in a different box. But the person who had written instructions hadn't actually thought through the problem in. I hadn't said step one, get hold of this bit. That's quite another bit of interesting, poor industrial design

Adam Wern: And I don't get it. They spent so much money on engineers and yeah, and the

engineering side. And this is kind of low hanging fruit design, better a better package involving good interaction designers. They should put just as much money on that. But I don't for some reason, management is blind to that kind of.

Mark Anderson: Well, it's a bit like, you know, if I was funding stuff now, I wouldn't fund it any. I group that didn't have an ethicist who wasn't a coder paid to be in the room. So that all the time there's someone leaning over the shoulder saying, look, as long as you do that, as night follows day, something bad will happen. So fix it now. Don't punt it down the line for somebody else. And in the same way, if you're doing the industrial design, someone will wheel their truck to you and said, you know, those steps really aren't going to work for many of your customers. You sort of you need that and it's there in us all, you know, because we allied away, the things are inconvenient because I just want to get the thing, you know, I want to get, I want to get the thing done. But yeah, and that's an interesting part of this whole thing. And one of the first things I did was actually cast the picture onto one of my screens because I wanted my wife to look at it because I knew she'd had problems because she's got a very poor eyesight.

Mark Anderson: That's quite interesting. So this is someone who's been, well, a signals officer and then a lawyer, corporate lawyer all her life. So, you know, sat on multinational billion pension boards and things. So not exactly a slouch, but sort of basically said, yeah, it's like a fun toy, but what does it do? The only thing she did notice because she did actually try it without her glasses, a little bit blurry. She liked the basically on boarding room you turn up in. So that was pretty cool. But I got to look at the bounding sort of bounding box, which I actually think is right. Really, that's really nicely done. But but it's again, it's an interesting thing because I'm thinking, well, if I can't communicate, someone else is a perfectly sort of educated grown up. Um, bearing in mind, the gist of the conversation wasn't this is games, this is this is this is technology we will be using, not necessarily in this form, but in the future. So I think I've got I think I've got some explaining still to do, but that's a nice challenge to have.

Adam Wern: And I've tried it with very iPad literate kids, but who has never been in in not really in 3D worlds and not in the multiplayer thing, so it's very interesting to see their their first reactions to putting the headset on. They grasp it very, very quickly. And things like race coming out from the hands is kind of the graph that within seconds that they're Ray coming out of the hand, hitting something far away is a kind of a pointer or. And it ties back to what Barbara talked about. That pointing is a very perhaps even a genetic thing that we are born

with the ability or very quickly to construct a. A model for pointing, and so that was very interesting to me, but we also had a very interesting incident yesterday, Rebecca and I, we tried out Mozilla hubs. The slightly more open M. Metaverse, the thing that Mozilla has been producing, so I was on my laptop and Rebecca took the headset because it's cooler with the headset and then I have to leave the room. And when I came back, Rebecca was on the chair because we were in a world where a microphone in the world of virtual world was high up. So she climbed the chair while in VR to reach to speak into the microphone to see if it was working. I was so horrified by that. That's because if she falls, she will be in the virtual world, falling on to real desks and

Mark Anderson: A big virtual cushion, but underneath the chair.

Adam Wern: But it's really, you know, you really get immersed in that world. When Frodo and I did some experiments as well, and when I came out of that world, I immediately went and we were in the conference room. I immediately went and washed my hands because I felt that I'd been in a foreign environment that I'm so used to get to washing my hands when I come out of a conference room or something with people.

Frode Hegland: So thank you for highlighting. It was not just because you were with me.

Adam Wern: Nope. And also other things I pointed my switch pointer to and it got stuck in this chair and it felt really horrible. I didn't know what was going to happen if I was going to be placed in first lap somewhere, and that would be would have triggered the awkwardness of real life, that it would have been a very intimate thing that neither of us would know.

Mark Anderson: So I made a note that we clearly need a hand basin when you when you come into your room as well, so you can virtually wash your hands on arrival.

Frode Hegland: This is this is actually part of the discussion I had with Vint yesterday from the whole Mysore thing. And because he said, You know, who do you know, who is who in a virtual environment and Darren's book because he goes back talking about the 70s and 80s and 90s, the saying before the internet, you go travel to the city, you didn't know who was who. You know, I guess it'll evolve in the same thing in VR spaces, in some places, if it's a meeting room for an office. There will be verification for who. So even though you may look like you're wearing a funny suit, like today I'm wearing a hoodie. I don't usually wear a

hoodie, but that will be the same kind of thing. But then you'll go to a club and you can accidentally sit on someone you don't know who they are. So the ability for social spaces will be very interesting.

Mark Anderson: This agree a degree of culture in that as well isn't there. I mean, some people are just happy to rock up and meet people they never, you know, in a sense that, OK, there may be cues as to who maybe has some sort of higher status in a certain group. But you know, it's interesting. I can imagine if you worked in a broadly sort of engineering or quite structured background, you require that you acquire the need to know who is who, because otherwise your karma is also bent out of shape. But actually, it broadly doesn't matter unless you're having to interact with someone where one of the four people in the room has special skills and you don't know which one it is.

Frode Hegland: Well, it's funny, Mark, because I've never met him in real life, but being in the other room where we walked around and we could draw shapes and space, which was crazy. It was a very ugly space. Fine. But at some point we'd end up being really close face to face. Hmm. And it was not very nice. Right? Which is hugely interesting. It is that sense of presence. But to other things, before I forget number one, I've pasted in here a link to the universal control thing, which became life today. Yeah, I think that's a hugely important thing because I think Apple will leverage lots of different technologies together for VR. The glasses will not do everything on their own, which is, you know, like it's very, very interesting. Also, I had one of those Oh my gosh, what is we are good for in specifics today. Not is it? It's not a question anymore. And I looked at two different things. One of them is the well, actually, I'll briefly share my screen, if you don't mind. So I went into my software called author, and I did this. So I started, you know, mapping out us, you know, like Mark Anderson Journal newsletter or that's that's Alan Hair. You know, that kind of stuff, because I thought, if we can't, because the article that Peter sent was interesting, but the whole conclusion, oh, what's the point of doing 3D stuff that we can't even work in 2-D, which was really annoying, but fair enough.

Frode Hegland: I should be able to start doing something in 2-D that I can imagine. We then take into 3-D. But what happened quite quickly was, let's look at Brandel hair. What's the point of me just having him here? You know, if we actually worked in the same company, we had department and stuff. I'm sure we both be in some kind of a box. But what would be interesting here is there was some kind of a feed. So if Brandel did something, this thing would update for me. But I think that's slightly out of scope. So what I thought about then

was. I don't please don't read this because it's just my weird notes, but. So Adam managed to take the future of text book as a PDF into this Mozilla space. And when you went close enough, it was incredibly readable. You know, one of the things Vince said, people won't go into VR to read, I think he's completely wrong. I think people will because one of the magical things that I only also understood today is very narrow field of view. So when you move your head, it's an infinite space, almost. But when you do not move your head, it's a concentration space, which for me with my issues is actually really, really good.

Frode Hegland: So that was one thing, but I thought, what is the key thing that we all have to look at what kind of work we want to augment and the kind of work I want to augment if I'm honest to myself, which is hard to do. It is the act of authoring and the act of reading. So therefore, and I really want to know what you guys think about this. What I think should be done is, first of all currently and author concepts are per documents. If you start a new document, you can copy the concepts over, but they're not there by default. So first of all, make the the concepts part of the system not per document. Then add a few very, very few things, such as category, you click on that and you have person, location, institution, a few basically tags, but you try to make it very few. You can allow people to add a tag manually, but make it a bit difficult so they don't do it too much. And then finally, we have here. Time, if it's a famous person who is dead, might as well put in the born and died. It could be useful. So point is, if we are allowed to because notion and Roman, of course, they all do it and they're all better than this, but if we look at it, really simple way.

Frode Hegland: If these things have categories and then Adam, who document and let's say he manages to get the visual meter out, that means that we should be soon able to be reading a documents and the we can then do things like this. See, only the defined concepts. You know, pull them out and do all that kind of stuff. Hey, I haven't defined very much, but we because we know what's in it, we can start doing really powerful views. So sorry for going on and on. But in closing, if we can help an author in a normal environment writes and to stuff that automatically when they produce the documents, it is in a way that when it's taken into VR, you can read it in a really flexible way. I think that would be really. A powerful and interesting, oh, final thing I forgot. If things are defined concepts when you point to them, the mouse should point change to a pointer, even though it's not a link. You know, we have to find a few affordances like that, but I'm really wondering what you guys have to say on the notion of that kind of document workflow even mute myself for a minute.

Brandel Zachernuk : I think having the concept that find her sort of workspace rather than a

document sort of points to an interesting question of in the context of hypertext, what constitutes a document and where where are its limits? Because it's a view and the idea of view, respect and any other sort of manifestations of it are that that there are specific kind of trails and that they are in a lot of ways there's less integrity. And I don't mean in a pejorative way to what is this document versus that document when you have this collection, this loose collection of of ideas that you want to kind of put together. The challenge with that is that sometimes you want to say different things about different things. And so having something that is on a canonical reference to Doug, for example, is challenging unless it's the kitchen sink. And so I definitely like the idea of being able to create documents and have a source of truth for things. And yeah, it's making one's own hypertext or with the PDF at some level, but at the same time, because of the specificity that one might desire at various times, that that's that's something to look at and think about the sort of practical consequences of.

Frode Hegland: Just on reflecting on that, it is really important that I consider these concepts and glossary the author's point of view. Not, not at all. Any kind of truth. And what becomes interesting over time, maybe, is you read my document that has this, but you also have your own glossary. So you should be able to say this document that's in front of me that I didn't author. Show me only the glossary terms I have defined in here, because that's what I'm interested in. And so what I'm looking for here is I think it's the same wavelength this year where we give the system stuff to work with. All right, so here is my defined stuff, there is your defined stuff. We have citations and so on, and then we can build because over the last week I've been going a little bit crazy thinking in this VR space, we can do this and that and all of that. But as Mark keeps hammering on about and it's completely right, where is the data coming from? All right, so how can we that how can we then introduce data to this in a comfortable manner where we feel like we're nicely building when we write? Similarly, when we read write.

Adam Wern: And I think one approach that is fruitful here is to to not work these concepts into a database or the kind of central store of truth, but but see it more as the sum of all documents or a part or a slice of all document. So you could have your I've said it before, but I don't want my. That tech reference is creeping into my theater references, for example, or very few of them, I don't want to see them. I don't want to see that the other way around. For example, many of the remaining of my theater concepts and the embodied embodiment parts of it really relates to VR. Seven things from theater coming into my tech world, but not the other way around. And so it's and also personal stuff I don't want. I want to separate that. So having having you? Maybe that is what you call categories. But but slices of your document

space to to draw from rather than being the source of truth, but more that they are options to draw from would be a way to looking to approach it. That I think is fruitful and not explored enough in tech circles. There is this kind of idea that you put everything into one big database and you have been working on the idea of the the document as canonical truth. And I think that your version is a bit more interesting because it automatically has a sense of time as well. A document was made in a in a time period, and it may be relevant now, but it may be not so slicing the. It's like anything. Things buy time and category is very useful. Yeah.

Frode Hegland: Over. Yeah, I say you have Mark, but just to respond to that. When I was doing this earlier on, I wanted to be able to let the user if they were high school student or university student, specify whether it's for maths, homework or music or whatever. Absolutely. But then I'm thinking more about the kind of thinking and sense making and all of that stuff we're talking about. That's why it becomes more unified. But I really don't mind having a little tag in the corner that says, you know, this is for such and such space. I think that's absolutely a legitimate thing to do. Um, yeah, over. I'm making this up. That's my money while I'm listening to you guys.

Mark Anderson: Yeah, I have written about three things. I mean, interesting. I think my first reflection when you thought it was probably being coloured, many of our Brandel in, I mean, just one of the problems, of course, is how these things scale outwards. And the truth is, will never have. We'll never really have the time and attention to detail to wanted to classify everything in this. And that's a problem with classifying systems. But I like I like the concept that certainly it's also shades across to what Adam said. But it's not unreasonable. You might say, Well, look within my sphere, my personal sphere, which might be all your documents here and out there, but broadly, in some way, yours, which is to be defined separately that you could say No, no. Well, this is my own constellation of facts and interesting things. And if they were structured in a way that they could be shared with people, that's also useful because as rightly said, well, where is the canonical version? And to a certain extent, there doesn't necessarily have to be because one of the problems with the the all encompassing sort of database is that, you know, well, we all end up in some sort of religious war over what the ground truth is when it doesn't really matter.

Mark Anderson: You know, we won't even agree just to have two truths in the same wrapper. Not that it, you know, it really doesn't matter. But you know, on a human level, it's clearly something we just don't do very well. Having, you know, having made our choice, we're a hodgepodge. So but I think it's good and I like the hyper textual nature of it. I think

it's also interesting because it has an innate sort of link or an in an inferred link structure, even if it's not actually there, which is important if we want to effectively move around that as a I don't want to call it a network and I don't want to cause it to grow up. But if we want to move it between interconnected things, we want to move, be able to sort of translate, teleport along the lines of connection that that's quite interesting. And that's the kind of thing that we might begin to be able to do in in, for instance, in a VR space is harder to do on a 2D presentation. I may be wrong, even on the latter on data. I mean, yeah, the reason I bring it up is is all too often data at the moment is basically just the exhaust

Brandel Zachernuk : Of our activities

Mark Anderson: And we think, Oh, there's something interesting in it. There aren't many people you see who actually sit down and plan their data. And I don't mean in something like, you know, international organization planning metadata. But this is something I fell into. I got housed on a university project and I was staggered. There were sixty. 60 funded projects, all funded by a national funding thing, and not one of them had a description of really their understand, their data, their entire approach was, Oh, we're going to be making data because we'll have lots of it. It's probably important. So what we want to do is we want we want to have intellectual property rights over it, but we don't really know what's in it yet. And I and I well, that's what Wendy asked me. Stop helping.

Mark Anderson: So this is an inconvenient truth at this point. But I find it hard to walk away from that because that is one of the things we're facing. And so a really interesting thing in the context of our sort of, you know, sea level discussion about about the airspaces. Well, does it make us think about how we design? So that will be helpful to us that, for instance, to be able to translate from this flattened thing to this to to to a richer structure. You know, it's a bit like this thing about going from a a complete hypertext linear rising a wiki. Well, how do you do that? It's not. It wasn't built to do that. I mean, you can as a sort of an author, you can choose what I will take this path, but it's the same sort of thing. So which is one of the ideas I sort of I did play with Nodar. And yeah, it's fun and it takes me to get used to. But but what I really wanted to do, my next impulse was right. I want to take a data set that I have, and I want to dump it in here and I want to see what all those little, you know? And yes, I'll I'll start with two thousand circles, but I sort of, you know, I'll know, I'll know some labels and I can and I can begin to do stuff. But it's interesting that I don't think people are thinking like that.

Mark Anderson: And one of the problems I think that comes out of that is that you get over

fascinated with the the interface. So you know, there'll be there'll be endless ways to have different colors or different shapes, but no thought as to what they represent to why you might want to be different shapes. So it's not that it's not impressive work, and it's all stuff that needs to be done. But again, you know, that's sort of that is the implementation level stuff that I think we want to skip over and see if we can take that, if we can, if we can take it as granted that probably by the time we need it, that kind of stuff will be better. So what is it? How how should we say, take your your Constellation's, your glossaries and put them into a into a space so that the map you just showing us an author is something that is actually useful to us. Because in effect, if it's just a 2-D map in a 3-D or Indy space, we can't we? Okay, we've moved it from one environment to the other, but we haven't enriched it very much. And so that sort of I think. And the last thing was another interesting aspect because time is mentioned is that this comes to often when I'm looking for a book and it's trying to find out that if a book was republished, if I'm trying to find a book, it's been recommended to me and it's been republished well.

Mark Anderson: Has it been republished and altered? And I don't just mean type that type of little correction because you'd sort of expect that. But did it put an extra chapter in or so in a sense? Am I actually talking about the same source or not? And again, that that's something that is very, very rarely picked up on. And I've also put in the sidebar, I think freights read it, but I'm really enjoying a book that on the face of it is supposed to be about translation. And it is. It's called Is that a fish in your ear? But in the course of talking about translation, he inevitably gets into the will. You know, is there as much fixed in language as we think there is? Not really. You know, can you define what a word is? Well, you can tell a computer what you think a word is in terms of, you know, things surrounded by spaces or punctuation. So it's really, really it's a really nice to sort of dive into the same ambiguities, but just just from a different direction. Because it's almost comforting to see that exactly the the problems he's bringing up are things that actually are not unfamiliar to me having that in other circumstances.

Frode Hegland: So I think we're all kind of on the same thinking here, and one thing I went through a couple of weeks ago with this definition dialogue concept box was to very easily and quickly import wiki data. And it turns out not to be that hard, but then suddenly I think we're inching very close to a universal truth rather than someone's glossary. So what would be really interesting, from my perspective, is to build, you know, I do this side of things with your input. But then when it goes into VR, if you extract the visual matter, of course, you have other access to lots of other data, too. So if you choose to say, you know, here's Doug

Engelbart to use that example again, you know, you want to see the wiki data about him and whether it contradicts or if it's if it's not contradicting, should be able to literally glue it together as one thing, and that will help you with the rest of the space. In other words, you start with a corpus of some sort, but you can expand and go here and there. I mean, I really think that if this were to happen, TED Nelson would just start crying. Yes, mark

Mark Anderson: This. I mean, because it keeps bringing me back to I mean, I've consistently failed to get Chris to understand what I meant, because when he did his tablet, his web sleuthing, because around the time I was talking about it through my thesis, I was talking with Dave Mallard, who was one of my supervisors. And I think you've now seen in the group here and I say, Well, one of the things that's all very well. I mean, I can go around the links on Wikipedia, and that tells me what people bothered to link. What I'm actually interested in is saying, Well, if I jump into a subject that I know of but don't know, so I don't know economics. Can I look at it and see where the holes are? I want to say I actually want to see the anti patterns. I want to see where the dark thoughts are that don't exist in I was. I know there ought to be something about the subject, but there isn't so or the ability to sort of take from Wikipedia said, No, I want this node, this node, this node, this node, and then the rest can sort of fade out at the edges. The links are also there, but I want to look at these objects, the interrelationship of those. And that was. Whereas what Chris was doing at the time was of was in a more deterministic way, just following the structure, it was there. One of the things, I suppose, because things have been doing one thing I've been used to doing for years is actually basically forking out the data, literally forking the rubbish out, having just saying what's there and is what's there, what what the person that gave it to me thought it was or said it was.

Mark Anderson: It does. It does what what they've given me. Does that actually represent what they they want it to be or think it to be? I mean, very often the first the first answer to those two is no, and it's not through anything bad. It's often people just don't understand the nature of the information they have and how it works. So more often than not, that's one of the reasons their information isn't working because they don't understand the nature of it. They think it does something or they think it's it's produced to do something that they want to do. And in fact, it doesn't do that at all because it's structured or interrelated. So this thing of being able to sort of take information without necessarily so tearing off all its links, for instance, if you grab a handful of Wikipedia. I don't want that necessarily be sheared off from the rest, but it just, you know, came back to the Oculus boundary type thing, well, it's outside. I don't really care. And if I need to move my boundary out or bring something into the space

I'm looking at? That's fine. But otherwise, rather like Adam's visualization, the rest can just gently recede into the background.

Frode Hegland: I think that brings up the question of what does Adam and Brandel want to build so we can support them with work and ideas and stuff? In this context, if anything, I mean, I would love to see an incredible reading space that's focused on one person that can easily incorporate more people. What do you guys actually want?

Brandel Zachernuk : Well, something that I built over the last couple days is a multiplayer VR page that also supports multiplayer 2D views of being in the same environment.

Frode Hegland: Brandel is an Oculus because all four of us have Oculus. Now if you send a link, we can go in.

Brandel Zachernuk : Yeah, I mean, the latency is probably not amazing. It's it's I've just been experimenting. It may be may very well be that something like Mozilla hubs is a better basis. But what I wanted to do was understand it from the ground or I was close to the ground as I can be bothered doing so that I can kind of stitch different sort of signals and systems together. And so that's been fun, something that I want to do. But again, like I said, just sort of more at an infrastructure level and to have essentially a boilerplate of techniques and approaches to be able to explore these smaller things. And my intention is to be able to sort of connect with two devices at once because at this point, speech recognition isn't something that you have direct access to in Quest while you're in the web. One of the things that Nvidia does is it has a limit because of the way that it's actually needing to make use of a paid service, so it needs to clip the ticket along the way in order to do that. Whereas Google Chrome actually provides a speech recognition system, graphics that you don't need to have any. But Google probably listening to speech, but other than that, it's something that you can make yourself. And so that's what I use in word reality. And you don't have the ability to do that on Quest. But if you have your headphones, when you're wearing these headphones and those connected to my Mac or PC and then in there, then I'll be able to have both hand-tracking, full hand-tracking and and the ability to do detection and speech recognition.

Brandel Zachernuk : So that's something that I'm doing for that, for the benefit of being able to kind of think about what it is the text input is and the sort of the multi multiplicity of representations that text can have. I'm really interested in in where you put text. I think that,

you know, that's one thing that Noda does, but I feel like it's actually under indexed like. Being able to more effortlessly place text in places and also to be able to replay the sort of temporality of when text was put in places, there's a really neat guy who sort of took over the department at UCSD. I think. Ed Hutchens and an HCI and cognitive science department, which is a really neat sort of mixture of things, and I watched his high lifetime achievement acceptance speech in Tokyo from 2015 recently. One of the things he talked about was the fact that computers are wonderful context destroyers, but they should also be wonderful context restorers as well. And so something that I'm really excited about is the possibility of being able to encode actions such that you can kind of get into the swing of and recognize what it is you might have been thinking about as you were doing stuff.

Brandel Zachernuk : And it sort of comes back to something that Mark was saying earlier about what is useful data to encode something that that another person in the. In the VR community recently was asking, and I think I know what kind of kick they're on. Otherwise I was it Apple? Was it Google? All those places. But like how many apps record all of the temporality of your actions in the sense of having something like an undo? Q But but recognized and elevated as being a more constituted significance for the purposes of being able to understand what a document actually is? You know, there are some things that are represented as a series of steps serialized in the way that, for example, Houdini. It's an application for doing production, film effects, level computer graphics, and that applies a series of procedural steps so that you never sort of lose that. But it's not the history press, because it's not necessarily a reflection of the weight of the timing that you undertook those actions with. And GitHub does exist, but it's not actually a fully granular representation of those things in those orders. So, you know, one of the things that I'm interested in is going, well, what are what are some of the artifacts that we made of? What are the attributes rather, I guess, are native components of the artifacts that we're typically interested in producing and what manner in which can they become represented in a context for either scrutinizing, sharing or otherwise thinking about the things that we already expect? So to that end, I like the idea of recording just in normal 2D apps, the sound and the speed with which you Typekit so you can hear somebody really smash it down.

Brandel Zachernuk : And also, the right angles are a really interesting sort of experiments, but you know, that's while flippant, also representative of the kinds of aspects of performance in the characteristics that might be recordable and made meaningful within a spatial environment as well. So I think that what I want to make is enough context, one to be able to kind of to give recognition to the fact that all of this stuff is pretty achievable and pretty easy,

especially with the right boilerplate in place and to to to say to to large point about what is the data. A lot of that data is stuff that we probably wouldn't have thought of as having the ability to be meaningful. And at such point as we track that and make recognition that it actually could be a useful thing for us to respect and understand. We'll have a pretty significant step change in our relationship to that data and recognize that a lot of the things that we're putting in and saying this is a document are pretty important. So that's a lot, but that's an answer.

Frode Hegland: Really cool. Yes. Yeah, the retro stuff we record, the richer stuff we can interact. Absolutely.

Mark Anderson: My comment briefly on just one thing before we go to to to Adam's take on what he wants to build just because it speaks directly. Just one thing on the time. One thing that we tend to overlook because we well, we measure the things that we can measure, which is quite natural thing to do. But what we don't actually measure or because we don't tend to record, is intent. So the classic thing is we'll type 100 characters, pause two characters, pause three characters, pause, focus. So basically, the third edit is the three typos you corrected in the things so that actually what you want to read is not that, you know, the important bit actually isn't the 100, it's the three edits after errors. Now, of course, that's not that's not obvious if you're just looking at the character flow, because unless you actually have an understanding of what's being changed, are you going to rewrite into the language which says to me one of the things that we should be as a sort of skill we might wish to acquire in a new sort of literacy as it were, is get in the habit of, you know, accepting that our input processes are not always as good as they should be and our mind wanders and things.

Mark Anderson: But it's it's sort of recording just in the way that actually recorded in a separate vein, having something say, when we're having this conversation, you can always tap a button set. Important thing happened here. It's exactly the same, but in one's own work, because we can, we can record the flow of the characters going into a document. And we can we can know that. Yeah. Yesterday afternoon, I wrote a long section or I wrote a number of documents, but it gets us that far. What it doesn't quite answer for it is, Oh, did I actually write something of real insight then? Because to do that, I'd have to go to that time frame, find that thing and get into the language of it. And I, I don't have any answers in this, but I just sense this. This has come up across my bows a number of times now. And the one thing, I suppose it seems, because we don't do it, it's self-evident to us when we look at our own work. But we don't record it in the moment. And maybe that's maybe that's a form of data we should build a receptacle for, and I shut up because we want to hear what I was interested in

working on.

Brandel Zachernuk : It.

Adam Wern: You started so many interesting things that I want to discuss more here before, but when I've been playing with both the Mozilla hubs and a little bit in the world, where is it work workspace, horizon thing and especially Mozilla. And when dragging things in, they're placing models and placing documents in their research. It's obviously clear that there is no kind of greater collection of things you import, either the whole world you go to world or you have small, singular objects, but the collections are missing in in a way. Of course, you can import a room or something, but it's kind of there is almost no. They are more detailed the information in there, and I've been looking at the US, DC, the the Pixar and also Apple format for four models. The open format and it's very, very 3D centric, model centric. But because I have been thinking on how to hang on extra data data in it and. It looks like it's really hard because there are just very small primitives. But we need some sort of bigger collections like that, this model that part this cube of this model or this, this image represents this and has an hyperlinked.

Adam Wern: And has this date stamp and time stamp and all the data we've been talking about. Yeah. Today and much more, we want to hang that onto the model, different parts of the model and also relate different models together so as when you bring two models in together and they happen to have a relationship that you can visualize or or show that relationship. So we have some work to do there if we want to have a kind of a side, a metadata format that we can hang on to 3D models and do something a bit more useful with and also the collection part to have a document. The three document, if it's a kind of a montage or even with a space, a gallery thing where you have some kind of substrate that you've put the knowledge objects on where it must be represented and encoded in a way that is. And I envision something that is a XHTML expectable something people can actually work with and and really learn quite quickly, if you're it. I will.

Brandel Zachernuk : My hope would be that it would actually be. I think I agree, Adam, about that, the question of where is meaning, and I don't feel like you ask, does it in terms of in terms of qualifying relationships and stuff? And so either you add that to the U.S. or you just say that meaning comes in and they're sort of a ground truth inside USD and and actually all of those relationships constraints and those and those kinds of things that define TED essentially interactivity, but certainly meaning come through in another format. And frankly,

it might as well, you know,

Adam Wern: It could be under. There is a question of do we have a wrapper around where the model is part of the. And we point into the model. Or is it that it's. Or is it inside that file and can they coexist within one one kind of a specific specification or a file? But what we really need is very address ability so we can address everything with the good position and describe it. So every every stroke or every form or every little triangle or whatever it is so we can address everything or most things so we could do a mapping between the visual representation and all the other things. Another side note here, or another thing, is that when I walked into the these Mozilla worlds. I feel like, like the future must involve some sort of running code as well. That the object must be living and do things that you bring in the kind of the. You have machines that you bring a machine with a visual representation and other representations bodied representations saw, but also that they can do things. So you're bringing in a tool that is both visual and two that does things either produce new things on covert things or or enlighten you in some way. So we must have running code. We can't just have lots of flat or flat flat things or models or 3D models of all forms. They must do something in order to end it, and we must think of a way that. Of course, we have the problem with security and sandboxing things in public space, but at least in private or high trust spaces, we need to have powerful tools that are visionary represented.

Frode Hegland: Yeah, absolutely, absolutely. And I think we need to start segmenting things because yes, if I want to bring in a propeller plane like a toy propeller plane into a room, I should be able to do so. You know, it has a simple engine. It doesn't do much, but it is not as static that object. So I think it's very, you know, it's a representation of what you're talking about. I think that's really important. And some of us this week have been talking about Apple's opened up approach where you have kind of a dead duck, but you put in the tools. That's obviously very related to this. But I think if we're going to try to build something together to demonstrate, I think we need to look at who wants to put in what effort and for what's. One thing I do not think we should do is to try to build a system of universal knowledge graph connections. That's something that nerd community seem to do a lot. You know, if I represent my world exactly, and you represent your world, exactly. We plug them together. We understand each other. That is, I can say, all the shaking of heads here that that's just just it's just it's just silly. So I would very much hope that what we can do is bring in different data types and through translators or whatever we might call it, have them talk to each other. So, for instance, a concept map from wherever, and then we have wiki data here. Does it connect or not, it should be almost a manual thing, because once you have too much

automatic stuff, it goes too much outside of the brain. Not that machine learning and all of that shouldn't be used, but Dave Millard used the term intentional. The concept definitions and author are intentional. You can't just tag something. You have to write what it is. So I think in this space, too, it's useful, especially because the power of this is immense, so we can very easily overwhelm ourselves to bring in a million Wikipedia articles is soon not going to be a big thing. So, you know,

Mark Anderson: This is always a question. Yeah. So it's the demo sense is so what are we demonstrating that we that we can't do? And and not just that we're doing it in 3D, but why are we doing it 3-D? Because we can't do it in fewer days than that?

Frode Hegland: Yeah, so. Exactly. So I think we need to design, you know, many people here will be doing many things in many worlds, but what will we do together? I think we need to design that. You know, we have the few people in a room. What are the things they're supposed to be able to do?

Brandel Zachernuk : Yeah, well, one thing that I really like in of user experiences is his attention to some of the earlier work on the description of focus plus context and recognition that reading a newspaper, this was on a back in the 80s, and so most monitors were sort of 320 feet or so. And so he sort of likened reading a newspaper on a on a on a computer to having a a very small sort of cut out through a piece of paper that you are then scanning over an entire broadsheet. And you know, it's perfectly adequate for a form of reading when you're actually looking at column inches and you're and you're scrutinizing a particular story or scanning through its classifieds. But it does nothing to the context picture of what is the thing that I want to kind of lunge in and read at this moment. And you know, there were there were hard cliffs in terms of the capability that one had to be able to display any of that by virtue of the low fidelity display. We simply didn't have the pixels to represent those things. But you know, those those things are going away. And so we have most of the way that the terms that we interact with computers on are at that sort of final level of Zoom for the most part. And I don't mean in the literal sense, there are things like zooming user interfaces, but they've also failed to recognize that that concept of level of detail is not merely physical scale.

Brandel Zachernuk : It's not that something is bigger or smaller. It's that something as at different levels of granularity and fidelity based on the intention for representation, like what is it that you intend to do with this document? And to that end, what are the levels that are important? Something that I was playing with a while ago before I got sort of not distracted

but pulled into virtual reality representations? The timeline stuff that I did for linear timelines I did before I was playing with the VR and I was like, Oh, this can work in VR and it has different characteristics. And I think that's that's an important thing not to discount the possibility that something simply the good dimensionality really does confer benefits in terms of your manipulation and interaction with it. But one of the things that I was really curious about at that time is the question mark was saying about what are the what are the the thoughts that aren't fine, but but even even simpler, like if I have if I've been to this page and this page and this page in Wikipedia. What are the other things that that means I should probably read can I can I get a reasonable summation of of those links? One of the challenges with Wikipedia looking at, I just looked at the economics article. It has an op degree of two thousand nine hundred twenty seven hundred and those are not all the same in quality. One one benefit is that one thing that you can do is look at the number of times that a concept because you typically only look one page once in a Wikipedia article.

Brandel Zachernuk : But that's not to say that the concept is reintroduced over time and time again. So one of the things you can do then, is to look at the number of times the term in an outlet is reused. In order to qualify that link identify what sort of relative importance it has because something can be peripheral or something can be central. If you're if you're reading about economics, then then simply the fact that it references out of like, there's only one link to Adam Smith. But but probably Smith is important if you're talking about what economics is versus, say, Alec Baldwin. I don't know if he's in the economics article, but probably a fairly peripheral if you're talking about that. But yeah, so that's something that I think I want to do on it. That's something I think that is important to recognize as a job for virtual reality is being able to come up with these multiple layers of abstraction and give give visibility to the fact that there are these different ways of thinking about things like level of detail. One of the one of the points that occurred to me while people were talking about the objects is that Pixar and other people who are involved with creating objects in 3-D like this are, I think, pretty poorly positioned to recognize

Mark Anderson: That what they're throwing

Brandel Zachernuk : Around, or a whole bunch of almost entirely empty signifiers that there are things about those things that matter and they matter to different people for different reasons and absence and ability to to imbue those information to those things, those those objects, those those elements tell a story vastly thinner than most people would be expecting to be able to tell with them. And so, you know, I think though those are those are significant

challenges and problems with sort of spatial and dimensional representations. But I think they're also really interesting provocations that can lead to some. Really transformative perspectives on what it is that data is what it is that navigation is and the way that meaning can kind of be manipulated in a way to make these things useful and fun to play with. That's a lot. Sorry.

Frode Hegland: That was great. So my tiny little initial point was, in some ways, reading a newspaper on hair may be better than I broadsheet because broadsheets take up a lot of space. You know, you basically need a table for them. So that's the wrong kind of concept, excuse me, context. Where it is on a page doesn't necessarily matter much. But I think the other thing you said about, let's say, Adam Smith, I really want to be in an environment where I'm reading Adam Smith, and because I'm doing something with economics, I select that touch had left at whatever. Then I do a Wikipedia search or whatever. And then the results come up and then I have an interaction to say this is actually about that. So that will become that kind of mentioned it earlier, but that means that in the future, as I go through other things, all that information is now verified as being that. So, you know, to see important people in time, all of that then comes automatically. So to build the opportunity for that kind of connective space or constellation or whatever, I think is important because I think what we're working on here is not to build a visual sculpture. I think what we're working on here is much more meta matamata than that. We're working on here to build the opportunities to constantly rearrange the sculpture.

Brandel Zachernuk : Yeah, something that I've been really conscious of, I'm sorry, I promise this is short in the context of special computing is that a lot of people are just woefully under indexed on how much kind of needs to be revised about what we think of as information in order to be able to make the best use of the medium. And so that's why I've listened to you invent talking the other day on that YouTube chat. And, you know, I don't think he sees it. And I think that part of that is that the value proposition of computing per say, we accept it wholeheartedly, as is right now. Then there aren't that many advantages because we need to do a lot more infrastructural work in order to get those things before so. I'm glad everybody else sees it here.

