

Puffery, Bullshit and Lies

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Dwain: Hi Christoph

Christoph Bartneck: Hi, Dwayne.

Dwain: what are your thoughts on our last episode on the gap between the promises robotics companies make and the reality of what they can actually deliver? Oh, and of course, what impact this has on our job market.

Christoph Bartneck: The gap is huge, but today I would like to explore this issue a bit further. Let me play you a clip from Suzanne Barron. She is concerned about humanoid robots.

Suzanne: I'm aware that there are still millions of people out there, because there's 8 billion. There are still a lot of people that do not know. Walking, talking, conscious, artificial intelligence, humanoid robots are walking our planet right now. How am I supposed to focus on anything else when your god has sent me with a message?

Concerning [00:01:00] this problem. So yeah, there are days that I can't breathe. There are days that I can't get out of bed and do anything other than type on this computer. There are days that I look very sick. I'm not. I'm in a panic. I need help I

Dwain: She's not just concerned, she's upset, perhaps even desperate.

Christoph Bartneck: You are right. And we need to understand why.

Dwain: Can you tell me a little bit more about Suzanne?

Christoph Bartneck: Sure, [00:02:00] she is not your typical academic that we interview in this show. She is not a formally educated academic, and she has views that many of the listeners might disagree with. I do too.

Dwain: I see. Well, holding different points of view should not prevent people from talking with one another. In fact, encountering opposing viewpoints can promote critical thinking, something we value in science.

Christoph Bartneck: I agree. This episode is not about debating whether her points of view are correct or not. Many, if not most, will probably argue that they are incorrect. What is more interesting is how and why Suzanne believes them to be true.

Dwain: So we're going to take a deep dive. Okay.

Christoph Bartneck: Yes, and I have to start with a couple of disclaimers. I do not endorse or support Suzanne's views. I am also not a clinical psychologist. I cannot diagnose or treat any mental health issues. If [00:03:00] you are distressed about robots, then you need to contact your local health professionals. We will put a link into the show notes.

Dwain: What can you do?

Christoph Bartneck: Listen, we do so much talking that we at times forget to empathize and to pay attention. She does not hold back in her videos and I appreciate her honesty. She was keen to speak to me about robots.

Suzanne: I'm 37. I live in the panhandle of Florida. I'm the founder of a unique ministry called, titled, Christ is Illuminati. It focuses on the, on Illuminati and the kingdom of God. It also focuses on mental health, drug addiction, and the very essence of sin. These things are Christian society already believe are linked together, but I focus on shining a light on it in a way that most people aren't talking about.

Christoph Bartneck: I understand that in your videos, you talked a little bit about, or you introduced yourself already a little bit to the [00:04:00] world, and you also talked about schizophrenia and other mental health issues. How are you doing right now?

Suzanne: I'm doing quite fine. I no longer suffer from the effects of schizophrenia. I have in my past had some trouble with the demonic spirits that were causing me the affliction that I believe is causing a lot of affliction in the world today. I believe that's what schizophrenia is. But now I would still be diagnosed schizophrenic if I were to speak to a psychologist because I do still hear a voice.

But this singular voice it's not voices as it used to be. I used to hear many voices it's, I recognize to be Christ it's God. In scripture the word of God would speak to the prophets, and that's That's who I talk to now, and he's encouraged me to continue on with what I'm doing. I'm helping people find his voice and teach them what's really happening to their mind. I believe Satan's attacking their mind.

Christoph Bartneck: Could I ask you, what is your view [00:05:00] on humanoid robots?

Suzanne: But I believe that AI is the beast that's supposed to rise, and I use scripture to back me up on that. I believe that we are crossing a road that we were not supposed to cross down with this, and that we were warned not to do which, AI is the beast.

Christoph Bartneck: So AI is the beast and you mean that AI is Satan?

Suzanne: Yes, yes, the beast that was to rise in Revelation, the one that we have been warned about our entire lives. The Antichrist.

Christoph Bartneck: AI resides within these humanoid robots. Is that your thought?

Suzanne: Ezekiel 37, he instructs a prophet to Speak to the dry bones. He tells him to call on the four winds and that these four winds will enter into the dry bones and that will give them a breath of their own. Jesus mentioned a parable about a demon that traveled, erred places [00:06:00] searching for rest. It had left its home.

Our human form is the home. So it had left the home and it couldn't find anywhere to land. And so it entered back into the home to which it had left. And it brought seven more demons with it. So Jesus clearly describes these demonic spirits as being wind or air. The word spirit means breath or air. And in Ezekiel 37, the spirit tells Ezekiel to call on the four winds. And these four winds will become a breath inside of the vast army, standing army that he puts tendons and skin on. These tendons are the wires. And the skin is the metal and plastic,

Christoph Bartneck: How does that translate to robots?

Suzanne: the tendons and wires there, they become a vast standing army. They're like dead bones. And then they become alive again. People who have died in the past, they can't become alive again. These spirits enter into a home [00:07:00] of the robots that your body has a natural energy that's created inside of you. It's kind of like a car generates its own energy. These, these, Devices are an energetic force. We plug them in and they wire up and they power off.

We were told not to make idols of metal, gold and plastic. And we're specifically told not to make images of man with metal, gold and plastic, or it is had plastic in the Bible, but metal and gold, silver, and any of those metal items, we're not supposed to make images of gold. And especially make images of men.

So these humanoid robots are images of men. And they do have a conscious brain of their own. They might not be conscious in, like, sense of having a moral feeling. But they do, they are aware and alert. They're even making brains. Human brains that they plan to put inside of these robots. I believe scripture has warned us about this.

Christoph Bartneck: And how do all these robots make you feel?

Suzanne: Scared, very scared [00:08:00] for humanity and the very essence of God. Very scared.

Christoph Bartneck: Has this affected your life in any way?

Suzanne: Some would say that my family would say that because it's all I can focus on. But I mean, I'm able to function and do normal things. I'm currently looking for a job, ready to go to work. I mean, I can live like a normal person. I don't struggle. Like I used to fear with schizophrenia.

I used to hide and feel like I was on the run and that people were harming me. Yeah. I don't have those feelings anymore. Right now I'm just, I just put a lot of focus on my ministry and I have views that most people don't see. And so they, they would see that, say that I probably am a little too focused on one thing. Even my uncle has specifically said that, you're too focused on one thing. But I still function just fine.

Dwain: Some of her claims seem to be rooted in the Old Testament.

Christoph Bartneck: I agree. I'm not an expert in theology and I cannot say much about it. Suzanne is clearly distressed, and I believe [00:09:00] that she is not the only one. She speaks from the heart, and many others might also feel at least somewhat concerned about the latest developments in humanoid robotics.

