

On Telepresence

1. Welcome to this next video lecture on virtual ontology. Today we will explore the new phenomenon of telepresence enabled by the internet. In particular we will VR and dive deeper into the use of avatar personae in video gaming, and in recently emergent augmented reality.
2. Oral communication is face to face; speech is a (1) performance before an immediately present audience. By virtue of this, speakers can draw upon embodied mimetic communication as well to enhance audience understanding and attentiveness. That is, speech is both embodied and rhetorical. (2) It is an event, performed at a particular time and place before and between particular people. (3) It cultivates a communal identity.
3. Literate communication, by contrast, is characterized by absence. (1) A text is *not* an event but an object that can be stored and disseminated to readers the writer has never met, and who may only read it long after its author has died. (2) When one writes, typically even one's intended readers are absent, and (3) when one reads a text, its author is almost always absent. Both reading and writing then are typically solitary activities. (4) Reading by oneself enables you to think for yourself. (5) Writing by yourself, let alone writing for yourself, enables you to record not only your own thoughts and beliefs but also your own feelings, desires and experiences. Literacy thus cultivates an individual identity.
4. Virtual communication shares characteristics of speech and text. (1) On the one hand, it can be interactive like orality. (2) On the other hand, as in literacy, parties are not physically present to each other. Rather both are telepresent. Just as telephone is voice at a distance and television is vision at a distance, so telepresence is presence at a distance. My body is in one place, but my attention is somewhere else. (3) When playing a video game, for example, I remain physically in my room glued to my chair but my attention is elsewhere in the virtual world of the game.
5. Now novels can also transport their hearers and readers to another world, the literary "world of the text" in which they can "lose" themselves. But here the communication is one-way, from writer to reader. (1) In a video game on the other hand, communication is two-way. One sends as well as receives. It thus enjoys the immediacy of interactivity as in orality, but with the global dissemination and potential permanence of literacy.

6. In this video lecture I will focus on four categories of telepresence. (1) I begin with robotic telepresence in physical space, first, at different orders of magnitude as in robotic microsurgery and then secondly, (3) at a distance, as in the case of drones. And of course the two can be combined, as in robotic telesurgery where the surgeon is thousands of miles away from the patient or the robot is on a distant planet yet performing precise infinitesimal experiments.
7. I then turn to telepresence in virtual space through avatars. Within the latter I shall explore both first-person and third person orientations. (1) In a first-person orientation, as in a “first-person shooter” game, I see what my avatar would see if it could see; in other words I embody the avatar as I embody glasses or weapons—I see and act through the avatar. (2) In a third person orientation, on the other hand, I control the action of an avatar that I monitor from above or “over the shoulder.” In this respect the avatar is more like an alter-ego or companion. I don’t act through it so much as I act with it. I am telepresent in the game through the avatar in both scenarios in that my attention is “immersed” in the virtual world and the intentionality of my action and cognition is directed there, in the virtual world, even though my body remains here in physical space. (3) Finally, there is augmented reality, in which text, virtual objects, even other people are telepresent in one’s own actual location.
8. In the film *Fantastic Voyage*, released in 1966, a team of scientists board a medical submarine that was then miniaturized so as to be injected into the bloodstream of an important scientist to break up an otherwise inoperable blood clot in his brain.
9. We still do not have the technology to miniaturize people, but surgeries that do something even more fantastic are now routine — inserting a probe replete with miniaturized cameras, sensors and robotic prostheses that can be used to perform procedures internally at a micro scale. For example, the Da Vinci robotic surgery system offers a surgeon a VR console that provides microscopic 3D high definition livestreaming and multiple miniaturized prosthetic tools and instruments that enjoy greater degrees of motion, precision, grip strength etc than any surgeon’s own hands. While physically seated at the console, the surgeon’s attention is immersed in the body of his patient, telepresent microscopically at the site of the organ, muscle or blood vessel being operated on.

10. Drones on the other hand can lead to telepresence across vast distances. Drone pilots at say Creech Airforce Base outside of Las Vegas operate high above suspected terrorists on the ground in say, Afghanistan or other “hot spots”. In such a scenario where is the pilot? Outside Las Vegas or on the battlefield in the Middle East? His attention is certainly over there, above the battlefield. While he looks at screens, he embodies the drone’s tools through the mediation of the internet and the control interfaces. It is drilled into him that despite all these mediations, the effects of the drone’s actions are real, not virtual, and that they are *his* actions, for which he will be held accountable. Perceptually, cognitively, and morally he is acting on the other side of the world from his body. He is telepresent on the battlefield in the Middle East.
11. The Air Force is discovering that drone pilots are emotionally telepresent as well. PTSD is at least as common among drone pilots as it is among soldiers physically on the battlefield. While not vulnerable to physical trauma, the psychological and moral harm can be even worse. For the world a drone pilot inhabits while flying his or her drone is radically different from the world he or she inhabits back home, with his or her family after the duty shift is over.
12. AWS, alternate world syndrome is a condition suffered by some airplane pilots training on simulators. It is caused by the instant switching back and forth between two radically different frames of reference leading to vertigo and nausea. Suffering carsickness while reading in a moving vehicle may be similar. One is focused on the stationary text while out of the corner of your eye you are also seeing the world passing by. Experiencing yourself being both stationary and in motion at the same time can be disorienting. (1) Drone pilots, telepresent in battle during the day, home at night sharing dinner with their family can also be psychologically disorienting. Adopting a warrior ethos during the day and a civilian spousal or parental persona at night, week in and week out for months can be even morally disorienting. After the second world war, soldiers had weeks and an ocean journey in which to “decompress.” Today drone pilots make the transition twice daily. Telepresence on the battlefield while safe physically, can be dangerous psychologically.
13. Video games also involve telepresence, not presence at a distance exactly but presence in a different world altogether, the virtual world of the video game. As mentioned earlier, a