Frode Hegland: People black and white completely agree. Guys, yeah. Mark Adam,

Mark Anderson: However, a couple of quick things. One just on papers. Actually, when you hang up the phone, I thought, Gosh, that's the last place I'd really think. I mean, because I was

at the weekend, Saturday. I read, I read the Financial Times and the Times, but I'd probably read the and I read The Guardian in times online most days. But I always know I'm getting less than I get in the real paper, and that always bugs me because it's a bit like and the worst of all is the BBC News, which is now just all sort of, you know, lifestyle fuff. And it used to be a real source. You know, it was, you know, a world trusted world source of knowledge. So I'm not sure actually, that it gives us the granularity that we want. Mainly, I think that's due to a probably fairly low skills layer of people who are doing filtering on the news. Anyway, that's by the by. I think that's going to mention was so an interesting point, and I think this is probably what Brenda was speaking earlier. I was thinking, Well, gosh, you know, so we're sort of talking about annotation. So I'm looking at some things. Sorry, I might have been my favorite speaker. I lost track, but. So are we looking at these things or I follow these links, one of the things I'm sort of doing? Oh, right. Actually, this is pertinent. This system, and as I spent a lot of time in Wikipedia mainly trying to understand the difference between what people had actually written and what they'd intended is that.

Mark Anderson: Yes, and it is a technocracy, and that's one of its weaknesses. So everything's sort of seen through. Yes, I can measure it. But but does it do anything useful? It's a question people tend not to ask, which is totally different to the argument, the sort of humanist argument about whether they agree what's what's in the written word at the end, which is a whole different ball game I don't want to get into. But so in a sense of OK, right? Yeah, there are, you know, there are 3000 outlets here, but which are useful? Well, I could annotate them in the system. But then that would probably be a separate bit of warfare because as my research showed, people don't like sharing you touch my shit and everything kicks off big time. Despite the fact that notionally it's a commons because basically people want ownership. So it's I'm thinking, so what one may be doing there is, is, is you're sort of making trails and this goes back to when I saw Chris's demo five years back, so I said, Oh, that's what I want to do. I want to basically take things. And I was thinking, you know, so 2D space, but it could be more. I wanted I basically want to I want to grab that and I want to grab that. I want to grab that and I want to put them in a clean space without cutting them off from everything else.

Mark Anderson: But I just want those bits in the petri dish so I can look at them and I can understand the interrelation. And I think that sort of speaks back to what you were both saying earlier. An interesting point about WikiLeaks and it didn't get mentioned, but but but it's another thing that happens here is when we look at things like other people's intentions, we're often guide by again our appalling habit of counting things. So it's a classic problem. If

enough people follow the same bad link, it's the most promoted. Well, that clearly wasn't quite what we meant, but we haven't. We haven't generated the systems other than basically humans coming along and fixing it, saying, No, no, no, no, you're you're, you know, you're following the wrong thing. I mean, short of removing the link, it's really quite hard to do, and we haven't. So we haven't we haven't dealt with that issue either, which means that measuring measuring links or making use of links is very often in felicitous and gets us to exactly the wrong outcome. It's the more subtle thing of being able to look at things. So you're looking at Adam Smith, you're thinking, but one of the things related to Adam Smith. So I don't necessarily need to know if he had a collection of names in his garden. Interesting, but not pertinent to the fact that I'm trying to understand maybe his philosophical take on something you know or some aspect of his life or how he relates to a subject.

Mark Anderson: And they're all in there. They'll all be in a corpus, be it in the Wikipedia or something similar as a hypertext. But you can't see the wood for trees. People don't. People don't write links with the sort of hyper textual intention that we're talking about. They write it within the style guide of Wikipedia, which is is not well written, but it's mainly done when people stop complaining. You know you've done it right until somebody else starts complaining. And it in a sense it is that poor because it's a complete open commons, which makes it actually a very bad study. What I've come to realize because there's so much unintentionally unusable human behavior, that's a skein of noise over what's a fascinating dataset. The trouble is, the dataset has been accumulated without necessarily a lot of careful thought, and it's just full of half the amount of half finished stuff. But there's no index to it. There's no the index is nearly all. Actually, brute force, single word match the the categories to agencies cover, anyone can make a category, so you go to you go to Wikipedia. I want the economic everything on economics. It'll give you the economics category, but that's not that is certainly not everything on economics. If if you were to look at all the documents, it'll just be whatever somebody takes out. And these these are real interesting sort of tricky things to do with it.

Frode Hegland: Let's not go too far into their plumbing as a Wikipedia, but the issue of no, it's

Mark Anderson: The measure issues. So hypertext issues Wikipedia's yeah, they get they get lost in the subject matter. The point that the important thing is the lessons that it shows in the felicitous way in which it leads us away from the understanding of the sort of visualizations and the way of displaying information we're talking about.

Brandel Zachernuk : Yeah, I mean, to that end, I would say that there are aspects of sort of data that can be measured for things like, like I've mentioned, Google has the ability to measure bounces. So when you visit a page and then you return back to the search results from whence you came immediately. They know that that's a bad, bad sign that that was a low value resource and reference, and that probably it was elevated to high,

Adam Wern: But not necessarily a bad business for them that you come back to the ad page. So it

Brandel Zachernuk : It's correct. That's correct. Yeah. But say, say in Apple, where where I do have some, some level of dominion over of that thing, it's something that I make use of is when when people have bad, when people return off of pages, when we have bounces, we know that something about what they did is not in line with what we want to be able to give them. And I've heard a lot of people talk about these implicit behavioral measures. So something that people did on Amazon Mechanical Turk back in the day was they would they would look at various aspects of the way that somebody was performing a task in order to come up with a sort of automated assessment of the quality of the answer based on the time it took to do it, what what kind of mouse movements they had because they found in broad strokes that it was possible to make assessments about that. They're not 100 percent, obviously. For example, somebody using, you know, accessibility assistance is going to have completely different use of utility profile of the way that they're making use of aspects of the site and all that kind of stuff.

Brandel Zachernuk : But I think that there are an incredible rich plethora of signals that can be used in 2-D, and I think that expands only ever outward in 3-D. It puts up against privacy in all kinds of other aspects of it to the point of Wikipedia, what are valuable links? One of the things is how many people follow it, but also what is their onward behavior after that? If it's non-economic ish, then you know that it's not necessarily useful. So there are ways of doing it. It depends on what kinds of capabilities you're willing to break into a system with regard to the aggregate aggregation of data and reporting of it. What sort of privacy implications that have know things like differential privacy do some job toward providing the best of both worlds. But yeah, I think that there's more we can know, and there's even more we can know in spatial providing where eyes open ethically about what implications it has. And I want to. I want people to know that.

Adam Wern: So I raised my hand because I want to save the statues, Frodo wanted to sculpt the statues, and I want to be a proponent for actually saving the statues a bit a bit more. So when you do some knowledge work and get a search result or bring in a few documents, follow links. I want the actual search results to be objects in themselves that you could scratch off, take a list and if you get a search result, you could remove things from that and save the actual result as an object. And I think 3D is in a way good for this because in flat interface, if you have a kind of a nested doll of many different spaces. So if we look at the operating system, many windows. And if you look at this room window, it follows its own logic and physics and so on. And it has menus and it has lots of icons and they are. All these things are different spaces. It's not one unified space with one logic, but 3D has more opportunity to be a bit more unified in that the the place where you went from and the target where you went, the results of your search could actually be placed inside the actual same same space. And that brings up very many new opportunities to unify the interfaces. No more menu bars or scroll bars because you don't need a scroll bar, you can just look up and down and get get the length of the document. But just by glancing, you don't need a tab bar because you can look around the document to see the other documents in the same stack. So many of the list goes back to what Peter wrote in the email about that article, but I think actually three days is better for many things because we're so limited with the screen, so we have to do this kind of imaginary toolbars and other spaces just to navigate.

Adam Wern: And so we need to or we are forced to do things a bit more hyper textual. Or interactive than they need to be, but in 3-D, we have so much space we can actually replace objects and the sources and and show the history of where we went from and where we went to. And that forms kind of a sculpture, a knowledge sculpture that I actually want to save. So I don't want to combine it. I rather have the next time I come back to the same sculpture, I may take a copy of it and put it further away. The arm or a walking distance or a glanceable distance, and then I say I can just as designers do, they copy the object on in Photoshop and do it 100 different variations or a sketchbook with 100 or different variations. To me, it's very important to see things side by side. The juxtaposition or glanceable differences that is where I derive so much value, just having a timeline scrubber and the history is not enough for me. I just really want to put different states between each other besides each other in juxtaposition. So I really need to see it could be because I'm very visual. I want to see things side by side. But I think it also ties into what Barbara Kirsti talked about that animations can be very bad because the actually putting the different steps a bit more visualized before you can lead to greater understanding. I think it is like that for many people, and so I would like to have the

different variations of the statues beside each other. Yeah, I hope.

Frode Hegland: Well, that was really nice, because you kind of said, we agree, disagree, but of course we don't now. Mark was mentioning earlier how his wife really liked the basic room inside Oculus. You know, I go to the Japanese room and it's really nice in there. It's really, really nice. So I put down a few notes there, number one, about the sculptures. Yes, we should be able to save them in many different ways. You know, I consider that publishing. That's why I really like documents. For me, what document means as an intentional here's a thing that I've now framed. That's all it means, rather than a continuous time stretching of modifications of it, at a certain point you say, OK, that's that or that's that. So that's what I mean by document. I'm not saying it has to be a rectangle, but also we need to look at where we should focus our brains because there's so many aspects, but also in kind of a real thing. We should start guessing what kind of APIs will Apple quote unquote give us? Right. That's a really important question, because I'm sure when Apple comes out with stuff, they'll provide incredible developer tools for people to be living in their world. You know, that's what they've done forever, and that's what they have to do. And that's all well and good. So obviously with Brandel deep knowledge of. And also, Adam, you're getting there of web and other VR tools. We have to really look at what our opportunities are.

Frode Hegland: And just as a slightly side issue, I could imagine in a few years putting on my whatever and being in this Japanese room that I can actually walk around there. So imagine you have this one floor that is my office and meeting room. So I know I meet you guys there, my library here, whatever you know, I lay it out like a normal space because it's a mind palace, partly. But then I can go up from the roof and that's where we kind of infinite space. So it's like all the Wikipedia is there. All of this is there. It's like, Whoa, you know, everything is here, but mentally we need to be able to be boxed and unboxed, obviously, right? So if we just have the complete freedom of VR without thoughts, it's. Overwhelming. But if you imagine some kind of a structure of crazy everywhere, specific rooms, the floor below, but then we have a basement that's kind of like plumbing. It's like the deep library of the stuff that we care about. It's almost like our settings and so on. Maybe we can start thinking about issues in some sort of a way like that, but also focus on, you know, right now we're in a meeting. One of us is published a document of whatever that means. And the rest of us are able to go through to try to understand that, I think would be really useful to get to a point of what that might mean in our community.

Adam Wern: I would like to add another space and it's kind of the void or white paper or

white room or black room or gray room, but the really, really empty space where you could bring in to get that kind of focus. Of course, you can do it in your Japanese home, and it may serve that purpose for you or for me as well. But the really blank, really blank white canvas is very. Sometimes very, very fun to start with, with just a word or a sentence or an image or a model or two things side by side and nothing else. Maybe your tools there?

Frode Hegland: Yeah, yeah, absolutely. That sounds wonderful. Mark Yeah, go ahead.

Brandel Zachernuk : Brandel those those were the first that the first four environments that I made for board reality was that was a lakeside. And the pass through to the extent that was available on five and then a pure black and a pure white sort of space that you can just kind of exist within and be able to kind of observe. It was it was nice. And I think that those are those are really valuable kind of things to be able to separate them and live in for different reasons.

Mark Anderson: Yeah, I think there's blank spaces are good because, you know, it came up actually in a separate sort of tinderbox week last week. But I I sort of I was just thinking on the fact of matter and dark matter. And, you know, dark knowledge certainly far exceeds divine knowledge. So there's also knowledge out that we haven't discovered yet, but we constantly focus on the stuff that we think we know anyway. And so what that often makes difficult is to sort of look beyond. So these blank spaces, I think, are really good because they're extensible and they help train people who are who tend to think always think inwards to just expand that, expand the horizons a bit. So I think that's that's a tremendous useful. And I just wanted to pop it. It's a slight bite. But I went to I watched Brett Viktor's most recent talk, but it's one interesting thing. I took away from it. I was, and I'm beginning to see it as a slight trope now. So, oh, if we did this, we could walk around, you know everything I'm thinking. Have you ever been to a museum or a weekend where you say, let's do four museums over the weekend, actually? I mean, I know you're only walking in the mind, but there is a sort of slight misunderstanding. So that's another thing I get what's meant behind it, i.e. that you can see this thing in a separate space. But it's interesting at the moment we're using some of no pun intended seemed quite pedestrian terminology to discover. Sorry to describe the way in which we might pull these things apart effectively into just a separate environment. Then reality would come to you rather than you go to them. I suspect.

Frode Hegland: So I'm raising my hand again because I want to push you guys a little bit. On. Would you be interested in the visual matter, VR thing? What I mean and what I'm

asking specifically is. If somebody offers a document with visual metaphor as a PDF and puts it somewhere. Do you find it interesting to parse the visual matter as part of how you can present a document in VR space? Because if you are interested in that, then you can of course, invent what this would mean in terms of the visual matter and the interactions.

Adam Wern: I mean, it's very unclear what the admission matter is. You say that we can put anything in there, but then you're talking about metadata in general and how that is useful if it's useful metadata, what what kind of metadata are you actually talking about? Can you give example that would be useful to you? So I can.

Frode Hegland: Yes, I would have. I wouldn't couldn't imagine anything I'd rather do than tell you that the different kinds of metadata that documents can contain and that visual matter supports include structural metadata, which is essentially headings and page numbers so that you can choose to divide the document up by headings. Because PDFs usually don't have that, then there is contextual metadata, which is what did this document cite. So that's the references, but connected to where they are in the document and addressable by one second. Yes, I've got real quick. I'm in a really big meeting.

Brandel Zachernuk : What?

Frode Hegland: I would like this

Adam Wern: One for people. Yes. Big ideas. Big, important here. Yes.

Frode Hegland: This one. Hello. Ok.

Adam Wern: We are the big meeting.

Frode Hegland: What we're putting it. Ok. Ok, cool. Right. So that's a really core. But I'm realizing more and more that the defined term slash glossary is really, really important, too, because I really feel that as we massage our knowledge, let's use the term again sculptures. Thank you, darling. You know, to help us think so and so is so and so that's actually really useful for people trying to understand us because it is very much about intention. You know, this is what we intended to write. So that's why one of the views I already have in reader is only show me headings plus defined terms, because that's what the author cared about. That

could be one of the views that in VR, you could say, you know, put everything in the background.

Mark Anderson: You know, you must remember that's a really interesting thing in doing that too, because if you if in doing that and you're looking at the say the head headings and the defined terms you don't see as the person who's authored the document, the reality, the document, it argues one of two things either you didn't do enough definition of terms or we may need another sort of object that that wouldn't sit well as a sort of defined concept. But you say, no, there might be another another strand of object that we need that exists as another bit of metadata like that allows the story. And I don't have an example in my mind, but I just know sometimes you may think, Yeah, but that doesn't really, you know, this thing is not really is not a concept, really, or it's not a person or a thing I can really describe. But there's an important idea.

Frode Hegland: Oh, and the defined concept dialogue, I'm looking at what kind of additional stuff to put in, like the type would be private and so on. This is what you guys mentioned earlier. The tag would be person, institution, that kind of stuff. So the question is what would be useful here? Because the whole idea is that the whole dream for me is you have a rectangular documents, if you actually reading it, there's probably no better format than having a rectangle with beautiful type to really deep read. That's fine as long as it's laid out nicely. But then you can't read all the documents all the time, so you need to just choose what elements to look at. So if you're reading one long document, you should be able to put it on a timeline which this kind of thing can do. Or you should be able to say only show me the bits that are about people which this can do. And then, of course, if you are dealing with a corpus like the hypertext proceedings, if all the documents have this, then you can see I want to see everything where they refer to this time period or only about institutions, only about that.

Frode Hegland: So you start moving the things around. And when I talk about PDF visual matter, it doesn't have to be. There's no real reason we couldn't export this HTML as well. Right? I would do a PDF as a backup because it's plain and simple. But the point is. Imagine. We all of us like to tinker. You know, we don't do paper plastic airplanes anymore, but if we had the time we would probably be building model airplanes, wouldn't we? Right? Could you put them together? It's really nice and it just feels good making that shape happen. Imagine providing a piece of software environment where it's pleasant to do that because you know, it's not just for your brain. It'll go into an environment where other people reading will have access to all your beautiful little details here and there, and they can thread them together.

Does that answer the question a bit more, Adam, on what kind of metadata? Because it's not limited to that, if you decide that another type of metadata is useful, we should look at how to make that happen.

Adam Wern: Yeah, I think I agree with your last question, where where you build something with your small notes and your personal reflections and share it with the world because I feel that I don't do that, I build it for myself so often. I have lots of things and I have so many. I work with improvisation drama and I've done a large number of exercises and refined them and they really exercises, really need the commentary to be useful. You can't just do an exercise, you really need to know why you're doing that, what you're practicing, what you're what you're looking for as a teacher and so on. And all this more details that it makes it useful. You can't just read a game and understand the. The beauty of it, but sometimes you can transfer the beauty and the things to look for, but do. And I want to share that, and a book has never been the right. There is no linear order to these exercises. There are, they are more clustered and I want to have other canvas for it. I. I've been thinking of doing big posters or but it's kind of hard. It will be a few metres wide or big at the hard to send to people, a poster to read and so on.

Frode Hegland: So yeah, it's a little bit perfect for that.

Adam Wern: Yeah, I mean, it's a perfect playground for it. And. And also, I like a bit too messy sketches, so that leaves room for the audience to think perfect things are a bit bit and draw my set as well. The good draw, my third lines, you write in your mind as an audience. These are the best lines. An author can never match those lines. What you think? So Goodrum, I assume the silence and the silences where the audience writes the lines. So I like sketches because it's opens up the audience participation into things. And so I would like to have an object or a way of transferring these sketches and all these. The ideas are small anchor points. Records that the place, a tune that that's played in the audience mind, so and I'm really against the Knowledge Graph because knowledge is by definition inside us, knowing things is inside us that people talk about knowledge as outside. And I think it can only be inside us and and we can have cords or anchors to knowledge and our information system. We can never have the knowledge in itself. And I think there is a confusion. It's not good to speak about knowledge in that way because it misses the smaller details that you evoke things by those anchors. It's not the knowledge itself, and we need to be more precise with that language. But and I want the instrument or the document sounds dry, but the document to to send it to other people.

Adam Wern: And so that part I want to have for the better. I don't see the connection to to the current current PDF commission matter. It's not clear because we can go directly for that kind of a rich knowledge object and and not be limited to the very, very linear and kind of the destructive the destructive nature of PDF and working against the technology here is not. Doesn't feel useful to me when when Hml is already beating PDF sons in so many dimensions, even now, it's even getting fixed layouts and it has meta data, you can hang on directly onto text. So why hang it on a page in the end, in a in a in a in a typographic format? It doesn't make sense outside that purpose. I really understand why it's good to print it in in the legacy world of PDF, but I don't think it's. It's a data want I want to have the data and in a disturbed form so I can not work against the technology and actually do the kind of representation we have been talking about. So that's I think you print to PDF, but you should not have that as a data source. So I think a PDF is just like the models we have here. Maybe we can attach a model with the meter data and the data, and I want something pure to project from.

Brandel Zachernuk : I would I would answer that differently. Sorry. I'd love to to to weigh in. I do find the idea of the metadata as presented in visual metadata are useful and interesting thing. One issue that I have is that I'm not from an academic background. I barely scraped through my bachelor's degree. And so I don't have the same sort of relationship to writing in particular. You know, I had a blog for a while, but I kind of gave that up after I after coming to Apple. So I don't I don't have the same relationship to sort of navigating large portions of text to write it for writing or even as much to that extent. The reading I read more than many, but but not nearly as much as an academic. And so. So I don't have that as as a basis upon which to sort of build a relationship to the sort of representations of text. That said, one of my fairly methodical processes for playing with stuff that's going on like what data is available? And then by that token, what what representation do I wish to try to pull out of it in order to be able to play with it? To that end, I do see the representation that exists within PDF. Again, I wouldn't use it in an application that's leveraging PDF, but if necessary, copy paste or experts I know I would look at and I started looking for Big Tech passes for JavaScript such that I should be able to kind of pull those things in so that I can then take a take a look at what it is that I want might want to represent that.

Brandel Zachernuk : One of the things that I've been doing with this infrastructural multiplayer stuff that I've recently is trying to build out of a sort of a fruitful enough foundation to be able to build those applications on top of. And so, you know, it is my

definitely intent to intend to take a look at parsing visual meta and thinking about what sort of representation sprang out to me as being interesting and useful for the benefit of being able to kind of navigate and pass the document. But based on where I come from in terms of my relationship to text geographies, those kinds of things, it's much thinner. And so I don't have that same kind of basis on which to reason out of the box about it until I get my hands on the ability to to actually process it and think about what significance it might have.

Adam Wern: Now, that could be my thing as well, that I'm not. I did my master's thesis 12 years ago or so, and I haven't looked at the diploma since then. I haven't done anything, any writing, and I also am a non native English speaker that also puts an extra layer or block. Here I read a lot of English things text, but but I don't write it, and that's why I'm reluctant to write for the future text as well, because it takes me five times as long and I need an editor in some way or proofread. And we don't have an abundance of proof readers here because everyone wants to write and no one wants to proofread. I think. Or more people want to ask.

Mark Anderson: Yeah.

Frode Hegland: So I got to jump in. I got I got to put my sword in and fight on this one. So really, really important. First of all, linearity is really important, really, really important. You cannot have academia without linearity because linearity is making an assertion, making a point. This is one of the first discussions Mark and Chris and I had when I started at Southampton. I was all about make it all hypertext protects and everything. But then you don't have an argument. This is something that Barbara also talked about. A graph or diagram is fine, but it doesn't tell a story. And this is why it's so bloody hard. Like the thesis, the last couple of months are hardly wrote anything, but I couldn't think of anything else. It's really, really hard. And I'm not saying we should make those long documents for everything. That is not what I'm saying, but I'm a little bit now polarizing myself with what you said because I'm very much agree with what you're saying. But just for balance, a sentence has to have grammar. All right, you can have the word, yes, no, fine stuff like that, but anything else, you need grammar. And that is the basic importance of text and speech. So if you have a longer piece, you need some sort of a threading. Right. So what I'm trying to write about the piece that you hated the kind of manifesto thing, it's really, really hard to write, especially in a community, but it has to be a little bit of an intro. This is important, but does it have to be always one linear, long thing? No, absolutely not. A lot of that can be moved around. A lot of it is arbitrary. No question. So the whole balance of how do you make a linear statement and how do you put stuff behind it is really, really crucial.

Frode Hegland: This is where I think we as a community really share perspective because we talked about newspapers earlier. I don't read newspapers very often. You know, economists and a few other things, partly because it's so shit the way it's written. The story has to start with. John walked the dog outside and it was rainy, a bit of personal fluff, and then he saw it was the end of the world, right? So it's like, I like machine learning to get rid of that first bit and then it's bad copywriting with lots of repetitions. All right, this is not good linearity. But but you need to find out what happened, so if we can manage to get closer to. A little bit of a statement and connected, that's why I'm so on and on and on on about the concept stuff. I want to be able to write. I had a meeting with Adam today and we talked about B.R., we decided blah blah blah. If most of those words are defined, including Adam, that means that the reader can see, Oh, it's Adam Byrne, who is he blah blah blah, right? This is really important, but I still have to write that one sentence. And going to the whole visual matter thing, I do not think that visual matters would be a very useful format inside VR. Absolutely not. But what I do think it is is a bridging format. Because it's ridiculously open. That that's all I'm pushing for with that. It is it is, you know, every kind of thing should be able to go into our VR rooms. It should be able to do the kind of drawing we did. It'll have meaning VR, sorry, visual matter will be useless for that.

Adam Wern: Well, but isn't HTML even more open in terms of tooling and the actual ease of getting the data in and out of it? It's so interesting that I feel when now when I start with the VCR, that I can hang things directly onto objects or that I can in HTML that I can hang data or metadata directly onto text or paragraphs and even characters if I want everything I feel. And the tooling for that is so much better than when I worked with the Web 10 or 15 years ago. Now you can even make your own tags and it's fine suddenly, OK? And it's it's a new world to me, coming back from a from theater, coming back to computers and the and.

Frode Hegland: Ok, let's fight over this one because I think what you're saying is actually wrong because it is hidden. Right, you don't show the HTML that's hidden away, you show a rendering of that. That's where to me, it gets kind of dangerous and I guess that's why we have this markup stuff, which is kind of a hybrid. Right, because yes, you can do put a lot of stuff into HTML, that's really, really useful. You put the data there, but then over time, when things and tags and meanings and renderings change, that goes kind of a way that's just my concern.

Mark Anderson: But they won't change, though. I mean, they mean what they mean. I'm not

sure I buy that argument, actually.

Frode Hegland: Well, if you look at older pages, especially if they have some kind of multimedia stuff to do with them, even basic stuff like look at 911, a lot of the stuff that was to communicate what happened on 911 is completely unbeatable today.

Mark Anderson: But that's not to do with HTML per say, that's to do with interim technical format. So the fact that you can't watch a video that was shot in the format is not supported now is is is actually nothing to do with HTML per say. That's a failure to serve digital formats.

Frode Hegland: It's not just about that, but OK. So the thing is. No. Ok, let's not argue about this too much, because in principle,

Adam Wern: If do we have any pub, which is the HTML version of the document, so it's a fair fight because I feel that you are talking about the kind of going back to the Wayback Machine and trying to browse a video. But if you have an E! Pub, that is a fixed thing, a document you own with a known format fairly compliant, the data is still there. So the question is whether it's visually represented to the user in some way, like your last page, last page with a visual matter. But that is also rendered. So it's rendered. So there's question about being shown to the user, and that's where I'm with you. Metadata is often hidden and then then we don't fill it in because it's hidden and we don't care about any. It takes too much time to fill in forms the things that are hidden. But if if the metadata had been the first page, the cover of your EPUB or thesis, you would make sure to fill in the fields because because that would be the first impression. Of your document, so I think it's more about actually showing metadata and make sure that people feel it in and that it's also an economic problem or an organizational problem, and a problem

Mark Anderson: That chimes with the facts of sort of an awful lot of data being the exhaust state rather than actually intentional effort. Yeah. And the fact that it's the fact that it's hidden. I mean, this is partly this gets back into all sorts of cultural divides between humanness and the technologies and all sorts of things that they're actually completely pointless

Brandel Zachernuk : Distinctions

Mark Anderson: To draw. I mean, it's basically, you know, the problem with some of the metadata is involves something you're not used to doing, which means to most of us, extra work. And most of us don't like extra work. And it's pretty much that. Not sometimes because it's not made easy to do.

Frode Hegland: Most of the metadata and visual matter is free. It requires no effort at all.

Mark Anderson: No, no, no. I understand that.

Frode Hegland: It deliberately doesn't. It doesn't. There's nothing filling in. You fell on your name and the title. That's all.

Adam Wern: But just some of the metadata in HTML, the like headings and so on. It's there by default, of course, and it has more pristine text. Right now, it's not as bad as it was 20 years ago when integrity, character and code I live. Yeah, I have some special characters in Swedish that are always were mishandled, and that is a Latin script, which is, yeah, far better than all the others in the world, except for English. So I think,

Frode Hegland: Yeah, OK, well, fine. Let's not waste too much time on this aspect of it because, you know, visual matter is slightly archival also. But for you guys, let's say you're talking to me, a software vendor, somebody is an author doing a thing and now they want to have it in a VR space. Would you both prefer that it is rendered in HTML?

Brandel Zachernuk : So I don't have a preference. Like I said, I'm pretty promiscuous as to the data sources and the representation, so long as I come up with a mechanism for parsing. I'm not concerned whether it's it's represented in visual media style or if it's in anything else, as long it's consistently possible, it's something that I can make use of. I think I actually think that this sort of discussion argument over HTML versus other formats is not a distraction and actually central to some of the discussions that we ought to have here. And that one of the one of the issues with HTML, as Adam pointed out, is that its job has changed over the years. And so what matters about what is represented within it has led to this. We're talking, we're talking about a range of things. And one of the things I think you did very reasonably item is comparing an EPUB H html to to a to another fixed document because link rot is a separate question. But representational kind of deterioration is that is the thing that we're talking about in terms of what ceases to make things relevant. That preceded Brandel has a really good

book, a good bit. And I guess in the new Dark Age, where it talks about the fact that the BBC produced a sort of a millennium edition or something for the doomsday book that was all produced for the BBC and Micro in the nineteen eighties. And now twenty something years later, 30 something years later, people have to have a digital archive retrieval sort of rescue effort for the BBC micro thing. Well, the doomsday book is just as readable as it was thousand years ago or whenever it was written. Yeah. And so, you know, I think

Mark Anderson: That most of the early hypertext literature now can't be read. Exactly. Flash is disappearing.

Brandel Zachernuk : Right, right. So so so I definitely agree that these things are imperilled. And that's one of the reasons I believe that Vint is so, so excited and enthusiastic about having such a barebones thing. One of the challenges with it is that it has the exact same inherent dangers as HTML out in terms of representational flexibility. The fact is that basic HTML has done so many different things for so many different people that that you end up with these garbage documents in terms of being able to pass because it's doing all of these different jobs at once. There have been some level, there's been some level of effort in terms of trying to separate people talk about using handlebars versus JSON JavaScript object representation notation in order to make sure that there are these things that remain separate. But for the most part that the things that are delivered to people as final documents are these disgusting intermingling of data and representation, and all of those representations kind of vary with the changing winds of what people decide to be able to put into a into a page. And so you know that the saving grace to some extent of visual matter as it progresses, is the sort of the ideological purity that the functional purity with which it may be carried forward. And so to that end, I applaud it. And so that sort of comes back and as a broader sort of restatement of so long as I can parse it, then it remains useful to me, but it's contingent on that possibility. And that's that's where what you're talking about within the context of HTML and its challenges, it has fallen down over the years. The reason why Wikipedia is such a great source is because it's comparatively clean again. Comparatively, it's not consistent. And as Mark will attest, no data source truly is. There's always a lot of plumbing involved in these things, a lot of a lot of janitorial work, some people call it.

Mark Anderson: But I mean, there's an interesting to try to get some threads here. I mean, you know, first I would say Brandel don't think you're not up with the hunt in terms of academic stuff. I mean, I come I mean, I think I think a PhD is merely a sort of log attendance. It's just can you get to the end because as Fred said, a lot of it, it's just sort of

thinking, maybe not thinking about anything else. But it's the one of the things I was thinking about is in relation to, say, doing some visual matter is, I think you're absolutely spot on. And what I mean, for instance, the visual metaphor is at the moment has stuff written in Big Tech because the initial use case we were doing related to an academic citation, which is a side thing, but it's just something that happens. But you couldn't. It's not organized as a corpus such that you could just put a you on everything, if only or even a URL didn't immediately die. So it has this. I mean, bib tech is quasi possible. It's like it has several different religions that live within it that don't talk to one another. And so they, you know, the parsing is a TED more complex than you want. But it was I remember the discussion at the time was a bit like going back to, you know, well, doing things with PDF.

Mark Anderson: The point was if you look at all the other formats we've got, it's the only one that is effectively, I guess, non-musical. And what if you take a word? Or something? Do you know that it won't get changed by a process? A PDF is broadly, for better or worse, baked in. That's that's the upside of it. Pretty much everything else is potentially a downside with visual matter. The fact that it's using Big Tech is basically we had to choose something. The biggest heavy lift at the time was doing the the academic referencing, which argued to and it was basically a choice between that. And I think although RSS, which meant your eyeballs bleed but just in a different way to Big Tech, so it wasn't exactly a stellar choice. And I always maintained from the get go that to anybody. Anybody prepared to ask or listen was, it's there until we find something better. It's not there because it's good. It's the least worst of the available choices. And it's which gets to your point that and my thought in my involvement in it in so where I try to contribute into it was exactly where you said, Look, if it's possible at the end of the day, it really doesn't matter. The main the biggest error we could make is to produce something that just can't be passed. So if I have to look at it as a legacy device and even if I have to go through several levels of paths for the really old stuff, it's not lost because we can track back and we won't need effectively an emulator, which is a whole different kettle of fish.

Mark Anderson: So I think that's that's. And so the interesting point about Will using visual matter, I think it's written to Anna's point is the thing I'm thinking interesting about that is the in and out. Can I take visual metaphor, put it in a visual visual space and get something useful from it? It's not that we want to look at the actual data. We will be wanting to look at a render of the data, but we might want to do something. Maybe, you know, we might, for instance, we might want to look at the glossary and the interrelation and, you know, sort of throw to authors like concept that sort of, you know, there is a 2D map and it probably is going to be a

sort of 2D ish map even in 3D. But you'll be able to have you'll be able to interact with it more easily, perhaps. But also what you can take back out. You know, so because an interesting question is, well, if you can't, then we've got more work to do on on visual matter. I mean, if it's if it's if it's the sort of, you know, if it's a sort of roach motel where the data goes in and doesn't come out, that that is a problem to address.

Mark Anderson: A couple of other things that say is in terms of visual matter, I'm well, Freud's thesis is effectively baked off now. Mine's done. And if I fix the issue with the with the ligatures, we've got a couple of bits of large. Um, metadata, you know, visual data that we can just play around. The point is there as complete as they can get there from known resources, you can talk to the author and say, What the hell did you mean with that? I know, for instance, I'm perfectly happy to take that and for instance, put more concept map data, which I probably manually said because I can't put the whole document into author at this point. But it wouldn't be difficult for me to take the visual metaphor that's attached to that and enrich it with some more stuff such as such as if it might have come from author and simply to allow you to look at it and say, Here's the thing what can I, what can I make of this? The answer may be nothing, but if that's the answer that's actually really powerful, that's all pertinent to what we're doing here. Because, you know, part of this thing is, well, how do we take what we have and put it in this new space in a way that's useful, which also makes me think about the escape and size, because necessarily often people start with really small representations because, you know, you'll just try to make the damn thing work at the outset.

Mark Anderson: But I am thinking, Well, how big should we be finding some bigger bits of data? And that's an area where I'm happy to help because it's a job in itself. Yeah, that's detracts from the building. You know, just having the thing that you put into the thing that you make is is a wearisome body of work in itself. So if can usefully do that, I'm really happy to help. And to that end, I still think some of the data that's within my overall citation dataset might be useful because, for instance, we could play with that on a linnaeus, on a on a temporal scale and get somewhere close, for instance, to the psychology article I must have mentioned moons ago. And it may be that even having done all that, that proved to not be useful. But I think the answer is you won't know until we've done it because it gets back to this problem. Is there something really exciting and interesting? And having this this this wider space, what's unfortunately less clear is what's useful within it, which doesn't invalidate the fact that it's interesting, but it still makes it difficult to know what we're going to do gainfully within it. I'll shut up and let Fraser be.

Frode Hegland: This is I'm really appreciating everything that's being said here, and it's lovely to fight with Adam on this because it's the good kind of fight because obviously we agree on the end goal. So I wrote a few notes here, and I think maybe the top one in terms of VR is this is something to smuggle things past the gatekeepers. But there will be different kinds of data gatekeepers and all kinds of things. So this jokey definition of visual matters being just writing what the document is at the end. I think it's really, really important, and I'll just put my notes in there. It is far from perfect. It is missing a lot. So all the kind of stuff Brandel was talking about earlier, getting the key presses and the sounds and all of this absolutely fantastically useful. All right. All of this stuff has to happen, but it's a different thing for different use. You know, to open that and be our from author or whatever software. Yes. Right. But just to get the basic stuff, you know, here it is. I framed a little thing and this is what I want the world to know about it. Please, can you? Software wise read this stuff is really, really important. And also, it's been mentioned the whole link wrote every once in a while just to say the obvious thing citations are different from links and that they don't actually give you anything that just tells you how to find it. So when we talk about different levels of referencing a citation should ideally open up something for you immediately. But if it's missing, it'll contain enough information to help you find it elsewhere.