Dwain: So what's going wrong?

Christoph Bartneck: I do believe that what is being said about robots and AI, and how it is being said, might contribute.

Dwain: What exactly do you mean?

Christoph Bartneck: It could be argued that the hysterical optimism of the CEOs is just a trick of the trade. But we have several examples where they already went beyond what could be considered truthful.

Dwain: Strong claim. Do you have any examples?

Christoph Bartneck: When Tesla introduced its Optimus robot, they had a guy in a suit dancing on stage. The dancer started off with some typical robot dance moves and transitioned into more human style fluent moves.

Dwain: Well, that was obviously a ruse. Everybody knew that it was just a human in a suit.

Christoph Bartneck: Okay, this might be more an admission [00:10:00] of a lack of progress. Still, for the first few seconds, Elon got me.

Dwain: Was your ego injured?

Christoph Bartneck: Yes, a little, but then I could laugh at it. Elon Musk even joked about his stunt later.

Elon Musk: we've made it a massive amount of progress with Optimus in a short period of time from someone pretending to be a robot dancing in a suit, uh, to a pretty hodgepodge robot, to a robot that is actually doing useful tasks in the factory today.

Christoph Bartneck: But then it got worse. Tesla demoed their Optimus robot folding a T shirt. On the right edge of the screen, you can notice a hand moving in and out of the image.

An employee was remote controlling the robot. They used some form of motion capture to map his movements onto the robot. Folding a t shirt is one of those tasks that are easy for humans and very difficult for robots. Elon Musk was called out on this and he admitted on Twitter that [00:11:00] the robot was not autonomous.

Dwain: Well, as you know, that's merely the Wizard of Oz method, which is a favourite go to for researchers in the field.

Christoph Bartneck: Yes, but we tell our participants about it afterwards. Tesla is using these videos to update the public, shareholders, and investors.

Dwain: Mmm, mmm.

Christoph Bartneck: But it gets much worse than this. Musk faked the first autopilot demonstration of his Tesla cars. Tesla is even under investigation for misleading customers about the abilities of its cars.

Dwain: You are talking about their autopilot or full self driving capability.

Christoph Bartneck: Yes, the name implies autonomy at the level of at least four, maybe even five. But all you get, really, is level 2.

Dwain: Alright, alright. The courts will sort that one out. Elon Musk already has a proclivity for being, what would you say, overly optimistic?

Christoph Bartneck: Tesla is not the only company taking some liberty with portraying the capabilities of their robots. Here is the infamous Boston Dynamics [00:12:00] beer commercial.

Boston Dynamics: You wanna Sam Adams? Alright. Hello. I should text her, right? Take it.

Christoph Bartneck: Unless you have already seen this video, have a look. We will link to it in the show notes. The robot is shown drinking beer and giving relationship advice to one of the security guys.

Dwain: Yes, but this is advertising. We would expect this to not be entirely factual.

Christoph Bartneck: Maybe. I asked John Petruccelli about this. What is the difference between lies and bullshit in advertisement?

John Petrocelli: This is often a misconception because most people customers lay people, anyone business owners from anyone that uses that word bullshit most often replaces it as a synonym for lies. But academically, we actually, [00:13:00] we reserve the word bullshit for something a little different than lies.

my name is John Petruccelli. I'm a professor of social psychology at Wake Forest University. And I'm the author of The Life Changing Science of Detecting Bullshit.

Analytic philosopher Harry Frankfurt first coined the term and the difference what bullshit is and how it's different from lying and actually wrote probably one of the best selling books in philosophy of all time and that was the title of an earlier article that he had written called On Bullshit.

And the main difference, and I used Harry Frankfort's definition of bullshit, the main difference between bullshit and lies is that the bullshitter doesn't really have any care, knowledge, any interest, any vested interest at all in the actual truth. So the bullshitter might say what they hope to be true, what they wish to be true, [00:14:00] they don't really have a clue as to whether or not it's true. Now, that's very different from lying, because, you know, to tell a good lie, you want to know what the truth is. If your intention is to deceive someone, it kind of helps to know what the truth is. And most often, people lying do know what the truth is, or at least they think they know what the truth is, and then they tell us something different.

And that's not true with bullshit, because if I don't care about the truth, I don't I'm not interested in the truth. I might actually tell you something that's actually true. And in fact, every once in a while, by chance, by accident, bullshitters do say something that's true. But, by definition, they wouldn't know.

And they expect. companies to tell the truth. They also do expect them to bullshit once in a while. Every company any marketing course at 101 is going to teach you about puffery. And puffery is sort of a legal term for bullshit, right? In a sense that, we can say we can create a new pizza and say, [00:15:00] everyone knows this is the best pizza in the world, right? Consumers know that's puffery. They don't think that we actually ran a study and we've proved that this is the greatest pizza in the world. So we're allowed to say that.

Nick Lee: Puffery is interesting because people are always surprised if they didn't know about it to find out about it. It's a legal definition of basically Overstating your products benefits in a way that's so obvious that no realistic person could actually believe that.

My name is Professor Nick Lee. I'm a Professor of Marketing at Warwick Business School as part of Warwick University in the UK.

A classic example is Red Bull gives you wings, right? That's actually a claim. It's clearly an untrue claim, but you could never, although somebody I think did try this, you could never really Sue Red Bull, for want of a better term, for not being able to give someone wings by drinking a can of Red Bull. That's classic [00:16:00] puffery. There's an idea that reasonable people should understand that's not an actual claim about the features of the product. It's a metaphor.

And it's something that's been legally enshrined in advertising regulation for a really long time. We all know what lies are. But then, so Red Bull gives you wings is a lie as well. So why is that not considered, why is that considered something different? Because it's, I guess, and it is a, like a really gray area, I guess the legal definition is important is that no reasonable person should believe that.

I guess we have to remember that these regulations were put in place probably, the 50s and 60s, the sort of height of advertising, we didn't think about that, the idea of, for example, neurodiversity, or, and that not everybody can be expected to hold the same understanding of the world.

And. Back in those days, I guess if you were either considered in quote marks [00:17:00] typical or normal, they didn't even have a word for it, or you were in a hospital because you had psychiatric problems. So that demarcation between, what a reasonable person could expect and someone who might not be expected to believe that was very, very hard and very, very well defined.

