

Reality, Sex, and Cyberspace:

An Exercise in the Philosophy of Technology

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One popular conception of virtual reality is of technology that could reproduce the experience of the ordinary physical world. Such technology is beyond the horizon of present development, but this conception of virtual reality is misguided in any case. Technology that creates new realities will not do so by aping the everyday world, but by forging new experiences with their own utility and place in peoples' lives.

Introduction

In order to make out some common ideas about virtual reality, I first examine how it is portrayed in fiction. Although it may be an implausible forecast of the future, popular science fiction like Star Trek provides clear evidence of what audiences think about the reality and virtuality of virtual reality.

In the subsequent sections, I turn to two questions about contemporary technology: Can Internet chat rooms legitimately be thought of as places? Can cybersex legitimately be thought of as sex? The answer to both questions is at least a qualified yes. The fact that chat rooms can be used in certain ways suggests that we ought to think differently about the prospects for virtual reality. Technology that creates new realities will not do so by aping the everyday world, but by forging new experiences with their own utility and place in peoples' lives.

1. The nature of reality

If the phrase 'virtual reality' conjures up images of helmets and gloves that plunge the user into a computer-generated world, one might be tempted to say that the world she is plunged into is virtually real. 'Virtually real' sounds similar to 'virtually dry' as in the sentence: "An hour ago my shirt was wet, but now it's virtually dry." This latter sentence means that the shirt is

nearly dry, and that if it were any drier then it would really be dry. Yet it would be wrong to think that virtual reality is virtually real in this sense or that adding just a bit more reality to the helmet and gloves would make the CG world really real. At risk of belabouring the point: We make a wet shirt virtually dry, in effect, by moving it along a continuum of moistness from the wet end towards the dry end. To make it really dry, we push it a bit further along that continuum. Suppose we make a CG landscape virtually real by moving it along a continuum of convincingness. To make it really real, however, we would need to do an entirely different sort of thing. To make a real landscape, we'd have to go out into the world and build it.¹

This makes clear the sense in which virtual reality could be *nearly* real. VR systems like the Matrix, from last year's science fiction blockbuster, would provide an experience sufficiently like a real-world experience that people inside the system would accept it as real. Numerous Star Trek episodes have presented characters being caught in holodeck programs which, initially at least, passed for their real world.² Whether it fools its users or not, the Matrix is not the real world, and making the Matrix more or less convincing will not make the simulation any more or less a real world.

One might ask why virtual reality that could pass for the real world is even a

desirable technology to have. Why do we need a virtual world, the skeptic asks, when we have the real one? One of the damn things is enough! Although one popular goal for VR is to have technology that could pass for real, nobody actually wants to copy the real world in every detail. In the Matrix, the system builders of the future designed VR that would convince the users that they were on late-20th-century Earth. In Star Trek, characters enter into holonovels, fight the battle of the Alamo, or watch old baseball games. In these stories, VR simulates places that aren't available for actual experience.

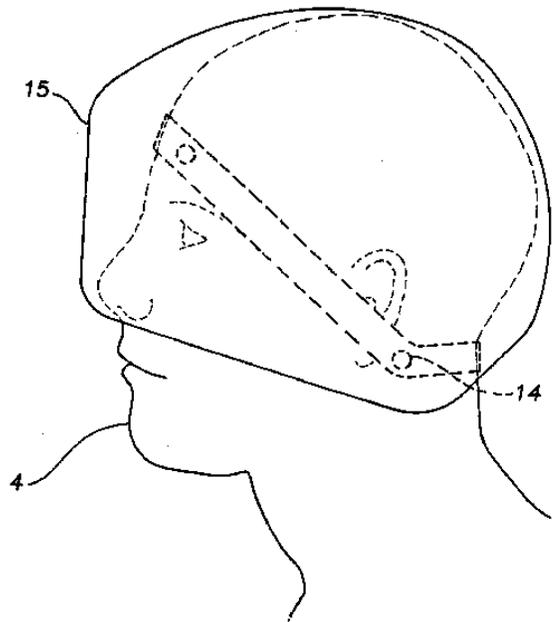


Figure 1

Although it might seem real, any virtual reality would not be real; whether or not it is able to deceive you into thinking it's real is beside the point. The intuitions of science fiction authors and hence, I suppose, of science fiction audiences seem to accord with this observation. Consider a few examples: On Voyager, a Vulcan's interaction with a holographic woman is unable to sate his lust for a real woman. On Deep Space 9, Garak's claustrophobia is not calmed in the slightest by the expansive vistas offered

by a holosuite. The holographic simulations that adopt some reality, like Voyager's Doctor and DS9's Vic Fontaine, do so because they find a rôle in the non-holographic world.