Mark Anderson: Well, it also tells it tells you what it is because it predates links when there weren't.

Frode Hegland: And it tells you that attributes of it so that you can go find it. But I think we should look at that same kind of thinking for other things. You know, not necessarily something that's cited specifically, but look at. You know, kind of hard to describe things anyway. Yeah, so, so so that's why I'm asking. There are many, many things we need to do, but I would really, really like a workflow of somebody sitting on a laptop writing some stuff. They open it up in VR. And you know, the way that I mentally picture it now is, you know, we're in this. We have the fake VR laptop and you take it instrument on top of it and it scans that text and suddenly you have the data, you know, just just a way to make it

Mark Anderson: The data, how it has the data.

Frode Hegland: But this is what I mean. Imagine this. This is me being really dumb on purpose, right? So in Horizon's work room or whatever you have your virtual screen, there's visual matter on the screen and you take a piece of software that is an OCR scanner. And it

touches the screen and it reads that text, and that is how the data goes into that room.

Mark Anderson: So I think we're at cross-purposes. No, the bit you've described is just translation. I'm not confused about that. I'm saying when this data has got from your laptop file into the 3D space, then what do we do with it?

Frode Hegland: Oh, well, that's where it gets really fun. Because Adam, today he puts the book. And so it's just a rectangle, just flat. But then a lot of the stuff we talked about earlier can start to happen, like, I'm sorry for going on and on about it, but the whole concept thing. If the author has defined certain things as having certain value that is connected, that can be then literally taken out and be put in a space. And if you have Wikipedia behind that, for instance, that can connect as well. So you know, Doug Engelbart so and so oh, he lived in Atherton. Atherton, OK. It's a location. Let's do a map thing. Where is it? You know, you can go on and on and on. But these are the points where you don't have to go page by page. You have all these elements, you have the citations so you can draw in everything at sites. If if the concepts actually is people, you can choose to have icons for the people on the side. This is crazy stuff that I think we could spend a lot of time in VR once we have this basic data to play with.

Brandel Zachernuk : Yeah.

Mark Anderson: Yes. To a degree. I mean, there's the difficult the counterbalance that is, yes, we can say, Oh, I can see all the things geographically, but do we actually? So you you you can theoretically build everything, but it has to be built. And the things part of it is saying at this stage, if you're thinking practical terms, which aspects of it are worth getting past the barest bones so that you can actually explain to a much more dating wider audience, there's something useful there, because the sort of slight danger is that especially probably a more educated end of the audience, people say, We are fine, it's great. But you know, look, I have a computer. It does all this stuff already. So the comes back to the thing having taken. So the point is when I say, what do we do with it? Having had a hand in helping make this a matter, I understand what it's for and I have a strong belief in it. I'm just trying to think what, what, what tasks should we set ourselves to do? Yeah. I'm also wondering if the data that Adam has at the moment includes another useful thing is that David Lobo went through, and it may only be in his highlighted system at the moment, but he's done a whole lot of keyword thematic thematic tagging, if you will, of the documents that would usefully be added back into whatever data set Alan's got and was showing you, because that's another interesting sort of

thematic stranding that the exactly the sort of way where a more malleable display

Frode Hegland: Market to address to address your question. What I refer to quite a bit earlier is there are many things we can do in VR, and I think everybody here should express what they want to do and see if there's an overlap. But in this particular context, what I'm talking about is augmenting someone's ability to write a thing where they define the details, the whole concept thing and then publish that in a frozen form where someone in VR can read that linearly if they want to. But also all that extra highlighted bits of the visual matter metadata is accessible for them to view and flexible ways. So they're reading something and they come across. And I think this is very TED Nelson. Visually, you know, you come across here is bracket one. Twenty six, you click on that or whatever. And then that document, there's a line to it. You see it floating in the background. You can choose to view the whole thing or not so visual that actually gives us a lot of data to interact with. Mm-hmm. And that's all I'm saying, so I think that that in a flow as one of the things to do. One person reading one document written by one other document or other person actually has a huge amount of actual real interactions and demo because, as Doug used to say. That while actually, no, my teacher, at least I don't tell them, show them Doug only ever made progress with a demo. This is one opportunity we have for a demo. I'm willing to support many others, but this is what I was talking about. Yeah, Adam. At a Mr. Mute,

Adam Wern: The thing is that I'm in my VR honeymoon phase right now, so the I'm I get so excited by the things you can experiment with, especially where like hands spatial audio. I really now when I've tried the spatial audio a bit more with you from the end, it's really important to place. It's so. You're opening to actually have spatial audio, if it opened a new thing for me here. Just as with the hands actually seeing your hands and pinching things and taking things and enlarging things with your hands in the different apps and even in the browser. To me, that is fantastic and also nothing I hold on for.

Frode Hegland: Oh, I didn't realize was visible yet. Sorry.

Adam Wern: Don't do graffiti when I speak, I'm easily distracted. And the good thing here with with VR is that there are so many or so few fixed interactions in place when it comes to text or even the hand gestures. What they mean and there is no overriding system telling you what to do. Like in every operating system, you often have to fight the if you want to do something novel or a bit more, maybe explore something better. You have to fight and try to disable and come around the inbuilt functions, like text selection in the browser. If you want

to do something different with text selection, you almost have to render every character by yourself on a canvas. It's the idea to really fight. So in VR, that is open and we have the opportunity to and many things don't translate well, like text selection in VR. You have your hands and controllers. It's not obvious how you do it. But if we give the technologists, I'm one of them, of course. But too much time they will have. They will translate everything from ordinary operating systems into flat into flat canvases with awkward text selection and not using the high fidelity hands, for example, or where it's slightly more analog or so. So to me, it's much more urgent to get better interactions, new embodied interactions into VR than to to doing the kind of bringing in Wikipedia, because I think that it's easier to do later on. So it's much more urgent to be to find the user interfaces than to to do the slightly more visual work.

Frode Hegland: Yeah. And I think Brandel agrees with you because he's doing a lot of that. I think we should do that, but I also think it's important that it's somehow based on real data because otherwise it becomes very removed from the world. And that's why something like visual matter might be part of it. As at least, you know what, some of the data's there anyway. Maybe, guys, I just saw this thing come out. We should all meet. And here it's one of those multiplayer run around and it looks very polished. It's very game ish. But we all have Oculus now. It's it's twenty three pounds, so it's not cheap. But then we can do some swimming, jumping and spatial audio and at something something to consider anyway, that we meet in a few of these spaces and see how it feels as long as we don't walk into each other at home,

Mark Anderson: Think something that? Go ahead.

Brandel Zachernuk : But that's something that that that slow Mira demo that I produced a while ago is for being able to demonstrate for people and for in a safe space for themselves is just how intrusive and how transgressive people are able to be because it must actually happen to you. You basically wouldn't believe it. So, so yeah, it's neat to know that you had that experience and can be aware of the way in which it needs to, that the concern needs to be brought to bear against the way that co-presidents can occur within within sort of a co-located virtual space because there are all sorts of real crazy rules that we've set up.

Mark Anderson: You might have to oculus boundaries. You know, one is, you know, one is sort of the outside of the room into the room. And then depending on how introvert or extrovert you are, you have another boundary we decide to around you. Whereas also out of the room,

Frode Hegland: Guys, I have to go. It's past the hour and I have to feed the family. But Brandel, can you please on our blog, add some links to the real VR experiences you have so we can go into Oculus and experience what you built. That will be really, really appreciated because if you add it there, then once you're on that page, you just clicked in your own.

Brandel Zachernuk : Sure, you know, that's a good point. Ok, I can do that. I can send a link to the sneaky. This is the link for the for the Oculus experience or actually presents. So if anybody jumps on there, then you'll have the ability to move a thing around and you'll see my camera and my ball. But also, if you do this on a quest, then you'll have your camera. Whoever is in there is blue right now. You presumably see my camera and you'll also see my hand and I'll be colored the same color as my ball. And it's just a very, very sort of basic for first foray into making use of a web interface to be able to transmit this data. It's not as fast in terms of the latency that as I would like. One of the things I'm looking at is making use of a binary socket or a pure connection such that it doesn't need to be coming through and multicast everybody you make.

Frode Hegland: Sorry. Ok, then I am. Tagging you, OK, I just added it to our Web. What's it called sneaky VR paste?

Brandel Zachernuk : It's called various. So I didn't choose the name. That's something that that just comes as a consequence of of making use of the free tier of glitch service.

Frode Hegland: So what do you call it? This thing,

Brandel Zachernuk : It's just it's it's a it's a it's a multiplayer boilerplate.

Mark Anderson: Okay, interesting.

Adam Wern: I'm very interesting as a next step to because I said to Brandel that I was going to look into multiplayer, but I had nothing to multiplayer. That is, why am I doing something light textual kind of drag and drop from a from text and actually getting text in there to multiplayer with it was obviously a first step. Uh, so I'm very interesting to get the multiplayer. Into that massive multiplayer thing, because you have a

Brandel Zachernuk : If you have a glitch account, then then I can show you give you admin rights to the project so that you can pull it down and take a look at it. It's just using Node Express and then socket to be able to do the connections. Yeah. But yeah, I wanted to have something sort of simple enough to be able to branch off and do more specific things.

Adam Wern: That's super cool and we should get some. I looked into web or it's called RTC RTC. Yeah, I looked into that and it's doable. It's just a lot of work, but it's not and not extreme work, so we should be able to it. I've been playing with an idea that you doing. I want to try hands as I want to write a run, an idea with you quickly here, just kind of being a traditional type sector with actual type, metallic type, but you have words instead. So you have lots of because in VR, you can have many boxes and not just uppercase lowercase boxes with with type, but you can have words and you can also have words in different layers as well. So you don't have to respect the physical boundaries. You can have words in different layers and just go down deeper to get new words or go through a letter to get combinations of for word. So you have I want to play with the idea that you pick words and put them together with your hands from the kind of typography, Old-School typography, and also that you could take the word and dip it into a kind of a synonym bowl and get the synonyms for it. So it's really hand hands-on, not just that you click on a simple synonym. So but so it's really everything is done with hands, you dip word and you also took words and ripped them apart and put them together as a unit. So I looked at your what was that called the lead text editor? Yeah. So even that, but even more removing the boxes are making the word floating. So it's even could like twist of the word. I really liked your demo.

Mark Anderson: It's not matching Adam in a virtual letter press shop

Adam Wern: In a switch to switch up

Mark Anderson: Right to work, and I make stuff on a letterpress.

Adam Wern: Yeah, in a sweatshop, we're making essays for Frodo.

Mark Anderson: It's something that you find you are in a virtual sweatshop working for somebody else.

Adam Wern: I found that the idea. Do you have any idea what you could do more than I find the idea of actually breaking synthesis apart by pinching it at the break point and taking it apart? It would be very interesting instead of a kind of cutting it with the tool, but actually ripping it apart with the two pinches or putting it together as a as a. It's just an idea that

Frode Hegland: I just see your hands that's based not Brandel that you made. Listening to you guys in that space.

Brandel Zachernuk : Yes, now I can see you on my on my two day thing, I might be able to jump in and be able to see you as well. I know, I agree, Adam. I think one of the things that I was really excited with, I don't know if you saw a smart triangle, but the idea of making a calculator with no buttons and actually representing those things visually sort of points to the fact that the mechanism through which you undertake a task doesn't need to be as tightly bound to the textual representations that we make use of today. And so, you know, to that end, I want something that I've been playing. I have played with a lot is what is Photoshop Protect? And so having something like an opacity slider which dictates not actually the sort of graphical opacity, but the textual opacity. So taking a list of synonyms from a thesaurus and replacing sort of simpler words with more opaque ones. My father's been involved in government and NGOs and stuff like that. And so they always say, why is it? Why is it 50 cent word when a two dollar word will do? And so being able to have an opacity slider that you can actually manipulate in order to wrap things up or down. I think it's really interesting, as well as things like in-situ thesaurus kind of alternative recommendations and things are very appealing. So gestural manipulation of what are considered to be textual things help to recognize that writing passé is not the process of inscribing specific glyphs onto a thing or punching keys, but the process of codifying thought in a way that can be represented and retrieved by other people at different times. Yes.

Adam Wern: So and so

Brandel Zachernuk : I'm glad you like it. And so that means that what rating is as well as being the most important thing that that humanity has ever done. We'll continue to be, but we got it wrong. We're we're vastly too specific with regard to what it actually is as a core activity. And this is an opportunity to go, no, we right by resolving fault and we can resolve thought by dipping stuff in and sending them. I love it, but it

Mark Anderson: Sounds to so, you know, maths, which alludes a vast amount of humanity past the most simple level. There's something else that's ripe in that sense. So there's a closer interaction. So if you need to understand a bit of geometry or calculus or whatever doing something and that actually that is in fairness, quite well touched on in what's his name's Victor Victor's thing, and I thought he was spot on there.

Brandel Zachernuk : Well, he's he's much more confident in mathematical concepts than in education or information, even in communication, per say. I mean, he's he's no slouch in terms of public policy, but in terms of his actual academic understanding what it is to educate and to communicate, not quite the same. So yeah, I agree. Cold, so yeah. Adam, if you if you want to send me or if you're on a glitch already, then I can give you the access to the code base. I mean, everybody can. It's not that it's private or anything, but you do, I believe, need to have a glitch account, which is right.

Adam Wern: I want to get one. I'm not there yet, but I will get the email.

Brandel Zachernuk : Yeah, yeah. So whenever anybody gets those things, then they can take a look at it and you don't need to be a developer to want it because you can also fork it and then give it to other people and stuff. I'm not. I'm not concerned about it. I just I just wanted some barebones thing to start, start being able to reason with these things and kind of communicate. Another thing that I'm really excited by is the fact that I realized that pressure sensitivity is available in Chrome nowadays so I can use my Wacom and I can actually. With this, I can use my Wacom and a virtual reality headset at the same time, call all those things together and have a really, really high fidelity drawing environment to whatever extent I desire. So, you know, there's just so many incredible opportunities, right? Yeah.

Adam Wern: One thing when I have you here on the phone or and so passthrough is currently it's not available, you know, but I wonder what the hacking hacky solution would be. I wonder if one solution would be to stream a video feed from a kind of a duct tape. Raspberry Pi zero two or with the camera module, I have one laying around here somewhere, so a duct tape it to the headset to actually get passed it through through a large right like a web connection. That would be one way to kind of get bigger because I want to see the see my my iPad with the Pencil to get. It also has pressure sensitive. In some way, it kind of. And also this keyboard. And so to get the keyboard in there when you need a discrete device. Yeah.

Brandel Zachernuk : Well, iPad actually also gives you the three to three degree of freedom orientation information. So you'd be able to know just and not not just the pressure sensitivity on the surface, but also the telltale.

Adam Wern: I played around a lot. Yeah, it would it be excellent, right? With it in the air, but yeah, to your hand? No. Ok. I have to go to my family as well. Now it's Friday evening here and I skipped out.

Mark Anderson: Very, very good passing thing on a practical note is just if, if, if there's anything in terms of causing the, you know, the virtual matter by all means, give me a prod the conceptual end I can, I can consult. But if it's just, you know, why is there a bracket here when there shouldn't be or something? I probably might be a better starting point as I'm responsible for some of that. Yeah.

Adam Wern: Awesome. Yeah, I'm I really mark. I'm sure we will get both photos in there and I passed PDFs and make rectangles of it. But it is non interactive. I can't really select text because it's really hard to to find out which character it is in practice, but it's doable, but it will be a lot of work to just do that. And and with the mark and mark with your data set, I am sure we will get to get to visualize that data, set the hypertext data set in some way in in three dimensions. I think it's very suited for that. So we will do that. It's just that I'm so into the embodiment of parts, and that was a newish, if not just shiny tool, but getting your hands back. It's really important for me. At some point we may get the eyes and feet back as well. I think feeds are completely forgotten, just the dancers in the world that like the feet. But but that's for later.

Frode Hegland: Ok, well, it's really, really, really important to hear you say that. I mean, I'm raising a child and he is a bit of a dancer, and I don't want that to be lost either. Of course, a lot of the work we can do sitting down. So, you know, that's a whole different thing. And then they have the issues with movements. But and also you refer. You said earlier, Frode Spatial Meta and it makes me feel a bit horrible when you say that, even though I know that I kind of came up with it, but it's it's an invention that is so obvious. That I hope that something we can really share because and it's only one way of one communication medium of things, so if you want to change what visual media is, let's let's do that together anyway.

Adam Wern: Yeah, but I say it is. I see it as a thing at the end of the end of a PDF because metadata is not your invention. One thing which is always been there everywhere after the first glyph stroke or a stone or a leather burning or a painting in 50 years ago, we had metadata in some way. So. So and I worked with metadata and RF and so or the database. So I feel that visual matter is your thing. Metadata is everyone's thing. That's my distinct distinction.

Frode Hegland: It's yeah, that kind of makes sense. However, it's worse than that because if you go back to Mesopotamia and you look at the origins of cuneiform, what we call today, the telephone or however you pronounce it, that was actually from them at the end of the document, it would say this was written by scribe so and so working for so and so. So the very first

Mark Anderson: And he didn't pay me.

Frode Hegland: Yeah, exactly. There can be little comments like that. That's exactly right. So now that, you know, only in the 17:08 and hundreds, it moved to the front of the book. So all I'm trying to do is if they can say what it is, you know, we can say what it is anyway. The interaction in this space are important and I hope to see you guys in this gamey thing after dinner. I'm probably going to go in there a little bit. Just move around. And it's just not my kind of world, but it looks. It's got great reviews, so maybe it's something we can do requests.

Adam Wern: Have you tried Hand Physics Lab?

Frode Hegland: No, but I will do that.

Adam Wern: Probably that because it shows what you can do with the and to which Fidelity remember to have good lighting because Oculus has a camera based and tracking thing, which means that to get good contrast for the camera and the computer to work with, you have to have good lighting. So don't sit in the dark closet when you do this.

Frode Hegland: No, no. I have noticed that that's been an issue. It's actually told me I low turn the lights on. Ok. This was lovely, guys. Maybe see you on the VR space. Look forward to Monday.

Mark Anderson: Okay, take care. Bye.

28 January 2022

28 January Video

<https://youtu.be/aLO5jNj8AJQ>

28 January Transcript

Frode Hegland: Was just going to text you a playlist. We just have to hold the meeting like this. Yeah, hang on, I to turn off the blur.

Mark Anderson: That's your music not mine. No, no, no, no. It is. I'm going to stop. That's too much like. So not that I can never get the lighting work in this house. Yeah, it's interesting. I had a good, actually good session yesterday. The one thing I can't do is I can't make it work with any of my glasses. There's not room to fit them with back on. And funnily enough, if I hold the head, if I hold the headset really close in, I can get in focus. So I find I need to do it in small chunks and then I get. It's not. It's not sort of the thing Peter mentioned. It's not the motion. It's it's actually just reading stuff that's slightly out of focus gets a bit.

Frode Hegland: I've had a problem with that, too. I ended up getting the click in lens things.

Mark Anderson: All right.

Frode Hegland: And they cost £100, which was obviously both studied. But that was annoying. And it helps a bit. But it doesn't help 100 percent because it's still a little bit about where. Yeah, it's maybe a focus. And maybe not.

Mark Anderson: This will also I, where I basically wear what they call computer glasses, which are the sort of it's like the sort of gateway version of very Focals. So there's a slight difference. So basically, this and this are different, but I mean, they're not insurmountable, but I'm rather recording. It's logging these things as I go in a sense, because they're not. I think it's a takeaway. I learnt from the years working on on systems that see that we're in a set, you might say incomplete designs, and that inside this beast was something that did what it was

supposed to do, but it did it most horrendously. Human unfriendly fashion was a sharp bit sticking out. And it's that sort of thing of because I know what happens is, well, we'll sort that out in Mark too. And of course, they never do, because that's now another department who don't care, either. And it's one of those marvelously somebody else's tasks.

Frode Hegland: Yeah, this is, of course, what's going to be a big deal with the Apple device, this stuff.

Mark Anderson: You see, I mean, I I carry these around where you've seen them before, but these which are they're French and then they do them in half half steps from one to three. So but that covers most of the people. We're sort of late middle age, you know, reading a reading distance degradation, you know, as you can get these out in the tube or something just to read a notice. That's what they're there for. Or reading labels on the back of tins in the supermarket. But I do what they are. I mean, you can get them. You can get them in other shapes and things. But you know, there are 10 Typekit apiece. So why you can't, you know, in a sense, why you can't get cheap reading glasses now. If you're wildly stigmatic or something, that's a whole different ball choking you and my mother, she's plus or minus TED. But you know, my wife's eyesight is really bad. And yeah, you wouldn't expect most things to cope with that. But for a majority of people, basic basics are reading, you know, basic reading, distance correction. I think it's something we've had cracked for years. So, you know, it's the kind of thing where that's a really interesting design oversight because it wouldn't have been possible. It wouldn't have been difficult to build a bridge to literally just drop in some corrections, which probably would have increased the sort of standing audience by a significant proportion. But, you know, all public service.

Mark Anderson: Hi, Adam.

Frode Hegland: Hey, Adam, do you have perfect vision or something, Mr. show off with no glasses?

Adam Wern: Nope. I use lenses. Contact lenses.

Mark Anderson: So we were discussing the inability to get this to work with these, you know, which on one level, it's the first of all a problem. And you know, this is early stage, but I was just musing on the fact that you can easily buy up these marvelous French readers

because they're even smaller than those spend and they eventually break in the middle. But for, you know, a few euros. That means I can read the labels in the supermarket if I forget my real glasses, and I would have thought that would have provided because there's uncorrected there, you know, they do between. They do between 0.5 and three and a half degree steps and you know, there's no different eyes or that kind of thing. But for a lot of people, it's pretty good enough because I find that in the very limited of use I was getting eyestrain, I wasn't feeling any of the nausea, but I can quite understand that some people do. But then again, I spent a lot of my youth at sea, so I probably pass through that stage. Because actually, funny enough and pertinent to this, I remember going to a tinderbox weekend in Hanover and someone kindly took us to a they have a ship simulator where people come to learn how to basically drive super tankers and things. And one of the programs they have is coming into Hamburg Harbor, which they like Rotterdam places is big, complicated and busy. And one of the programs he has is for TED drivers. So we were stood inside this thing and it screens all the way around and you stand on a little dais which is affecting the bridge and you see, right? Well, let's turn the weather up to a level. So we were in a snowstorm in Hamburg in failing light, and some of the people with me clearly were beginning to feel sick, just watching the screen. So I totally get that there is a graduation of that effect.

Frode Hegland: Indeed.

Adam Wern: So did I get it correctly, Mark, that you have you have an Oculus, tried it now.

Mark Anderson: Hmm. Yep, so I'm yeah, and I've got it all working. Another interesting thing was I had because both bits came together, I opened it, I happened to open the box that was on top, which is the smaller one, which is the battery pack. And I'm very nearly ripped part of it off because the instructions no one had thought about that because the the diagram of the back headpiece looks not dissimilar to a face mask. So you said basically I was trying to remove this when I was. I should have been removing that, which was something in a different box. But the person who had written instructions hadn't actually thought through the problem in. I hadn't said step one, get hold of this bit. That's quite another bit of interesting, poor industrial design

Adam Wern: And I don't get it. They spent so much money on engineers and yeah, and the engineering side. And this is kind of low hanging fruit design, better a better package involving good interaction designers. They should put just as much money on that. But I don't

for some reason, management is blind to that kind of.

Mark Anderson: Well, it's a bit like, you know, if I was funding stuff now, I wouldn't fund it any. I group that didn't have an ethicist who wasn't a coder paid to be in the room. So that all the time there's someone leaning over the shoulder saying, look, as long as you do that, as night follows day, something bad will happen. So fix it now. Don't punt it down the line for somebody else. And in the same way, if you're doing the industrial design, someone will wheel their truck to you and said, you know, those steps really aren't going to work for many of your customers. You sort of you need that and it's there in us all, you know, because we allied away, the things are inconvenient because I just want to get the thing, you know, I want to get, I want to get the thing done. But yeah, and that's an interesting part of this whole thing. And one of the first things I did was actually cast the picture onto one of my screens because I wanted my wife to look at it because I knew she'd had problems because she's got a very poor eyesight.

Mark Anderson: That's quite interesting. So this is someone who's been, well, a signals officer and then a lawyer, corporate lawyer all her life. So, you know, sat on multinational billion pension boards and things. So not exactly a slouch, but sort of basically said, yeah, it's like a fun toy, but what does it do? The only thing she did notice because she did actually try it without her glasses, a little bit blurry. She liked the basically on boarding room you turn up in. So that was pretty cool. But I got to look at the bounding sort of bounding box, which I actually think is right. Really, that's really nicely done. But but it's again, it's an interesting thing because I'm thinking, well, if I can't communicate, someone else is a perfectly sort of educated grown up. Um, bearing in mind, the gist of the conversation wasn't this is games, this is this is this is technology we will be using, not necessarily in this form, but in the future. So I think I've got I think I've got some explaining still to do, but that's a nice challenge to have.

Adam Wern: And I've tried it with very iPad literate kids, but who has never been in in not really in 3D worlds and not in the multiplayer thing, so it's very interesting to see their their first reactions to putting the headset on. They grasp it very, very quickly. And things like race coming out from the hands is kind of the graph that within seconds that they're Ray coming out of the hand, hitting something far away is a kind of a pointer or. And it ties back to what Barbara talked about. That pointing is a very perhaps even a genetic thing that we are born with the ability or very quickly to construct a. A model for pointing, and so that was very interesting to me, but we also had a very interesting incident yesterday, Rebecca and I, we

tried out Mozilla hubs. The slightly more open M. Metaverse, the thing that Mozilla has been producing, so I was on my laptop and Rebecca took the headset because it's cooler with the headset and then I have to leave the room. And when I came back, Rebecca was on the chair because we were in a world where a microphone in the world of virtual world was high up. So she climbed the chair while in VR to reach to speak into the microphone to see if it was working. I was so horrified by that. That's because if she falls, she will be in the virtual world, falling on to real desks and

Mark Anderson: A big virtual cushion, but underneath the chair.

Adam Wern: But it's really, you know, you really get immersed in that world. When Frodo and I did some experiments as well, and when I came out of that world, I immediately went and we were in the conference room. I immediately went and washed my hands because I felt that I'd been in a foreign environment that I'm so used to get to washing my hands when I come out of a conference room or something with people.

Frode Hegland: So thank you for highlighting. It was not just because you were with me.

Adam Wern: Nope. And also other things I pointed my switch pointer to and it got stuck in this chair and it felt really horrible. I didn't know what was going to happen if I was going to be placed in first lap somewhere, and that would be would have triggered the awkwardness of real life, that it would have been a very intimate thing that neither of us would know.

Mark Anderson: So I made a note that we clearly need a hand basin when you when you come into your room as well, so you can virtually wash your hands on arrival.

Frode Hegland: This is this is actually part of the discussion I had with Vint yesterday from the whole Mysore thing. And because he said, You know, who do you know, who is who in a virtual environment and Darren's book because he goes back talking about the 70s and 80s and 90s, the saying before the internet, you go travel to the city, you didn't know who was who. You know, I guess it'll evolve in the same thing in VR spaces, in some places, if it's a meeting room for an office. There will be verification for who. So even though you may look like you're wearing a funny suit, like today I'm wearing a hoodie. I don't usually wear a hoodie, but that will be the same kind of thing. But then you'll go to a club and you can accidentally sit on someone you don't know who they are. So the ability for social spaces will

be very interesting.

Mark Anderson: This agree a degree of culture in that as well isn't there. I mean, some people are just happy to rock up and meet people they never, you know, in a sense that, OK, there may be cues as to who maybe has some sort of higher status in a certain group. But you know, it's interesting. I can imagine if you worked in a broadly sort of engineering or quite structured background, you require that you acquire the need to know who is who, because otherwise your karma is also bent out of shape. But actually, it broadly doesn't matter unless you're having to interact with someone where one of the four people in the room has special skills and you don't know which one it is.

Frode Hegland: Well, it's funny, Mark, because I've never met him in real life, but being in the other room where we walked around and we could draw shapes and space, which was crazy. It was a very ugly space. Fine. But at some point we'd end up being really close face to face. Hmm. And it was not very nice. Right? Which is hugely interesting. It is that sense of presence. But to other things, before I forget number one, I've pasted in here a link to the universal control thing, which became life today. Yeah, I think that's a hugely important thing because I think Apple will leverage lots of different technologies together for VR. The glasses will not do everything on their own, which is, you know, like it's very, very interesting. Also, I had one of those Oh my gosh, what is we are good for in specifics today. Not is it? It's not a question anymore. And I looked at two different things. One of them is the well, actually, I'll briefly share my screen, if you don't mind. So I went into my software called author, and I did this. So I started, you know, mapping out us, you know, like Mark Anderson Journal newsletter or that's that's Alan Hair. You know, that kind of stuff, because I thought, if we can't, because the article that Peter sent was interesting, but the whole conclusion, oh, what's the point of doing 3D stuff that we can't even work in 2-D, which was really annoying, but fair enough.

Frode Hegland: I should be able to start doing something in 2-D that I can imagine. We then take into 3-D. But what happened quite quickly was, let's look at Brandel hair. What's the point of me just having him here? You know, if we actually worked in the same company, we had department and stuff. I'm sure we both be in some kind of a box. But what would be interesting here is there was some kind of a feed. So if Brandel did something, this thing would update for me. But I think that's slightly out of scope. So what I thought about then was. I don't please don't read this because it's just my weird notes, but. So Adam managed to take the future of text book as a PDF into this Mozilla space. And when you went close

enough, it was incredibly readable. You know, one of the things Vince said, people won't go into VR to read, I think he's completely wrong. I think people will because one of the magical things that I only also understood today is very narrow field of view. So when you move your head, it's an infinite space, almost. But when you do not move your head, it's a concentration space, which for me with my issues is actually really, really good.

Frode Hegland: So that was one thing, but I thought, what is the key thing that we all have to look at what kind of work we want to augment and the kind of work I want to augment if I'm honest to myself, which is hard to do. It is the act of authoring and the act of reading. So therefore, and I really want to know what you guys think about this. What I think should be done is, first of all currently and author concepts are per documents. If you start a new document, you can copy the concepts over, but they're not there by default. So first of all, make the the concepts part of the system not per document. Then add a few very, very few things, such as category, you click on that and you have person, location, institution, a few basically tags, but you try to make it very few. You can allow people to add a tag manually, but make it a bit difficult so they don't do it too much. And then finally, we have here. Time, if it's a famous person who is dead, might as well put in the born and died. It could be useful. So point is, if we are allowed to because notion and Roman, of course, they all do it and they're all better than this, but if we look at it, really simple way.

Frode Hegland: If these things have categories and then Adam, who document and let's say he manages to get the visual meter out, that means that we should be soon able to be reading a documents and the we can then do things like this. See, only the defined concepts. You know, pull them out and do all that kind of stuff. Hey, I haven't defined very much, but we because we know what's in it, we can start doing really powerful views. So sorry for going on and on. But in closing, if we can help an author in a normal environment writes and to stuff that automatically when they produce the documents, it is in a way that when it's taken into VR, you can read it in a really flexible way. I think that would be really. A powerful and interesting, oh, final thing I forgot. If things are defined concepts when you point to them, the mouse should point change to a pointer, even though it's not a link. You know, we have to find a few affordances like that, but I'm really wondering what you guys have to say on the notion of that kind of document workflow even mute myself for a minute.

Brandel Zachernuk : I think having the concept that find her sort of workspace rather than a document sort of points to an interesting question of in the context of hypertext, what constitutes a document and where where are its limits? Because it's a view and the idea of

view, respect and any other sort of manifestations of it are that that there are specific kind of trails and that they are in a lot of ways there's less integrity. And I don't mean in a pejorative way to what is this document versus that document when you have this collection, this loose collection of of ideas that you want to kind of put together. The challenge with that is that sometimes you want to say different things about different things. And so having something that is on a canonical reference to Doug, for example, is challenging unless it's the kitchen sink. And so I definitely like the idea of being able to create documents and have a source of truth for things. And yeah, it's making one's own hypertext or with the PDF at some level, but at the same time, because of the specificity that one might desire at various times, that that's that's something to look at and think about the sort of practical consequences of.

Frode Hegland: Just on reflecting on that, it is really important that I consider these concepts and glossary the author's point of view. Not, not at all. Any kind of truth. And what becomes interesting over time, maybe, is you read my document that has this, but you also have your own glossary. So you should be able to say this document that's in front of me that I didn't author. Show me only the glossary terms I have defined in here, because that's what I'm interested in. And so what I'm looking for here is I think it's the same wavelength this year where we give the system stuff to work with. All right, so here is my defined stuff, there is your defined stuff. We have citations and so on, and then we can build because over the last week I've been going a little bit crazy thinking in this VR space, we can do this and that and all of that. But as Mark keeps hammering on about and it's completely right, where is the data coming from? All right, so how can we that how can we then introduce data to this in a comfortable manner where we feel like we're nicely building when we write? Similarly, when we read write.

Adam Wern: And I think one approach that is fruitful here is to to not work these concepts into a database or the kind of central store of truth, but but see it more as the sum of all documents or a part or a slice of all document. So you could have your I've said it before, but I don't want my. That tech reference is creeping into my theater references, for example, or very few of them, I don't want to see them. I don't want to see that the other way around. For example, many of the remaining of my theater concepts and the embodied embodiment parts of it really relates to VR. Seven things from theater coming into my tech world, but not the other way around. And so it's and also personal stuff I don't want. I want to separate that. So having having you? Maybe that is what you call categories. But but slices of your document space to to draw from rather than being the source of truth, but more that they are options to draw from would be a way to looking to approach it. That I think is fruitful and not explored

enough in tech circles. There is this kind of idea that you put everything into one big database and you have been working on the idea of the the document as canonical truth. And I think that your version is a bit more interesting because it automatically has a sense of time as well. A document was made in a in a time period, and it may be relevant now, but it may be not so slicing the. It's like anything. Things buy time and category is very useful. Yeah.

Frode Hegland: Over. Yeah, I say you have Mark, but just to respond to that. When I was doing this earlier on, I wanted to be able to let the user if they were high school student or university student, specify whether it's for maths, homework or music or whatever. Absolutely. But then I'm thinking more about the kind of thinking and sense making and all of that stuff we're talking about. That's why it becomes more unified. But I really don't mind having a little tag in the corner that says, you know, this is for such and such space. I think that's absolutely a legitimate thing to do. Um, yeah, over. I'm making this up. That's my money while I'm listening to you guys.

Mark Anderson: Yeah, I have written about three things. I mean, interesting. I think my first reflection when you thought it was probably being coloured, many of our Brandel in, I mean, just one of the problems, of course, is how these things scale outwards. And the truth is, will never have. We'll never really have the time and attention to detail to wanted to classify everything in this. And that's a problem with classifying systems. But I like I like the concept that certainly it's also shades across to what Adam said. But it's not unreasonable. You might say, Well, look within my sphere, my personal sphere, which might be all your documents here and out there, but broadly, in some way, yours, which is to be defined separately that you could say No, no. Well, this is my own constellation of facts and interesting things. And if they were structured in a way that they could be shared with people, that's also useful because as rightly said, well, where is the canonical version? And to a certain extent, there doesn't necessarily have to be because one of the problems with the the all encompassing sort of database is that, you know, well, we all end up in some sort of religious war over what the ground truth is when it doesn't really matter.