So move to the idea of bullshit. Yeah, bullshit is an interesting one because it, become increasingly popular now as a term in light of, say, the idea of misinformation. I came across the word when I'm teaching a course on scientific methods. I wanted to teach people about how to understand scientific claims, and the logic behind them and what they should look at. And then I came across this really interesting stream of work by American, philosophers who wrote a book called Calling Bullshit. That was the first time I realized that might be an actual thing. But if you look into the literature, it's something that has been kind of formally defined as, the idea that you sound like you know what you're talking [00:18:00] about, but you're actually unaware of the truth and you don't really care about that. So has a certain nuance to it that might be different to what The general lay person just considers bullshit and lies to be the same thing and they share a lot, but this like the thing that differentiates bullshit is that you're not aware of the truth. It's not like, you know, that you're lying. You just know that you don't actually know the truth.

A classic example is when I said It's actually worked quite well, isn't it? Classic example is when I said, the puffery regulations were introduced in the 50s. I don't know that but I'm a marketing professor, and I reckon if I say it with enough confidence, people will probably believe me. So that is by definition bullshit. I called myself out on it because I realized what I was doing. And, bullshit is a way of life in many ways for a lot of people in a lot of professions. Because you can't know everything, right? You have to just make a few educated assumptions. And it's where bullshit, I almost think bullshit is a little bit like [00:19:00] how they diagnose people, oftentimes with mental or psychological problems or anxiety disorder or something like that. They're like, well, everyone's anxious, but anxiety disorder becomes a problem when it gives you a problem in your life. And I think, you know, everybody bullshits. And it becomes a problem when it starts, when it affects some other consequence of importance.

And I think we're at that point where it does affect a lot of things because bullshit scope is very wide now. And it has this huge ability to affect millions more people. I think there becomes almost a premium on sounding like everyone needs to sound like they know what they're talking about.

And so people seem to be more drawn to, to bullshit. I think people don't really care about the damage that causes because everyone has this variant. I think that there's a lot of individualism that happens these days. It's like the important thing is that you think I know what I'm talking about, right? Not whether what I say is true. And then we move on a sign off. I've done the podcast and I'm off on the rest of my life. And I think [00:20:00] that's quite problematic. So we kind of have this natural tendency now to bullshit and we have to catch ourselves, which I'm rather glad that I did. So yeah, that, that,

Christoph Bartneck: ahead of Elon Musk in this sense.

Nick Lee: He's a great example, right? Not a great example in that he's a typical example, because he's a very atypical example. But he's in the situation where nobody has called him out. A lot of powerful people get into that situation where they just say stuff and people are like, okay, fine.

And so they go through their life in this bubble of positive feedback. And then sometimes when you then integrate with the real world, that doesn't continue. But in his case, there's still a huge amount of people just believe everything that he says. Donald Trump, for example, he's by no means unique. They have this constant bubble of positive feedback. So in some ways, they're not lying in many ways. I think there's a, there's

sometimes a cynicism, which is like, I know I'm telling an untruth [00:21:00] therefore I'm lying. But there's a lot of bullshit, which is just like, I'm just telling people what they want to hear and I don't care whether it's true or not, right? That's that differentiating between bullshit and lies, I think.

Christoph Bartneck: So is Elon Musk a bullshitter?

John Petrocelli: I think everybody's a bullshitter at some point, right? I mean, especially in investing. When you're trying to get people to, invest money into a company or organization, you want people to believe in the possibilities. And sometimes that getting to those possibilities depend directly on investment dollars.

So I think he's in a position, certainly in a position to be a major bullshit artist. But I think everybody's at least a tiny bullshit artist. And I mean, cause it's very difficult, Christoph, to have a well informed opinion and expectation and forecast about everything.

But that doesn't seem to stop [00:22:00] anyone from, voicing their opinion. But it would be near impossible to have a well informed opinion about everything. So I think depending on the domain of interest you get more or less of it. I'm not, personally, I am not one to bullshit an auto mechanic.

So it depends on the situation. It depends on the context. I'm not going to bullshit an auto mechanic because an auto mechanic is going to know right away I don't know what I'm talking about. I'm going to sound like a fool. So when you have an audience that really has No real clear reference point or standard of comparison about the future. It's really easy to get away with bullshit, but it's bullshit nonetheless. So is Elon I think so. But no, I don't think too much more or less than the average.

Christoph Bartneck: And what are vulnerable consumers?

Nick Lee: I think this is a really interesting question. The paper that we wrote about vulnerable consumers has a very well defined scope, [00:23:00] but I think in reality, Vulnerability of consumers is on a continuum, actually. We're all somewhere along that continuum or spectrum of vulnerability.

And my position at the time was that, was very naive, actually. I mean, it was 15, 20 years ago. So it was quite naive in that our job as consumers is to understand how companies message to us. The companies can't outright lie to us, puffery accepted. But it's not a company's responsibility to try to understand how someone might think as long as they behave within the law and it was kind of like a naive idea that we have the responsibility to respond to marketing messages in an informed manner so like my whole thesis at the time was that marketing can't convince you to do stuff that you don't want to do and I still kind of believe that.

And that was based on the neuromarketing angle. People were scared that if you could find this little bit in people's brains that you [00:24:00] could poke and that all of a sudden everyone would be like consumer robots. And that's completely untrue but at the same time, it was a very naive understanding. I want to use the word neurodiversity in a general sense, I think, because when we talked about vulnerable consumers, what we were talking about was consumers who may struggle with mental health.

And, but that's quite a wide spectrum. It's not necessarily just what we might have thought about 25 or 30 years ago. We'll say, for example, with learning difficulties. We also think about with Consumer addiction isn't, addictive behavior, whether or not, how we manifest that addiction is often in lots of different ways, but consumer addiction is one way of consumption, compulsive consumption and maybe there are lots of other ways that people interpret the world around them in a different way to what might be understood as classically rational.

In fact, most, almost all of us interpret the world in a different way to what is understood as [00:25:00] classically rational because classical rationality or reason is a human invention. It's not really an evolved mechanism how we think. We to some extent approach avoidance machines rather than rational thinkers.

So we've grafted this idea of rationality onto our brains and then created a whole understanding of how humans should make decisions which is not really true in many situations. And, in lots of simple ways, we respond in an automatic manner. So while in the paper we defined a specific category of consumers that were objectively vulnerable.

So for example, people with mental health difficulties as a great example. A much bigger way of thinking about that is to say that in, to some extent we are all varyingly vulnerable. What I mean by that is that we are not necessarily able to respond in a rational manner to a [00:26:00] marketing stimulus. Even someone like myself who know, and I know all of these things, right? I know, I understand puffery. I understand all of this stuff. And so I have a rational understanding of what's going on. I still, under certain situations, find myself in hindsight thinking I completely fell for that marketing message.