What I want to suggest, then, is that it's a mistake to think of virtual reality as merely a mirror of reality. Not only would this require technology years or decades beyond what we have, it would miss the point. In the next two sections, I will argue that technology we already have today promises as much reality as we could ever hope to program into a holodeck. I will consider Internet chat, first generally and then the specific chat activity of cybersex. Although I use the phrase 'chat room' in what follows, the lessons apply equally well to IRC channels.

Before moving on, I pause to offer a caveat. It is in part only a terminological dispute as to whether the label VR should be applied to technology that impersonates reality or technology that creates new reality. The choice of words amounts, in the end, to a matter of taste. I am arguing a point about what we should expect technology to do and what we should think when it's done it. You may translate that point into any nomenclature you prefer.

2. Talking in cyberspace

Internet chat rooms are curious things. People enter them and make friends who may live across the state or across the world. Chat rooms are a unique social technology. Compare them first to e-mail: E-mail is faster than mailing a letter, but it's not so much different in its power. Indeed, e-mail is rather like the postal network that bound together 19th-century Europe. Correspondents within England could trade overnight mail everyday throughout the week, and letters from as far away as St Petersburg would reach London in only two weeks. Historian Martin Rudwick comments: "Such speed and reliability gave the exchange of scientific correspondence

an immediacy and vitality that it had never had in earlier generations and, arguably, that it has never had since" (p. 36-7). Rudwick made this claim in 1985, before the rise of the Internet, and one might differ with his assessment of 19th-century postal vitality. Moreover, e-mail offers something no prior postal network offered, in that a single message is sent at effectively no cost. Regardless, the advance of e-mail is only a difference in degree. It may be faster and cheaper, but it is still more or less just mail. People occasionally have pen pals whom they only know in a postal context, but it is far more usual to send mail only to people they have met in another social or commercial context. People keep up with old friends by e-mail, but can meet and make new friends in chat rooms. When someone enters a chat room, there will probably be people there whom she doesn't know and with whom she would not interact were it not for the chat room.

For this same reason, chat rooms are not like telephones either. Phone calls are made to one number with the expectation that there will be some particular person or business at the other end. An analogy can be made between chat rooms and the telephone chat lines which used to be advertised late at night on UHF television. The ads encouraged insomniacs to call in and talk with other people who had called in. With such chat lines, however, any noise that one user made was equally audible to any other user. In chat rooms, a user can issue commands to send private messages, query user information, or search other rooms at the site. When she does so, other users know only that she isn't saying something publicly. This allows users to carry on private conversations in the midst of the public conversation of the chatroom. Sometimes, of course, one interlocutor may communicate by private message while the other responds by public message. This can be frustrating for everyone else, since the

rest of the room only sees half the conversation.

Although I have not provided an exhaustive argument, I want to suggest that chat rooms are disanalogous to any prior communication technologies in at least these two important respects. First, they encourage a user's meeting and interacting with people whom she only knows on-line. Second, they allow the user to switch seamlessly between public and private messaging.

We speak of chat rooms using the usual place vocabulary, and thus it is tempting to think that chat rooms are places. A user enters, moves from room to room, and eventually leaves. When he sits down at his computer, he goes to the chat room. Of course, he is still sitting at his computer. How can he both be in the chat room and be sitting at home?