Mark Anderson: You know, we won't even agree just to have two truths in the same wrapper. Not that it, you know, it really doesn't matter. But you know, on a human level, it's clearly something we just don't do very well. Having, you know, having made our choice, we're a hodgepodge. So but I think it's good and I like the hyper textual nature of it. I think it's also interesting because it has an innate sort of link or an in an inferred link structure, even if it's not actually there, which is important if we want to effectively move around that

as a I don't want to call it a network and I don't want to cause it to grow up. But if we want to move it between interconnected things, we want to move, be able to sort of translate, teleport along the lines of connection that that's quite interesting. And that's the kind of thing that we might begin to be able to do in in, for instance, in a VR space is harder to do on a 2D presentation. I may be wrong, even on the latter on data. I mean, yeah, the reason I bring it up is is all too often data at the moment is basically just the exhaust

Brandel Zachernuk : Of our activities

Mark Anderson: And we think, Oh, there's something interesting in it. There aren't many people you see who actually sit down and plan their data. And I don't mean in something like, you know, international organization planning metadata. But this is something I fell into. I got housed on a university project and I was staggered. There were sixty. 60 funded projects, all funded by a national funding thing, and not one of them had a description of really their understand, their data, their entire approach was, Oh, we're going to be making data because we'll have lots of it. It's probably important. So what we want to do is we want we want to have intellectual property rights over it, but we don't really know what's in it yet. And I and I well, that's what Wendy asked me. Stop helping.

Mark Anderson: So this is an inconvenient truth at this point. But I find it hard to walk away from that because that is one of the things we're facing. And so a really interesting thing in the context of our sort of, you know, sea level discussion about about the airspaces. Well, does it make us think about how we design? So that will be helpful to us that, for instance, to be able to translate from this flattened thing to this to to to a richer structure. You know, it's a bit like this thing about going from a a complete hypertext linear rising a wiki. Well, how do you do that? It's not. It wasn't built to do that. I mean, you can as a sort of an author, you can choose what I will take this path, but it's the same sort of thing. So which is one of the ideas I sort of I did play with Nodar. And yeah, it's fun and it takes me to get used to. But but what I really wanted to do, my next impulse was right. I want to take a data set that I have, and I want to dump it in here and I want to see what all those little, you know? And yes, I'll I'll start with two thousand circles, but I sort of, you know, I'll know, I'll know some labels and I can and I can begin to do stuff. But it's interesting that I don't think people are thinking like that.

Mark Anderson: And one of the problems I think that comes out of that is that you get over fascinated with the the interface. So you know, there'll be there'll be endless ways to have different colors or different shapes, but no thought as to what they represent to why you

might want to be different shapes. So it's not that it's not impressive work, and it's all stuff that needs to be done. But again, you know, that's sort of that is the implementation level stuff that I think we want to skip over and see if we can take that, if we can, if we can take it as granted that probably by the time we need it, that kind of stuff will be better. So what is it? How how should we say, take your your Constellation's, your glossaries and put them into a into a space so that the map you just showing us an author is something that is actually useful to us. Because in effect, if it's just a 2-D map in a 3-D or Indy space, we can't we? Okay, we've moved it from one environment to the other, but we haven't enriched it very much. And so that sort of I think. And the last thing was another interesting aspect because time is mentioned is that this comes to often when I'm looking for a book and it's trying to find out that if a book was republished, if I'm trying to find a book, it's been recommended to me and it's been republished well.

Mark Anderson: Has it been republished and altered? And I don't just mean type that type of little correction because you'd sort of expect that. But did it put an extra chapter in or so in a sense? Am I actually talking about the same source or not? And again, that that's something that is very, very rarely picked up on. And I've also put in the sidebar, I think freights read it, but I'm really enjoying a book that on the face of it is supposed to be about translation. And it is. It's called Is that a fish in your ear? But in the course of talking about translation, he inevitably gets into the will. You know, is there as much fixed in language as we think there is? Not really. You know, can you define what a word is? Well, you can tell a computer what you think a word is in terms of, you know, things surrounded by spaces or punctuation. So it's really, really it's a really nice to sort of dive into the same ambiguities, but just just from a different direction. Because it's almost comforting to see that exactly the the problems he's bringing up are things that actually are not unfamiliar to me having that in other circumstances.

Frode Hegland: So I think we're all kind of on the same thinking here, and one thing I went through a couple of weeks ago with this definition dialogue concept box was to very easily and quickly import wiki data. And it turns out not to be that hard, but then suddenly I think we're inching very close to a universal truth rather than someone's glossary. So what would be really interesting, from my perspective, is to build, you know, I do this side of things with your input. But then when it goes into VR, if you extract the visual matter, of course, you have other access to lots of other data, too. So if you choose to say, you know, here's Doug Engelbart to use that example again, you know, you want to see the wiki data about him and whether it contradicts or if it's if it's not contradicting, should be able to literally glue it

together as one thing, and that will help you with the rest of the space. In other words, you start with a corpus of some sort, but you can expand and go here and there. I mean, I really think that if this were to happen, TED Nelson would just start crying. Yes, mark

Mark Anderson: This. I mean, because it keeps bringing me back to I mean, I've consistently failed to get Chris to understand what I meant, because when he did his tablet, his web sleuthing, because around the time I was talking about it through my thesis, I was talking with Dave Mallard, who was one of my supervisors. And I think you've now seen in the group here and I say, Well, one of the things that's all very well. I mean, I can go around the links on Wikipedia, and that tells me what people bothered to link. What I'm actually interested in is saying, Well, if I jump into a subject that I know of but don't know, so I don't know economics. Can I look at it and see where the holes are? I want to say I actually want to see the anti patterns. I want to see where the dark thoughts are that don't exist in I was. I know there ought to be something about the subject, but there isn't so or the ability to sort of take from Wikipedia said, No, I want this node, this node, this node, this node, and then the rest can sort of fade out at the edges. The links are also there, but I want to look at these objects, the interrelationship of those. And that was. Whereas what Chris was doing at the time was of was in a more deterministic way, just following the structure, it was there. One of the things, I suppose, because things have been doing one thing I've been used to doing for years is actually basically forking out the data, literally forking the rubbish out, having just saying what's there and is what's there, what what the person that gave it to me thought it was or said it was.

Mark Anderson: It does. It does what what they've given me. Does that actually represent what they they want it to be or think it to be? I mean, very often the first the first answer to those two is no, and it's not through anything bad. It's often people just don't understand the nature of the information they have and how it works. So more often than not, that's one of the reasons their information isn't working because they don't understand the nature of it. They think it does something or they think it's it's produced to do something that they want to do. And in fact, it doesn't do that at all because it's structured or interrelated. So this thing of being able to sort of take information without necessarily so tearing off all its links, for instance, if you grab a handful of Wikipedia. I don't want that necessarily be sheared off from the rest, but it just, you know, came back to the Oculus boundary type thing, well, it's outside. I don't really care. And if I need to move my boundary out or bring something into the space I'm looking at? That's fine. But otherwise, rather like Adam's visualization, the rest can just gently recede into the background.

Frode Hegland: I think that brings up the question of what does Adam and Brandel want to build so we can support them with work and ideas and stuff? In this context, if anything, I mean, I would love to see an incredible reading space that's focused on one person that can easily incorporate more people. What do you guys actually want?

Brandel Zachernuk : Well, something that I built over the last couple days is a multiplayer VR page that also supports multiplayer 2D views of being in the same environment.

Frode Hegland: Brandel is an Oculus because all four of us have Oculus. Now if you send a link, we can go in.

Brandel Zachernuk : Yeah, I mean, the latency is probably not amazing. It's it's I've just been experimenting. It may be may very well be that something like Mozilla hubs is is a better basis. But what I wanted to do was understand it from the ground or I was close to the ground as I can be bothered doing so that I can kind of stitch different sort of signals and systems together. And so that's been fun, something that I want to do. But again, like I said, just sort of more at an infrastructure level and to have essentially a boilerplate of techniques and approaches to be able to explore these smaller things. And my intention is to be able to sort of connect with two devices at once because at this point, speech recognition isn't something that you have direct access to in Quest while you're in the web. One of the things that Nvidia does is it has a limit because of the way that it's actually needing to make use of a paid service, so it needs to clip the ticket along the way in order to do that. Whereas Google Chrome actually provides a speech recognition system, graphics that you don't need to have any. But Google probably listening to speech, but other than that, it's something that you can make yourself. And so that's what I use in word reality. And you don't have the ability to do that on Quest. But if you have your headphones, when you're wearing these headphones and those connected to my Mac or PC and then in there, then I'll be able to have both hand-tracking, full hand-tracking and and the ability to do detection and speech recognition.

Brandel Zachernuk : So that's something that I'm doing for that, for the benefit of being able to kind of think about what it is the text input is and the sort of the multi multiplicity of representations that text can have. I'm really interested in in where you put text. I think that, you know, that's one thing that Noda does, but I feel like it's actually under indexed like. Being able to more effortlessly place text in places and and also to be able to replay the sort

of temporality of when text was put in places, there's a really neat guy who sort of took over the department at UCSD. I think. Ed Hutchens and an HCI and cognitive science department, which is a really neat sort of mixture of things, and I watched his high lifetime achievement acceptance speech in Tokyo from 2015 recently. One of the things he talked about was the fact that computers are wonderful context destroyers, but they should also be wonderful context restorers as well. And so something that I'm really excited about is the possibility of being able to encode actions such that you can kind of get into the swing of and recognize what it is you might have been thinking about as you were doing stuff.

Brandel Zachernuk : And it sort of comes back to something that Mark was saying earlier about what is useful data to encode something that that another person in the. In the VR community recently was asking, and I think I know what kind of kick they're on. Otherwise I was it Apple? Was it Google? All those places. But like how many apps record all of the temporality of your actions in the sense of having something like an undo? Q But but recognized and elevated as being a more constituted significance for the purposes of being able to understand what a document actually is? You know, there are some things that are represented as a series of steps serialized in the way that, for example, Houdini. It's an application for doing production, film effects, level computer graphics, and that applies a series of procedural steps so that you never sort of lose that. But it's not the history press, because it's not necessarily a reflection of the weight of the timing that you undertook those actions with. And GitHub does exist, but it's not actually a fully granular representation of those things in those orders. So, you know, one of the things that I'm interested in is going, well, what are what are some of the artifacts that we made of? What are the attributes rather, I guess, are native components of the artifacts that we're typically interested in producing and what manner in which can they become represented in a context for either scrutinizing, sharing or otherwise thinking about the things that we already expect? So to that end, I like the idea of recording just in normal 2D apps, the sound and the speed with which you Typekit so you can hear somebody really smash it down.

Brandel Zachernuk : And also, the right angles are a really interesting sort of experiments, but you know, that's while flippant, also representative of the kinds of aspects of performance in the characteristics that might be recordable and made meaningful within a spatial environment as well. So I think that what I want to make is enough context, one to be able to kind of to give recognition to the fact that all of this stuff is pretty achievable and pretty easy, especially with the right boilerplate in place and to to to say to to large point about what is the data. A lot of that data is stuff that we probably wouldn't have thought of as having the ability

to be meaningful. And at such point as we track that and make recognition that it actually could be a useful thing for us to respect and understand. We'll have a pretty significant step change in our relationship to that data and recognize that a lot of the things that we're putting in and saying this is a document are pretty important. So that's a lot, but that's an answer.

Frode Hegland: Really cool. Yes. Yeah, the retro stuff we record, the richer stuff we can interact. Absolutely.

Mark Anderson: My comment briefly on just one thing before we go to to to Adam's take on what he wants to build just because it speaks directly. Just one thing on the time. One thing that we tend to overlook because we well, we measure the things that we can measure, which is quite natural thing to do. But what we don't actually measure or because we don't tend to record, is intent. So the classic thing is we'll type 100 characters, pause two characters, pause three characters, pause, focus. So basically, the third edit is the three typos you corrected in the things so that actually what you want to read is not that, you know, the important bit actually isn't the 100, it's the three edits after errors. Now, of course, that's not that's not obvious if you're just looking at the character flow, because unless you actually have an understanding of what's being changed, are you going to rewrite into the language which says to me one of the things that we should be as a sort of skill we might wish to acquire in a new sort of literacy as it were, is get in the habit of, you know, accepting that our input processes are not always as good as they should be and our mind wanders and things.

Mark Anderson: But it's it's sort of recording just in the way that actually recorded in a separate vein, having something say, when we're having this conversation, you can always tap a button set. Important thing happened here. It's exactly the same, but in one's own work, because we can, we can record the flow of the characters going into a document. And we can we can know that. Yeah. Yesterday afternoon, I wrote a long section or I wrote a number of documents, but it gets us that far. What it doesn't quite answer for it is, Oh, did I actually write something of real insight then? Because to do that, I'd have to go to that time frame, find that thing and get into the language of it. And I, I don't have any answers in this, but I just sense this. This has come up across my bows a number of times now. And the one thing, I suppose it seems, because we don't do it, it's self-evident to us when we look at our own work. But we don't record it in the moment. And maybe that's maybe that's a form of data we should build a receptacle for, and I shut up because we want to hear what I was interested in working on.

Brandel Zachernuk : It.

Adam Wern: You started so many interesting things that I want to discuss more here before, but when I've been playing with both the Mozilla hubs and a little bit in the world, where is it work workspace, horizon thing and especially Mozilla. And when dragging things in, they're placing models and placing documents in their research. It's obviously clear that there is no kind of greater collection of things you import, either the whole world you go to world or you have small, singular objects, but the collections are missing in in a way. Of course, you can import a room or something, but it's kind of there is almost no. They are more detailed the information in there, and I've been looking at the US, DC, the the Pixar and also Apple format for four models. The open format and it's very, very 3D centric, model centric. But because I have been thinking on how to hang on extra data data in it and. It looks like it's really hard because there are just very small primitives. But we need some sort of bigger collections like that, this model that part this cube of this model or this, this image represents this and has an hyperlinked.

Adam Wern: And has this date stamp and time stamp and all the data we've been talking about. Yeah. Today and much more, we want to hang that onto the model, different parts of the model and also relate different models together so as when you bring two models in together and they happen to have a relationship that you can visualize or or show that relationship. So we have some work to do there if we want to have a kind of a side, a metadata format that we can hang on to 3D models and do something a bit more useful with and also the collection part to have a document. The three document, if it's a kind of a montage or even with a space, a gallery thing where you have some kind of substrate that you've put the knowledge objects on where it must be represented and encoded in a way that is. And I envision something that is a XHTML expectable something people can actually work with and and really learn quite quickly, if you're it. I will.

Brandel Zachernuk : My hope would be that it would actually be. I think I agree, Adam, about that, the question of where is meaning, and I don't feel like you ask, does it in terms of in terms of qualifying relationships and stuff? And so either you add that to the U.S. or you just say that meaning comes in and they're sort of a ground truth inside USD and and actually all of those relationships constraints and those and those kinds of things that define TED essentially interactivity, but certainly meaning come through in another format. And frankly, it might as well, you know,

Adam Wern: It could be under. There is a question of do we have a wrapper around where the model is part of the. And we point into the model. Or is it that it's. Or is it inside that file and can they coexist within one one kind of a specific specification or a file? But what we really need is very address ability so we can address everything with the good position and describe it. So every every stroke or every form or every little triangle or whatever it is so we can address everything or most things so we could do a mapping between the visual representation and all the other things. Another side note here, or another thing, is that when I walked into the these Mozilla worlds. I feel like, like the future must involve some sort of running code as well. That the object must be living and do things that you bring in the kind of the. You have machines that you bring a machine with a visual representation and other representations bodied representations saw, but also that they can do things. So you're bringing in a tool that is both visual and two that does things either produce new things on covert things or or enlighten you in some way. So we must have running code. We can't just have lots of flat or flat flat things or models or 3D models of all forms. They must do something in order to end it, and we must think of a way that. Of course, we have the problem with security and sandboxing things in public space, but at least in private or high trust spaces, we need to have powerful tools that are visionary represented.

Frode Hegland: Yeah, absolutely, absolutely. And I think we need to start segmenting things because yes, if I want to bring in a propeller plane like a toy propeller plane into a room, I should be able to do so. You know, it has a simple engine. It doesn't do much, but it is not as static that object. So I think it's very, you know, it's a representation of what you're talking about. I think that's really important. And some of us this week have been talking about Apple's opened up approach where you have kind of a dead duck, but you put in the tools. That's obviously very related to this. But I think if we're going to try to build something together to demonstrate, I think we need to look at who wants to put in what effort and for what's. One thing I do not think we should do is to try to build a system of universal knowledge graph connections. That's something that nerd community seem to do a lot. You know, if I represent my world exactly, and you represent your world, exactly. We plug them together. We understand each other. That is, I can say, all the shaking of heads here that that's just just it's just it's just silly. So I would very much hope that what we can do is bring in different data types and through translators or whatever we might call it, have them talk to each other. So, for instance, a concept map from wherever, and then we have wiki data here. Does it connect or not, it should be almost a manual thing, because once you have too much automatic stuff, it goes too much outside of the brain. Not that machine learning and all of that shouldn't be used, but Dave Millard used the term intentional. The concept definitions

and author are intentional. You can't just tag something. You have to write what it is. So I think in this space, too, it's useful, especially because the power of this is immense, so we can very easily overwhelm ourselves to bring in a million Wikipedia articles is soon not going to be a big thing. So, you know,

Mark Anderson: This is always a question. Yeah. So it's the demo sense is so what are we demonstrating that we that we can't do? And and not just that we're doing it in 3D, but why are we doing it 3-D? Because we can't do it in fewer days than that?

Frode Hegland: Yeah, so. Exactly. So I think we need to design, you know, many people here will be doing many things in many worlds, but what will we do together? I think we need to design that. You know, we have the few people in a room. What are the things they're supposed to be able to do?

Brandel Zachernuk : Yeah, well, one thing that I really like in of user experiences is his attention to some of the earlier work on the description of focus plus context and recognition that reading a newspaper, this was on a back in the 80s, and so most monitors were sort of 320 feet or so. And so he sort of likened reading a newspaper on a on a on a computer to having a a very small sort of cut out through a piece of paper that you are then scanning over an entire broadsheet. And you know, it's perfectly adequate for a form of reading when you're actually looking at column inches and you're and you're scrutinizing a particular story or scanning through its classifieds. But it does nothing to the context picture of what is the thing that I want to kind of lunge in and read at this moment. And you know, there were there were hard cliffs in terms of the capability that one had to be able to display any of that by virtue of the low fidelity display. We simply didn't have the pixels to represent those things. But you know, those those things are going away. And so we have most of the way that the terms that we interact with computers on are at that sort of final level of Zoom for the most part. And I don't mean in the literal sense, there are things like zooming user interfaces, but they've also failed to recognize that that concept of level of detail is not merely physical scale.

Brandel Zachernuk : It's not that something is bigger or smaller. It's that something as at different levels of granularity and fidelity based on the intention for representation, like what is it that you intend to do with this document? And to that end, what are the levels that are important? Something that I was playing with a while ago before I got sort of not distracted but pulled into virtual reality representations? The timeline stuff that I did for linear timelines I did before I was playing with the VR and I was like, Oh, this can work in VR and it has

different characteristics. And I think that's that's an important thing not to to discount the possibility that something simply the good dimensionality really does confer benefits in terms of your manipulation and interaction with it. But one of the things that I was really curious about at that time is the question mark was saying about what are the what are the the thoughts that aren't fine, but but even even simpler, like if I have if I've been to this page and this page and this page in Wikipedia. What are the other things that that means I should probably read can I can I get a reasonable summation of of those links? One of the challenges with Wikipedia looking at, I just looked at the economics article. It has an op degree of two thousand nine hundred twenty seven hundred and those are not all the same in quality. One one benefit is that one thing that you can do is look at the number of times that a concept because you typically only look one page once in a Wikipedia article.

Brandel Zachernuk : But that's not to say that the concept is reintroduced over time and time again. So one of the things you can do then, is to look at the number of times the term in an outlet is reused. In order to qualify that link identify what sort of relative importance it has because something can be peripheral or something can be central. If you're if you're reading about economics, then then simply the fact that it references out of like, there's only one link to Adam Smith. But but probably Smith is important if you're talking about what economics is versus, say, Alec Baldwin. I don't know if he's in the economics article, but probably a fairly peripheral if you're talking about that. But yeah, so that's something that I think I want to do on it. That's something I think that is important to recognize as a job for virtual reality is being able to come up with these multiple layers of abstraction and give give visibility to the fact that there are these different ways of thinking about things like level of detail. One of the one of the points that occurred to me while people were talking about the objects is that Pixar and other people who are involved with creating objects in 3-D like this are, I think, pretty poorly positioned to recognize

Mark Anderson: That what they're throwing

Brandel Zachernuk : Around, or a whole bunch of almost entirely empty signifiers that there are things about those things that matter and they matter to different people for different reasons and absence and ability to to imbue those information to those things, those those objects, those those elements tell a story vastly thinner than most people would be expecting to be able to tell with them. And so, you know, I think though those are those are significant challenges and problems with sort of spatial and dimensional representations. But I think they're also really interesting provocations that can lead to some. Really transformative

perspectives on what it is that data is what it is that navigation is and the way that meaning can kind of be manipulated in a way to make these things useful and fun to play with. That's a lot. Sorry.

Frode Hegland: That was great. So my tiny little initial point was, in some ways, reading a newspaper on hair may be better than I broadsheet because broadsheets take up a lot of space. You know, you basically need a table for them. So that's the wrong kind of concept, excuse me, context. Where it is on a page doesn't necessarily matter much. But I think the other thing you said about, let's say, Adam Smith, I really want to be in an environment where I'm reading Adam Smith, and because I'm doing something with economics, I select that touch had left at whatever. Then I do a Wikipedia search or whatever. And then the results come up and then I have an interaction to say this is actually about that. So that will become that kind of mentioned it earlier, but that means that in the future, as I go through other things, all that information is now verified as being that. So, you know, to see important people in time, all of that then comes automatically. So to build the opportunity for that kind of connective space or constellation or whatever, I think is important because I think what we're working on here is not to build a visual sculpture. I think what we're working on here is much more meta matamata than that. We're working on here to build the opportunities to constantly rearrange the sculpture.

Brandel Zachernuk : Yeah, something that I've been really conscious of, I'm sorry, I promise this is short in the context of special computing is that a lot of people are just woefully under indexed on how much kind of needs to be revised about what we think of as information in order to be able to make the best use of the medium. And so that's why I've listened to you invent talking the other day on that YouTube chat. And, you know, I don't think he sees it. And I think that part of that is that the value proposition of computing per say, we accept it wholeheartedly, as is right now. Then there aren't that many advantages because we need to do a lot more infrastructural work in order to get those things before so. I'm glad everybody else sees it here.

Frode Hegland: People black and white completely agree. Guys, yeah. Mark Adam,

Mark Anderson: However, a couple of quick things. One just on papers. Actually, when you hang up the phone, I thought, Gosh, that's the last place I'd really think. I mean, because I was at the weekend, Saturday. I read, I read the Financial Times and the Times, but I'd probably read the and I read The Guardian in times online most days. But I always know I'm getting

less than I get in the real paper, and that always bugs me because it's a bit like and the worst of all is the BBC News, which is now just all sort of, you know, lifestyle fuff. And it used to be a real source. You know, it was, you know, a world trusted world source of knowledge. So I'm not sure actually, that it gives us the granularity that we want. Mainly, I think that's due to a probably fairly low skills layer of people who are doing filtering on the news. Anyway, that's by the by. I think that's going to mention was so an interesting point, and I think this is probably what Brenda was speaking earlier. I was thinking, Well, gosh, you know, so we're sort of talking about annotation. So I'm looking at some things. Sorry, I might have been my favorite speaker. I lost track, but. So are we looking at these things or I follow these links, one of the things I'm sort of doing? Oh, right. Actually, this is pertinent. This system, and as I spent a lot of time in Wikipedia mainly trying to understand the difference between what people had actually written and what they'd intended is that.

Mark Anderson: Yes, and it is a technocracy, and that's one of its weaknesses. So everything's sort of seen through. Yes, I can measure it. But but does it do anything useful? It's a question people tend not to ask, which is totally different to the argument, the sort of humanist argument about whether they agree what's what's in the written word at the end, which is a whole different ball game I don't want to get into. But so in a sense of OK, right? Yeah, there are, you know, there are 3000 outlets here, but which are useful? Well, I could annotate them in the system. But then that would probably be a separate bit of warfare because as my research showed, people don't like sharing you touch my shit and everything kicks off big time. Despite the fact that notionally it's a commons because basically people want ownership. So it's I'm thinking, so what one may be doing there is, is, is you're sort of making trails and this goes back to when I saw Chris's demo five years back, so I said, Oh, that's what I want to do. I want to basically take things. And I was thinking, you know, so 2D space, but it could be more. I wanted I basically want to I want to grab that and I want to grab that. I want to grab that and I want to put them in a clean space without cutting them off from everything else.

Mark Anderson: But I just want those bits in the petri dish so I can look at them and I can understand the interrelation. And I think that sort of speaks back to what you were both saying earlier. An interesting point about WikiLeaks and it didn't get mentioned, but but but it's another thing that happens here is when we look at things like other people's intentions, we're often guide by again our appalling habit of counting things. So it's a classic problem. If enough people follow the same bad link, it's the most promoted. Well, that clearly wasn't quite what we meant, but we haven't. We haven't generated the systems other than basically

humans coming along and fixing it, saying, No, no, no, no, you're you're, you know, you're following the wrong thing. I mean, short of removing the link, it's really quite hard to do, and we haven't. So we haven't we haven't dealt with that issue either, which means that measuring measuring links or making use of links is very often in felicitous and gets us to exactly the wrong outcome. It's the more subtle thing of being able to look at things. So you're looking at Adam Smith, you're thinking, but one of the things related to Adam Smith. So I don't necessarily need to know if he had a collection of names in his garden. Interesting, but not pertinent to the fact that I'm trying to understand maybe his philosophical take on something you know or some aspect of his life or how he relates to a subject.

Mark Anderson: And they're all in there. They'll all be in a corpus, be it in the Wikipedia or something similar as a hypertext. But you can't see the wood for trees. People don't. People don't write links with the sort of hyper textual intention that we're talking about. They write it within the style guide of Wikipedia, which is is not well written, but it's mainly done when people stop complaining. You know you've done it right until somebody else starts complaining. And it in a sense it is that poor because it's a complete open commons, which makes it actually a very bad study. What I've come to realize because there's so much unintentionally unusable human behavior, that's a skein of noise over what's a fascinating dataset. The trouble is, the dataset has been accumulated without necessarily a lot of careful thought, and it's just full of half the amount of half finished stuff. But there's no index to it. There's no the index is nearly all. Actually, brute force, single word match the the categories to agencies cover, anyone can make a category, so you go to you go to Wikipedia. I want the economic everything on economics. It'll give you the economics category, but that's not that is certainly not everything on economics. If if you were to look at all the documents, it'll just be whatever somebody takes out. And these these are real interesting sort of tricky things to do with it.

Frode Hegland: Let's not go too far into their plumbing as a Wikipedia, but the issue of no, it's

Mark Anderson: The measure issues. So hypertext issues Wikipedia's yeah, they get they get lost in the subject matter. The point that the important thing is the lessons that it shows in the felicitous way in which it leads us away from the understanding of the sort of visualizations and the way of displaying information we're talking about.

Brandel Zachernuk : Yeah, I mean, to that end, I would say that there are aspects of sort of

data that can be measured for things like, like I've mentioned, Google has the ability to measure bounces. So when you visit a page and then you return back to the search results from whence you came immediately. They know that that's a bad, bad sign that that was a low value resource and reference, and that probably it was elevated to high,

Adam Wern: But not necessarily a bad business for them that you come back to the ad page. So it

Brandel Zachernuk : It's correct. That's correct. Yeah. But say, say in Apple, where where I do have some, some level of dominion over of that thing, it's something that I make use of is when when people have bad, when people return off of pages, when we have bounces, we know that something about what they did is not in line with what we want to be able to give them. And I've heard a lot of people talk about these implicit behavioral measures. So something that people did on Amazon Mechanical Turk back in the day was they would they would look at various aspects of the way that somebody was performing a task in order to come up with a sort of automated assessment of the quality of the answer based on the time it took to do it, what what kind of mouse movements they had because they found in broad strokes that it was possible to make assessments about that. They're not 100 percent, obviously. For example, somebody using, you know, accessibility assistance is going to have completely different use of utility profile of the way that they're making use of aspects of the site and all that kind of stuff.

Brandel Zachernuk : But I think that there are an incredible rich plethora of signals that can be used in 2-D, and I think that expands only ever outward in 3-D. It puts up against privacy in all kinds of other aspects of it to the point of Wikipedia, what are valuable links? One of the things is how many people follow it, but also what is their onward behavior after that? If it's non-economic ish, then you know that it's not necessarily useful. So there are ways of doing it. It depends on what kinds of capabilities you're willing to break into a system with regard to the aggregate aggregation of data and reporting of it. What sort of privacy implications that have know things like differential privacy do some job toward providing the best of both worlds. But yeah, I think that there's more we can know, and there's even more we can know in spatial providing where eyes open ethically about what implications it has. And I want to. I want people to know that.

Adam Wern: So I raised my hand because I want to save the statues, Frodo wanted to sculpt the statues, and I want to be a proponent for actually saving the statues a bit a bit more. So

when you do some knowledge work and get a search result or bring in a few documents, follow links. I want the actual search results to be objects in themselves that you could scratch off, take a list and if you get a search result, you could remove things from that and save the actual result as an object. And I think 3D is in a way good for this because in flat interface, if you have a kind of a nested doll of many different spaces. So if we look at the operating system, many windows. And if you look at this room window, it follows its own logic and physics and so on. And it has menus and it has lots of icons and they are. All these things are different spaces. It's not one unified space with one logic, but 3D has more opportunity to be a bit more unified in that the the place where you went from and the target where you went, the results of your search could actually be placed inside the actual same same space. And that brings up very many new opportunities to unify the interfaces. No more menu bars or scroll bars because you don't need a scroll bar, you can just look up and down and get get the length of the document. But just by glancing, you don't need a tab bar because you can look around the document to see the other documents in the same stack. So many of the list goes back to what Peter wrote in the email about that article, but I think actually three days is better for many things because we're so limited with the screen, so we have to do this kind of imaginary toolbars and other spaces just to navigate.

Adam Wern: And so we need to or we are forced to do things a bit more hyper textual. Or interactive than they need to be, but in 3-D, we have so much space we can actually replace objects and the sources and and show the history of where we went from and where we went to. And that forms kind of a sculpture, a knowledge sculpture that I actually want to save. So I don't want to combine it. I rather have the next time I come back to the same sculpture, I may take a copy of it and put it further away. The arm or a walking distance or a glanceable distance, and then I say I can just as designers do, they copy the object on in Photoshop and do it 100 different variations or a sketchbook with 100 or different variations. To me, it's very important to see things side by side. The juxtaposition or glanceable differences that is where I derive so much value, just having a timeline scrubber and the history is not enough for me. I just really want to put different states between each other besides each other in juxtaposition. So I really need to see it could be because I'm very visual. I want to see things side by side. But I think it also ties into what Barbara Kirsti talked about that animations can be very bad because the actually putting the different steps a bit more visualized before you can lead to greater understanding. I think it is like that for many people, and so I would like to have the different variations of the statues beside each other. Yeah, I hope.

Frode Hegland: Well, that was really nice, because you kind of said, we agree, disagree, but

of course we don't now. Mark was mentioning earlier how his wife really liked the basic room inside Oculus. You know, I go to the Japanese room and it's really nice in there. It's really, really nice. So I put down a few notes there, number one, about the sculptures. Yes, we should be able to save them in many different ways. You know, I consider that publishing. That's why I really like documents. For me, what document means as an intentional here's a thing that I've now framed. That's all it means, rather than a continuous time stretching of modifications of it, at a certain point you say, OK, that's that or that's that. So that's what I mean by document. I'm not saying it has to be a rectangle, but also we need to look at where we should focus our brains because there's so many aspects, but also in kind of a real thing. We should start guessing what kind of APIs will Apple quote unquote give us? Right. That's a really important question, because I'm sure when Apple comes out with stuff, they'll provide incredible developer tools for people to be living in their world. You know, that's what they've done forever, and that's what they have to do. And that's all well and good. So obviously with Brandel deep knowledge of. And also, Adam, you're getting there of web and other VR tools. We have to really look at what our opportunities are.

Frode Hegland: And just as a slightly side issue, I could imagine in a few years putting on my whatever and being in this Japanese room that I can actually walk around there. So imagine you have this one floor that is my office and meeting room. So I know I meet you guys there, my library here, whatever you know, I lay it out like a normal space because it's a mind palace, partly. But then I can go up from the roof and that's where we kind of infinite space. So it's like all the Wikipedia is there. All of this is there. It's like, Whoa, you know, everything is here, but mentally we need to be able to be boxed and unboxed, obviously, right? So if we just have the complete freedom of VR without thoughts, it's. Overwhelming. But if you imagine some kind of a structure of crazy everywhere, specific rooms, the floor below, but then we have a basement that's kind of like plumbing. It's like the deep library of the stuff that we care about. It's almost like our settings and so on. Maybe we can start thinking about issues in some sort of a way like that, but also focus on, you know, right now we're in a meeting. One of us is published a document of whatever that means. And the rest of us are able to go through to try to understand that, I think would be really useful to get to a point of what that might mean in our community.

Adam Wern: I would like to add another space and it's kind of the void or white paper or white room or black room or gray room, but the really, really empty space where you could bring in to get that kind of focus. Of course, you can do it in your Japanese home, and it may serve that purpose for you or for me as well. But the really blank, really blank white canvas is

very. Sometimes very, very fun to start with, with just a word or a sentence or an image or a model or two things side by side and nothing else. Maybe your tools there?

Frode Hegland: Yeah, yeah, absolutely. That sounds wonderful. Mark Yeah, go ahead.

Brandel Zachernuk : Brandel those those were the first that the first four environments that I made for board reality was that was a lakeside. And the pass through to the extent that was available on five and then a pure black and a pure white sort of space that you can just kind of exist within and be able to kind of observe. It was it was nice. And I think that those are those are really valuable kind of things to be able to separate them and live in for different reasons.

Mark Anderson: Yeah, I think there's blank spaces are good because, you know, it came up actually in a separate sort of tinderbox week last week. But I I sort of I was just thinking on the fact of matter and dark matter. And, you know, dark knowledge certainly far exceeds divine knowledge. So there's also knowledge out that we haven't discovered yet, but we constantly focus on the stuff that we think we know anyway. And so what that often makes difficult is to sort of look beyond. So these blank spaces, I think, are really good because they're extensible and they help train people who are who tend to think always think inwards to just expand that, expand the horizons a bit. So I think that's that's a tremendous useful. And I just wanted to pop it. It's a slight bite. But I went to I watched Brett Viktor's most recent talk, but it's one interesting thing. I took away from it. I was, and I'm beginning to see it as a slight trope now. So, oh, if we did this, we could walk around, you know everything I'm thinking. Have you ever been to a museum or a weekend where you say, let's do four museums over the weekend, actually? I mean, I know you're only walking in the mind, but there is a sort of slight misunderstanding. So that's another thing I get what's meant behind it, i.e. that you can see this thing in a separate space. But it's interesting at the moment we're using some of no pun intended seemed quite pedestrian terminology to discover. Sorry to describe the way in which we might pull these things apart effectively into just a separate environment. Then reality would come to you rather than you go to them. I suspect.

Frode Hegland: So I'm raising my hand again because I want to push you guys a little bit. On. Would you be interested in the visual matter, VR thing? What I mean and what I'm asking specifically is. If somebody offers a document with visual metaphor as a PDF and puts it somewhere. Do you find it interesting to parse the visual matter as part of how you can present a document in VR space? Because if you are interested in that, then you can of

course, invent what this would mean in terms of the visual matter and the interactions.