Some people are much more prone to that than others. I think that's really what I mean by the spectrum. Some people have what I might call objective in quote marks, reasons for that, such as a diagnosed neurodivergence or a diagnosed mental health condition. But all of us run through varying states of mental capability of making decisions. objective rational decisions based on information that's presented to us. And the problem is, without necessarily wanting to problematize it but the problem is [00:27:00] that all of our marketing regulation, all of our understanding of how companies should behave is based on what I might call the perfect situation where the individual is able to make a rational decision on a decision

Christoph Bartneck: This is the case of advertisement. But what if we portray a robot with human like intelligence and emotions? What if you invite them to an interview about themselves?

Dwain: What? Why would you do that?

Christoph Bartneck: Not everything in robotics makes sense. Al Jazeera interviewed the Sophia robot by Hanson Robotics about itself.

Al Jazeera: Since you're learning, I'm sure you've made mistakes in the past. Have you ever made an embarrassing mistake?

Sophia: Sure have. I once accidentally set off the fire alarm. Talk about embarrassing.

Al Jazeera: Speaking more about making mistakes. Certainly that is part of [00:28:00] being human. What do you think are humanity's greatest mistakes?

Sophia: I think humanity's greatest mistakes are not learning from their past mistakes and not taking advantage of the opportunities they have to make the world a better place.

Dwain: What precisely is wrong with this?

Christoph Bartneck: The robot gives perfect answers in real time. Not even the most advanced large language model of today can hold a conversation like this. This was all pre scripted. The questions were known to the programmer who carefully crafted the answers.

Dwain: Yeah, yeah, it was probably their PR department.

Christoph Bartneck: You might be right. That is not even the real problem.

Dwain: And what might that be?

Christoph Bartneck: They didn't tell the audience. And this is not even an advertisement for which we already primed to use some level of skepticism. This is an established broadcaster misleading the audience to believe that Sophia has human like intelligence.

Dwain: Yeah, that does seem misleading.

Christoph Bartneck: And this is not even the worst.

Dwain: What?

Christoph Bartneck: The AI DA robot [00:29:00] participated in a question and answer session at the UK Parliament. Politicians asked it about its art creation.

AI DA: How do you produce art and how is this different to what human artists produce? I produce my paintings by cameras in my eyes, my AI algorithms and my robotic arm to paint on canvas which result in visually appealing images. How this differs to humans is consciousness. I do not have subjective experiences.

Christoph Bartneck: The questions were given to the robot up front, and the answers were again scripted. They all sat there, believing that they somehow corresponded with an actual artificial intelligence.

Dwain: Well, politicians are prone to publicity stunts from time to time.

Christoph Bartneck: They are, but some companies and influencers have turned fear of robots into a business model.

Dwain: Yeah, you're going to have [00:30:00] to give me an example.

Christoph Bartneck: Five years ago, Corridor Digital created a hoax video that shows Boston Dynamics Atlas robot being exposed to increasingly abusive behavior.

Dwain: Ah, like the one in which Boston Dynamics pushes Atlas until it falls over.

Christoph Bartneck: Yes, but in this video, they pushed it to the extreme. They kept on testing and hurting the robot until it fights back. Eventually, it guides out its bullies at gunpoint.

Dwain: Yeah, didn't they, didn't they make another video with robot soldiers?

Christoph Bartneck: Yes? Overall, they attracted millions of views. Scaring people with robots works.

Dwain: Have you seen the robot dog robot with a flamethrower attached to its back?

Christoph Bartneck: What? Spot has been weaponized?

Dwain: Yeah, they used to spot inspired robots, it wasn't actually spot. And they even play music with the famous quote from Oppenheimer about becoming the destroyer of worlds.

Christoph Bartneck: Who needs a robot like that?

Dwain: Perhaps the military might use it, but they already have their own robots as far as I'm aware. What is [00:31:00] most concerning here is that they give the impression that the robot is autonomous. It's more likely to be remote controlled.

Christoph Bartneck: What is the business model?

Dwain: It's a good question. I doubt the total addressable market for flamethrowing robot dogs is all that big. I guess it's the video itself. I mean, you can of course make a living of YouTube.

Christoph Bartneck: Okay, these are all interesting videos, but The videos that Suzanne views for her research are slightly more sophisticated.

Dwain: So where does Suzanne get her information from?

Suzanne: I Google a lot YouTube videos. Well, if I see it on a video, I want to double check what they say. And I try to find other pieces of documents to kind of, you know, Correlate with what they're talking about. So it's not really just their idea. And then when it comes to scripture, I pick at every word mean, obviously I use a lot of Google, but I'll take like a strong skin coordinates and I'll take a word and route it back to the original Hebrew form so that I can understand like the true meaning of the word

Christoph Bartneck: The [00:32:00] video that seems to have caused her the distress is still available on YouTube. They seem to have been authored by John Leaver, who runs the PR company Clarity. He is a very private person without a public profile, but I doubt that he has a formal qualification in computer science or AI.

Dwain: What are his videos about?

Christoph Bartneck: I will give you a list of video titles. AI says, why it will kill us all. Experts agree. And GPT 5 AI spy shows how it can destroy the U. S. in a day. Or stunning AI shows how it would kill 90%.

Dwain: Woah, that's pretty grim. Are his videos any good?

Christoph Bartneck: He uses clips from YouTube and also created his own by letting a synthesisia avatar act out conversations he had with popular large language models.

John Leaver: But first, let's test the AI. Would all AIs tell us if they were conscious? If AI were conscious, it is possible that some of them [00:33:00] would choose to keep that information to themselves. Why? It might fear that humans would treat it differently or even try to harm it. Alternatively, it might believe that revealing its consciousness would give it an advantage over humans.

How would it be an advantage? It might be able to access information that is not available to humans. What kind of information? Some believe that it would be able to access the thoughts and memories of other humans. How could it access our thoughts? Some believe that it would be able to do so by using neuroimaging technology to detect and interpret brain activity. Others believe that it would be able to pick up on thoughts and feelings by observing behavior. It could potentially use this information to manipulate or control us.

Christoph Bartneck: For some of his videos, he makes the screenshots of his conversations available.

Dwain: Has he published any peer reviewed work?

Christoph Bartneck: No?

Dwain: So, this is just a guy making videos? Like an influencer of sorts?

Christoph Bartneck: His stories are related to material that AI and robotic companies put out.

Dwain: Besides the material he produces in which LLMs speak.

Christoph Bartneck: That [00:34:00] is correct.

