

FINDINGS

3-D Avatars Could Put You in Two Places at Once



Cade McCall

FUTURE IS HERE Through a 3-D avatar, you could always appear awake.

By [JOHN TIERNEY](#)

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If Jim Blascovich and Jeremy Bailenson are right, here is what's in store for you and your avatar very soon, probably within the next five years:

Multimedia



 Virtual Conferencing

1) Without leaving your living room or office, you'll sit at three-dimensional virtual meetings and classes, looking around the table or the lecture hall at your colleagues' avatars.

2) Your avatar will be programmed to make a better impression than you could ever manage.

3) While your avatar sits there at the conference table gazing alertly and taking notes, you can do something more important: sleep.

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You could also create a face partially morphed from that of anyone in the room. When researchers morph a person's face with a politician's, that person becomes more likely to approve of the politician.

Does this sound like future hype? Your first instinct may be to classify it with the old predictions — see World's Fair, 1964 — that there would soon be a picturephone in every kitchen. It took half a century for video phone calls to become affordable and usable. But in their new book, [Infinite Reality](#) Dr. Blascovich and Dr. Bailenson insist that 3-D conferences with avatars are nigh because consumer technology has suddenly caught up with the work going on in their virtual-reality laboratories in academia. These [psychologists](#) point to three developments in the past year: the [Microsoft](#) Kinect tracking system for the Xbox, the Nintendo 3DS gaming device, and the triumph on “Jeopardy!” of [I.B.M.](#)'s Watson computer.

“These three events have been paradigm-shifting for avatar conferences,” says Dr. Bailenson, the founding director of Stanford's [Virtual Human Interaction Lab](#). “Virtual reality scientists have been waiting for these events for decades — and faster than most of us predicted, the technology is finally ready for the living room and the cubicle.”

The Kinect tracking device, sold for \$150, shows that it's now practical for you to control your avatar simply by moving around the living room — no more need for special suits or elaborate sensors in a lab. Nor do you have to wear special glasses to see in 3-D, thanks to the “autostereo” display on the new \$250 Nintendo 3DS, which beams a three-dimensional image to the naked eye.

With these technologies — and a few tricks that have already been done in the lab — you can sit at a virtual conference table and exchange glances with the avatars of the other participants. Unlike the two-dimensional avatars that are already convening on Second Life and World of Warcraft, your avatar would appear to be three-dimensional, and you'd feel immersed in the scene as you looked around at the other participants from the eyes of your avatar.

These moving and talking avatars would be computer-generated, and in that sense they'd be less

photo-realistic than the images from Webcams that are already available on phone calls and teleconferences through services like [Skype](#). But looking at Webcam images of talking heads isn't as satisfying as sitting around with three-dimensional avatars, according to Dr. Blascovich, the director of the [Research Center for Virtual Environments](#) at the [University of California, Santa Barbara](#).

“People don't like video conferences today because it's more like watching ‘Hollywood Squares’ than being in a meeting,” Dr. Blascovich says. “You want the feeling of sitting at the table and having a full view looking around, seeing the side conversations and gazes that people are giving each other. In our lab, we can already give you that feeling by putting your avatar in a virtual conference room.”

By building an avatar based on your photograph and tracking your movements, a computer could give a fairly accurate rendering of you and of your reactions. But how accurate would you want it to be? Why let everyone know what you really think of them? In a virtual classroom, for instance, you might want to program your avatar to appear to sit up straight and look intently at the professor — even as you slouched or looked around the room. Similarly, your professor could program her avatar so that she seemed to be gazing directly at you throughout the entire lecture — and create the same illusion for each of the other students in the virtual classroom.

Now that computers like Watson have gotten so good at emulating humans, avatars could be programmed to go on autopilot during a class or meeting, according to Dr. Blascovich and Dr. Bailenson. In “Infinite Reality,” they imagine a slacker named Dave who sleeps in while his avatar attends an 8 a.m. corporate meeting.

“Dressed impeccably in a digital Italian suit, the avatar was programmed to be a perfect participant,” they write. “It laughed at jokes (taking cues from voice inflection changes of the other avatars), nodded in all the right places, and dutifully recorded the details of the discussion.”

To make a really good virtual impression, Dave could exploit a tactic that has been demonstrated in [experiments involving politicians' faces](#). When researchers partially morph a person's face with a politician's, that person becomes more likely to approve of the politician — and has no clue why. As long as the ratio of the politician's features remains below 40 percent, the person doesn't even realize the photograph was doctored.

Therefore, Dr. Blascovich and Dr. Bailenson say, you could conceivably create an avatar with a face partially morphed with that of anyone in the room that you wanted to impress. In fact, you could customize it so that each person saw a face containing some of his or her own features. That would presumably make you more popular with your colleagues or clients — who, of course, might be using exactly the same strategy by displaying avatars morphed with your facial features. There'd be a lot of love in the room, assuming that any of the avatars' owners were actually awake.