Adam Wern: I mean, it's very unclear what the admission matter is. You say that we can put anything in there, but then you're talking about metadata in general and how that is useful if it's useful metadata, what kind of metadata are you actually talking about? Can you give example that would be useful to you? So I can.

Frode Hegland: Yes, I would have. I wouldn't couldn't imagine anything I'd rather do than tell you that the different kinds of metadata that documents can contain and that visual matter supports include structural metadata, which is essentially headings and page numbers so that you can choose to divide the document up by headings. Because PDFs usually don't have that, then there is contextual metadata, which is what did this document cite. So that's the references, but connected to where they are in the document and addressable by one second. Yes, I've got real quick. I'm in a really big meeting.

Brandel Zachernuk : What?

Frode Hegland: I would like this

Adam Wern: One for people. Yes. Big ideas. Big, important here. Yes.

Frode Hegland: This one. Hello. Ok.

Adam Wern: We are the big meeting.

Frode Hegland: What we're putting it. Ok. Ok, cool. Right. So that's a really core. But I'm realizing more and more that the defined term slash glossary is really, really important, too, because I really feel that as we massage our knowledge, let's use the term again sculptures. Thank you, darling. You know, to help us think so and so is so and so that's actually really useful for people trying to understand us because it is very much about intention. You know, this is what we intended to write. So that's why one of the views I already have in reader is only show me headings plus defined terms, because that's what the author cared about. That could be one of the views that in VR, you could say, you know, put everything in the background.

Mark Anderson: You know, you must remember that's a really interesting thing in doing that too, because if you if in doing that and you're looking at the say the head headings and the defined terms you don't see as the person who's authored the document, the reality, the document, it argues one of two things either you didn't do enough definition of terms or we may need another sort of object that that wouldn't sit well as a sort of defined concept. But you say, no, there might be another another strand of object that we need that exists as another bit of metadata like that allows the story. And I don't have an example in my mind, but I just know sometimes you may think, Yeah, but that doesn't really, you know, this thing is not really is not a concept, really, or it's not a person or a thing I can really describe. But there's an important idea.

Frode Hegland: Oh, and the defined concept dialogue, I'm looking at what kind of additional stuff to put in, like the type would be private and so on. This is what you guys mentioned earlier. The tag would be person, institution, that kind of stuff. So the question is what would be useful here? Because the whole idea is that the whole dream for me is you have a rectangular documents, if you actually reading it, there's probably no better format than having a rectangle with beautiful type to really deep read. That's fine as long as it's laid out nicely. But then you can't read all the documents all the time, so you need to just choose what elements to look at. So if you're reading one long document, you should be able to put it on a timeline which this kind of thing can do. Or you should be able to say only show me the bits that are about people which this can do. And then, of course, if you are dealing with a corpus like the hypertext proceedings, if all the documents have this, then you can see I want to see everything where they refer to this time period or only about institutions, only about that.

Frode Hegland: So you start moving the things around. And when I talk about PDF visual matter, it doesn't have to be. There's no real reason we couldn't export this HTML as well. Right? I would do a PDF as a backup because it's plain and simple. But the point is. Imagine. We all of us like to tinker. You know, we don't do paper plastic airplanes anymore, but if we had the time we would probably be building model airplanes, wouldn't we? Right? Could you put them together? It's really nice and it just feels good making that shape happen. Imagine providing a piece of software environment where it's pleasant to do that because you know, it's not just for your brain. It'll go into an environment where other people reading will have access to all your beautiful little details here and there, and they can thread them together. Does that answer the question a bit more, Adam, on what kind of metadata? Because it's not limited to that, if you decide that another type of metadata is useful, we should look at how to

make that happen.

Adam Wern: Yeah, I think I agree with your last question, where where you build something with your small notes and your personal reflections and share it with the world because I feel that I don't do that, I build it for myself so often. I have lots of things and I have so many. I work with improvisation drama and I've done a large number of exercises and refined them and they really exercises, really need the commentary to be useful. You can't just do an exercise, you really need to know why you're doing that, what you're practicing, what you're what you're looking for as a teacher and so on. And all this more details that it makes it useful. You can't just read a game and understand the. The beauty of it, but sometimes you can transfer the beauty and the things to look for, but do. And I want to share that, and a book has never been the right. There is no linear order to these exercises. There are, they are more clustered and I want to have other canvas for it. I. I've been thinking of doing big posters or but it's kind of hard. It will be a few metres wide or big at the hard to send to people, a poster to read and so on.

Frode Hegland: So yeah, it's a little bit perfect for that.

Adam Wern: Yeah, I mean, it's a perfect playground for it. And. And also, I like a bit too messy sketches, so that leaves room for the audience to think perfect things are a bit bit and draw my set as well. The good draw, my third lines, you write in your mind as an audience. These are the best lines. An author can never match those lines. What you think? So Goodrum, I assume the silence and the silences where the audience writes the lines. So I like sketches because it's opens up the audience participation into things. And so I would like to have an object or a way of transferring these sketches and all these. The ideas are small anchor points. Records that the place, a tune that that's played in the audience mind, so and I'm really against the Knowledge Graph because knowledge is by definition inside us, knowing things is inside us that people talk about knowledge as outside. And I think it can only be inside us and and we can have cords or anchors to knowledge and our information system. We can never have the knowledge in itself. And I think there is a confusion. It's not good to speak about knowledge in that way because it misses the smaller details that you evoke things by those anchors. It's not the knowledge itself, and we need to be more precise with that language. But and I want the instrument or the document sounds dry, but the document to to send it to other people.

Adam Wern: And so that part I want to have for the better. I don't see the connection to to

the current current PDF commission matter. It's not clear because we can go directly for that kind of a rich knowledge object and and not be limited to the very, very linear and kind of the destructive the destructive nature of PDF and working against the technology here is not. Doesn't feel useful to me when when Hml is already beating PDF sons in so many dimensions, even now, it's even getting fixed layouts and it has meta data, you can hang on directly onto text. So why hang it on a page in the end, in a in a in a typographic format? It doesn't make sense outside that purpose. I really understand why it's good to print it in in the legacy world of PDF, but I don't think it's. It's a data want I want to have the data and in a disturbed form so I can not work against the technology and actually do the kind of representation we have been talking about. So that's I think you print to PDF, but you should not have that as a data source. So I think a PDF is just like the models we have here. Maybe we can attach a model with the meter data and the data, and I want something pure to project from.

Brandel Zachernuk : I would I would answer that differently. Sorry. I'd love to to to weigh in. I do find the idea of the metadata as presented in visual metadata are useful and interesting thing. One issue that I have is that I'm not from an academic background. I barely scraped through my bachelor's degree. And so I don't have the same sort of relationship to writing in particular. You know, I had a blog for a while, but I kind of gave that up after I after coming to Apple. So I don't I don't have the same relationship to sort of navigating large portions of text to write it for writing or even as much to that extent. The reading I read more than many, but but not nearly as much as an academic. And so. So I don't have that as as a basis upon which to sort of build a relationship to the sort of representations of text. That said, one of my fairly methodical processes for playing with stuff that's going on like what data is available? And then by that token, what what representation do I wish to try to pull out of it in order to be able to play with it? To that end, I do see the representation that exists within PDF. Again, I wouldn't use it in an application that's leveraging PDF, but if necessary, copy paste or experts I know I would look at and I started looking for Big Tech passes for JavaScript such that I should be able to kind of pull those things in so that I can then take a take a look at what it is that I want might want to represent that.

Brandel Zachernuk : One of the things that I've been doing with this infrastructural multiplayer stuff that I've recently is trying to build out of a sort of a fruitful enough foundation to be able to build those applications on top of. And so, you know, it is my definitely intent to intend to take a look at parsing visual meta and thinking about what sort of representation sprang out to me as being interesting and useful for the benefit of being able to

kind of navigate and pass the document. But based on where I come from in terms of my relationship to text geographies, those kinds of things, it's much thinner. And so I don't have that same kind of basis on which to reason out of the box about it until I get my hands on the ability to to actually process it and think about what significance it might have.

Adam Wern: Now, that could be my thing as well, that I'm not. I did my master's thesis 12 years ago or so, and I haven't looked at the diploma since then. I haven't done anything, any writing, and I also am a non native English speaker that also puts an extra layer or block. Here I read a lot of English things text, but but I don't write it, and that's why I'm reluctant to write for the future text as well, because it takes me five times as long and I need an editor in some way or proofread. And we don't have an abundance of proof readers here because everyone wants to write and no one wants to proofread. I think. Or more people want to ask.

Mark Anderson: Yeah.

Frode Hegland: So I got to jump in. I got I got to put my sword in and fight on this one. So really, really important. First of all, linearity is really important, really, really important. You cannot have academia without linearity because linearity is making an assertion, making a point. This is one of the first discussions Mark and Chris and I had when I started at Southampton. I was all about make it all hypertext protects and everything. But then you don't have an argument. This is something that Barbara also talked about. A graph or diagram is fine, but it doesn't tell a story. And this is why it's so bloody hard. Like the thesis, the last couple of months are hardly wrote anything, but I couldn't think of anything else. It's really, really hard. And I'm not saying we should make those long documents for everything. That is not what I'm saying, but I'm a little bit now polarizing myself with what you said because I'm very much agree with what you're saying. But just for balance, a sentence has to have grammar. All right, you can have the word, yes, no, fine stuff like that, but anything else, you need grammar. And that is the basic importance of text and speech. So if you have a longer piece, you need some sort of a threading. Right. So what I'm trying to write about the piece that you hated the kind of manifesto thing, it's really, really hard to write, especially in a community, but it has to be a little bit of an intro. This is important, but does it have to be always one linear, long thing? No, absolutely not. A lot of that can be moved around. A lot of it is arbitrary. No question. So the whole balance of how do you make a linear statement and how do you put stuff behind it is really, really crucial.

Frode Hegland: This is where I think we as a community really share perspective because

we talked about newspapers earlier. I don't read newspapers very often. You know, economists and a few other things, partly because it's so shit the way it's written. The story has to start with. John walked the dog outside and it was rainy, a bit of personal fluff, and then he saw it was the end of the world, right? So it's like, I like machine learning to get rid of that first bit and then it's bad copywriting with lots of repetitions. All right, this is not good linearity. But but you need to find out what happened, so if we can manage to get closer to. A little bit of a statement and connected, that's why I'm so on and on and on on about the concept stuff. I want to be able to write. I had a meeting with Adam today and we talked about B.R., we decided blah blah blah. If most of those words are defined, including Adam, that means that the reader can see, Oh, it's Adam Byrne, who is he blah blah blah, right? This is really important, but I still have to write that one sentence. And going to the whole visual matter thing, I do not think that visual matters would be a very useful format inside VR. Absolutely not. But what I do think it is is a bridging format. Because it's ridiculously open. That that's all I'm pushing for with that. It is it is, you know, every kind of thing should be able to go into our VR rooms. It should be able to do the kind of drawing we did. It'll have meaning VR, sorry, visual matter will be useless for that.

Adam Wern: Well, but isn't HTML even more open in terms of tooling and the actual ease of getting the data in and out of it? It's so interesting that I feel when now when I start with the VCR, that I can hang things directly onto objects or that I can in HTML that I can hang data or metadata directly onto text or paragraphs and even characters if I want everything I feel. And the tooling for that is so much better than when I worked with the Web 10 or 15 years ago. Now you can even make your own tags and it's fine suddenly, OK? And it's it's a new world to me, coming back from a from theater, coming back to computers and the and.

Frode Hegland: Ok, let's fight over this one because I think what you're saying is actually wrong because it is hidden. Right, you don't show the HTML that's hidden away, you show a rendering of that. That's where to me, it gets kind of dangerous and I guess that's why we have this markup stuff, which is kind of a hybrid. Right, because yes, you can do put a lot of stuff into HTML, that's really, really useful. You put the data there, but then over time, when things and tags and meanings and renderings change, that goes kind of a way that's just my concern.

Mark Anderson: But they won't change, though. I mean, they mean what they mean. I'm not sure I buy that argument, actually.

Frode Hegland: Well, if you look at older pages, especially if they have some kind of multimedia stuff to do with them, even basic stuff like look at 911, a lot of the stuff that was to communicate what happened on 911 is completely unbeatable today.

Mark Anderson: But that's not to do with HTML per say, that's to do with interim technical format. So the fact that you can't watch a video that was shot in the format is not supported now is actually nothing to do with HTML per say. That's a failure to serve digital formats.

Frode Hegland: It's not just about that, but OK. So the thing is. No. Ok, let's not argue about this too much, because in principle,

Adam Wern: If do we have any pub, which is the HTML version of the document, so it's a fair fight because I feel that you are talking about the kind of going back to the Wayback Machine and trying to browse a video. But if you have an E! Pub, that is a fixed thing, a document you own with a known format fairly compliant, the data is still there. So the question is whether it's visually represented to the user in some way, like your last page, last page with a visual matter. But that is also rendered. So it's rendered. So there's question about being shown to the user, and that's where I'm with you. Metadata is often hidden and then then we don't fill it in because it's hidden and we don't care about any. It takes too much time to fill in forms the things that are hidden. But if if the metadata had been the first page, the cover of your EPUB or thesis, you would make sure to fill in the fields because because that would be the first impression. Of your document, so I think it's more about actually showing metadata and make sure that people feel it in and that it's also an economic problem or an organizational problem, and a problem

Mark Anderson: That chimes with the facts of sort of an awful lot of data being the exhaust state rather than actually intentional effort. Yeah. And the fact that it's the fact that it's hidden. I mean, this is partly this gets back into all sorts of cultural divides between humanness and the technologies and all sorts of things that they're actually completely pointless

Brandel Zachernuk : Distinctions

Mark Anderson: To draw. I mean, it's basically, you know, the problem with some of the metadata is involves something you're not used to doing, which means to most of us, extra

work. And most of us don't like extra work. And it's pretty much that. Not sometimes because it's not made easy to do.

Frode Hegland: Most of the metadata and visual matter is free. It requires no effort at all.

Mark Anderson: No, no, no. I understand that.

Frode Hegland: It deliberately doesn't. It doesn't. There's nothing filling in. You fell on your name and the title. That's all.

Adam Wern: But just some of the metadata in HTML, the like headings and so on. It's there by default, of course, and it has more pristine text. Right now, it's not as bad as it was 20 years ago when integrity, character and code I live. Yeah, I have some special characters in Swedish that are always were mishandled, and that is a Latin script, which is, yeah, far better than all the others in the world, except for English. So I think,

Frode Hegland: Yeah, OK, well, fine. Let's not waste too much time on this aspect of it because, you know, visual matter is slightly archival also. But for you guys, let's say you're talking to me, a software vendor, somebody is an author doing a thing and now they want to have it in a VR space. Would you both prefer that it is rendered in HTML?

Brandel Zachernuk : So I don't have a preference. Like I said, I'm pretty promiscuous as to the data sources and the representation, so long as I come up with a mechanism for parsing. I'm not concerned whether it's it's represented in visual media style or if it's in anything else, as long it's consistently possible, it's something that I can make use of. I think I actually think that this sort of discussion argument over HTML versus other formats is not a distraction and actually central to some of the discussions that we ought to have here. And that one of the one of the issues with HTML, as Adam pointed out, is that its job has changed over the years. And so what matters about what is represented within it has led to this. We're talking, we're talking about a range of things. And one of the things I think you did very reasonably item is comparing an EPUB H html to to a to another fixed document because link rot is a separate question. But representational kind of deterioration is that is the thing that we're talking about in terms of what ceases to make things relevant. That preceded Brandel has a really good book, a good bit. And I guess in the new Dark Age, where it talks about the fact that the BBC produced a sort of a millennium edition or something for the doomsday book that was all

produced for the BBC and Micro in the nineteen eighties. And now twenty something years later, 30 something years later, people have to have a digital archive retrieval sort of rescue effort for the BBC micro thing. Well, the doomsday book is just as readable as it was thousand years ago or whenever it was written. Yeah. And so, you know, I think

Mark Anderson: That most of the early hypertext literature now can't be read. Exactly. Flash is disappearing.

Brandel Zachernuk : Right, right. So so so I definitely agree that these things are imperilled. And that's one of the reasons I believe that Vint is so, so excited and enthusiastic about having such a barebones thing. One of the challenges with it is that it has the exact same inherent dangers as HDMI out in terms of representational flexibility. The fact is that basic HTML has done so many different things for so many different people that that you end up with these garbage documents in terms of being able to pass because it's doing all of these different jobs at once. There have been some level, there's been some level of effort in terms of trying to separate people talk about using handlebars versus JSON JavaScript object representation notation in order to make sure that there are these things that remain separate. But for the most part that the things that are delivered to people as final documents are these disgusting intermingling of data and representation, and all of those representations kind of vary with the changing winds of what people decide to be able to put into a into a page. And so you know that the saving grace to some extent of visual matter as it progresses, is the sort of the ideological purity that the functional purity with which it may be carried forward. And so to that end, I applaud it. And so that sort of comes back and as a broader sort of restatement of so long as I can parse it, then it remains useful to me, but it's contingent on that possibility. And that's that's where what you're talking about within the context of HTML and its challenges, it has fallen down over the years. The reason why Wikipedia is such a great source is because it's comparatively clean again. Comparatively, it's not consistent. And as Mark will attest, no data source truly is. There's always a lot of plumbing involved in these things, a lot of a lot of janitorial work, some people call it.

Mark Anderson: But I mean, there's an interesting to try to get some threads here. I mean, you know, first I would say Brandel don't think you're not up with the hunt in terms of academic stuff. I mean, I come I mean, I think I think a PhD is merely a sort of log attendance. It's just can you get to the end because as Fred said, a lot of it, it's just sort of thinking, maybe not thinking about anything else. But it's the one of the things I was thinking about is in relation to, say, doing some visual matter is, I think you're absolutely spot on. And

what I mean, for instance, the visual metaphor is at the moment has stuff written in Big Tech because the initial use case we were doing related to an academic citation, which is a side thing, but it's just something that happens. But you couldn't. It's not organized as a corpus such that you could just put a you on everything, if only or even a URL didn't immediately die. So it has this. I mean, bib tech is quasi possible. It's like it has several different religions that live within it that don't talk to one another. And so they, you know, the parsing is a TED more complex than you want. But it was I remember the discussion at the time was a bit like going back to, you know, well, doing things with PDF.

Mark Anderson: The point was if you look at all the other formats we've got, it's the only one that is effectively, I guess, non-musical. And what if you take a word? Or something? Do you know that it won't get changed by a process? A PDF is broadly, for better or worse, baked in. That's that's the upside of it. Pretty much everything else is potentially a downside with visual matter. The fact that it's using Big Tech is basically we had to choose something. The biggest heavy lift at the time was doing the the academic referencing, which argued to and it was basically a choice between that. And I think although RSS, which meant your eyeballs bleed but just in a different way to Big Tech, so it wasn't exactly a stellar choice. And I always maintained from the get go that to anybody. Anybody prepared to ask or listen was, it's there until we find something better. It's not there because it's good. It's the least worst of the available choices. And it's which gets to your point that and my thought in my involvement in it in so where I try to contribute into it was exactly where you said, Look, if it's possible at the end of the day, it really doesn't matter. The main the biggest error we could make is to produce something that just can't be passed. So if I have to look at it as a legacy device and even if I have to go through several levels of paths for the really old stuff, it's not lost because we can track back and we won't need effectively an emulator, which is a whole different kettle of fish.

Mark Anderson: So I think that's that's. And so the interesting point about Will using visual matter, I think it's written to Anna's point is the thing I'm thinking interesting about that is the in and out. Can I take visual metaphor, put it in a visual visual space and get something useful from it? It's not that we want to look at the actual data. We will be wanting to look at a render of the data, but we might want to do something. Maybe, you know, we might, for instance, we might want to look at the glossary and the interrelation and, you know, sort of throw to authors like concept that sort of, you know, there is a 2D map and it probably is going to be a sort of 2D ish map even in 3D. But you'll be able to have you'll be able to interact with it more easily, perhaps. But also what you can take back out. You know, so because an

interesting question is, well, if you can't, then we've got more work to do on on visual matter. I mean, if it's if it's if it's the sort of, you know, if it's a sort of roach motel where the data goes in and doesn't come out, that that is a problem to address.

Mark Anderson: A couple of other things that say is in terms of visual matter, I'm well, Freud's thesis is effectively baked off now. Mine's done. And if I fix the issue with the with the ligatures, we've got a couple of bits of large. Um, metadata, you know, visual data that we can just play around. The point is there as complete as they can get there from known resources, you can talk to the author and say, What the hell did you mean with that? I know, for instance, I'm perfectly happy to take that and for instance, put more concept map data, which I probably manually said because I can't put the whole document into author at this point. But it wouldn't be difficult for me to take the visual metaphor that's attached to that and enrich it with some more stuff such as such as if it might have come from author and simply to allow you to look at it and say, Here's the thing what can I, what can I make of this? The answer may be nothing, but if that's the answer that's actually really powerful, that's all pertinent to what we're doing here. Because, you know, part of this thing is, well, how do we take what we have and put it in this new space in a way that's useful, which also makes me think about the escape and size, because necessarily often people start with really small representations because, you know, you'll just try to make the damn thing work at the outset.

Mark Anderson: But I am thinking, Well, how big should we be finding some bigger bits of data? And that's an area where I'm happy to help because it's a job in itself. Yeah, that's detracts from the building. You know, just having the thing that you put into the thing that you make is is a wearisome body of work in itself. So if can usefully do that, I'm really happy to help. And to that end, I still think some of the data that's within my overall citation dataset might be useful because, for instance, we could play with that on a linnaeus, on a on a temporal scale and get somewhere close, for instance, to the psychology article I must have mentioned moons ago. And it may be that even having done all that, that proved to not be useful. But I think the answer is you won't know until we've done it because it gets back to this problem. Is there something really exciting and interesting? And having this this this wider space, what's unfortunately less clear is what's useful within it, which doesn't invalidate the fact that it's interesting, but it still makes it difficult to know what we're going to do gainfully within it. I'll shut up and let Fraser be.

Frode Hegland: This is I'm really appreciating everything that's being said here, and it's lovely to fight with Adam on this because it's the good kind of fight because obviously we

agree on the end goal. So I wrote a few notes here, and I think maybe the top one in terms of VR is this is something to smuggle things past the gatekeepers. But there will be different kinds of data gatekeepers and all kinds of things. So this jokey definition of visual matters being just writing what the document is at the end. I think it's really, really important, and I'll just put my notes in there. It is far from perfect. It is missing a lot. So all the kind of stuff Brandel was talking about earlier, getting the key presses and the sounds and all of this absolutely fantastically useful. All right. All of this stuff has to happen, but it's a different thing for different use. You know, to open that and be our from author or whatever software. Yes. Right. But just to get the basic stuff, you know, here it is. I framed a little thing and this is what I want the world to know about it. Please, can you? Software wise read this stuff is really, really important. And also, it's been mentioned the whole link wrote every once in a while just to say the obvious thing citations are different from links and that they don't actually give you anything that just tells you how to find it. So when we talk about different levels of referencing a citation should ideally open up something for you immediately. But if it's missing, it'll contain enough information to help you find it elsewhere.

Mark Anderson: Well, it also tells it tells you what it is because it predates links when there weren't.

Frode Hegland: And it tells you that attributes of it so that you can go find it. But I think we should look at that same kind of thinking for other things. You know, not necessarily something that's cited specifically, but look at. You know, kind of hard to describe things anyway. Yeah, so, so so that's why I'm asking. There are many, many things we need to do, but I would really, really like a workflow of somebody sitting on a laptop writing some stuff. They open it up in VR. And you know, the way that I mentally picture it now is, you know, we're in this. We have the fake VR laptop and you take it instrument on top of it and it scans that text and suddenly you have the data, you know, just just a way to make it

Mark Anderson: The data, how it has the data.

Frode Hegland: But this is what I mean. Imagine this. This is me being really dumb on purpose, right? So in Horizon's work room or whatever you have your virtual screen, there's visual matter on the screen and you take a piece of software that is an OCR scanner. And it touches the screen and it reads that text, and that is how the data goes into that room.

Mark Anderson: So I think we're at cross-purposes. No, the bit you've described is just translation. I'm not confused about that. I'm saying when this data has got from your laptop file into the 3D space, then what do we do with it?

Frode Hegland: Oh, well, that's where it gets really fun. Because Adam, today he puts the book. And so it's just a rectangle, just flat. But then a lot of the stuff we talked about earlier can start to happen, like, I'm sorry for going on and on about it, but the whole concept thing. If the author has defined certain things as having certain value that is connected, that can be then literally taken out and be put in a space. And if you have Wikipedia behind that, for instance, that can connect as well. So you know, Doug Engelbart so and so oh, he lived in Atherton. Atherton, OK. It's a location. Let's do a map thing. Where is it? You know, you can go on and on and on. But these are the points where you don't have to go page by page. You have all these elements, you have the citations so you can draw in everything at sites. If the concepts actually is people, you can choose to have icons for the people on the side. This is crazy stuff that I think we could spend a lot of time in VR once we have this basic data to play with.

Brandel Zachernuk : Yeah.

Mark Anderson: Yes. To a degree. I mean, there's the difficult the counterbalance that is, yes, we can say, Oh, I can see all the things geographically, but do we actually? So you you can theoretically build everything, but it has to be built. And the things part of it is saying at this stage, if you're thinking practical terms, which aspects of it are worth getting past the barest bones so that you can actually explain to a much more dating wider audience, there's something useful there, because the sort of slight danger is that especially probably a more educated end of the audience, people say, We are fine, it's great. But you know, look, I have a computer. It does all this stuff already. So the comes back to the thing having taken. So the point is when I say, what do we do with it? Having had a hand in helping make this a matter, I understand what it's for and I have a strong belief in it. I'm just trying to think what, what, what tasks should we set ourselves to do? Yeah. I'm also wondering if the data that Adam has at the moment includes another useful thing is that David Lobo went through, and it may only be in his highlighted system at the moment, but he's done a whole lot of keyword thematic thematic tagging, if you will, of the documents that would usefully be added back into whatever data set Alan's got and was showing you, because that's another interesting sort of thematic stranding that the exactly the sort of way where a more malleable display

Frode Hegland: Market to address to address your question. What I refer to quite a bit earlier is there are many things we can do in VR, and I think everybody here should express what they want to do and see if there's an overlap. But in this particular context, what I'm talking about is augmenting someone's ability to write a thing where they define the details, the whole concept thing and then publish that in a frozen form where someone in VR can read that linearly if they want to. But also all that extra highlighted bits of the visual matter metadata is accessible for them to view and flexible ways. So they're reading something and they come across. And I think this is very TED Nelson. Visually, you know, you come across here is bracket one. Twenty six, you click on that or whatever. And then that document, there's a line to it. You see it floating in the background. You can choose to view the whole thing or not so visual that actually gives us a lot of data to interact with. Mm-hmm. And that's all I'm saying, so I think that that in a flow as one of the things to do. One person reading one document written by one other document or other person actually has a huge amount of actual real interactions and demo because, as Doug used to say. That while actually, no, my teacher, at least I don't tell them, show them Doug only ever made progress with a demo. This is one opportunity we have for a demo. I'm willing to support many others, but this is what I was talking about. Yeah, Adam. At a Mr. Mute,

Adam Wern: The thing is that I'm in my VR honeymoon phase right now, so the I'm I get so excited by the things you can experiment with, especially where like hands spatial audio. I really now when I've tried the spatial audio a bit more with you from the end, it's really important to place. It's so. You're opening to actually have spatial audio, if it opened a new thing for me here. Just as with the hands actually seeing your hands and pinching things and taking things and enlarging things with your hands in the different apps and even in the browser. To me, that is fantastic and also nothing I hold on for.

Frode Hegland: Oh, I didn't realize was visible yet. Sorry.

Adam Wern: Don't do graffiti when I speak, I'm easily distracted. And the good thing here with with VR is that there are so many or so few fixed interactions in place when it comes to text or even the hand gestures. What they mean and there is no overriding system telling you what to do. Like in every operating system, you often have to fight the if you want to do something novel or a bit more, maybe explore something better. You have to fight and try to disable and come around the inbuilt functions, like text selection in the browser. If you want to do something different with text selection, you almost have to render every character by yourself on a canvas. It's the idea to really fight. So in VR, that is open and we have the

opportunity to and many things don't translate well, like text selection in VR. You have your hands and controllers. It's not obvious how you do it. But if we give the technologists, I'm one of them, of course. But too much time they will have. They will translate everything from ordinary operating systems into flat into flat canvases with awkward text selection and not using the high fidelity hands, for example, or where it's slightly more analog or so. So to me, it's much more urgent to get better interactions, new embodied interactions into VR than to to doing the kind of bringing in Wikipedia, because I think that it's easier to do later on. So it's much more urgent to be to find the user interfaces than to to do the slightly more visual work.

Frode Hegland: Yeah. And I think Brandel agrees with you because he's doing a lot of that. I think we should do that, but I also think it's important that it's somehow based on real data because otherwise it becomes very removed from the world. And that's why something like visual matter might be part of it. As at least, you know what, some of the data's there anyway. Maybe, guys, I just saw this thing come out. We should all meet. And here it's one of those multiplayer run around and it looks very polished. It's very game ish. But we all have Oculus now. It's it's twenty three pounds, so it's not cheap. But then we can do some swimming, jumping and spatial audio and at something something to consider anyway, that we meet in a few of these spaces and see how it feels as long as we don't walk into each other at home,

Mark Anderson: Think something that? Go ahead.

Brandel Zachernuk : But that's something that that that slow Mira demo that I produced a while ago is for being able to demonstrate for people and for in a safe space for themselves is just how intrusive and how transgressive people are able to be because it must actually happen to you. You basically wouldn't believe it. So, so yeah, it's neat to know that you had that experience and can be aware of the way in which it needs to, that the concern needs to be brought to bear against the way that co-presidents can occur within within sort of a co-located virtual space because there are all sorts of real crazy rules that we've set up.

Mark Anderson: You might have to oculus boundaries. You know, one is, you know, one is sort of the outside of the room into the room. And then depending on how introvert or extrovert you are, you have another boundary we decide to around you. Whereas also out of the room,

Frode Hegland: Guys, I have to go. It's past the hour and I have to feed the family. But

Brandel, can you please on our blog, add some links to the real VR experiences you have so we can go into Oculus and experience what you built. That will be really, really appreciated because if you add it there, then once you're on that page, you just clicked in your own.

Brandel Zachernuk : Sure, you know, that's a good point. Ok, I can do that. I can send a link to the sneaky. This is the link for the for the Oculus experience or actually presents. So if anybody jumps on there, then you'll have the ability to move a thing around and you'll see my camera and my ball. But also, if you do this on a quest, then you'll have your camera. Whoever is in there is blue right now. You presumably see my camera and you'll also see my hand and I'll be colored the same color as my ball. And it's just a very, very sort of basic for first foray into making use of a web interface to be able to transmit this data. It's not as fast in terms of the latency that as I would like. One of the things I'm looking at is making use of a binary socket or a pure connection such that it doesn't need to be coming through and multicast everybody you make.

Frode Hegland: Sorry. Ok, then I am. Tagging you, OK, I just added it to our Web. What's it called sneaky VR paste?

Brandel Zachernuk : It's called various. So I didn't choose the name. That's something that that just comes as a consequence of of making use of the free tier of glitch service.

Frode Hegland: So what do you call it? This thing,

Brandel Zachernuk : It's just it's it's a it's a it's a multiplayer boilerplate.

Mark Anderson: Okay, interesting.

Adam Wern: I'm very interesting as a next step to because I said to Brandel that I was going to look into multiplayer, but I had nothing to multiplayer. That is, why am I doing something light textual kind of drag and drop from a from text and actually getting text in there to multiplayer with it was obviously a first step. Uh, so I'm very interesting to get the multiplayer. Into that massive multiplayer thing, because you have a

Brandel Zachernuk : If you have a glitch account, then then I can show you give you admin rights to the project so that you can pull it down and take a look at it. It's just using Node

Express and then socket to be able to do the connections. Yeah. But yeah, I wanted to have something sort of simple enough to be able to branch off and do more specific things.

Adam Wern: That's super cool and we should get some. I looked into web or it's called RTC RTC. Yeah, I looked into that and it's doable. It's just a lot of work, but it's not and not extreme work, so we should be able to it. I've been playing with an idea that you doing. I want to try hands as I want to write a run, an idea with you quickly here, just kind of being a traditional type sector with actual type, metallic type, but you have words instead. So you have lots of because in VR, you can have many boxes and not just uppercase lowercase boxes with with type, but you can have words and you can also have words in different layers as well. So you don't have to respect the physical boundaries. You can have words in different layers and just go down deeper to get new words or go through a letter to get combinations of for word. So you have I want to play with the idea that you pick words and put them together with your hands from the kind of typography, Old-School typography, and also that you could take the word and dip it into a kind of a synonym bowl and get the synonyms for it. So it's really hand hands-on, not just that you click on a simple synonym. So but so it's really everything is done with hands, you dip word and you also took words and ripped them apart and put them together as a unit. So I looked at your what was that called the lead text editor? Yeah. So even that, but even more removing the boxes are making the word floating. So it's even could like twist of the word. I really liked your demo.

Mark Anderson: It's not matching Adam in a virtual letter press shop

Adam Wern: In a switch to switch up

Mark Anderson: Right to work, and I make stuff on a letterpress.

Adam Wern: Yeah, in a sweatshop, we're making essays for Frodo.

Mark Anderson: It's something that you find you are in a virtual sweatshop working for somebody else.

Adam Wern: I found that the idea. Do you have any idea what you could do more than I find the idea of actually breaking synthesis apart by pinching it at the break point and taking it apart? It would be very interesting instead of a kind of cutting it with the tool, but actually

ripping it apart with the two pinches or putting it together as a as a. It's just an idea that

Frode Hegland: I just see your hands that's based not Brandel that you made. Listening to you guys in that space.

Brandel Zachernuk : Yes, now I can see you on my on my two day thing, I might be able to jump in and be able to see you as well. I know, I agree, Adam. I think one of the things that I was really excited with, I don't know if you saw a smart triangle, but the idea of making a calculator with no buttons and actually representing those things visually sort of points to the fact that the mechanism through which you undertake a task doesn't need to be as tightly bound to the textual representations that we make use of today. And so, you know, to that end, I want something that I've been playing. I have played with a lot is what is Photoshop Protect? And so having something like an opacity slider which dictates not actually the sort of graphical opacity, but the textual opacity. So taking a list of synonyms from a thesaurus and replacing sort of simpler words with more opaque ones. My father's been involved in government and NGOs and stuff like that. And so they always say, why is it? Why is it 50 cent word when a two dollar word will do? And so being able to have an opacity slider that you can actually manipulate in order to wrap things up or down. I think it's really interesting, as well as things like in-situ thesaurus kind of alternative recommendations and things are very appealing. So gestural manipulation of what are considered to be textual things help to recognize that writing passé is not the process of inscribing specific glyphs onto a thing or punching keys, but the process of codifying thought in a way that can be represented and retrieved by other people at different times. Yes.

Adam Wern: So and so

Brandel Zachernuk : I'm glad you like it. And so that means that what rating is as well as being the most important thing that that humanity has ever done. We'll continue to be, but we got it wrong. We're we're vastly too specific with regard to what it actually is as a core activity. And this is an opportunity to go, no, we right by resolving fault and we can resolve thought by dipping stuff in and sending them. I love it, but it

Mark Anderson: Sounds to so, you know, maths, which alludes a vast amount of humanity past the most simple level. There's something else that's ripe in that sense. So there's a closer interaction. So if you need to understand a bit of geometry or calculus or whatever doing

doing something and that actually that is in fairness, quite well touched on in what's his name's Victor Victor's thing, and I thought he was spot on there.