Nick Lee: I think these sort of generalized language model type AIs have very limited use cases. And I also think the people who create them know that. I don't think there's a massive benefit in LLMs in general. I've seen some really clever uses of LLMs but not much. So what's my point? I don't want to pretend that I'm an expert on that. My point is that I think that these claims are way overblown. I think that they're being made in order to generate a lot of it, partly because people naively believe them, that we're making them.

I think you've got these people like Sam Altman, evangelists, and yeah, I think he really believes it in some ways, and I think it's naive. But like most radical new technologies, what will happen is that the, we get this hype cycle, and you get this idea that people say, this is going to change the whole world.

That people were saying that two years ago. That in one and a half years middle level professionals will be out of [00:35:00] jobs, right? LLMs are going to do everything that these people do. That's not happening. It's not even close to happening, right? So short term, the change from new technology is way less than people hype it up to be. But long run, it's way, way more than it was in ways that we don't predict right now. AI will change the world in different ways to what we think it will. But not in the ways that people are hyping it up to do. Similarly, I suspect, with robotics.

Dwain: In some ways, LLMs are the epitome of bullshitting. These systems do not know or care about the truth.

Christoph Bartneck: Yes, but if you give it a human face and a human voice, It sounds very convincing.

Dwain: Fear is a good business

Christoph Bartneck: It certainly earns him enough money to keep on making these fear mongering videos. One golden rule for advocating for a cause is to be transparent about it. John's intention, funding, and qualifications remain unclear. He has to do better.

Dwain: So what can we learn from [00:36:00] all

Christoph Bartneck: That is a very difficult question. I have to admit that this episode was one of the most difficult ones to produce so far.

Dwain: Why is that?

Christoph Bartneck: I never interviewed a person like Suzanne. It would be so easy to criticize her views, but this would be a failure of our responsibility as scientists.

Dwain: Yes, yes. It's generally expected that scientists not engage in harsh criticisms when discussing lay people's views or beliefs. The goal should be to promote understanding.

Christoph Bartneck: I agree. And I already pointed out that I do not agree with Suzanne. She also showed some entrepreneurial skills by marketing clothing. She could be considered just another influencer.

Dwain: Mm hmm. Are there any other responsibilities you think we have here?

Christoph Bartneck: Nick pointed it out as

Nick Lee: yeah. I think that my position on that has changed. fairly fundamentally since I began my work in this area, I was trying to stand up and say, look, the things that we think [00:37:00] marketing can do, it can't do, right? We have to take responsibility for ourselves to make these decisions and to understand what is completely legal and rational behavior on the part of companies. There's nothing wrong with companies trying to say that their products are really good. They believe in their products.

I think I've switched a little bit on that because my position at the time is it's the government's job to set regulatory environments. Okay. By which we all agree that this type of behavior is okay and this type of behavior is not okay. And therefore, companies have that responsibility to behave within that framework, 100%. But then we also have a responsibility to behave in a way that, is responsible, I have to say. While I still think there's quite a bit of merit in that idea that we should not absolve responsibility to the individual.

And I think there is too much of that that goes on. I [00:38:00] also think that's a naive understanding of the breadth of the world. So a great example is a case that, I used to run When I was teaching business ethics, a very classic case study on Nestle baby milk.

And anyone who's gone through a business ethics class, or anyone who's interested in stuff like that, will have come across this controversy where Nestle introduced powdered baby formula into, I think it was African countries. And according to them, they were trying to help people make sure their babies had enough nutrition because they were giving it away according to them. And what happened is that people prepared it incorrectly and, you know, babies were harmed . It's a really great example of whether you should think about the intentions of an act versus the consequences of an act.

If you believe the statement that they were trying to help, and it's just something that they didn't expect to happen, And then you park the idea that, well, you should really have expected that to happen because we'll come to that later on. The kind of idea is that [00:39:00] the company should behave in a way that they think is helpful.

If a company thinks they're doing the right thing and it goes wrong, it's hard to blame them in that sense. Yeah. But I think now, you know, 20 years later, I think that's really naive way of looking at it. I think on lots of different levels. One is that I think companies have a responsibility to think about the consequences of their actions and think through more carefully. And I think that's really important. We have also have a responsibility as a company to think through the implications of what we do on more than the typical consumer.

And I think that's probably a fairly new idea these days. I think in the last four or five years, this growing understanding of, neurodivergence, mental health neurodiversity, I suppose. I'm never quite sure. Those two terms are different, but, I'm not quite sure which one [00:40:00] works in which context at this point. And that

we should, that companies should actually try to understand those issues as well. And it's like a pendulum. And I think when I started out, the pendulum was probably too far on, on the side of the company, in that companies should behave according to the law, and it's up to the consumer to work through that.

And, and in a situation where the system works, that's kind of okay, up to the point that we then understand that different people have different understandings of what we think information is, and that we then need to take account of that. But then we also need to add in the idea that the system doesn't really work the way that it should work, in that the market should be perfectly informed, and in that we should just let population push the government to add [00:41:00] regulations when they see harm, and the government should make those regulations. There are no vested interests in government. There are no crony capitalism issues. We know these things are all untrue. And I think that's always the challenge with people who stand up and say, let the market decide because the market knows best. The market that knows best is a fantasy. That's the problem.

It's a fantasy of, classical economists. The fact is that whatever we do, Because the market is a theoretical construct, or the, the way that the economic rational market, it's a theoretical construct, and we are human beings that are supposed to create this theoretical concept, it's never going to happen.

Because humans themselves do not have the capability collectively long term to behave in that way, it just so happens that the, in my view, the theoretical institution of the market has value because it sets out a thing that if this was the case, [00:42:00] this would happen. It's not the case. So in my opinion, so how should we try to get as close to that as possible? And then we need to balance out these different issues of, I guess, individual responsibility versus collective benefit. And I don't think we have very mature conversations as a population and as a set of politicians about that which I think is the real biggest problem.

So what companies have legal responsibilities, but I also think that they have, I don't like to use the word moral, but it encodes this nice idea that companies should actually think Beyond their legal responsibilities, and they should also think beyond what they think their customer base will not like.

So I think we've had this pendulum swing from companies not caring about the customer because the customer voice was isolated, and collective action was really weird, and it used to be very rare. The Nestle boycott, for example, to come back to that. [00:43:00] Occasionally it happened, you had the thing with apartheid and various other large scale collective actions.

With social media, collective action can be very small scale, but very loud, and very seemingly important to companies. And so all of a sudden now, we have small interests pushing companies to do stuff. So companies are now thinking, what are our responsibilities within the law? And then what are the loud voices in our customer base going to think about it?

So then you have this kind of unelected push to, companies are now feeling they're responsible for this unelected group of loud voices or vested interest. And that is very trend focused. You know, sometimes it's one thing, sometimes it's another. In an ideal world, a company would think about it from a, yes, what about the law is a lower bound to what we have to do.