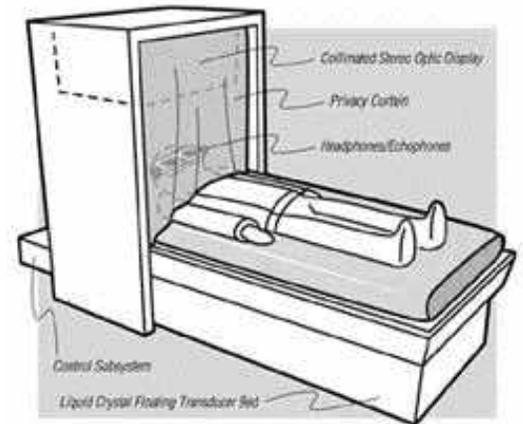


Figure 2

An obvious answer is to dismiss chat rooms by insisting that our use of place terms to describe them is just an abuse of language. One may argue: Science says what is a place and what is not. The only real places are specifiable in the language of physics as points or regions of space-time. Chat rooms are not in space-time, so they are not places. Although one may use the word 'place' in this scientific way, it would have rather odd consequences. Consider the

question of where the MacHack conference is located. In case you've forgotten, we are at the Holiday Inn Fairline in Detroit, Michigan. That is not in the space-time language of physics, but we would agree that MacHack is held someplace. One might hope to locate the hotel in space-time by exploiting physical theory, cosmology, or whatever else. Suppose you did that. Would you include the lobby? Since the conference computer network extends into it, I suppose you would. What about a corner of the lobby, one far from any of the network hubs? What about the fountain in the lobby, which is turned off during the conference? What about the front desk of the hotel, where people checking in are as likely to be people off the street as to be conference participants?³



Figure 3

Since these questions have no non-arbitrary answers, the conference is not a rigidly specifiable region of space-time. Rather it is a location in social space. One might note, of course, that the conference does have a corresponding base of objects in space-time even if the precise base can only be vaguely specified. This hotel, the machine room, this room, and so on are—to put it loosely—the physical root for the conference as a place. Insofar as chat rooms lack such a physical base they are not places. However, there are objects in the physical world that are preconditions for the existence of the chatroom. There are servers connected to networks, ISP's connected to phone systems, personal

computers connected to keyboards, and people sitting at desks typing. I could argue that this collection of objects makes up a physical basis of a chat room in the same way that the hotel and so on are the basis of the conference. This would resolve the paradox above, but one might still object that there is an important difference. The conference's location in social space is strongly correlated with the location of the hotel in physical space; to come to MacHack you have to come to Detroit. Being near the server or a phone line, however, won't get you any closer to being in the chat room. Indeed, it seems natural to say that although the people are in the chat room, the server and the phone lines are not. All this is just to say that a chat room is not a place in exactly the same sense as the conference, but we have already seen that the conference is not a place in exactly the same sense as a geosynchronous orbit.

If we accept a distinction between physical and social space, we can admit that there are some places which have locations in both and some places that have a location in only one or the other. The conference has a location in social space and, roughly speaking, a location in physical space. There are vast regions of deep space which, although specifiable as regions of space-time, are not places in our social space at all. Chat rooms, I suggest, may best be thought of as places in social space with no clear analogue in physical space.

Whereas telephones may be thought of as connections between the places at each end, chat rooms become distinct places in social space because of the special features I noted earlier. Chat rooms not only allow interaction between people widely distributed in physical space, but foster the formation of communities which only meet in an abstract location in social space. They make for a kind of reality, then, because they make possible a kind of interaction not possible with other technology.

3. Salacious interaction

Howard Rheingold heralds the teledildonic potential of virtual reality.⁴ He sketches a scenario in which users are able to don VR body stockings and share carnal adventures which feel just like the fleshy, sweaty, real thing. They can do this with partners across the globe and without any risk of disease or unwanted pregnancy. Rheingold admits that this scenario requires technology we don't have, but I think there is something funny about it even as a fantasy. Introverts who have trouble scoring in a room full of potential partners will still have trouble scoring on a network full of them. People who are insecure about their appearance or physique would not want their cyber-selves to be indistinguishable from their homely or pudgy real selves. Setting those concerns aside for the moment, we may ask if such virtual bumping and grinding would even count as sex. We can explore this question further by considering the teledildonic encounters that occur in chat rooms, encounters which are commonly referred to as cybersex.

Of course, there is a sense in which cybersex is not sex. It is not actual intercourse— the one does not physically penetrate the other. Although we call a range of things 'sex' beyond straight intercourse, one might argue for this restricted usage on the grounds that straight intercourse is the sex act that allows for reproduction and reproduction is the natural function of sex. However, this would yield the perverse result that infertile men and women could not have sex even by straight intercourse, since their act could not fulfill its function of reproduction. I will contend without further argument that any definition so restrictive that it excludes cybersex out of hand will be too restrictive to capture common usage.