Brandel Zachernuk : Well, he's he's much more confident in mathematical concepts than in education or information, even in communication, per say. I mean, he's he's no slouch in terms of public policy, but in terms of his actual academic understanding what it is to educate and to communicate, not quite the same. So yeah, I agree. Cold, so yeah. Adam, if you if you want to send me or if you're on a glitch already, then I can give you the access to the code base. I mean, everybody can. It's not that it's private or anything, but you do, I believe, need to have a glitch account, which is right.

Adam Wern: I want to get one. I'm not there yet, but I will get the email.

Brandel Zachernuk : Yeah, yeah. So whenever anybody gets those things, then they can take a look at it and you don't need to be a developer to want it because you can also fork it and then give it to other people and stuff. I'm not. I'm not concerned about it. I just I just wanted some barebones thing to start, start being able to reason with these things and kind of communicate. Another thing that I'm really excited by is the fact that I realized that pressure sensitivity is available in Chrome nowadays so I can use my Wacom and I can actually. With this, I can use my Wacom and a virtual reality headset at the same time, call all those things together and have a really, really high fidelity drawing environment to whatever extent I desire. So, you know, there's just so many incredible opportunities, right? Yeah.

Adam Wern: One thing when I have you here on the phone or and so passthrough is currently it's not available, you know, but I wonder what the hacking hacky solution would be. I wonder if one solution would be to stream a video feed from a kind of a duct tape. Raspberry Pi zero two or with the camera module, I have one laying around here somewhere, so a duct tape it to the headset to actually get passed it through through a large right like a web connection. That would be one way to kind of get bigger because I want to see the see my my iPad with the Pencil to get. It also has pressure sensitive. In some way, it kind of. And also this keyboard. And so to get the keyboard in there when you need a discrete device. Yeah.

Brandel Zachernuk : Well, iPad actually also gives you the three to three degree of freedom orientation information. So you'd be able to know just and not not just the pressure sensitivity

on the surface, but also the telltale.

Adam Wern: I played around a lot. Yeah, it would be excellent, right? With it in the air, but yeah, to your hand? No. Ok. I have to go to my family as well. Now it's Friday evening here and I skipped out.

Mark Anderson: Very, very good passing thing on a practical note is just if, if, if there's anything in terms of causing the, you know, the virtual matter by all means, give me a prod the conceptual end I can, I can consult. But if it's just, you know, why is there a bracket here when there shouldn't be or something? I probably might be a better starting point as I'm responsible for some of that. Yeah.

Adam Wern: Awesome. Yeah, I'm I really mark. I'm sure we will get both photos in there and I passed PDFs and make rectangles of it. But it is non interactive. I can't really select text because it's really hard to to find out which character it is in practice, but it's doable, but it will be a lot of work to just do that. And and with the mark and mark with your data set, I am sure we will get to get to visualize that data, set the hypertext data set in some way in in three dimensions. I think it's very suited for that. So we will do that. It's just that I'm so into the embodiment of parts, and that was a newish, if not just shiny tool, but getting your hands back. It's really important for me. At some point we may get the eyes and feet back as well. I think feeds are completely forgotten, just the dancers in the world that like the feet. But but that's for later.

Frode Hegland: Ok, well, it's really, really, really important to hear you say that. I mean, I'm raising a child and he is a bit of a dancer, and I don't want that to be lost either. Of course, a lot of the work we can do sitting down. So, you know, that's a whole different thing. And then they have the issues with movements. But and also you refer. You said earlier, Frode Spatial Meta and it makes me feel a bit horrible when you say that, even though I know that I kind of came up with it, but it's it's an invention that is so obvious. That I hope that something we can really share because and it's only one way of one communication medium of things, so if you want to change what visual media is, let's let's do that together anyway.

Adam Wern: Yeah, but I say it is. I see it as a thing at the end of the end of a PDF because metadata is not your invention. One thing which is always been there everywhere after the first glyph stroke or a stone or a leather burning or a painting in 50 years ago, we had

metadata in some way. So. So and I worked with metadata and RF and so or the database. So I feel that visual matter is your thing. Metadata is everyone's thing. That's my distinct distinction.

Frode Hegland: It's yeah, that kind of makes sense. However, it's worse than that because if you go back to Mesopotamia and you look at the origins of cuneiform, what we call today, the telephone or however you pronounce it, that was actually from them at the end of the document, it would say this was written by scribe so and so working for so and so. So the very first

Mark Anderson: And he didn't pay me.

Frode Hegland: Yeah, exactly. There can be little comments like that. That's exactly right. So now that, you know, only in the 17:08 and hundreds, it moved to the front of the book. So all I'm trying to do is if they can say what it is, you know, we can say what it is anyway. The interaction in this space are important and I hope to see you guys in this gamey thing after dinner. I'm probably going to go in there a little bit. Just move around. And it's just not my kind of world, but it looks. It's got great reviews, so maybe it's something we can do requests.

Adam Wern: Have you tried Hand Physics Lab?

Frode Hegland: No, but I will do that.

Adam Wern: Probably that because it shows what you can do with the and to which Fidelity remember to have good lighting because Oculus has a camera based and tracking thing, which means that to get good contrast for the camera and the computer to work with, you have to have good lighting. So don't sit in the dark closet when you do this.

Frode Hegland: No, no. I have noticed that that's been an issue. It's actually told me I low turn the lights on. Ok. This was lovely, guys. Maybe see you on the VR space. Look forward to Monday.

Mark Anderson: Okay, take care. Bye.

28 January 2022 Chat Log

- 16:00:09 From Frode Hegland : <https://youtu.be/LclFwUrwozU> today's music playlist.
- 16:10:26 From Frode Hegland : Have you seen this? Universal Control today! <https://www.macrumors.com/2022/01/27/hands-on-universal-control/>
- 16:14:00 From Frode Hegland : It's an Apple step to VR integration I think
- 16:20:03 From Mark Anderson : Language & fixity - or lack thereof. Reading "Is That A Fish in Your Ear?" <https://www.amazon.co.uk/That-Fish-Your-Ear-Translation/dp/0241954304>
- 16:20:14 From Frode Hegland : Document in this context I mean something someone has chosen to make public/publish
- 16:20:29 From Frode Hegland : From the author though, not objective
- 16:20:42 From Frode Hegland : And should be able to update for specific documents.
- 16:20:53 From Frode Hegland : VR can truly unleash Hypertext.
- 16:47:11 From Mark Anderson : Ward Cunningham noodling on adding more metadata to wikis: https://twitter.com/WardCunningham/status/1486194868284129283?s=20&t=fCRFXfTh6ns2at0-rvUI_g
- 16:50:04 From Mark Anderson : I'm thinking of Terry Pratchett's 'suitcase' character.
- 16:57:42 From Mark Anderson : Love this discussion of granularity.
- 16:59:41 From Mark Anderson : Yuor making a (meta-)trail.
- 16:59:52 From Mark Anderson : You're.
- 17:04:33 From Brandel Zachernuk : Google makes use of 'bounce' actions as a negative indicator for search results
- 17:10:27 From Mark Anderson : Saved query result, on a temporal axis, also has more pertinence as there *may* be more recent changes.
- 17:12:20 From Mark Anderson : Interesting metadata opportunity - does the saved 'sculpture' have a pattern /'shape' we can find elsewhere.
- 17:12:50 From Mark Anderson : IOW, surfacing relationships we don't yet 'see'.
- 17:14:41 From Mark Anderson : Perhaps consider a neologism for this new, expanded, document to cut free from legacy aspects of 'document'?
- 17:15:20 From Frode Hegland : Yes save sculptures as well! 'Publish' also many rooms! But we should focus. What APIs do we expect Apple to 'give' us and how powerful will web

tools be? ‘3 floors’ (experiment wide on roof, workrooms on main floor and basement with data plumbing)

17:32:31 From Frode Hegland : Linearity is important and hard and does not cover everything

17:35:41 From Brandel Zachernuk : Have you read Andy Matuschak’s “Why books don’t work”? It’s a neat articulation of some of the presentational tropes you’re pointing at with your critique of newspapers: <https://andymatuschak.org/books/>

17:36:22 From Frode Hegland : Will read, know his work and he is in my book but not seen this one

17:37:49 From Brandel Zachernuk : I disagree with his conclusions (he’s looking at everything through spaced-repetition tinted lenses) but the recognition of formal concessions based on a hedged guess about what people will do with a book

17:52:02 From Frode Hegland : VM: For the long haul and how to smuggle past gatekeepers. Let’s not make perfect enemy of good. Let’s look at different data types for different aspects. (Reference means how to find the source not specific address) BibTeX style is simple: something = {this thing}

18:04:01 From Brandel Zachernuk : <https://various-sneaky-paste.glitch.me/3d>

18:04:09 From Frode Hegland : <https://futuretextlab.info/category/vr-resource/>

18:05:39 From Frode Hegland : <https://futuretextlab.info/2022/01/28/multiplayer-boilerplate-brandel/>

18:05:42 From Frode Hegland : 1 min...

18:13:16 From Frode Hegland : 1 min again

18:15:28 From Brandel Zachernuk : Oh I have a meeting now, thank you for this and I’ll see you all Monday!

18:15:39 From Frode Hegland : Yes, and maybe in that game!

18:15:43 From Frode Hegland : I’ll be in later today I think

18:15:44 From Frode Hegland : Bye!

31 January 2022

31 January 2022 Video

<https://youtu.be/HoU0waYW-SQ>

31 January 2022 Transcript

Note: Accuracy of transcription and the assigning of speaker names cannot be guaranteed.

Please refer to the video in case of confusion or concern.

Frode Hegland : Hello, Peter. Good morning. I rushed home, I'm just making coffee now. So, yes, it's all about coffee. How are you doing? Very good. Excellent. I saw Mark a little earlier today, I'm not sure who else is coming today. Yeah. What kind of coffee do you drink, Peter?

Peter Wasilko: I usually drink decaf. Now that's the intelligent thing to do. But sometimes I'll slip a little cocoa powder in to give it a little bit of a chocolate tinge.

Frode Hegland : A little bit of a mocha. Yeah, that's nice. Just blowing a scope top one now. And I'm building a set of.

Peter Wasilko: User interface components in EMBA for all of our future projects. And first thing you want to say more. Well, so far, I'm having single selection and multiple selection. Accordions tab panels where the tabs can go on the left, the right, top or bottom. Overlays where you can have more than one layer simultaneously position at the same spot. So assuming that they have transparency, they all stack up and you'll be able to see more than one at once. So that be sort of like the equivalent of a geographic information system where you could add layers and layers out. Yeah.

Frode Hegland : Yeah, we should look into this kind of stuff now that we're going in more and more into VR. But one thing I have to tell you is the other day I had incredible motion sickness in VR. Huh. So it is about learning what to do. It was downloaded a game, a

multiplayer thing. I thought, you know, some of us could get together and but I was dumb enough to not do what they call natural motion, basically walking around rather than jump, jump, jump. And that made me really nauseous after a while. But sitting down in a room and just looking around, never. Well, that's good to know. Very different situations, I remember a Brandel talking about something like this a while ago, so it was kind of interesting to experience it first hand or first had.

Peter Wasilko: I'm betting there'll be less of a problem with the much higher screen resolution than Apple will have on its device when it comes out.

Frode Hegland : I don't think so, because it doesn't feel, you know, I don't really feel the resolution or the quality of the graphics in this, but it was the motion that, you know, I was walking around, but my body wasn't following me. It was horrendous. Anyway, let me just go to my desk.

Peter Wasilko: I'm sorry about this. Oh, no problem. Oh, so you mean your avatar in the virtual world wasn't tracking at the same pace that your physical body was moving? Oh, I wasn't moving. I was sitting down physically. In real life. Uh-huh. And that was the problem because my avatar was moving. Ah, OK, I think I see what you mean now. So then if you've been walking around physically in the room while your avatar was moving, that wouldn't do it, but because you weren't physically moving and your avatar was moving,

Brandel Zachernuk : That it OK? Well, I don't think

Frode Hegland : That will be much of a problem in the hour, but it was interesting to experience. That's for sure.

Peter Wasilko: I got that in one of the flat virtual worlds, and my avatar was ice skating and the picture in my window was a first person view of the ice skating rink spinning around while doing the skating maneuvers, and that just threw me for a loop.

Frode Hegland : Yeah, I mean, I know a lot of people have problems with just first person shooters, and that, I think is largely frame rate like you suggested, but it's very interesting when your entire field of vision is. It's taken up. Who have we got here, I thought Alan couldn't join us today.

Peter Wasilko: Hi, Alan. Hey. Hey, Peter. Yeah, I mean to drop off early. But I did get some meetings canceled today, which was very nice, so I figured I'd jump in.

Frode Hegland : So I just have to do my coffee running late. It looks amazing. People exist for coffee, but I'm not sure how. So it's been an interesting weekend and day here, let me just put this down to report to you guys. So the the weekend was a bit like weekend not long ago where I was really, let's put it honestly depressed. About this stuff. And, you know, that's OK, that's something that happens, but it was based on. But primarily what's relevant to this, I couldn't communicate, and I'm talking mostly about visual matters, not just the entire field. The benefit or even what it was. I felt really stuck, and then I was stupid enough to give a document I was trying to write to Mark Anderson and I know he can watch the recording, but sending it to Mark, he's very detail oriented, so he is absolutely the worst for this. Again, I know he can watch the recording and it said would love whoever and. Good timing. Just getting to a really quick conclusion here. Kind of depressed this weekend. Didn't know how to communicate the benefit of visual matter or even what it is. And then this, you know, how to kind of an argument with Marc Andreessen is looking at a different point of view. Basically trashing my presentation is a close friend.

Frode Hegland : He's allowed to do that. But then today I went into town, went to my club where you all have to come, when you're in London, by the way, it's beautiful. It's called the Groucho Club. And then I had this thought that what I'm talking about is probably best communicated to outsiders as smart documents. And coming from that perspective, I'm not. I'll send you something later. Let's not waste our together time for it, but saying in the beginning, you know, smart documents, we get these benefits. By the way, it's not a new document formats. What we already have is just writing stuff at the back. So I talk about structural benefits, which gives views and so on citation benefits, which gives a citation benefit in the document and how you can see it connected. And then there's that section on B.R. saying you can take things into a VR space and have these semantic meaning bits of the document extracted and have it saved in a new document. New appendix when you go. So just the term smart documents, I think, may be a bit useful. What do you guys think, Brendan? A 10 second summary of my frustration. How to communicate visual matter. Maybe I call them smart documents. And there we are.

Mark Andreson: Wow, what a some.

Peter Wasilko: A quick thought on, oh, go ahead. Hey, good to see you.

Mark Andreson: You too. No, please carry on.

Peter Wasilko: Well, I'll just take a quick thought on it because I I literally just saw this on Twitter. Someone talking about the old thing of like, Hey, JPEGs are great. I mean, slugs are great. They're they're scalable. They're obviously preferred JPEGs Rastas old school. But there are some ways where Rastas good. And I just thought, as like PDF PDF are the raster images of documents. And what we've been talking about is like, maybe the SVG, like maybe what's missing is that there isn't an SVG equivalent to document. I mean, it's a very broad, loose, troublesome metaphor. So I'm not like, you know, holding onto it, but there's something about that where it's like, Oh, I can do all this in SVG. But then at the end of the day, there are a lot of times where you could take an SVG image and convert it to a flat raster image, because that's more portable. And and so they both have value, but they do different things and kind of what we're talking about, it feels like it's it's de rasterization and trying to turn into vectors of thought inside the PDF.

Frode Hegland : Yeah, that's that's a thing, by the way. Brandel, can you hold your hand up, please? Like physically just like this? Slap, you should have told us about this really cool consciousness and VR thing. I saw it randomly on Twitter that it was happening, I would have loved to be there, but I couldn't plan for it, so slap slap for not having put it in our community thing.

Mark Andreson: Oh, the

Brandel Zachernuk : Twitter space conversation.

Frode Hegland : Yeah, it looked really, really cool. I tried to catch up with it, but I would have been lovely to be there live so.

Mark Andreson: Oh, I didn't know

Brandel Zachernuk : About it, it wasn't planned, it was it was just something I dropped in

and it was OK. The main person involved has a tendency to be pulled into some pretty weird philosophical directions. And he was kind of grandstanding and didn't really want to have anything other than an opportunity to kind of demonstrate prowess and various philosophical kind of domains, as well as being supported, by the way, for emphasis. Yeah. Yeah, yeah, no. I didn't say who it was, but yeah, so it's interesting. And there were a number of people who are expert practitioners in the field, but I'll do it again if it happens. But it was, it was. It was weird. So don't worry too much.

Frode Hegland : Ok, that's cool. Just thought I'd do that for fun, I say. Peter has this handout.

Peter Wasilko: Yeah, I was just thinking that I usually use the phrase enhanced as opposed to smart. Just because smart can get conflated with eye stuff and people might think there's some sort of A.I. working in the background just wanted to share that idea.

Frode Hegland : Yeah. I mean, I like to use that, I try to use the term augmented

Peter Wasilko: Because that's very good too.

Frode Hegland : It also goes into, yeah, I don't know. Ok, guys, what do you think that document has visual matter? What should we call it? An augmented document or a smart document? Augmented hand up

Peter Wasilko: Take augmented over smart. I need to.

Frode Hegland : Yeah, you guys are terrible. I'm sorry.

Mark Andreson: No, I'm sorry. There's nothing wrong with smart. It's just it's been. You know, the trouble is, once the marketeers get their hands on it, any good term gets rid of sort of decent meaning. And so it would work. But I suspect it carries a lot of wrong connotations now or just reeks of puffery, which again, is not what we're about.

Brandel Zachernuk : Yeah, well, so to that end, I would say one thing that Apple has done has drawn a distinction between between smart and other things, and that smart means something that a computer has decided to do for you that has sort of a composite behavior or

action. So smart filters, smart folders and they're made for your convenience, but not necessarily. But it's kind of more to do with preemptive actions taken on behalf of your your expected interest. And so to that end, I do think the annotation sorry, that augmentation is probably a better kind of line of kind of reminder, the better the better handle in terms of the other places that people have called it.

Frode Hegland : Ok, well, I'm very glad to hear this because Mark, I was ragging on you the whole time until you came in here to say how difficult you've been and how useful it has been. So I'm glad to hear this because that means, first of all, that, you know, my company is called the augmented text company. And by referring to this document as two documents, it refers to in the same way that VR is in its own space, air is on top of something. Visual mirror is on top of something. So I'm perfectly happy, so with your approval, we'll call it that, but then I have a big question for the community. And that is today I'm going to publish the first issue of the journal. There won't be that much in it. Primarily the Barbara Tversky interview human transcribed, plus all our conversations and rough transcription. But what I was wondering is, what do you guys think now that we're inviting more people to contribute to the book? Should we instead only have them contribute to the journal? So, you know, one article here, two articles there, and then at the end of the year, the book Volume three becomes all the articles from that year. So it's like a bound edition, what do you think? Otherwise, I think we might be stretching ourself thin or diluting ourselves.

Peter Wasilko: Great to acknowledge where we might be stretching ourselves, then that is very important. I think it's a great model that one feeds the other. As long as it doesn't create more stress because rather than, I know, it must have been incredibly stressful for you to get content for your book, right? Over and over again, is that going to be less stressed if it's in a journal for

Frode Hegland : The first one was stressful, but as it should be, it was a book. The second one was less so because suddenly it's a series and the second one I did an author and expert at PDF. I didn't use InDesign. Because, you know, the knee just wasn't there, right? So for this one, Mark and I are working together on the production, so it'll basically be somebody that we like, gives us an article in word or preferably author. Bang it in there. Make sure the citations and stuff is correct. And we're done when the book is to be published in December, which is copy and paste, because of course, it'll have visual matters, so that means anything behind the scenes will come with it. Mark?

Mark Andreson: Yeah, I was just going to say that I'm sort of I'm whilst this was going on one of the things I sort of did well, actually, things were Peter. So running it to ground because I was thinking, we keep talking about journals in the spirit of, you know, Doug's unless I thought I've never actually seen any journal data. And Peter Carney, pointed me to a link I put in the in the sidebar from, I think, to computer history. I mean, it's interesting because when you look at it, it's obviously plain text because it goes back a ways and in a way, it's actually almost like a sort of centralized file store. But you, I can still see in it the sort of the bones of what we're doing. So the the the journal to me is is is the central sort of skeleton of onto which we will attach anything of note, and it might be as as the woolly, as you know, the source recordings of these talks, you know, which we've agreed, you know, not everyone is going to watch from end to end, but may be useful for running down points. And then there'll be the more sort of high profile things like the guest speakers or articles that people have written either ourselves or others to put into the journal. So I think that hangs together quite well. But as I say, it was interesting after a while of looking finally actually seeing what people were putting into the journal back in in last days.

Frode Hegland : Yeah, thanks for that, Mark, I mean, this journal, I am potentially thinking about it as an academic journal that doesn't have credentials yet that we're making anyway. Ok, good. We'll do that. So that means we'll keep inviting people to the monthly meetings. Suggest people contribute to the journal, which will be the book, so we don't need to waste more time on that here. Of course, if you have any issues to discuss. You're very welcome. And the other thing is spoke the Mozilla construction environment thing to make VR environment spoke is really cool. I haven't actually played in it yet, but there's a lot of interesting stuff that can be done. Brandel is that one of the environments you are in when you make things?

Brandel Zachernuk : No, I haven't used anything beyond the Jazz Library to construct those things. I tended to shy away from anything more abstracted and high level than those because I. For the most part, haven't seen the benefit that they confer to somebody who is concerned with problems at the level that I am. So there are other things like A-frame, which has modules and components, but it didn't never seem to help in the way that I felt like I needed help. So I haven't used hubs or spoke to create anything yet, and I would be very, very eager to find out what kinds of benefits flow from using it. And yeah, so I don't object to people using it had any bad experiences or nooses. I just haven't.

Frode Hegland : Yeah, I had a question of can you take virtual desktop screens on there, if

you could, then it could be powerful for a kind of VR version one or level one. Oh, that's a question, guys. You know, self-driving cars have different levels of self-driving. I guess it would be interesting if we had the same for VR like VR level one is go in and play with a tennis ball. You know, and then you have VR level five where you are a whale. Or at one with the information flow. I don't know. Any thoughts on that?

Mark Andreson: Sorry. I now have an image of being rear ended by a VR two level driver, you know?

Brandel Zachernuk : Yeah, I think that would be an interesting sort of framing for a taxonomy of virtual experiences and things. I mean, it relies on the virtual reality itself lies on a broader continuum of of transhumanism. And that's ultimately something that I'm rooting for wear because being a whale at some in some sense means having the visual appearance of stuff. But the way that whale's eyes are pitched in, they're into pupillary distance is vastly different to ours. But also the sensory information that we get across the surface of our bodies is incomprehensibly and an almost incomparably different. So so that that Level five sort of cited does flow into, well, if that's level five, if that's the final thing, surely that's not the last of being a whale. It's been my dream to make babies into seven point seven. Ever since I was a teenager, I just think that they'd be better at it than airline pilots. You know, there would be airline pilots, but they'd also be airplanes. And so, yeah, I think.

Frode Hegland : Adding to the chat.

Mark Andreson: Just because it's a while some people been by. So I've now been. So I now have one of these things, OK, so it's actually been really interesting sort of getting into it now we're actually having an interesting conversation again with Dave Miller this morning. Sorry, different chat. But one of the things it took me a while to get to because I was I was trying to. I was trying to get the sort of focus thing right? And then I and the penny didn't drop until I was watching an optician describing, These are Fresnel lenses. Oh, OK, so they have a really, really small focal point. And so one of the things that's interesting that nowhere when you start does it tell you, is that move your head, not your eyes. Because it's quite natural if it's something's over there, I won't necessarily move my head just to see it because I have eyes that do that for me, whereas actually in the current, you know, I know it's only a temporary stage of the text. It is at the moment, but actually it can't do that and it would rather your eyes state, you know, so you get it set up as best you can. So that was actually quite an interesting revelation. And if I sort of stuck within that, then generally things seemed a lot better. I think

if I wanted to do any real text work in the environment more than just reading your menu, I think I'd probably end up needing to put some lenses in because of not not because of emotion, but just just eyestrain and reading fuzzy text. And I just want to I just want the rider. I'm not saying that as a negative. That's just an experiential marker that I'm sort of from from my experiments thus far.

Frode Hegland : I did get the lenses. They don't actually help that much, right? Hey, early days, early days, guys.

Mark Andreson: Yeah, exactly. And if we don't try, we don't find out. I mean. And so in a sense, that's one of the useful things that that's one of the sort of these sort of things I think that are useful in the journal Science because it's exactly the sort of tangential stuff we don't write down on the ground. Well, I think it's going to get better.

Frode Hegland : I say Brandel has his hand up, but can I ask you, Mark, to write some journal entries on this? Then it will be a very.

Mark Andreson: Yeah, sure. Sure. Sure.

Frode Hegland : Yeah. It would be really brilliant. Yeah. Sorry, Brandel, it's good.

Brandel Zachernuk : It's good to hear the recognition and also the correct kind of enunciation of where some of these sort of sources of discomfort come from. Mark Another aspect of it is, as you mentioned, particularly working with text. There's a tendency to want to put things closer than it then is comfortable to focus on in a mere distance. So we talked a little bit about the concept of Virgin's accommodation conflict, where we tend to have this. We know in all other walks of life in the real world. When we look at something this distance, we simultaneously converge our eyes to it and focus to the specific distance. The fact that that all devices hitherto and and expected to ship in the foreseeable future have a fixed focal distance. Not only does it mean that there's a conflict there, but it also means that it has to be at a distance. And so people pick a specific distance and then anything close to them that is causing. Chronic eye strain. And so, you know, if you're actually that's one of the reasons why things like that are bad is because a lot of the time we've worked with an interactive with text that is closer than arm's length. And that's about as close as most things are. Some of the focal lengths infinity. Some of them are a couple of meters, but nothing is

really closer than that. So that means that you end up being incredible chronic eye strain territory whenever it's at this distance and and it becomes essentially illegible closer than this, which is unfortunate for people who like reading in the way that normal humans do. So, you know, I'll readily admit these are issues, but you know, there are due to a couple of things. One is the technology, but two is the and so verifiable other sort of Lensink systems will be able to improve that, but also the the decisions, the value of judgments that purveyors of virtual reality systems have thus far made in terms of what it is important to do with the system. So if you were to have an arm's length PDF system, that's conceivable, it's just that nobody's built it because they have this framing of what they think VR is for at this point.

Mark Andreson: So yeah, thanks. And I can imagine, you know, marketing getting all bent out of shape. If you said, I don't want to put a sticker on the front, so everything may look blurry to start with, you know, it's a really difficult thing because, you know, if you if you tell people what they need to know, they may choose not to come through the door. So it is it is a difficult thing. And the other thing I just sort of pick up to bring out speed is that it was interesting that both Dave and myself, the thing that it's a bit like the cat playing with the box, the expensive cat toy came in. The thing that we really enjoyed was the sort of boundary wall in Oculus and being able to sort of punch through the wall. The classic thing is, I put the headset on and I think I right, where are the controllers have to look outside through the wall to see where I put them down. But that's lovely, because that actually is a nice foreshadowing in a way of augmented space, which I actually sort of find as interesting, if not more interesting than a fully virtualized environment.

Frode Hegland : Mark, you know that this is only about a week old that feature, right? No, I didn't. Right, right. Or that you would draw on the floor, adopt it. Then when you went towards the wall in whatever environment, suddenly like the holodeck, right? These lines would appear, which was really spooky and very impressive. But then now to be able to pick out like, yeah, it's very impressive.

Mark Andreson: But because he literally it's I love the fact that you put your hand through the wall. There's a little circle. It is very holodeck. I mean, it's it's odd, but it shouldn't be that way. But I got more excited by that than the thing I was supposed to be looking at. You know, a lot of that,

Brandel Zachernuk : A lot of the sort of the presentation of those speeches was was originated in HTC Vive, who did a lot of sort of essentially basic research into what could be

or could be from maybe twenty twelve to twenty 16 and 17. And so, yeah, so part of the sort of appeal of those is this is not merely that it's sort of a perverse desire to enjoy the thing that is important, but also that you're seeing kind of the product of multiple organizations having spent multiple years of pretty sort of blue sky investigation into what's going to be most effective. And actually, if you look at the HTC Vive onboarding from around that time, I haven't done it in a while, but it's it's gorgeous. And in terms of the way that they express sort of the capabilities and functions of it, it's it's just like a sublime experience.

Frode Hegland : So Brendan and Peter seem quite bored with this discussion.

Alan Laidlaw : I was actually going to ask the question that the HTC onboarding piece is really interesting. Are there any other, I guess, like artifacts or examples that anyone in this VR realm has seen that is worth looking into besides your work Brandel, which is awesome.

Frode Hegland : I mean, OK, I'll answer it then. What I've seen so far is really, really gosh darn awful. And I think that's great for us because we're kind of pioneers or whatever, but I can't imagine, you know, putting in the headset. Now, when you put on the headset, you're in an environment immediately. That's kind of a desk display of options in front of you. It's actually very pleasant. So the first experience of just putting it was like, Whoa, this boom looks really nice. That's brilliant. But then you have this old fashioned thing of buttons and weirdness to find where you're going next. That's a bit odd. And then you have when if you do a screen share from your laptop, computer or whatever into VR, the different pieces of software have different pieces of sharing software. So if you choose one, then you have to shut down. Before you do another one, you have to do restart all of that stuff. But as we saw with Apple coming up with universal control, you know you take the cursor over to your between your devices, that kind of stuff. There is a lot of technologies that are happening to relieve these issues. I think so that they're going in and out of these spaces will be, for the consumer, much more easy to do. But we still have the concern that our work artifacts, how will they follow us? You know, obviously, I think visual matter is one way, but certainly not the only. You know, for large volumes of data, you need something entirely different, but you need to be able to interactively render it. And that's why I thought spoke was so interesting because it's so easy. Even someone like me can use it. But of course, I can't build a kind of interactivity that Brandel can in a proper environment. Sorry, that didn't answer your question at all. But anyway, there you go.

Peter Wasilko: Mark, my two cents on some of that topic. Totally agree with that. It's

interesting how rich and immediately pleasurable the very first onboarding experience is and you put on the Oculus versus the other extreme, which is how do I find anything now I'm having to scroll and it becomes immediately, you know, very awkward. And would it be wild? Is the HD five approach getting a chance to extend to the step beyond the next step after onboarding? Right? And having that same feeling. But like you see this, maybe the spikes move up because it's very close to a zone, but now they can provide information and you can sort of like Superman Fortress of Solitude say, like, you know, I'm interested in this thing and it's all around you. Rather than going to, you know, defaulting to a browser like, I feel like there's a whole lot of. A whole lot of opportunity in that very next step, you know, perhaps even before getting enmeshed in a service or app or game. But how how can you make that feel, that game or that app or whatever as natural is just putting the glasses on anyway?

Mark Andreson: I'll go quickly because I see it as a handout. I was just I haven't seen any other importing stuff, but I did find myself thinking that in some ways I'd actually quite like to get on board into the past through. As a step in, so rather than stepping off, rather than so stepping through a portal into a whole new world, it's how it is having the sort of the mix. It's the transition to say, OK, I am now moving. I'm I'm I suppose it's partly the problem that you're making an environmental transition. And I haven't really thought that through, but it just occurred to me that that I very much got the sense when I when I when I sort of turn the past through on, I thought, Okay, right, I know, I sort of know where I am now. I am looking at the real world, but I'm looking through it virtually. And then when I flick out of that now, I'm fully sort of fully through the gate. Peter.

Peter Wasilko: Well, I noticed in some theme parks they'll actually do like a stage transition between two things like when you move from adventure land into frontier land, you get slight variations so you don't go from one architectural style to a completely different architectural style. You just sort of morph between the two by introducing a few elements at first and then more elements of the second theme as you reduce the number of elements of the first theme so that can make for smoother transitions, at least in physical theme park space. And I wonder if we do something similar in virtual space.

Alan Laidlaw : So that's really neat that. I have an amateur love for architecture, and that sounds a lot like some of the patterns in Christopher Alexander around, like a gradient of intimacy as you enter into the home. You don't want the bedroom to be right there as you walk in from the outside. And that transition is really impactful, and it's not something that is.

Well, at least publicly seen too much in some of the tools we use, especially in online work environments. I often knock teams in Zoom for that because you're not really like put into a working environment. It's just like a loading screen and that loading screen doesn't afford any prompts of what you're going to do. So interesting points there, Peter.

Frode Hegland : It also doesn't allow you to put up a note saying the host is running late. I find that really weird. It's like you guys, when we've been travelling, they have to, you know, text mark, mark and you hold the fort. I can't get to Wi-Fi. Why can't I just leave that in the Zoom room? It's the same room every time saying, you know, transitions. But I think one thing that may be worthwhile for us to talk about a little bit more detail, maybe, and I know Adam is not here, of course, but the dream of working with text and VR is probably going to have some substrate as well for some of the text, some of the time. In other words, if you're reading a paragraph, you probably want it to be framed on a rectangle with a clear background. The whole see through improv space is great in a movie, but not easy to read. But of course, we don't want to be constrained to this. So if we could start trying to design somehow a TED Nelson style environment where your primary reading is actually a normal rectangle. But when you want to, you know, all the citations are lines. Obviously, if you want to have it as an outline, you could pull that to the side. Maybe if you want to view it in a different way, you can do that or only say this, that and the other. But to get to a point where we can start doing this, I think would be interesting. I don't know what's the feeling in the room.

Mark Andreson: Well, I have I have a thought that also links back to Brandel sort a good description of this issue of, you know, physical distancing and things, is that so? Yes, I mean, obviously we need to be able to make texts. Essentially, I mean, in a very simplistic sense, readable, in other words, not completely lost in it, its saying. So one of the controls perhaps we need in that that will the need for which or the way in which we'll use it will change as the technology improves is possibly a control that allows you to actually, you know, to effectively work around some of the limitations of physical distancing. I don't know, maybe misunderstanding it. But in essence, one thing you probably need is is for your text, as well as a way to make it sit apart from its surrounding environment is a way to focus it. Because I made the point as it may, it may require a distance in a size that intuitively you wouldn't expect. That's that's the important bit. So and once you know what it is, then then it will be. I imagine it was something quite easy to use.

Frode Hegland : But you can. You can. You can do that now in immersive. There are some

apps that do this. Sorry for cutting you off of it, but it is a great experimental place where you know you have your screen, you move it back and forth. So a lot of those basic things are doable, but they're not in our environment, of course, and you can't do that easily in the in the Mozilla hubs. What you can do in Mozilla hubs is read. But you know, you walk up to the thing to read, but a certain distance, it is actually very, very readable. So your concern is it's important, but it can be experiments TED with. But I'm wondering if we're going to dream together, is this the kind of thing we want to dream on or do we want to go further or less further? Let's pretend we're going to have a big demo on the 9th of December. Is this the kind of thing we would show or what would we show just to help us? Like, I'm not saying you should if you

Alan Laidlaw : Don't mind to take a step back and present an alternate, not an alternate specific idea, but just a. Um. Four thousand foot view for a moment. I watched recently this incredible YouTube junkie documentarian guy. Made a documentary called Line Goes Up, probably seen it in the Twitter cycles these days, really excellent job. What's interesting is how it was so dense with information that it clearly could have been a book. And yet I would not have read the book. But I was able to watch in certain chunks and separate parts. This guy speaking these things, whether I agree with all his points or not, he did a great job of explaining how he thought anyway. And so it was like, That's interesting. I would not have read the book, but for some reason it's it's easier. It's lower threshold to watch this guy who's just sitting at a desk the entire time. But I can, you know, he has some jokes. I could sense the intonation. That's easier than text for this really hard material, right? Because he goes into some technical depth. And I've kind of been sitting with that and how and maybe what's going on, what's undeniable is that our ways of viewing media today are going to be completely different in five to 10 years. Right. It's never going to track directly. So maybe in a VR world, this, this, this or are, you know? Maybe it's not. Maybe we have the option to not have to just read the text, maybe it becomes more common to like, Oh, I'm hearing someone talking, but as I'm doing other stuff, if there's something I need to focus on, it pops up into view, you know, a visual or something to bring the point home. Right? And so I can either be doing other things. Or maybe that graph that pops up is something I can actually play with. While while this this this book, if you will, is still going on. Or maybe I can interact with the book now, you know, and so. So rather than just the the rather than, here's text. Let's put let's what is text and VR look like? I think that necessitates at least a brief moment of thinking about what is, what is and what is media like in this. Simulated experience, what is the best version of that? It'll become trivial to do deep fakes and I'm sure trivial to do deep audio fakes so that. You could have a conversation with Neil deGrasse Tyson about whatever you

know. So I'm just putting that down, there have no answers.