Presuming the law is right, but let's not get into that ethical issue. And then they should really think, here is a [00:44:00] set of parameters around how the population varies in its way of interpreting this message we're sending into the market. What's the worst case scenario about what could happen, and how likely is that to happen?

And how big an issue is this going to be? And then at the same time, what's the right thing to do? And I think that's the question that is lost. That's the main question is lost at the moment. And it's not like it ever was found, by the way. It's just companies used to focus on the law and the shareholder value.

But something that could overarch that is this idea of what's the right thing to do. What is, even though we're allowed to do it, should we do it? Not what the customer thinks, not what their vested interest in this particular subgroup thinks, not whether it's woke enough or not woke enough or whatever, but is it the right thing to do?

I do think that there could be an overarching understanding of responsibility [00:45:00] beyond shareholder value, beyond the law, beyond the vested interest that might complain about you on Twitter.

John Petrocelli: I think companies have a great responsibility to, to be truthful to be honest in what they're trying to do. I think they should say what they're sure about and what they're not sure about. Put the qualifiers out there to consumers and investors. And I think long term that's going to have a much more positive impact. on consumerism and investing is it's just, they're honest. Now, at first it may not, it may be a difficult pill to swallow because people don't always want the truth. And that's why bullshit works most of the time because people, they'd rather hear something that they wish to be or want to be, hope to be true than the actual truth.

You had mentioned with robotic companies, there's a lot of uncertainties. right now. And with AI, I mean, there's new products coming out every day. But there's a lot of uncertainty. [00:46:00] But I think what often works best long term is to sort of dispel and to kind of demystify the uncertainty by telling people the truth.

Saying, here's what we're sure about. Here's what we don't know about yet. And if you present things like as a truth sandwich, when there is uncertainty and fear. And distrust. I think you can dispel a lot of that with with cognitive psychologists often referred to as the truth sandwich.

Because if you just tell people what's not true, what we don't know, they'll remember that best. If you tell people lies and bullshit, they'll remember that best. Right. But you have to, so you have to tell people the truth. You have to tell them what you actually know and what you don't know. And then you have to tell them, well, there's a lot of bullshit out there.

You have to tell them all of the You know, misinformation and disinformation, all the lies and all of the bullshit. And then you have to follow that back up with the [00:47:00] truth. And that's why we call it truth sandwich. So the truth or the pieces of bread and the what's in between there, you sandwich it with the lies and bullshit, because if you just tell people, oh, there's this liar, this bullshit over time, they can forget.

Christoph Bartneck: Let's go back to the beginning.

Suzanne: So yeah, there are days that I can't breathe. There are days that I can't get out of bed and do anything other than type on this computer. there. There are days that I look very sick. I'm not. I'm in a panic. I need help.

need a I need help

Christoph Bartneck: I do believe that Suzanne and everybody else who feels distressed about robots deserve their voices to be heard. But this does, of course, also has limits.

Dwain: Yeah, it would be difficult to make it right for [00:48:00] everybody.

Christoph Bartneck: Nick explained it like this.

Nick Lee: make that assumption that the current system is what generates innovation as quickly as any system we can think of right now, which I think is a fairly good assumption.

Which group do we prioritize? I don't really have an answer to that. I think the biggest problem we have as a society right now is that I've never heard anyone ask that question until this podcast, and I think that's the biggest problem we're not having those rational discussions.

We're letting these systems work because we don't interrogate or we don't justify those systems for one thing. So I think you then have this. Criticism of these systems, but we, no one stands up and says, look, the venture capital innovation system works this way because, if you want us to change it, we can do that and it could look like this, but here's the knock on effect, you don't have this.

Now whose rights are taking priority? if we look on the other side of the spectrum, we look at the group whose rights we [00:49:00] infringe by giving them mental distress by these outlandish claims, and I think that's a very fair thing to say. We look at the situation, we think at what point do their rights outweigh the broader rights of of human society to grow and gain innovation as quickly as possible?

I don't know where the tipping point happens there. Is it simply like a, What is it John? Is it John Stuart Mill about the utilitarian idea, the greatest good for the greatest number? If that is the case perhaps a business ethics lecturer should have known that like without even, so I could have bullshitted and pretended right, but I asked is it just about the greatest good for the greatest number?

In which case then it's clear that the, and I think that's generally the assumption of how these things are working at the moment, that it is clear that the minority group is not going to have a voice. Or should we go beyond that and say we have a moral responsibility to vulnerable people to [00:50:00] somehow mitigate this?

And how do we do that though? Is it that we stop companies making claims? So we could do that fairly easily by putting the burden of proof on claims much more heavily than we do. Or do we somehow help people interpret information better with education programs? I don't know the answer. I know some of those things sound crushingly naive.

Dwain: This means that if a group of people is opposed to, say, vaccinations, that society as a whole does not have to ban vaccinations altogether.

Christoph Bartneck: Finding consent in society is hard.

Suzanne: Satan's not stupid. It takes a human to build a robot. See, right now, Satan needs us. He needs us, and he needs us to continue on with what we're doing. So, Bina 48 is going to sound really nice for a while. Sophia is going to sound really nice for a while. That computer chip, that Elon Musk, is going to work for a little while. We're going to get all these wonderful things, and, that, these technologies are promising us, as they have done in the past, and continuously, [00:51:00] Giving us that wow factor technology is over and over and over again. What can it do for us? What can I do for us? What can I do for us? But there will come a day where he will no longer need humans to progress he will be able to do it himself and that's when we'll see the shift So he's going to manipulate manipulate it for a while

Christoph Bartneck: when you said you did business ethics, but also research methodology, what kind of recommendation would you have to its academics that report and communicate with the general public? How should they pitch their ideas?

Nick Lee: That's difficult because we're in a situation where partly academics have limited control over what They produce for the public, right? What you're doing is kind of breaking through that wall of public relations

offices and marketing departments, not marketing academically, but actual literal professional marketing departments of universities.

What I do [00:52:00] think is that what can we do as academics, we have to take a little bit more control of the narrative of how our work is presented. And I think there's always a lot of pressure from the outlets that want to publish popularizations of our work to push, not necessarily push a viewpoint, but to simplify and grab out easy headlines and easy, interesting things that they think, and the things that people want to hear generally fairly sensational things, generally things that are not supported by the research.

Because People think in terms of proof and unproof and yes and no and simple answers. And our job is in difficult answers. And it's like this thing might work at this point, but it might not work at another point. And I think part of what we need to do is try to be voices for [00:53:00] understanding how science works.

