TECHNOLOGY

< Just How Real Is Virtual Reality?

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LULU GARCIA-NAVARRO, HOST:

Virtual reality hasn't become a reality for most of us yet. So if you want to know how real virtual reality feels, listen as this young girl balances on a virtual plank and then steps off.

(SOUNDBITE OF ARCHIVED RECORDING)

UNIDENTIFIED WOMAN #1: Help. Help. No. No.

GARCIA-NAVARRO: Don't worry. She survived. But how will I do when I walk the plank? Keep listening. In the last few years, we've seen a new wave of VR technology, from those 360 videos on cardboard viewers to more sophisticated headsets. And now there's the VR arcade. I recently went to check one out in New York City.

It's called VR World, advertised as the largest virtual reality center on this side of the planet. Joining me there is Jeremy Bailenson. He runs the Virtual Human Interaction Lab at Stanford University. And he's written a new book on VR called "Experience On Demand." Full disclosure - he's also a friend.

Bailenson's a VR pioneer, but he's never seen anything quite like VR World.

JEREMY BAILENSON: I've been doing virtual reality since 1999. If you would've told me back then that I could walk into an arcade like this with literally - I think I see 60 stations here - it's taking me off guard, to be honest. It's really special.

GARCIA-NAVARRO: I've never done VR before - like, not even one of those cardboard viewers looking at your phone.

BAILENSON: It's a privilege to be here for your first time.

GARCIA-NAVARRO: (Laughter).

BAILENSON: And we're going to make sure you stay safe, OK?

GARCIA-NAVARRO: OK.

Safe - but first, of course...

UNIDENTIFIED MAN #1: We'll just have you just fill out a very basic waiver.

GARCIA-NAVARRO: That's in case, while I'm doing virtual reality, I accidentally hurt myself for real. Now it's time for my plank experience. I put on a chunky, black VR headset. And suddenly, I'm standing in an elevator complete with elevator music.

(SOUNDBITE OF ELEVATOR MUSIC)

KEVIN: And up we go.

GARCIA-NAVARRO: The elevator doors open.

(SOUNDBITE OF DING)

GARCIA-NAVARRO: And I'm at the top of a skyscraper so high that I'm above the clouds, balancing on a tiny, wooden plank with nothing on either side but a massive drop.

GARCIA-NAVARRO: Oh, no, no, no, no, no, no, no, no, no, no.

UNIDENTIFIED MAN #2: Try looking down.

GARCIA-NAVARRO: Oh, my God (laughter).

KEVIN: So now you take step out on the plank.

GARCIA-NAVARRO: OK.

KEVIN: I believe in you. You got this.

GARCIA-NAVARRO: I - oh, my God. Yeah, your mind is like, no, no, no, no, no, no. OK. We're done now. Thank you. It's terrifying. Oh, my God. That's terrifying.

I could barely take a single step. And that, Bailenson says, is the magic of VR. It actually tricks your brain.

BAILENSON: What you just did was sane, actually. Assuming that the brain treats that as real, why would you ever step on that plank in the first place?

GARCIA-NAVARRO: Right.

BAILENSON: And the whole point of everything that I do from research standpoint - we make a mistake where we talk about VR as a medium. The brain tends to treat the experience as if it were real.

GARCIA-NAVARRO: That feeling of realness is what Bailenson wants to harness. As we're about to head upstairs to talk more about his research, Bailenson asks us to hold up.

BAILENSON: Now, I want to do this for two minutes.

GARCIA-NAVARRO: We stop at a popular VR first-person shooter game, "Raw Data." Bailenson's never played it before because he's a scientist. And he doesn't get to have a lot of fun with VR. So "Raw Data" - there's a complex storyline, but the important part is you get to shoot robots. Bailenson gets a headset and two handheld controllers. He's supposed to use them as guns.

UNIDENTIFIED MAN #3: Grab your guns at any point in time...

BAILENSON: Do I have to use guns? Can I play this game without using guns?

UNIDENTIFIED MAN #3: No, unfortunately.

BAILENSON: The only way to interact with anyone in this game is by using guns?

UNIDENTIFIED MAN #3: For this character, yes.

BAILENSON: OK.

GARCIA-NAVARRO: Bailenson tries it out but never fires a virtual shot. Remember this moment because I'm going to ask him about it later. But for now, we go upstairs, where Bailenson shows me how his lab is using VR.