gamer can be present in the world of the video game in two different orientations: in a first-person orientation in which one sees the virtual world through the eyes of an avatar or in a third-person orientation in which one's awareness is above or "over the shoulder" of one's avatar whose actions you control like a drone pilot. In both cases, your attention is focused inside the virtual world, and your avatar's actions are your actions. The behavior is not actually "real" in the sense that the actions of a drone pilot's are real but they are virtually real, they are expressions of your avatar's persona, that ought not be wholly dissociated from who you are.

- a. Indeed gamers talk of "character bleed" in and out. (1) Your character bleeds into your avatar's persona to the extent that its actions are expressions of your personality and character. Your virtual behavior through an avatar in the game is not to be taken literally though. Running over pedestrians and shooting hookers in Grand Theft Auto does not make you an actual mass murderer. But it does speak to your actual skill with the game. And in Massively Multiplayer Online Gaming (MMOG) how your avatar contributes to or betrays your team or "guild" does speak to your actual character. (2) So too virtues and vices developed by your avatar can also bleed out into your life offline. Your avatar may be only a virtual persona, but it is still you telepresent in the game. Even a game is not "just a game." How you play the game speaks to your actual character. And your gameplay in turn, can enhance, reinforce or undermine your actual character.

14. But how real can virtual reality get? Virtual reality can be incredibly immersive. Many players report times online when they lost all sense of time. Yet, however immersive and life-like the virtual experience, one still knows, in the background of one's awareness at least, that it is still a simulation, or a simulacra, but not the "real thing." In fact often times virtual reality can even appear better than the real thing—it can be hyperreal. Especially virtual relationships made between avatars online on a virtual platform such as Second Life, or in a video game guild, can become more important, and in that sense seem more real, than many of one's relationships offline.
15. In fact, more than a few gamers feel they can be more "themselves" online than face to face with others. For example, people who only know one another through their avatars on Second Life have built homes and created virtual lives together. Virtual life (VR) can

become more meaningful, and in that sense, more “real” to someone, than RL, “real life” itself.

16. Some couples have even married each other virtually. In such cases shuttling back and forth between virtual and actual worlds may indeed lead to a social form of AWS-- Alternate World Syndrome. Indeed some Second Life couples, even some MMOG guild members agree to never actually meet offline, precisely to avoid their two worlds colliding at the cost of both.
17. More recently yet, virtual reality headsets such as those in the Oculus product line, can radically enhance such immersive telepresence. With a 360-degree 3D visual field and miniaturized stereo speakers in the head gear, visual and aural immersion is virtually complete. Add to this, manual controllers and the ability to track one’s movement, and one’s immersion is even fuller. Yet even should we reach full sensory immersion, there will still be limits to VR telepresence. However compelling the VR simulation, there will always remain a background awareness that one’s presence in this alternate world is not bodily but virtual. Augmented reality, on the other hand, flips the polarity. You are not telepresent somewhere else. (1) Rather some text, (2) screen, or (3) object, is telepresent in your world.
18. Such technology is already operative in engineering design labs where one can visualize from every angle and in precise detail a prospective invention before even having to build a prototype. So too in architecture, building plans can be rendered in 3D affording the ability to explore changes in color, dimension and layout virtually instantaneously without having to make new models, let alone build the finished product.
19. However outside of such technical applications, the roll out of augmented reality for use in everyday life has been much slower. 3D holograms of individuals will not be populating boardrooms anytime soon. Is this solely due to technological limitations or is it still just too uncanny to chat with a hologram?
20. By adding immersive interactivity at a distance, virtual telepresence constitutes a novel form of reality, as potentially radical in my view, as its oral and literate antecedents. Together with distributed agency and cognition, virtual technologies are blurring the ontological boundaries between virtual and actual reality altogether. In the virtual religion series of video lectures I explore the potential religious consequences of this epochal

revolution. For example, can virtual online religious rituals be sufficiently interactive and psychologically immersive to afford a sacred telepresence? Does the dependence of the virtual on the actual for its creation as well as its ongoing dependence on an actual world power source provide a new way of looking at God's relationship to his creation? The need to develop a virtual theology to address the new religious questions and needs of digital natives is only becoming more exigent as humanity moves ever further into the virtual age.