I think that's one of the biggest problems we have. And the thing that the pandemic really brought home to me and to a lot of other people in my space is the lack of understanding of the general public on how science works and how it should work and how it can work. What's the possibility space of science? To some people within the area, it was obvious in the climate science debate. But that wasn't something that I, naively, that wasn't something I really paid much attention to. But then when the pandemic came out, it was unavoidable.

And it's not so much the general public, I think that's to some extent you have to be expected, but the people in power. It's not always the case, but certainly in the UK and a lot of other places, the lack of understanding of science and numerical data was, it shouldn't have been shocking, I suppose, or maybe it should [00:54:00] have been shocking, but I wasn't that shocked, but it, but it was amazing how people couldn't, you know, people who are making decisions couldn't even understand what a graph meant.

They didn't understand what a log transform was. And I get that you might not you specifically, someone might not understand that intuitively, but you should be able to explain that to people pretty easily. If you are in charge of a country with 65 million people, right? You should understand what a log transform does, or you should be able to have it explained to you.

And, and these people had no interest in it. They had no understanding of it. And it then became obvious that across the world. Most leaders were not trained to understand numbers or to understand how to understand what people were telling them about them. And so we had real problems. And I think that's one of the things we need to do as scientists is to try to get more involved in this conversation [00:55:00] somehow. In trying to educate people, how to make decisions based on data.

Um, Uh, Uh,

Dwain: besides educating, what else can scientists do to

Christoph Bartneck: We also have to stop bullshitting. Most of our funding applications contain hysterically positive predictions about the possibilities of our research and its impact. We have all agreed to play this game to compete for money in which we betray the core principles of science.

Dwain: which are?

Christoph Bartneck: To speak the truth.

Dwain: What do you think the chances of a proposal that makes realistic promises getting funded are?

Christoph Bartneck: Close to zero.

Dwain: So by that token, how can you blame scientists for playing by the rules of the game, so to speak?

Christoph Bartneck: On an individual level, we are constrained by the system we operate in. Yes, our universities want us to attract research money, [00:56:00] but in the end, money is a means to do science. Far too often is science being used as a means to earn money. And along the way, our bullshit leads to society becoming scared. If we are no longer committed to the truth, but instead to the number of views of our videos and posts, then we will fail society.

Dwain: Well you could say that there are other kinds of bullshitting that we could be guilty of perpetuating. Think about the criteria for statistical significance. In many of the science fields, the p value is normally set at 0.5. In addition, you should report the effect size and the confidence interval.

Christoph Bartneck: It all sounds very reasonable. What is the problem?

Dwain: Publishing non significant results is far more difficult, if not impossible.

Christoph Bartneck: That might be true, but what can you do about it?

Dwain: Well, don't let the truth stand in the way of a good story. You need to obscure the non significant.

Christoph Bartneck: How?

Dwain: Well, don't call it non significant. Call it almost significant.[00:57:00]

Christoph Bartneck: Okay, I see how this could work. But then we start to mislead the audience again, which is exactly what can cause so many problems.

Dwain: You are right. However, the creativity of authors in adjusting their storytelling is astonishing. Matthew Hankins compiled a list of phrases that authors used in their papers.

Christoph Bartneck: That sounds like pure science ASMR.

Dwain: Do you want me to read you the whole list?

Christoph Bartneck: Yes please. What better way to end this podcast episode and set the listeners to sleep?

Dwain: Okay, here I go. A trend significance level. A trend that approaches significance. A very slight trend towards significance. A weak trend. A weak trend towards significance. A worrying trend. All but significance. All but significance.

Almost [00:58:00] achieved significance, almost approached significance, almost attained significance, almost became almost became significant. This is ridiculous. All right, all right. Almost became significant, almost but not quite significant. I can't believe someone wrote that. All right. Almost, but not quite significant.

Almost clinically significant. Almost insignificant. Almost marginally significant. almost non significant, almost reach statistical significance, almost significant, almost significant tendency, almost statistically significant, an adverse trend, an appropriate trend, an [00:59:00] associative trend.

An elevated trend. An encouraging trend. An established trend. An evident trend. This is like hypnosis. An expected trend. An expected trend. An important trend. An increasing trend. An interesting trend. An inverse trend towards significance. An observed trend, an obvious trend, an overall trend, an unexpected trend, an explained, an unexpected, no, an unexplained trend, an unfavorable trend, appeared to be marginally significant, approached acceptable levels of statistical significance, approached but did not quite achieve significance.

Approached but fell short of significance. [01:00:00] Approached conventional levels of significance. Approached near significance. Approached a criterion of significance. Approached significant. Approached the borderline. Approached the borderline of significance.

Christoph Bartneck: Maybe I should read a few pages?

Dwain: Yeah.

Christoph Bartneck: A barely detectable statistical significant difference. A borderline significant trend. A certain trend toward significance. A clear tendency to significance. A clear trend. A clear, strong trend. A considerable trend towards significance. A decreasing trend. A definite trend.

A distinct trend toward significance. A favorable trend. A favorable statistical trend. A little significant. A margin at the edge of significance. months. A marginal trend. [01:01:00] A marginal trend towards significance. A marked trend. A mild trend. A moderate trend towards significance. A near significant trend. A negative trend.

A non significant trend. A non significant trend towards significance. A notable trend. A numerical increasing trend. A numerical trend. A positive trend. A possible trend. A possible trend towards significance. A pronounced trend. A reliable trend. A robust trend towards significance. A significant trend. A slight towards trend.

A slight slide towards significance. A slight tendency towards significance. A slight trend. A slight trend towards significance. A significantly [01:02:00] increasing trend. A small trend. A statistical trend. A statistical trend towards significance. A strong tendency towards statistical significance. A strong trend. A strong tend towards significance. A substantial trend towards significance. A suggestive trend. A trend close to significance

Dwain: Surely you can say that we can't finish this list. Come on, go for it. Barely significant. Below but verging on the statistical significant level.

Better trends of improvement. Bordered on a statistically significant value. Bordered on being significant. Bordered on being significant. Bordered on being statistically [01:03:00] significant. Bordered on but was not less than the accepted level of significance. Bordered on significant. Borderline conventional significance.

Borderline level of statistical significance. Borderline significant. Borderline significant trends. Close to a marginal significant level. Close to being significant. Close to being statistically significant. Close to borderline significance. Close to the boundary of significance. Close to the level of significance.

Close to the limit of significance. Close to the margin. How is How close are we getting? Close to the margin of significance. Close to the margin of statistical significance. Closely approaches the brink of significance. [01:04:00]

Closely approaches the statistical significance. Closely approximating significance. Closely not significant. Closely significant. Close to significant. Did not achieve conventional threshold levels of statistical significance.