(SOUNDBITE OF VIRTUAL REALITY SIMULATION)

UNIDENTIFIED WOMAN #2: Climate change has begun. It is already hurting our planet.

GARCIA-NAVARRO: This is one of Bailenson's VR simulations. It transports you to the bottom of the ocean to see the effects of CO2 pollution. In his new book, Bailenson writes about that experiment and the myriad other uses he's found for VR - mitigating the effects of PTSD, developing training software he sells to pro sports teams and creating understanding of some of the world's most complex problems like deforestation and racism.

BAILENSON: So imagine that you look down in your NVR, and you see your right arm, and it's a different skin color. We do something called body transfer, which is - you feel like you're someone else. We use a set of exercises that - as you move around and see your body move with you, the brain tends to treat that - we call that an avatar - as part of the self. In other words, you truly feel like this avatar you're wearing is someone else. Then you experience some level of trauma. You experience some prejudice about your race, about your gender, about your age. Perhaps you're disabled. And you experience prejudice firsthand while walking a mile in someone else's shoes.

GARCIA-NAVARRO: Experiments like that have proven that VR can build empathy and change the way people think. Bailenson says he thinks that's exactly the kind of thing this powerful tool that affects our perception should be used for.

BAILENSON: Save it for things that are impossible to do in the real world - like

change your skin color - things that are dangerous to do in the real world, like go down to the bottom of the ocean - and then, of course, things that are super expensive or rare. If five years from now, Lulu, you're checking your email in VR, then I've done something wrong as an evangelist.

GARCIA-NAVARRO: So back to that robot game. If you'll recall, Bailenson didn't want to shoot the robots, which makes him, by the way, a terrible gamer. In fact, he has never shot anything in VR because he says there are some real dangers to this technology and how we could use it.

BAILENSON: I watch zombie movies. I'm not against watching TV shows that have got all sorts of intense stuff. I love it. And video games - you know, currently, there's a lot of research on desensitization. But you're still kind of using your thumbs on buttons. And there's this level of separation.

With VR, you're actually getting the muscle memory to kill. And when it gets done really well, you're actually going to be learning the skills to succeed at violence. You're going to know how exactly to hold a gun and to reload and how to, you know, crouch down for lines of sites. And it's - you know, I can't look you in the eye and say that I truly believe - and I do based on our data - that VR can actually change behaviors about racism and about sexism - but, if you do bad stuff, that it won't equally affect you. I can't maintain that position.

GARCIA-NAVARRO: So should it be regulated?

BAILENSON: From a legal standpoint, you're saying?

GARCIA-NAVARRO: I don't know. I'm asking you, should it be regulated? Should this nascent industry self-regulate?

BAILENSON: I spend a lot of time with these companies. I talk to them at the top level - the CEOs. I talk to the - they each have their own lobbyists. And maybe this is cliche. I think they want to do the right thing. My interactions with the VR teams on these companies is they'd be open to that - kind of a self-regulation. I don't think anybody wants to train murderers in VR.

GARCIA-NAVARRO: Well, once a technology's out there, what's to stop people from taking it in a direction that could be harmful? We've seen that with social media.

BAILENSON: I have very, very little ability to control anything in this world. What I can do is I can talk to people like you. I can be really honest about the downsides. What - you know, functionally, what I can do right now, most importantly, is for friends and family - give them the right kind of guidelines. How long is too long? How young is too young? And, you know, we're struggling with these immediate answers right now.

GARCIA-NAVARRO: As someone who's been doing this for a long time, do you feel like this is a moment where this is actually going to change the way that we understand and interact with this medium?

BAILENSON: Look. We are in an arcade in New York City. And they opened the doors. There was a line of kids that just came in here and are running around and playing. So this is a little different than anything I've experienced. So I know VR - the joke that everyone's had is the next year, it's going to be in your living rooms. And we've been saying that since the '90s. But this does feel like a special time.

GARCIA-NAVARRO: Jeremy Bailenson directs Stanford's Virtual Human Interaction Lab. His new book is "Experience On Demand" - out now. By the way, if you're wondering how long is too long or how young is too young for VR, Bailenson told me he's let his 6-year-old daughter try out VR only four times and then only for a couple of minutes on each occasion.

(SOUNDBITE OF KETTEL'S "CLEAR")