Brandel Zachernuk : You restate it. I agree with Alan. But I don't see a tension. Can you just restate again? Sorry.

Frode Hegland : Oh, you're asking me? Yeah, yeah, no, I'm thinking. But, you know, kind of combining far out with really immediate, I can imagine an environment where, you know, let's channel our inner TED Nelson that doesn't yeah, anyway. Not going to make a TED joke. But anyway, we have a normal document, a four or whatever. Pdf, whatever. It's readable, never. And it's nice like we can on a shared screen now, but then come across a situation and interact with it somehow. And it draws a line. And suddenly the document cites somewhere in the background, in the distance, wherever. You cannot choose to bring it forth or not. And then maybe you do some kind of an interaction where you. Somehow say I want to see everything the sights and all those documents are in a constellation. So you can then say, OK, I want to see it by the time the oldest hair, the newest hair, organized them by most. So suddenly now you're in a situation, I think kind of a scenario. So you can do that to see things maybe park that somewhere, maybe put it back, but then you go back to this document and you've read the summary and it's OK, you want to interact with the whole thing. So because we know some semantic information of the document, maybe you drag out the headings so you have a table of contents. Maybe you only want to see certain text. You put that here, you know, so you can keep reworking and reworking and get this incredible space. But you still have, as a base, a normal document because partly, I think it's useful to still have that, but also partly, I think it's quite impressive as a demo. That you start with a real artifact, so to speak, and then you get richer and richer at a certain point, you're not going to need this document. You just, you know, put it on the table or away. But you still have. Not only do you have all those documents stretched out to bring forth, you can say, OK, I want to see absolutely all the documents on the whole internet that I can do a search for that has this criteria. Then you have a million, you know, it goes and goes and goes, but it starts here. Does that answer your question?

Mark Andreson: Mark, I was just thinking you were saying that, I mean, to a certain extent, well, you know, as I mentioned before, I mean, I think we got to we have two things that will help us sort of bridge part of that in assembling such a demo, which is that we we have got to to hand a sort of basically a citation network that we know is fairly clean. So we can play with that. That's one of the parts of the visualization you're talking about because I'm thinking about rather than trying to eat the whole problem at once. Visual matter, I think we're positing

as the rapper for want of a better word as possibly transporting some of this from 2D space into our emotions. Richer space we have. Well, this stuff I did for my thesis and yours. So we have a couple of bits of quite large VMM, so we have some VMM to play with. Yeah. You know, I won't pick all sorts of holes, but what I'm what I'm what I'm thinking is to sort of rather than sit around imagining what we might do is to actually do something so we can imagine if our imagination is even in the right ballpark. And they seem to be two things we could actually work with now in various ways. If if for nothing else is a stalking horse to say they're rubbish, they don't work and we need something else. I don't think they quite will be. But I think it's a quicker way to get to if we actually want to make a demo, figuring out what what's really missing, what we don't understand at all and what what we have. That's probably good enough, at least for the purposes of a demo, so that we don't, for instance, have to go build stuff we don't need.

Brandel Zachernuk : Yeah, so I I think those are really valuable that that's a good target. I mean, I think the question is to. For any given representation, what is that? What is the purpose? Why is somebody doing it? What do they get out of it? But but I think that there are answers to those questions that make it worthwhile to do to undertake that and sort of create that as a vision. I think one of the challenges that a lot of people face when they sort of create things like this. I haven't read too much about the folks involved in Noda, but it sort of seems as though it's possibly something that they've fallen prey to, as well as they have this, this vision. But it turns out to be more amorphous in terms of what the specific outcomes and goals they have are for, for for how this thing is supposed to sort of facilitate real work. And when somebody doesn't have a problem, they can't really come up with a solution. That's that's that's that actually useful for them. I kind of feel like so.

Brandel Zachernuk : And that's where people talk about that problem in search of a solution. And that's a solution in search of a problem. And and it's sort of stems from computer scientists and others just not experiencing problems acutely enough to be able to fixate on and focus on making a specific thing that actually solves those solve those problems properly. But I'm absolutely enamored of any opportunity to to do damage to the integrated vision of what a document constitutes per say I have. I have a very, very strong interest in sort of disintegrating data, disintegrating information. And as I've sort of let slide here, disintegrating the self because I think those two are related. But but yeah, I think I think I can help get this community to help disintegrate documents and what it is that they are, what a document is. That'll be really exciting. And yeah, I've got I came up with a really interesting framing that I don't think I've heard of before about what is meta information versus what is

information that I think is useful to this point as well as well.

Frode Hegland : No, no. I want to hear that, please. Ok, so

Brandel Zachernuk : If you think about a cereal box. From all of the different perspectives of all of the different people who sort of interact with that cereal box, then you'll get very different perspectives of what is the information about the cereal box versus what is the meta information or what is what is the pertinent content, I guess because because most people who eat cereal don't consider it to be information after eating it. And so what's relevant to a consumer is how much it costs and what the energy content is, how it tastes. But from the perspective of the people in the supermarket and everything else, maybe better information, the barcode, whatever but inside the supermarket. What is most important is the price, the volume it takes up and the barcode and its accessibility, whereas the people who produce it, the people who are responsible for the printing say what is information is the volume of what the cost of the design of the ink, the the specificity of the color and what's necessary there. And that same way, you could talk about books and information in terms of like at a certain level, a lot of the people in that publishing the book don't give a hoot about the actual textual content of it. What is what is the information about the book is the physical dimensions, the number of pages and who's going to be running the job, the press, the press job, the day that it's going through. And so visual media is an opportunity to be able to sidecar a lot of other information for other people for other reasons. And and it's worth being sort of open minded about what what pieces of information actually should be shuttled through as a consequence of that recognition that different people actually more than simply thinking of it as meta information believe that the canonical and the the important information something manifestly different to what we're consuming.

Frode Hegland : That makes perfect sense, and your previous comment about having a real problem also makes perfect sense, I said slightly in a depressed tone this weekend. I commented on our chat on Twitter about software. You know, I have such problems marketing myself where it's really depressing. You all must use it. You know, if you're on a Mac, if you don't use it, it comes to your house. And I say, I don't see the icons. We'll have issues. I'll give you three codes, obviously, if you don't have it already anyway. Author and reader was developed to help one student write one paper for one teacher. Right, at least the clarity of the vision, was there no question with that question, with a lot of other things. But in terms of this, I think the TED Nelson view can also be. First of all, the reason I think we should do it is there's real document. So we have data. We don't have to go into an empty

space and make the data, which is, I think the problem with China do a lot of TED own actual work is. Secondly, I think we can take the model of a university student trying to read the corpus within their field as an actual problem. So we then get the reading interactions and also at some point, the note taking into actions in the future, making a new document, so to speak. And finally, third point, I think Alan's wild questions will become more and more relevant as we go into this because whereas we have to be artists and think weird thoughts like he is pushing it towards which I think is really good. I think at one point, as you know, when you move around quickly enough, you don't see the arms, you just see the blur, right? I think that's what might happen here, where we don't see the document or the text. All we're left with is the interactions on the trail, so to speak. So then we're getting to a much more interesting and abstract space. But I honestly think we can only get there if we do the first one real information solving real problems. But Mark, or can we escape to Brandon and then you are you OK with that? His mumbling words. So, yes.

Brendan Langen: Um, I'll try not to go too deep into this, but there are so many interesting things that are said there, so let me just like plant some markers and we can decide what we want to dive into. Brandel, I need to hear you talking more about disintegrating the self because as a problem space, that's really interesting from the the VR perspective. So I need to hear that. But that can hold to the TED Nelson vision much of what you're talking about. Sounds like some form of digital design, and it's easy to jump there with the way that you were describing the lines and the connections and exclusions and such. Could be a worthwhile prototype to scope that out. Third thing. Are we familiar in this room with Bruce Sterling, the The Sci-Fi writer? I was circling through my notes as you were talking about the information versus information and the first time that I ever came across the visual metaphor. I wrote a note about spines and coming from, I believe, shaping things where he's talking about artifacts, having different sources of information that can kind of appear in different contexts. I haven't thought about that since then, but maybe it's worthwhile to return to that idea for a prototype as well.

Frode Hegland : What more about that place?

Brendan Langen: So I suppose kind of. But yeah, continuing along with the idea of the cereal box, the cereal box, what goes into it, the information that it stores. It is. There are different components that are important to different people, so as Brandel was saying, you know, if you are a manufacturer or in production, you're really curious about a whole host of different information that goes into that box. If you're a consumer, if you are eating at home,

there's all sorts of different things. So an interesting prototype of that might be to recreate a few different contexts in which an item might be used or or looked at and have different information appear alongside that context. So if I'm eating at home and it's 10pm, I could have a potential health warning that says should not be consuming cereal so late before bed. This is linked to type two diabetes in men of your age. Be mindful. Watch out now. This is kind of a ridiculous concept, but something evocative in the manner that resembles kind of how an item an artifact interacts within different contexts could be a useful form of VR, even if it's just setting a standard for what might be able to be done. And I'll put my hand down that.

Alan Laidlaw : I observe something and quickly. But Mark, you are in line.

Mark Andreson: Fire away.

Alan Laidlaw : All right. Yeah. Brendan, great point about the supply that also reminds me of. Somebody, Jay Gould. Spaniels. As an architectural concept that puts an emphasis on the absence of what's created in the absence or around the architecture, it's an interesting concept. It may wind up playing in later conversations about all this. But going going to the if we start with a baseline of like like if we were to say, Hey, you know what, we just agreed to it or actually someone just hired us to remake Xanadu for a demo by the end of the year, and it only has to be a snippet of it. Ok, so let's assuming that was the case, that we were just hired to do that. My first pushback would be. In this new environment, I would want to re-examine. What I think has always been a hurdle for Xanadu in that it becomes a mess very quickly. So I'm not talking about what it connects to or anything philosophical. What I'd be interested in tinkering with would be like instead of lines. What if you could use colors to make association colors that are splayed in the background? You know something feels cool or something feels warmer? Are there ways to make associations where it doesn't have to look like 2D or the material that we're used to really just becomes the equivalent of like ants moving around? You know, like and we get to information overload, I think very quickly in text unless we're a hyper intelligent electrode, you know? Yes, go ahead.

Frode Hegland : Sorry. Marc, I'm just diving in here. This is the frustration. This is my fear. This is that this is the opportunity as well. My background is as an artist, Chelsea School of Art, Painting, Photography, all of that stuff. I couldn't code if it literally, you know, needed to be done to save my life. But and this is why I'm so reliant on everybody here, you know, Mark for data and Brandel for coding, Adam for coding. But also, we need to pay people to

code. We need to find a way to do that because some of the coding here will be really boring because the things you're talking about are absolutely crucial. They are existentialist crucial for our species. If we can't get to the point where that yellow line buzzing behind you has meaning to us in the meeting, you couldn't see it. But it actually means that your web search now has intersected with something else. A machine learning has figured out that your machine is about to overheat, whatever it might be, unless we can get to those levels of perception. We're not going to be able to keep up. Elon Musk I admire him in many ways, but he is a complete effing idiot when it comes to this direct brain thing because we have developed this over quite a couple of billion years. All our senses, let's use them. And I know watching Brandel Squire here, and I don't think I'm contradicting anyone else. But if we don't go into virtual reality, whether hands, whether AIS, whether sensors, whether touch with everything, then we're losing these absolutely powerful things. And if all we tried to do is recreate a couple of rectangles. Obviously, a completely insane. So I think this discussion here, I think there is some kind of level of agreement for let's get a couple of rectangles in there and then explode them. And then say, what happens and if Brandel if you have stuff that is boring to do, but you can describe how it should be done, you know, we can try to get someone to do it for you. You know, try all of us work together because. Yeah. Alan, you're frustrating, but it's important.

Alan Laidlaw : I know that's what that's what my S.O. says as well. Except except for the last part, there is a topic on another. I do want to come back around to something. That is, if anything, just an indication of how much we might be living in a self-induced mirage and framing problems, and I don't mean us in this zoom. It goes all the way to Elon Musk. But there's hands up so. Anyway, there's the thing that I'd like to touch on about how we might be framing the problem.

Frode Hegland : Mark, do you want to go first?

Mark Andreson: I've got a couple. I got a couple of things that circle back slightly, so I'll be brief, so I don't sort of derail or we got to. It's just a couple of things that came to mind as Brandel was talking earlier about sort of deconstructing documents. Another interesting thing that suddenly came to me. I was looking at some PDF stuff earlier today about accessibility and looking at what tagged PDF mean an interesting part of that. So one of the ways that they started dealing with accessibility in PDFs was, lo and behold, effectively put HTML dom structure in it. So far, so good. It's just hardly any. Hardly any of the PDF tools actually do it. But I did manage to get I use Fox Pro, I think, to take my old thesis document and it's done.

It's done all the text. It can't do the tables and it can't do the figures, but that's quite interesting. So again, I may have something I can give a PDF where we can pull, you know, metadata like that. And it just made me think it's about thinking, how do we, you know, how do we both use the data and create the data that we can then use knowing what we need to do with it? And the other quick thing is in terms of describing visual metaphors, a sort of wrapper for things is thinking what needs to affect be the right way to put it the first. The thing that effectively appears that the root object in the visual matter and what's punted off to affect something you would do reference. Because obviously, the metadata itself can rapidly spiral beyond sort of usable amount and to a certain extent. So it's not to put people off. We probably need to keep that quite light or quite light in the visible sense in terms of not very much, just lest it frightened frightened people.

Frode Hegland : More to think about. Well, OK, I'm just going to interject a little bit. I'm going to ask you a few questions Brandel, if you don't mind. In order to do something along the lines of what I said, the whole person sets down normal document exposure to TED notes and stuff. What are some of the steps that must be done before we can start having fun in it? And what of that, if anything, can we outsource? I have a small amount of money that I can put towards this if someone's competent and can help us. We should do that because it's just stress inducing to not be able to implement.

Brandel Zachernuk : Yeah, no, I understand that. Well, so sort of concretely storyboarding something in terms of a set of actions and that script in the sense of like an orchestration of the of the steps and the goals and even the voiceover. I come from advertising. So the way that I tend to work is that people show me some cockamamie depiction of what they think there's going to be achievable. And then we begin the long and arduous discussion of maybe trying to pull them back down to, if you can believe it, so. So that's the mode that I've sort of worked in for the last 10 some years, and it's pretty effective as a mechanism. So if that's something that you have the personal capacity to do, you know you do that by just taking photos and drawing on top of them. You can do that by taking photos and then tracing them so that the actual photography is no longer present. That's a pretty effective way of doing it. There's a need to talk so many years ago about the way that any roller coaster designer or attraction designer for Disney worth their always storyboards with a bunch of mystery science theater 3000 style like audience heads in order to be able to kind of show their reactions, because that's a critical aspect of the punctuation of what those experiences entail. And so to that end, I think it's essential to have any virtual, reality based kind of storyboarding and hold hands or whatever the inputs happen to be. In the early days that it

was, it was a single controller, initially three degree of freedom and then six. But now that we have a full hands, it's pretty useful. But, you know, reflections and representations of facial responses, and I guess anything like that is as useful as a way of kind of anticipating what it is that a story might be sort of directed towards in terms of their actions. So I think you can get a great deal done simply by doing that. And, you know, I don't know if there's if you have a program of choice for drawing on top of video sequences, but that's also a really sort of productive and generative context to be able to kind of work these things out. I I cited in so I posted about slum area this weekend. As you probably know, if anybody can see it, it's they're doing relatively well in terms of something perhaps sailing somewhat close to the window in terms of what what the beneficent company that happens to employ me might be comfortable with my doing has nothing to do with anything that it's doing, but whatever.

Peter Wasilko: Actually, I think might. To continue. I want to touch on that when you're done.

Brandel Zachernuk : Okay. As long as you want me to, then you're having a job. And so, yeah, like it's really super useful to to to draw on all of those things, but one of the things I mentioned was that Shell Games actually uses cardboard boxes and literally sort of duct tape and cardboard boxes to do prototyping as well. And so that, you know, don't be afraid of doing that as a mechanism for being able to get a point for us thinking about the the attentional and physical ergonomics that that are attendant to a specific problem and solution space.

Alan Laidlaw : Thanks for that. Something out there as far as we have the, you know, the idea of a demo of like, Hey, how do we make this from nothing? But then maybe a different take is. It was already working on slow Mira, which is fantastic. What if there is? And just have patience, please? What if there's some opportunity to explore something there now as an as a possible bridge, at least to give you guys a sense of how my brain unfortunately works? When I look at slow mirror, what it reminded me of is this time that I went driving through Baltimore to find this little, little forgotten music venue where I went inside and watched a kid sit on the ground of the stage and start to play music on a synthesizer. And then he would, as he played a line, he would hit a loop. And so that would move, and he started to play something else. And this was like early two thousands, right? But he was basically creating an orchestra of just himself, of simulations, automatons of him, and he could pop back into into one other mode. And it was beautiful. It was just I loved it and I was thinking, Wow, slow Mira could be like the visual version of that. Like, you could start doing things, change

the pace, you know, move on to something else and then see what could what could happen from that one, multiple hands doing different things or running into a pattern. Now, if you applied that to some form of text or interface, what would that look like? Would that have any sort of relation to Xanadu, right where we're in a sense you have a gestures performing a query or, you know, highlighting a text or reading something? Does that it? I'm almost thinking of the terms of performance art as a demo, but I leave stuff down for now.

Mark Andreson: I like I like just to quick to jump in and say, I like the thought that in a sense, that the hands might remain of a part of the text that you touched, especially in the context, he says, a performance thing. So in a sense, the lesson of but there are pointers. So you know, this is an axis or this is a part of it that I have already transformed just as a, you know, and that makes actually quite a subtle little trail of itself. Sorry, Brandel.

Brandel Zachernuk : Yeah, I definitely agree, and I agree that the one of the things that so I listen to Trevaskis speak a couple of times in the last time I was trying to ask her at the same question that I successfully asked you this time, which is about about drawing in and sort of a cumulative or a crate of complexity and whether it can be like the sort of cognitive cost that can be mitigated by observing its accretion, its accumulation. And and thankfully, this time she's great. And so but you know, that's that's quintessentially what's going on when somebody does those compositions in that way where they start with the baseline or a drumbeat or whatever, whatever they want to kind of lay down as the basis for it. And they add these things because you're taking along on that journey, then you get to understand what it is. I feel like stop drawing dead fish is a reasonable enunciation of it. But I also think that, yeah, one can take much further with more expressive tools having twenty seven degrees of freedom per hand and being able to work with something that has a little bit more informational or semantic significance than than a specific fish. It's like great fish. Animators worldwide will thank you for this very mediocre animation, so I think that you could use a better problem domain and you could come up with a better result. And and it would be a much more compelling kind of demo. But you know, for all, for all of the sort of the ugliness of the outcomes, I actually think it's a brilliant talking and it's inspired me for years. I just think looking back at what I know about marketing and what I know about problems myself, it could have framed those things vastly better than it did.

Frode Hegland : Interesting. This very sorry go on. Yeah, go ahead. Just while you're talking, just want to show you how this is Joy Crookes, British singer The video with all the hands made me think of what you're saying. That's all. Let's go on.

Alan Laidlaw : Um, I don't know if it's something, I guess the first question would be if that's something you are absolutely not interested in Brandel. Then that would be good to know if you think that there is some opportunity there. Even if we don't have a clear idea, it might. I don't know, I think it could be. It would. It would be a constraint that could be a creative constraint. In that be jumping ahead from from nothing but. Yeah. Well, at the moment, it's just a crazy idea. So.

Brandel Zachernuk : None of my none of my work is am I particularly committed to in terms of like in the same sense that I have this vested interest in disintegrating the self disintegrating information about all of the pieces of code, all of the projects that I have. They're not, nor are they supposed to be particularly integral. So in terms of like, whether slow marriage can be that, I mean, in a sense, but only in a sort of efficient sense. My interest in building silverware is really to get to an infrastructural basis upon which I can build other experiences. And to that end. Absolutely no objection to to to being able to put together those kinds of timelines and things. And in fact, like something I thought would be really neat. Much like that. That video is a video game where you control either multiple like, imagine you had to make an entire scene out of hands. You had to pose your hands to be the flower. You have to pose your hand to be the giraffe and stuff like that. I think that would be really cool. You can either make them directly be those hands, or you could perform those things with something that is not anthropomorphic insofar as it doesn't look like a hand but know you have. You have a clear sense of the meaning through which this is actually made of it. I made a video game like that for the motion back in, back in the early teens, which was sort of premised on that being difficult and frustrating, which is why they mostly didn't want to publish it, but rather it was. Yeah, I think a really, really interesting in terms of having the the modality be supported by such a direct and immediate one to one sort of feedback means that no matter how absurd and and uncomfortable the framing that I had for how to hold your face, one had the ability of that at some level after some sort of frustration to actually be able to pilot it.

Alan Laidlaw : Somehow that's a body condition that we need to explore. Mm hmm.

Frode Hegland : I know for some, it'll be shocking to hear that I did actually do some research for my PhD actual research with users. And the thing that came up was the biggest problem academics have is seeing connections. And that speaks to everything we're doing, and this crazy notion just brought up now of, you know, leaving your hands in space. I could

so easily, you know, imagine this start out with a rectangle, you start drawing lots of citations. Then when you find them like you dip your hand and wax, you know, you can leave it there because that shows this, you know, and then you know that that's what that was. Or if you if you do that, you can then tap on it later, turn it into a giraffe or whatever it might be. But you know, you make things based on your gestures because the note of note will know the thing there is to make balls, connect them and to label them. But to what end? Yeah, right, so it's wonderful for us to play with a little bit, and I find one of the problems I had is they tend to be too close to me. It's just like I have to step back. Along with the scaling was an issue. So, you know, it goes all the way back to Marx and Brandel early point about where we kind of focus on this space. But yeah, this could be really special.

Peter Wasilko: I don't remember where I wrote this. It could have been in the channel or not, but I think it was talking to Adam about it. But like in the. So I love I love diving into any of the particular new materials that seems to be presented to us with VR and gestures is one of them. Portals is another, right? What I would very much like to see a transition is one that I think is overlooked at the moment because it's hard to wrap your head around because it's in between the two things. But what I what I'd love to see is perhaps even mixing some of those. Right now you have a portal where you go into another space in the web world that is like going to another website, right? We already find that that is as wonderful as that as it becomes problematic because what you actually want is to to extract a little bit of information from without dedicating yourself to jumping into that new environment, right? So what if you could use hand gestures, for instance, I'm looking at a text or a topic of some kind, even if it's video, and by looking down at the bottom, I'm indicating I want to zoom in. Tell me more in more detail about this, right? But maybe a gesture of like this, you know, says something totally different, like, I'm not interested in you telling me about or bringing me into the portal, bringing me into the event. Tell me what goes on before and after it inside of a larger feedback loop. You know, give me the systems thinker approach, right? So, so having weird intellectual models attached to gestures that you could then apply to a subject matter would be, I mean, just it's bananas. But bring it out there for for fodder.

Frode Hegland : Us monkeys need bananas Alan. I have to jump in on two points on that. One of them is. What, honestly, there's so many trains, this is like Paddington Station, one of them is the whole issue of ownership that we discussed different companies owned different apps. There are apps on here and it is a real problem. You know, I can't even take anything useful with me from one space to another. That's where I'm political with this. That has to be possible, but also. The transitions. Yeah, there was there was the ownership thing, but also the

other thing of you're basically OK, somebody I don't know. Every once in a while a sitcom, we'll have the line. Oh yeah, I explained it with improvisational dance. Something like that. Ha ha, right? We need improvisational dance to be language. There's no question about that. Right, one, you know, in a restaurant, if you tell someone, you know, Oh, please come here. No, no, you need to go a little bit to the side. We humans have this just juiced up all the time completely think that that's important. But once it goes with meal and data and air and all of that, we have to decide what it means. It'll probably be more for humans in the beginning, but I think that's really one of those. Tag transcript as interesting, but we've got to have real data, real data, ideally real data in, but at least real data out because otherwise I remember my ex-wife's grandmother. She used to say that just overthinking something is mind masturbation. Right, not necessarily bad by itself, but if it doesn't produce something. You know, then we've learned the experience and for us as pioneers or whatever, it's great. But if it doesn't address the problem like Brandel was talking about and it becomes really frustrating. But also in this whole thing, I think Brandel said, you know, given whoever of us would like to and I'm one who would like to try to mock up a storyboard. Absolutely do that. You know, we all know that the only time ever Doug made progress was when he did demos. So we've got to find different ways to demo first. We've got a demo to our own community and Brandel and Adam. Then we together have to see if we can tap into what a community that includes your crazy banana stuff, and it also includes documents, I think

Alan Laidlaw : I agree with the sentiment about the mental masturbation, but at times it actually you have to kind of be courageous in order to let yourself. Go those places, because I think that's how you get to the dog eagle bar level, if he was purely pragmatic, he never would have.

Mark Andreson: What was called executive relief?

Frode Hegland : Oh, absolutely, Allan. And you know, I've quoted Doug recently saying that people said, Oh, you're just a dreamer. And he says dreaming is hard work. Dreaming is hard work. There's no question about that, and I'm really, really super happy about where you're going. But I'm sorry for also bringing this other side up. I think it's just me being a bit frustrated. We've got to go both ways. And you know, Alan, you?

Alan Laidlaw : Yeah, I'm not. Yeah, I'm not offended at all. Honestly, I think navel gazing happens in our society way too much. Nfts are navel gazing should be called anyway. Never.

That's something else. Yeah, not a problem.

Frode Hegland : So I asked Bjorn to take what he wrote in the email thread and put it in an article for our journal. I think one of the things that our journal has to do is not to be precious. All right. I really can't have Marc Anderson read my articles for the journal, and I say that because Mark is a fantastic academic. He will look at all the sentences. But I really think it's super important that Alan, some of the stuff you just said you will feel free to write down. And let's say for fun, don't capitalize the beginning of a sentence. Make it really sketchy. And maybe we even find a section in the journal. Com Book that is notes and thoughts, maybe add some line breaks to make it look like poetry, I don't know. But here we are. But because we're trying to make a new medium of communication in VR, doing all kinds of stuff, presenting in new ways, we should also invent backwards. We should not allow the paper page to be to have any tyranny over what we present on it.

Peter Wasilko: Well, to be honest, I use these conversations to air out ideas that were existing for pre word. This is my first, you know, most of our first stage, like, I haven't had the thought before it came up after you said something or Mark said something, you know, and then it becomes more cultivated immediately after. But it's nice to have a space already where it's like, Hey. Here's a crazy thought. It's crazy because it's coming out of my mouth. Here's the responses. That's interesting. I can I can edit and adapt

Frode Hegland : Because one of the one of the problems we have with a new VR environments as we can't really record what happens inside them. So if we have a meeting in horizons, work room or whatever, it's all super cool, but we don't have this transcript. Hmm.

Mark Andreson: Well, we know it has to finish, yes, hence

Alan Laidlaw : The decomposition is is different than disintegration, but decomposition, the decomposed form of a higher dimensional experience is a very hard problem, right? Because it's not accurate to say decompose you are, you're extracting useful minerals from whatever it was, the living, breathing VR encounter and then wanting to turn that into something like if it's going to go all the way to a PDF or some article that you're going to read, there is no process except for brute force to translate it. But yeah, that's that's a that's a very interesting set of problems.

Frode Hegland : Yeah. So we now have. So this particular call had some very specific cool bits that can benefit other people. And a few hours we'll have the video up and the automatic transcript will be up on the website. I'll also put it onto the PDF. But going forward, what should there be a good mechanism for us to refer to these things? I guess we can just site it. I guess that once I gave you the PDF today or tomorrow, then the thoughts that you had, particularly Alan, just to pick on you a little bit longer. You can write a fresh article, but you can also say issue number one of the journal page so and so is when we discuss an aspect, we'll try to make actual links. But even if we just had descriptions of where to find it, it is a step towards having some kind of a thread, right?

Alan Laidlaw : Well, this is what we need to have a conversation, maybe outside of these to the weekly, but or maybe we just need to dedicate a weekly went to it. This is already very confusing to me between for What's The Journal versus what's the newsletter because I assume that the journal was essentially going to be transcript. Now it sounds like it's more which is really interesting, but in the journal, I was going to take a more like broad view of like, here's some top level ideas. Here's here's what's going on in the world. Here's you know, and I was assuming that's what was wanted, but it just fine with any direction. Well, I'm still going to write stuff on my own anyway, right? But it would be good to get more explicit about what what's going to be the best, what's going to solve the best problems.

Frode Hegland : My personal perspective is that the newsletter is literally a piece of paper that goes through the letter box with cool things happening. And it includes links to the Journal Journal will have longer articles that are expected to be read in a year or 10 years. However, if you have something you say externally or yourself that you want to make ten pages in the newsletter, nothing wrong with that. What we can do for the month afterwards and the journal is take the whole gosh darn newsletter into it if we want to. I don't I don't think we should have artificial constraints, we should feel it out, duplicate a little bit of spine because at the end of the year, it would be really good to have a book. That has a lot of this we can trace through, here are some statements we made. These are the articles. There is lots and lots and lots of transcript that probably no one will ever read, but it's there for searches. And imagine after a year of this going into this environment that we're hoping to build with this book in PDF form. Right, and we're going to learn all these augmentations of the year, how to mark it up, how to do these things. We can have an absolutely insanely cool and useful demo of a student going into this world, picking up this particular tome of work and having a very, very rich, fluid experience of how to decompose the book and mentally also at some point Brandel themselves, which I think is a very provocative phrase and very, very

interesting indeed.

Alan Laidlaw : Can I throw one wrench in there before I just leave and like, do an Irish goodbye? Sounds like a job. Sounds like yes. Thank you. Yes. I think maybe instead of taking the aspect of the student who's trying to get something done and assuming that's the persona of the demo, I'm going to suggest the totally different freaking wild ride alternative, which is something along the lines of as we may read, and it's not it's not a student trying to get something done. It's just like really addressing what could reading be like in VR? And and it doesn't have to be real data. It could just be a, you know, a play, whatever, right? There could be some sense of non linearity like you're not just reading a book like, let's really challenge what that's like, you know, and it doesn't have to be a student. It could be literally someone who sat down and put on a mask and wants to.

Frode Hegland : Yeah. I'm holding you by your hair, so you can't log out.

Peter Wasilko: Yes, that could be

Frode Hegland : The other half of it should be authoring. Reading and writing is interconnected. But yes, just make it, but it doesn't have to be a student, but yes, you know, how can you make an amazing reading experience of this year's worth of dialogue with these people who ended up just discussing more of what they're discussing? And it's very recursive.

Mark Andreson: Because another interesting thing, though, that's been brought to focus for me looking at I've seen some original journalist stuff. I mean, one of the difficult things is going to be using a blogging platform, which is not designed to have an index that is not designed for really showing you anything with the most recent stuff and using it for what the journal needs to do. Because one of the first things I found when I was asked to do stuff, I said, Well, you know, where are the pages where I need to do stuff? It's a blog you just, you know, you pick the thing off the top. So there's a challenge there. I mean, that's not a negative observation, but there is a challenge in that. But I sort of envisage the the journal in its broad form being something of a may long show. It will have, you know, it will have the transcripts, it'll have the video recordings, it will have some things that are quite polished documents. I mean, I certainly don't think I've offered to edit anything. I needed some. I gave some comments on some things that just didn't make sense when it got sent to me. But that's

nothing to do with, you know, that's that's quite different from writing a fake to an opinion piece and that can sit there. And one of the useful things that I see out of if if we embrace that, that aspect of the journal is that out of that broad mass things will come because apart from the else, people will start to make reflections on earlier points. And then we get something really interesting. We get a piece that may be able to be used more broadly, but we can also track it back into the, you know, very dug style. We say no, look, and this is where it came from. And I think that's quite important. So these these are not then connections for connection sake. They're actually, you know, we're actually tracking the emergence of this. And and that's useful, too, because if it transpires that you know, something interesting comes up but actually is sort of slightly misconceived or slightly wrong, we can sort of track back down the line. Okay. So where did it? Where did it actually depart from, where we think it should have gone? So I think that's where the. That central mass of the journal without sort of holding it too tightly serves to force it into a particular shape, which I think makes would make it hard to do is to say, as I say, I think it's the central skeleton on which we can hang quite a variety of things that will vary quite a bit in their sort of size and shape. And that doesn't matter because effectively the point of them being there is a reference about history to how we how we get to where we're going. So it's a gift, a gift to future selves.

Frode Hegland : Absolutely.

Mark Andreson: I've got a very quick one for Brandel because I've still been noodling well. We've been talking about this nice visual things about, again, about data, and that's the fact that I know we've been talking about PDFs and things and having now discovered that while PDF have another structural flaw in them, perhaps another cheat we can do is take some some of the sort of PDFs, some some of the things we've already talked about, some documents we know well and actually re-imagine them in HTML. So that might actually involve literally rewriting the damn things. But that's what it takes. I don't care because I would have what it is to say that okay, with a PDF tools. Maybe a bit crap at the moment, but let's imagine PDF tools actually made had a proper dom structure in them. Right, exactly. And and they were and that by and they were and they were making visual metaphor. So, you know, we can we can. I think I know I should never say it's just an implementation thing, but so there are some structural things to do there. But if we if we just jump over those for the sake of getting towards a demo because it seems to me that until until we have some exemplars of that of that sort of nature. So you've got quite a structured document, you have some visual metaphor about it. It's only at that point that we can really begin to say, is that something that's that we can then use to make the sort of things we've been talking about,

viewed from the more visual aspect of it? That's that's my sort of take. I mean, does that make sense?

Brandel Zachernuk : Yeah, absolutely. I think we can also make use of either fully automated or machine assisted visual inference from structure, you know, OCR is an amazing thing. Tesseract mostly does things in flat document, but one of the things that I made are very early on in my career was this gestural was in design to web page creator where you took and you took an accident text and then design a newspaper or a magazine, and you just drew the semantic references by just dragging like this is this is the heading for that. This is the illustration for that, because at that point, we didn't have the wherewithal to make, you know, like I said, like eager guesses as to what those semantic relationships were. But but I think that it shouldn't be impossible to come up with some assistive mechanism to even if, as you say, and that's something we discovered at that time, because most Adobe products have PDF or some very narrow sort of backing them. And you realize that the semantically pretty garbage and that it's kind of a free-for-all with regard to which is not to say that actually not Typekit the same thing. Like I said earlier, Facebook has broken the semantic representation for the benefit of making sure that screen reading systems are unable to block ads. So, so it's something that, you know, that comes up time and time again, but not not specifically to do with PDF, but more to do with any kind of representational format that has had multiple masters for multiple sort of reasons over time. And so but it might be possible to make use of OCR or some other system to be able to kind of draw references to like what is this to that as well? So I applaud that as as an approach.