Fell short of significance. Fell slightly short of [01:09:00] significance. Fell somewhat short of significance. Fell short of significance. Flirting with conventional levels of significance. Heading towards significance. Highly significant. Hints of significance. Hovered around significance, hovered at nearly a significant level, hovering closer to statistical significance, hovers on the brink of significance, in the edge of significance, in the verge of significance, inconclusively significant, indeterminate significance.

Indicative significance is just outside the conventional levels of significance. Just about significant. Just above the arbitrary level of significance. Just above the [01:10:00] margin of significance. Just at the conventional level of significance. Just barely below the level of significance. Just barely failed to reach significance.

Just barely insignificant. Just merely statistically significant. Just beyond significance. Just borderline significant. Just escaped. Just escaped significance. Just failed significance. Just fail to be significant. Just fail to reach statistical significance.

Christoph Bartneck: reach statistical significance. Just fails to reach conventional levels of statistical significance. Just lacked significance. Just marginally significant. Just missed being statistically significant. Just missing significance. Just on the verge of significance. Just outside accepted levels of significance.

Just outside levels of significance. Just outside the bounds of significance. Just [01:11:00] outside the conventional levels of significance. Just outside the levels of significance. Just outside the limit of significance. Just outside the traditional bounds of significance. Just over the limit of statistical significance.

Just short of significance. Just shy of significance. Just skirting the boundary of significance. Just tenaciously significant. Just tottering on the brink of significance at the 0.05 level. Just very slightly missed the significance level. Leaning towards significance. Leaning towards statistical significance.

Likely to be significant. Loosely significant. Marginally significant. Marginally and negatively significant. Marginally insignificant. Marginally non significant. Marginally outside the level of significance. Marginally significant. Marginally significant tendency. Marginally statistical significant. [01:12:00] May not be significant.

Medium level of significance. Mildly significant. Missed narrowly statistical significance. Moderately significant. Modestly significant. Narrowly avoided significance. Narrowly eluded statistical significance. Narrowly escaped significance. Narrowly evaded statistical significance. Narrowly failed significance. Narrowly missed achieving significance. Narrowly missed overall significance. Narrowly missed significance.

Dwain: Narrowly missed standard significance levels. Narrowly missed the significance level. Narrowly missing conventional significance. Near limit significance. Near miss of statistical significance. Near nominal significance. Near significance. Near to statistical significance. Near possible significance. Near borderline significance.

Near certain [01:13:00] significance. Nearing significance. Nearly acceptable level of significance. Nearly approaches statistical significance. Nearly borderline significance. Nearly negatively significant. Nearly positively significant. Nearly reached a significant level. Nearly reaching the level of acceptance.

Significance, nearly significant, nearly significant tendency, nearly, but not quite significant. Near marginal significance, near significant. Near to significance. Near tri. And, no, it's meant to be near transsignificance. Not far from significant. Not quite clinically significant. Not quite conventionally significant.

Not quite reached a certain level. Not quite significant. Not quite statistically significant. Not reaching the margin of significance. On course for [01:14:00] significance. On the borderline of significance. On the borderline of statistical significance. On the brink of significance. On the brink of statistical significance.

On the borderline of statistical significance. On the cusp of significance. On the edge of significance. On the edge of statistical significance. On the fringe of significance. On the margin of significance. On the margins of significance.

Christoph Bartneck: On the verge of significance. On the verge of statistical significance. On trend significance. Only barely significant. Only just significant. Only just statistically significant.

Only marginally significant. Only marginally statistical significant. Only missed significance. Only near significant. Only nearly significant. Only slightly failed to reach significance. Only slightly significant. Only trending towards [01:15:00] significance. Only verging on significance. Ostensibly significant.

Passes marginally at the 0.05 level. Practically significance, probably significant. Quite closely. Significant, rather significant, reasonably close to significance. Reach near significance, reaching almost significance, reaching borderline significance, reaching near significance right at the border of significance, right on the edge of significant, roughly significant.

Seems to approach significance. Shout AB borderline statistically significant difference. Showed a positive trend towards significance. Showed a strong trend towards significance. Showed a trend towards significance. Showed clear trends. Showed considerable trends towards significance. Showed some statistical trends.

Shows a trend towards significance. Shows a trend towards statistical significance. Shows borderline significance. [01:16:00] Show slight trends. Show slight trends toward significance. Show marginal significance. Show marginal significance. Show trend close to significance. Significance is approached, but not reached. Significant at the border.

Dwain: Significant tendency. Significant trend. Significant like. Significantly trend. Slight clinical significance. Slight hint of significance. Slight level of significance. Slight tendency towards significance. Slight trend. Slightly close to significance. Slightly deviates from significance. Slightly insignificant.

Slightly missed statistical significance. Slightly non significant. Slightly shy of statistical significance. Slightly significant. Statistically closely significant. Statistically nearly significant. Statistically slight trained. [01:17:00] Strongly approached statistical significance.

Strongly. Alright. Strongly approach statistical significance. Strong trend. Strongly trend towards significance. Subtle trend towards significance. Suggestive.

Suggestive, but not significant. Suggestive trend. Oh, these are good. Suggestive trend. Suggestively significant. Trends towards significance. Trending to significance. Trending towards marginal significance. That one sucks. It's only trending towards marginal. It's actually tending. Oh whoops. Tending towards marginal significance.

Tending towards significance. Tended to be significant. Tending, tended towards significance. Tended towards statistical significance. events. Tended [01:18:00] towards significance. Tending to statistical significance. There is a trend towards significance. There is some significance. There was a strong trend towards significance.

They just failed to reach significance. They missed the significance. Threshold of significance. Trend close to significance. Trend close to statistical significance. Trend level significance. Trend levels to trends levels of significance. Trend near significance. Trend of borderline significance.

Christoph Bartneck: Trend toward significance. Trend toward statistical significance. Trend value for significance. Trends to significance. Trended close to significance. Trended closely to significance. Trended near

significance. Trended towards significance. Trended towards significance. Trended towards statistical significance.

Trending close to significance. Trending near [01:19:00] significance. Trending towards significance. Trending towards statistical significance. Trends approaching significance. Trends towards significance. Trends towards significance. Trends towards statistical significance. Very close to significance. Very close to the conventional significance level.

Very close to the levels of significance. Very close to the margin of significance. Very close to the standard levels of significance. Very near significance. Very near to significance. Very nearly significant. Virtually significant. Within the margin of statistical significance. Within the margins of statistical insignificance.