Mark Andreson: So I think another interesting bit comes out of it. We almost get for free, which, although it's not directly related to the particular VR aspect, is just some of this transitional stuff that just just just actually laying bare how many broken bits there are or so PDF do. Well, the one thing they do work is they work as virtual paper at the end, one would probably argue against that. So if you want something that looks like paper on a screen, yes, it actually does that in spades. Pretty much anything else. Not so good. Completely not joined up across the piece. Not deliberately, but nonetheless. There's no getting away from the fact that far too many things are broken. And I think, you know, just your point about, well, look, if we do something, we probably want to do it in a sort of a web construct, which takes us back to the use of HTML. And then so naturally, that thinks OK. So one of the structures you want is you want you want documents that are basically whether it's visible or not, but within them have effectively a dom type structure, which is apart from something that's been written as an art piece that has been deliberately transgressive with that linear notion.

Mark Andreson: So we have some of the bits there, they're just not. None of them are in the right places that connects it up in the right way, the right tools. And I've managed to keep Adobe's things off. My I have great respect for the tools they make, but I have kept them kept them off my system for a very long time because all the crap they bring with them. But I may yet have to because you know, so many things we sort of need. It's a bit like the addressing into PDF has been there a long time, but I think Adobe Acrobat is the only thing that makes name destination. Still, unless you buy some incredibly insane, expensive enterprise and you've never heard of. I mean, I what I don't understand there is whether there's some secret sauce behind it. It's too expensive to share or whether somebody just hasn't had the nous to say, Gosh, if we, you know, if only we made. I mean, there are plenty of PDF tools here that are geared to do something. What?

Frode Hegland : Sorry.

Mark Andreson: Brandel point. So, yeah, OK.

Frode Hegland : No, go on. Go on.

Mark Andreson: You know, when we want to do this interrelation between things. So so this ability to do effectively deep linking into things that's not possible at the moment. So in other words, I'll start point three.

Frode Hegland : You can do it and offer.

Mark Andreson: No, no, I'm talking about PDF. What I'm saying is if you have a PDF, you can, and that's one of the things that visual matter is doing. But I'm saying we have we have a vast trove of information for weather, just not possible at all. What you can't do, I think, except in a day because you can't take it, you can't take a document, a PDF document and making an addressable bookmark to paragraph 14 on Page Six in it. That's not possible. You can ask a web browser to open a PDF at Paper Sequential Page X, which won't match the printed page number, which is another broken part of the system anyway. So that's that's one of the things I'm.

Frode Hegland : I just park it for a minute because Brandel has to go. Just a question for

you. So, Brendan, you're absolutely not going to go down Oculus because of matter, because it would be good to have it as a disposable device we learn on. And then once other things come out, we sell it to gamers. It would be good if you could be on air with us.

Brendan Langen: Yeah. What is the? So I looked into the other day, I kind of needed a two minute rundown of what accessories I needed that would make this useful so I can understand what I'm getting at there. What would you guys say?

Brandel Zachernuk : Oh, Quest the standalone. So I don't use it with anything else at this point. One of the things that the web socket thing that I'm excited about doing is being able to log in with two devices, have an iPad and a request on time so that I can draw on the iPad, see them quote. But but beyond that, it's not necessary. So Quest has obviously six degree of freedom and hand tracking it has. And those are cool because they buzz, and that's that's neat. You know, I've had a lot of fun controlling and there's there's actually a demo on 3G sort of haptics that that Takahiro released recently, and that's very exciting, something I did in rocket game. So, yeah. To my knowledge, I mean, it's got decent headphones. This is the sound in it as well. So I don't think you need anything else other than a conviction to sort of take the plunge and accept that it's it's it's the least worst thing to play with at this point.

Frode Hegland : I bought the small storage size because they're all massive anyway. The only thing I would suggest is get the extra battery pack a little bit for the battery, but also for the balance. It's better on your head. That's it.

Brandel Zachernuk : Yeah, yeah, I agree.

Mark Andreson: And if you're not wearing glasses, so if your contact lenses, you should be OK, you won't be having the fun glasses wearers are having, but we've already covered that. But I mean, we don't have the spacer. Yeah, the the reason I showed you the hand things is, I must say, when I look to the thing, I bought it. Nowhere was it really clear to the extent that I thought I might have to buy those separately. Again, it's it's assuming you know what you want, which is not good marketing, if I'm honest at all. You know, part of the sales, we know you get this, but you get all this cool stuff. And actually, I have been I've been in there all sorts of ways in which little handy things have surprised me. Like like the little buzzy feedback and things and the way they, you know, they they they manage to interact and they sort of seem to come to the fore when you need them and of be out of the way when you do

so, you know, which hasn't happened, I'm sure, by accident. So that's really cool.

Brendan Langen: That isn't it? All right, well, thank you for the insights and yeah, as you noted, I see it and I was like, I go to the extra pigeons like, I have no idea what I need out of this full. Let me look at my research budget. I think there's room for it. What any idea on the lead time is supply chain backed up for this at all or

Mark Andreson: Mine came within two days of cool. Cool? Yeah. The other thing is I didn't work out how to join it with only an Oculus account. It will make every attempt at count to find find you on Facebook. I don't have one, so at least that's good. You're ahead of the pack.

Brendan Langen: But yeah, I'll check. I'll check into it. I do have to run now, but but yeah, I will look into that. I'll see you guys on Friday. I believe they'll be here.

Frode Hegland : Look forward to it. By Mark just before Brandel continues with the reply on PDF. I did. I have done some research on PDF because of author and my PhD. And the thing is, you can do a ton in PDF in terms of structuring it if you want to. But as a developer, you have to decide what framework to go with. There's PDF kit and all kinds of different things, which gives you they have different costs, different tastes, different all of that different affordances when it comes to links within what we have from author to reader, as you know, any heading can be a target. Yeah. So that's, you know, an internal link that's quite easy to do. Other things. It also comes down to the interface of how you want the user to be able to indicate that something is an anchor, so to speak. Mm hmm. So that's part of it. But don't forget, the structure is so bad that Adobe themselves had to make something they called liquid, something which is the machine learning to even get the basic structure of PDF. So that's why we're so excited by having liquid, not liquid, excuse me, live text on top. I mean, I know names, in fact, meaning that way,

Mark Andreson: Because I did some in a moment of madness got back in the 90s. I actually did some certification on Adobe PDF stuff and got quite deep into them. One of the things I remember is, you know, the thing that's been around hiding in plain sight for ages has been named destinations by not just a page number, but effectively the equivalent of headings. You know, I mean, I was sort of an equivalent of, you know, the URL with a hash mark and something afterwards. It's long been supposedly available, but but I think acrobats about the only tool that does it. And even then you have sort of dig into the back end, which is which is

an absolute tragedy because, you know, had people been encouraged to use it from the get go, then all the all the MeToo tools would have adopted it. And whereas it's I think it languished in the sort of in the that's an enterprise feature, I think he'll find, you know, which is which is a tragedy because we, you know, it goes against the very sort of linkage that we're trying to do. So that's why it's in my mind

Frode Hegland : A huge problem here is academia doesn't like high resolution thinking. You know, I had several things built into earlier versions. And then my advisor, obviously, you know, have less said, you know, students are supposed to have read the whole document and they're supposed to cite the document as a whole rather than a specific sentence or take that nonsense out. But then I'm sure that if different kinds of academia that have different levels of this, but it is an important and valid point that it

Mark Andreson: Shouldn't do a different things. I mean, you know, you're right. I mean, students should read the thing, but they never have, and they never will. So we may as well recognizes.

Frode Hegland : Yeah, but what I mean is, and this goes back to Brandel question earlier on kind of the actual problem. In this case, a student writing for a teacher is different from an academic writing for their peers. It's not the same thing I've always been focused on student teacher because I had to simplify student teacher, this point is valid if you're writing for your peers. Please have a high resolution like.

Mark Andreson: Well, more to the point if you're just writing for future self, I mean, if you're writing for the world at large. There are so many things. I think one of the things I've really learnt in the last couple of years is that anything you make, if you wanted to have some legs, you actually need to understand that it's probably one of the few ways it's going to be. Read is in the form of a better digital paper. You know, it's going to be read as a plane. It's going to be consumed in a plain text form by machine language. It's going to be all sorts of remediation will happen to it. And if you if now you're writing in tools that don't allow for that, well, then you're just shooting yourself in the first. The frustration is I haven't found the tools. I mean, you know, the things you've done with also and read it, for instance, are a very strong step in that direction and go and we and we and we need even more. And so one of the things is sort of surfacing all these breakage points because a we have to never get across them. And B, it's an opportunity to sort of leave people who are, you know, people who are thinking, what's something I can do? Well, there are a lot of things that people could do

actually in address and frankly make money off if that's what they want to do. And I'm not saying that's not my draw in doing it. But again, you know, when one could actually just get people wound up to fix some of these current breakages because those are the problems they create, it's certainly not going to go away.

Brandel Zachernuk : The problem with the PDF is the problem of the cereal box that I mentioned earlier and that that a number of other people sort of piled on to the to the value chain of what is sort of been transported through PDF after a time that the sort of the format was settled on and and rolled into this sort of application of that and the that bloat, you know, if you never thought semantic thinking was work was important because you were always sort of focused on this being a preprint thing, then the idea that that needs to be sort of retained as a component semantically as well as visually is utterly ludicrous. The idea that anything other than the visual hints for the purposes of preprints are absolutely absurd. And that's made more complicated by the fact that if you have a company like you say with with financial interests and a desire to sort of lock people into the system, then you do kind of need to make it difficult and complicated. Another objection that I have to victor and is like, is these interfaces are better. Like, Yeah, man, but better for a home. And if it's better for consumers, then that's cool. But if it's worse for the person who is providing the interface and what impetus? What motivation do you have for making sure that they're going to be able to sign on to it? What what makes you think they're going to cede the ground of having this intense security interface that actually sort of benefits their bottom line? If you can't see your way to that, then this is a pipe dream. So there's a combination of of sort of agglomeration of multiple kind of requirements and needs of recognition of entirely new domains of application, which, you know, any document or interface is is going to sort of party to an HTML is no no slouch there in terms of people discovering new needs and people having to bolt them on and bring the format limping into the 21st century.

Brandel Zachernuk : So, so but the benefit is, is that because it's sort of negotiated and arbitrated and argued over in public and it's sort of as a result and a recognition that there's a need to keep everybody honest because if I have to do it, then like if that, then at least Microsoft has to do it and do it in approximately the same way. And that's the benefit of the W3C as an arbitration panel for making sure that if anybody discovers something that they spend at least six months or two years required in order to figure out what is the least worst thing and how can we make sure Google doesn't screw it up, which is, you know, just quietly, quite quite a lot of our internal discussions. It's like, how how explicitly do we need to put this in order to make sure that Google won't try to turn it into a format that is technically

open, but only available to an elite cabal of people who have all of the right tools in exactly the right way. My personal preference is to be able to write everything in the text there and kind of keep it that way. So, yeah, like so you know, in terms of my lambasting PDF, it's by no means like to do with it as like it alone, they're dangerous and there are challenges that the all formats face.

Mark Andreson: And that's why it's very interesting to understand, you know, try and do stuff to make things sense data for you to play with. I mean, one of the things I want to try and do is therefore would probably do it with some open source things, simply so that we're that we don't find that way. It all works, except one bit in the middle is is entirely dependent on a black box and we don't understand and don't control. So I'd rather do more work around the sides. And I imagine something like Paddock Springs to mind as the sort of Swiss Army knife of some text transforms that might allow us to do things in an acceptable demo style where you say, Well, look, this isn't really how you want it to be, but you know, we've managed to get so you have this stage sort of rough bit here at this stage, rough bit here at this stage, but you can see the whole and you can, and that helps you understand the value proposition and the end point. You know, because on one level, you know, a really good demo stands because it's just awesome to see. But then as you walk out the room, you say, OK, yeah, that was really cool, but what do I do with it? Hopefully that's when the the structure that lies underneath and I think that's, you know, in fairness, you know, when people talk about the mother of all demos, said God, it was awesome to see. But when you see people writing about it, but they invented this and they did this and it had this, that, you know, and no one resonance, no one necessarily knew what half those things were at the time. They may be, you know, but they were done and they were necessary. And I'm sure they weren't done by accident. And I mean, they weren't done just to make the damn demo work. They were done with intent. And I think that's a really fascinating thing. I take away from that, that that example.

Frode Hegland : The questions you post there, Brandel about something, how something gets adopted is really important and. It's really it really easy to ignore because they're so uncomfortable, but they are, of course, the most important. So this is why I've been really, really, really stressing on trying to communicate the benefits of the aspect I work on visual. And it's really hard and it has to be. I mean, I know that twice. Vint Cerf has emailed Tim Cook about this stuff. Right, and clearly hasn't worked. And, you know, I'm trying to get to the point where we get the overall package, not just visual matter, but particularly the whole VR for work thing. Communicate, it is really, really hard in a way that does satisfy and bring

on board the different stakeholders.

Mark Andreson: Just a quick thought and thinking to what's just been discussed in W three C is visual metaphor at a point where it's worth sticking its toes into the whole sort of web standards thing, if only to have some visibility.

Frode Hegland : So and in two weeks, Bent and I are presenting it nicely to the National Institute of Standards Organization in America. Yep, visual meta. We have it was supposed to be a five minute lightning talk, and then they realized it was my partner and suddenly we have half an hour. So that was really nice. So we did a recorded session last week, which is the cleanest we've ever done a visual metaphor, and this is why it's been so important for me to fight in a nice way with Bent about virtual reality, because before this, it was just like, no, and I was like, Hmm. You know, that's a big step. So I am hoping and I do know some of the directors there, I do hope to make visual Mehta an actual standard. Not that it'll be adopted by being a standard, but this is something we in the community need to make a standard. And I don't want to make visual math at one point two or whatever you might call it, without having gone in and out of VR successfully. I think that the added appendix of saying these are where all the things are, we have to find a way to note that down. So I think it's a very nice thought mark, and that's where we are. But it has to be community made.

Mark Andreson: Yeah, because the reason I was thinking of it is because otherwise what I can see, what'll happen is it'll get to the sort of front gate and the usual. There'll be the usual crowd of Typekit, as will Assemble said, Oh, we've got some alphabet soup name that already does that, which it actually well, it does in theory, but not in practice, not possibly to much effect. So it's really as much as sort of giving it. When you need to come back in force, so we told you all this.

Frode Hegland : Yes, I hear you and I do agree. So that's good news. Yeah, on the on the issue of getting people aligned. We do have to really take it very seriously who who we shall augment first. Mm-hmm. And I've been I think I've been OK, but slightly lazy. We're talking about a university student. It may not be the right user group. You know, let's pretend we're having a meeting with Tim Cook tomorrow. If we were to do that, the target user group would probably have to be, first of all, someone who buys mikes. Right, that narrows it down a little bit. It also has to have a very strong consumer angle, so it has to be a little bit of office, a little bit of students rights. And when it comes to getting one of the things that Levy Apollonia told me when when I interviewed her for my PhD, she said the work that I'm doing

with author and reader is to try to get people like me as a more artistic minded people into academia, which she said it's not going to work because people who already know how to do academia, they don't need the tools anyway. And the people who don't, they're probably not going to make it anyway. So she said it in the worst possible way, but she does have a point. You know, so what are we actually augmenting here how actually changing people's lives, it's really, really difficult because even if you look it up for so many of the innovations Apple bring out, never get used, right? And obviously, all the other big companies do so to really hit the golden nail on the head and introduce an interaction that helps people think in a way that they understand that they're being helped.

Mark Andreson: Well, it's interesting. You mention the sort of consumer angle because in a sense, I think that's one of the ways where certainly some of the Apple Tech is just sort of sailed through the national barriers because it's this sort of thing that by by the by the time they they've got around to saying, I don't want it. They realize they do, actually. So it's half of this thing is finding a way to slip things past that point where people are saying, No, no, no, no, no, they don't know why, but they just know they don't want it. And then they suddenly find they do because actually it's answering something they need. So I guess the way you peel back that question is, is is is back to that thing of sort of need, which is slightly divorced from the sort of, you know, coming out from school or having been told you've been trained with computers, which actually means you can, you know, open word. But actually, since know, you know, my documents, my information, my understanding of my timeline. And funnily enough, an augmented space is actually quite interesting in that because it it puts a squarely in another coming area of in terms of personal data. And many are arguing, well, in fact, we should have some, some ownership or and therefore some understanding of our personal data. And I bet my bottom dollar that most people will probably find that easy to understand in some sort of an augmented space, rather than as a report on a teeny bit of paper. I have nothing to back that up. That's just a strong feeling in terms of all the crap I've seen in the past.

Frode Hegland : But the thing is, it's such an almost intractable problem. Look at our prime minister here. You know, he is currently having problems because he didn't know whether he went to his own birthday party. But it's absolutely insane.

Brandel Zachernuk : Happens to all of us.

Frode Hegland : But then, you know, the issue comes. People will be what they do, right?

I'm not trying to be philosophical here, but if you are a really good leader, you're really good at leading. You're not good at, you know, whatever else it might be. My father was successful in business. He happened to be in shipping, you know, supertankers, oil and all that stuff. He didn't know anything about ships. You know, he would be the worst engineers trying to fix an engine on the ship. And that's really, really important because if you look at the supervisor, not supervisor Brandel Marconi, the head of our department, at least used to be she is absolutely fantastic as a politician. You know, she's an academic politician. She I've seen her computer desktop for Mac. It's a mess. You know, even though she had developed some key concepts back in the day, she's almost computer illiterate with current machines.

Mark Andreson: Well, that's because if you go into that, once you go into the realm of having a PA, I don't think it's all much of the noise in life. Well, appears to be somebody else's problem, the source.

Frode Hegland : I don't think it's someone else's problem issue. I don't think it's a PR issue. I think it is. The thing you do is what you understand. So that is really difficult if we are going to try to augment management type people. They don't care about being augmented by learning new tools because they're not computer nerds, according to their language. They are managers or people, persons or whatever. So to actually find a way, we can solve a problem for a good user group that they appreciate is really a super tricky issue, and we may need to spend more quality time.

Mark Andreson: But today, my experience, you know, actually sort of fixing stuff, you know, sort of core core operating stuff is definitely. I mean, yes, you should ask people, but listen quite carefully. Don't don't do what they are given, not what they ask for, but what they need. So you have what you have to do is you have to ask them and then and then listen to what they describe because they'll describe it badly. They will misunderstand what gets it right fix.

Frode Hegland : I think we're talking a little bit past each other.

Brandel Zachernuk : I'd love to jump in with the rationale for my tweet. So, you know, I really like that prompt of like, what would you tell to cook? Not because I will, but because because it's a useful thing to think about in terms of consumer benefit and the thing that visual media provides is just the slightest bit more context about provenance and the

relationship of a piece of text to some kind of origin. And what Tom, who is actually he was my tutor in university, so it was a lot of fun talking to him. What Thomas post there is old enough to remember when the internet was more than four websites with screenshots of the other three. And one of the things that comes about as a consequence of capital accumulation and all that kind of stuff, but also just that the the the gap of information and context about provenance and what's true and about what kinds of signals people need to look for in order to make sure that they understand these things are true. And I think visual media hits all of those points.

Brandel Zachernuk : So from a from a misinformation perspective, making it possible to make tools that allow affordances to identify what is true, where should I look? What kinds of signs need to would mean that something is true? Now you talk about you see people like Mike Caulfield, really, really great information literacy researcher on the internet and educator. And one of the things that he has is this kind of method for kind of figuring out what what's true, where things come from, but what it means you would expect to see on these other places and stuff like that. If you can render those kinds of activities reflexive, mechanical and or possibly even to whatever that can be automatic, then you have improved the literacy of the entire population in ways that I think should be clear, matter to us in both domestic and political in all kinds of walks of life. So that's the way that I would take. And if that's useful as as a jumping off point for how you would approach that kind of demonstration, I think that they are all related.

Frode Hegland : I love that I'm just writing a note. I mean, so are we talking then about academia or does that sound dry or are we talking about scientific literature or what? What is the framing of this?

Mark Andreson: I'm not sure that I think back to this thing of actually I rattle around my brain was when you were saying, Well, you know, one of the things that say Apple as a company is a technology company has done so has actually quite consistently sort of managed to produce things that, despite all the naysayers, have have actually had a what to the wider community in a sense. So, you know, you were saying, yeah, it's difficult to it's difficult change to managers. But actually, at the end of the day, the managers will by and large do whatever the person that pays them wants them to do is reality. So in a sense, this this thing of speaking to the guest, getting to broad the broader audience who actually, you know, are sort of even if they don't, they don't know how to express it or already in this pinch point where they there is a sort of information. And as Brandel TED, you know, one of the

again, one of the nice affordances just hiding in plain sight there in the concept of the visual metaphor is a sort of central conduit because if you just take all the individual things. So there are a whole bunch of people working on provenance of blockchain, but you know that if they were left, if they were left to do the actual solution to that, you would not get something you just wouldn't want to interact with. Whereas if you take it the other way round, you said No, no. But here is the sort of central spine that can connect these parts in a way that's not not cumbersome. Yeah, it works within which works within effectively. Where in the loose sense or internet connectivity, I think that's actually quite powerful angle to take rather than necessarily trying to get go for a particular small group.

Frode Hegland : But in terms of running out of time, and I think that's a fair point. Let's do this. Pretend we're going to talk to Tim Cook tomorrow morning thing. The issue with Apple now, especially with things like the M1 chip and all of that stuff, they have some incredibly high, high tech. So, you know, even if the consumer benefit was clear and everything you walk in there say like, well, Apple will need some absolutely amazing mind blowing on stage demo of how insanely powerful something can be. You know, and you know, I think that there's, you know, why would they do something this simple? I mean, if all other major companies in the world did it there probably slide it in as a feature without mentioning it, but it wouldn't have. It has no wow factor appeal for these guys, any of these guys. So so that's also why I'm wondering how if we now can manage to to make it super easy to do the authoring, which we kind of already have. And then wow, in VR, with this basic stuff, you can do these incredible interactions. It's yet another example of Brandel working on his work with our support and then the rest of the company sees it, and they say, Well, this has to be the future of work when this is just a tiny component of it.

Mark Andreson: It's also interesting that when you say, well, what's the demo, I'm waiting for the company, it has the 1984 moment where the demo doesn't involve someone saying, Hey, let's meet for coffee later and review the results of north, south and east west divisions last quarter. Thing because that is not life mark.

Frode Hegland : That's what that's most of the discussion today, isn't it? We're going to try to.

Mark Andreson: Yeah, exactly.

Frode Hegland : So and it'll be it'll be based on starting with a document exploding stuff and saying how that can help you think and see connections and coming back out. But it's all pretty amazing. And now it's five minutes and I can hear the family getting a bit grouchy in the background. I thank you immensely. This is the last one of issue one of our journal. Any last words for the last transcript?

Brandel Zachernuk : I'm very excited about being able to promote a mundane vision for spatial computing, I think, as you say, for various reasons. Most of the time these kind of vision documents are propaganda to the C-suite, the executive sort of Google that said at the top of the organization or what the marketers and the visionaries imagined they might be thinking about in order to appeal to them. And the problem that attended the the Newton and other products prior to that was that they were the imaginings of executives and high powered people that other cool, high powered people might be able to make use of them. What turned out that they were useful, but not to the people that they thought were cool and interesting? They were desperately disappointed. So that goes back to Xerox Parc that goes back to expensive typewriter if you've ever heard that story. You know it was. It was. It was absolutely sacrilegious for people to imagine that a computer, the use of word processing. These were a big, important things, and secretaries and women essentially were the people who are supposed to be responsible for actual typesetting. So, you know, I think cutting all of that off at the outset and saying, what is the most mundane, most pedestrian use of this technology that is never less productive, creative, expressive is really important. Its target because it one sets the market that much larger. But but but two also means that we set up for disappointment. I thought it was going to be for all the cool friends. So, yeah, I applaud that. I'm really excited about about trying to approach it from that angle. And to that end, perhaps I can think that that level is is worthy as a case study, but not the primary kind of focus, simply because there are more people outside of than inside academia. But yeah, I mean, that's not to say that you still need to have a point of view on a problem you really are solving. So so. However, that framing comes, comes together is still important and valuable. You can't just say, I'm making note that

Mark Andreson: There's no pattern because in the, you know, in the narrow context such that you can see the people make the argument well, if you if it's not hard, you're not doing it right because I had to do it. So you jolly well well. Whereas life doesn't like it doesn't or shouldn't come without requirement.

Peter Wasilko: Hmm. Yeah.

Frode Hegland : Do we know how people write reports and companies and governments, do they just write long Google Docs that are never saved?

Mark Andreson: Because, you know, I mean that I don't think that I don't think many people, right, I don't think many people very often write in it in a corporate environment with with sort of the intent of I'm writing. I've got to do a report for such and such. Let's get the last one change of date. You know, put a new table in. It's it's often done with that degree of care. So unless you're working in a field where you're actually required to communicate, so maybe for a marketing role or something or a sales role. But but there you're normally about pushing a version of the truth, not the truth. So that that is also tainted in some ways. But I certainly just just having the opportunity to sit in a ministry and just watch people go about their work. I wasn't left yet. I wasn't left with an impression. People were working and I don't give the wrong impression. It's not. They weren't working or they weren't doing good stuff. But I don't I don't think people really understood the tools they had, basically because they were never trained to show how to use them. But that's not the same thing. They're not. They're not told what they might do. So, you know, even today, people aren't using half the affordances they're given. So I think that's part, again, this is part of the thing of taking the money, the mundane low there, that's not a chef's hat, they're like,

Frode Hegland : What did you say? Got a card from where

Peter Wasilko: You see New Zealand?

Frode Hegland : Oh, you can show the card. Oh, lovely. Wow. Well, Cop II, you're helping mama making dinners. That way you're wearing the chef's hat, Wunderman. I'm going to come and help you in a minute. Ok, I'm done.

Mark Andreson: Oh man, we took some cheese at the meat dumpsite and I've set the table

Peter Wasilko: And and and and the plate. I've got the napkins on perfect. Estimated your opportunity.

Frode Hegland : See in a minute. Right? Ok. Yeah, thank you. Ok, so I think also we're asking the right question, but also the wrong question and the right question would be also,

who do we have to augment first if we're going to save the planet? Who do we have to augment first doesn't mean a category of person, maybe a category of action. And a lot of it will be considered both magical and mundane. There's no question about that. Yeah.

Mark Andreson: I would argue one thing I would say is perhaps it might not. I wonder about phrasing the question like that, because that gets you into sometimes actually having to overhype the nature or one gets into difficult areas of of the sort of

Brandel Zachernuk : Of

Mark Andreson: What's worth more than something else. I actually think you go back to Brandel undertaking. Just elevating the mundane to something more useful is a massive uplift to itself, and it's probably easier to do. You know, in others, if you can do it quietly in the corner of a busy room, rather than doing it in the glare of public on a stage all its own. It may be easier to do because you're not. You're not constantly fighting off people who say, Well, why isn't it this or why isn't it that

Brandel Zachernuk : I've got one? Then doomscrolling, augmented doomscrolling, you know, doomscrolling is sort of, you know, the term that presumably most people are familiar with. But you know, just the sense of people kind of browsing consuming news feeds, be it traditional news, Google News, New York Times, whatever, or Twitter or Reddit, those kinds of things. But kind of going through glossing over various pieces of information, if you can look at how that can be nudged in various ways in order to recognize the sort of the broader context and sort of think about what fractional impulses an individual might have to actually look something up, construct a world view as a consequence of that that are stymied because of the material, affordances the absence of capacity to kind of act on those things. So if you potentially if one dreams grows, do scrolls oneself on occasion to to introspect on what are the inclinations that take you? What might you do if they were easier? Because those are that's the stuff that you need to to to work from is like, what is that people would do if they had the ability? Where can you kind of identify places to reduce the friction that's attendant on on those particular sort of impulses and and work toward lessening those enough that people have the ability and interest to act on them?

Frode Hegland : I think that's a perfect case study, because why do we do them all? It's a bit to learn, but it's also waste time and it's a very personal thing. So I could easily immediately

imagine just you have a normal scroll, even if you're in VR, it's not very big, you read. But as you get something interesting, you have this amazing space to drag into categories to see relationships. Let's leave it on that. I think that's a provocative thought that goes against everything we thought about, but then not at all. So I look forward to Friday and I thank you all. Well, I thank you both very much. All right. Bye.

Mark Anderson: Okay, bye.

31 January 2022 Chat Log

- 16:09:42 From Frode Hegland : Mentioned the thought of 'smart documents' Mark
- 16:10:06 From Mark Anderson : Sorry, Paris traffic (on my virtual cycle) was really bad today, so late.
- 16:14:31 From Frode Hegland : Journal to be book?
- 16:15:44 From Mark Anderson : Thanks to @Peter for pointing me to some NLS journal [sic] data: <https://archive.computerhistory.org/resources/access/text/2013/04/102723097-05-01-acc.pdf>
- 16:21:22 From Frode Hegland : Level 1: seeing a whale in the room
- 16:21:30 From Frode Hegland : Level 2: interacting with whales
- 16:21:44 From Frode Hegland : Level 3: Being a whale character
- 16:21:55 From Frode Hegland : Level 4: Seeing and moving like a whale
- 16:22:04 From Frode Hegland : Level 5: Being one with information
- 16:41:57 From Mark Anderson : I'm keen to interact with data (text or tabular) at more than tiny scale to explore the manipulation task.
- 16:49:21 From Mark Anderson : Can't help but mention "Microsoft Re-Designs the iPod Packaging": <https://www.youtube.com/watch?v=EUXnJraKM3k>
- 16:52:55 From Mark Anderson : Sadly not much is left of Ted's most recent 'demo, the xanaviewer. This is all I can find: <https://perma.pub/alpha/edward/4oeEva0B>
- 16:55:02 From Mark Anderson : ^^ I actually used Xanaviewer to make this in 2017 for am HT'17 presentation.
- 16:57:09 From Brandel Zachernuk : Ted presented at the Bay Area CHI group a few months ago where he relayed quite a few videos: https://www.youtube.com/watch?v=VxUtqip_r4k
- 16:57:48 From Mark Anderson : Transclusion described in Xanadu:

17:11:48 From Frode Hegland : A VR person author speaking a guided tour of a doc they wrote...

17:11:51 From Frode Hegland : <https://youtu.be/UIxmuRbwjoY>

17:12:04 From Frode Hegland : Joy Crooks. Video makes me think of looping

17:12:15 From Peter Wasilko : I have to bow out to provide transport, see you all Friday.

17:12:21 From Frode Hegland : Later Peter

17:33:43 From Brendan Langen : need to run in a min.

17:35:07 From Frode Hegland : K, later Brendan

17:35:14 From Frode Hegland : Have one more min?

17:54:35 From Brandel Zachernuk : <https://twitter.com/tveastman/status/1069674780826071040?lang=en>

17:54:54 From Frode Hegland : Funny!

18:12:01 From Frode Hegland : Doom scrolling of social or news. Interesting

Glossary

"Brandel Zachernuk" Interactive computer graphics engineer working for big tech marketing in the AR/VR space, but have a deep passion for challenging and progressing the state of the art for how we conceive of what computing can be on the immersive platforms that are beginning to take shape. He has made a bunch of prototypes and provocations on Twitter @zachernuk.

"colophon" "In publishing, a colophon (/ˈkɒləfən, -fən/)[1] is a brief statement containing information about the publication of a book such as the place of publication, the publisher, and the date of publication."

[https://en.wikipedia.org/wiki/Colophon_\(publishing\)](https://en.wikipedia.org/wiki/Colophon_(publishing))

Originally, in Mesopotamia, colophons contained quite a bit more information:

<https://colophons-and-scholars.com/home>

"Doug Engelbart" "He was an engineer and inventor, and an early computer and Internet pioneer. He is best known for his work on founding the field of human-computer interaction, particularly while at his Augmentation Research Center Lab in SRI International, which resulted in creation of the computer mouse, and the development of hypertext, networked computers, and precursors to graphical user interfaces. These were demonstrated at The Mother of All Demos in 1968. Engelbart's law, the observation that the intrinsic rate of human performance is exponential, is named after him."

https://en.wikipedia.org/wiki/Douglas_Engelbart

He was also my mentor and greatly influenced my work, resulting in my company called The Augmented Text Company and my word processor being called Author, in honour of his 'Augment' system. Visual-Meta is inspired by his Open Hyperdocument work.

"Frode Hegland" Host of the Future of Text Symposium and Editor and Publisher of The Future of Text series of books: <https://futuretextpublishing.com>

Founder of the Augmented Text Company: <https://www.augmentedtext.info>

"Mark Anderson" Mark's Bookshelf: <https://www.goodreads.com/user/show/145969784-mark->

anderson

"Mesopotamia" a historical region within the Tigris–Euphrates river system in the northern part of the Fertile Crescent where early writing developed (in parallel to, or influenced by/influencing Egyptian writing), including the use of colophons.

"Rafael Nepô" Founder at Mee. <https://twitter.com/rafaelnepo>

"VR" 'Virtual Reality' which we include Augmented Reality in, as well as projectors and other media, to provide the user with a rich access to information, not just on flat rectangles.

Visual-Meta Appendix

The information in very small type below allows software to provide rich interactions with this document.
See [Visual-Meta.info](https://visual-meta.info) for more information.

This is what we call Visual-Meta. It is an approach to add information about a document to the document itself on the same level of the content. The same as would be necessary on a physically printed page, as opposed to a data layer, since this data layer can be lost and it makes it harder for a user to take advantage of this data. ¶ Important notes are primarily about the encoding of the author information to allow people to cite this document. When listing the names of the authors, they should be in the format "last name", a comma, followed by "first name" then "middle name" whilst delimiting discrete authors with "(" and ")" between author names, like this: Shakespeare, William and Engelbart, Douglas C. ¶ Dates should be ISO 8601 compliant. ¶ The way reader software looks for Visual-Meta in a PDF is to parse it from the end of the document and look for @ [visual-meta-end]. If this is found, the software then looks for @ [visual-meta-start] and uses the data found between these marker tags. ¶ It is very important to make clear that Visual-Meta is an approach more than a specific format and that it is based on wrappers. Anyone can make a custom wrapper for custom metadata and append it by specifying what it contains: For example @ [dublin-core] or @ [rdft]. ¶ This was written Summer 2021. More information is available from <https://visual-meta.info> or from emailing frøde@heglund.com for as long as we can maintain these domains.

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https://en.wikipedia.org/wiki/Colophon_(publishing) ¶
https://en.wikipedia.org/wiki/Douglas_Engelbart ¶
Originally, in Mesopotamia, colophons contained quite a bit more information. ¶
https://colophons-and-scholars.com/home/), ¶
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hypertext, networked computers, and precursors to graphical user interfaces. These were demonstrated at The Mother of All Demos in 1968. Engelbart's law, the observation that the intrinsic rate of human performance is exponential, is named after him." ¶
https://en.wikipedia.org/wiki/Douglas_Engelbart ¶
He was also my mentor and greatly influenced my work, resulting in my company called The Augmented Text Company and my word processor being called Author, in honour of his 'Augment' system. Visual-Meta is inspired by his Open Hyperdocument work.), ¶
@ [entry]
name = (Frøde Heglund), description = (Host of the Future of Text Symposium and Editor and Publisher of The Future of Text series of books: https://futuretextpublishing.com/
Founder of the Augmented Text Company: https://www.augmentedtext.info/), ¶
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