Philosopher Thomas Nagel offers an interesting candidate definition. Nagel asks us to imagine two people, whom he

calls Romeo and Juliet. Romeo sees Juliet and is sexually aroused by the sight of her. Juliet looks back at Romeo and is aroused not only by the sight of an aroused man, but also by the very fact that she is what has aroused him. Romeo, in turn, is aroused by the fact that Juliet is aroused by his arousal. This process of feedback and mutual arousal advances to states of heightened arousal that become harder and harder to express: Romeo is aroused by Juliet's arousal at his arousal at her arousal at his arousal, and so on. Such escalation, Nagel contends, is at the heart of sexual experience. He writes:



Figure 4

"Physical contact and intercourse are natural extensions of this complicated visual exchange... . Ordinarily, of course, things happen in a less orderly fashion— sometimes in a great rush— but I believe that some version of this overlapping system of distinct sexual perceptions and interactions is the basic framework of any full-fledged sexual relation and that relations involving only part of the complex are significantly incomplete" (p. 46).

Nagel explicitly considers visual and tactile exchange, but observes rightly that this is a general schema.

Imagine Romeo and Juliet are sitting in their respective apartments at their computers. They enter a chat room, exchange pleasantries, and begin to chat. At some point in that conversation,

Juliet says something risqué which arouses Romeo. Romeo gives a clever reply which not only arouses Juliet but makes her aware that Romeo was aroused by her original comment. She is aroused, we may say, on two levels: first by Romeo's reply, second by the fact that she has aroused Romeo. The conversation continues with Juliet's sultry rejoinder, and so on. They have thus found in a chat room the escalating mutual awareness that Nagel argues is characteristic of sexual relations. Although this is true whether Romeo and Juliet pursue the encounter to climax or not, I think it is reasonable to argue that whatever they are doing with their hands besides typing is a natural extension of their on-screen interaction.



Figure 5

Cybersex is not, as one pseudonymous interlocutor suggested to me in a chat room, "just talking." Neither is it, as she conceded a moment later, "just talking and masturbation." It may be those things, but is not just those things. The 'talking' in cybersex functions in a way that talking in ordinary chat situations does not. It exhibits the complex psychological structure exhibited by real, in-the-flesh sex. The 'masturbation' in cybersex functions in a way that the masturbation in response to a pornographic web-site does not. The arousal when viewing porn is purely voyeuristic, while the arousal in cybersex is mutual. The former is in

response to a picture, while the latter is in response to a person.

One may resist the conclusion that cybersex is sex in a number of ways. Perhaps people do not interact during cybersex as we have imagined Romeo and Juliet interacting. Instead, they lie, dissimulate, and confabulate. This paper is not an anthropological study of chatrooms, I have said nothing robust about what goes on in them, and there is no denying that it is easier to fake an orgasm on-line than in person. Nevertheless, the conclusion that cybersex could be sex doesn't rely on the fact that people *usually* experience the full range of mutual arousal when they interact in adult chat rooms. It need only be a psychological possibility. If the full-fledged interaction is both harder to establish and easier to fake on-line, then this may make cybersex less satisfying than in-person sex, but it ought not obscure the fact cybersex *can* attain that level of complexity.

Another response is to note that Nagel has only proposed a necessary condition for full-fledged sexual relations. Even if he is right, there may be other things that are also required. I have no principled objection to such an argument, but I cannot for my part imagine what the additional criteria would be.⁵ Even if there were some further criteria which excluded cybersex from being a full-fledged sexual relation, it is important to note how cybersex got so close in the first place. It was not because it provides physical stimulation that resembles sex in any way. If physical stimulation were the criterion, cybersex would just be talking and masturbation. Instead, the critical feature of cybersex is that it establishes a particular kind of relation between people.

There are attempts to push the teledildonic envelope by engineering computer interfaces and network clients for sex toys. As a consequence of such gizmos, one commentator suggests, "the

definition of sex has become a whole lot more complicated."⁶ However, these complications arise even without new technology. Perhaps more intimate hardware will make cybersex easier or more satisfying, but it will not change the nature of the beast. Cybersex is sex, if it is sex at all, not because it provides stimulation like what can be had in person but because it is the right form of human interaction. Similarly: Chatrooms are places, if they are places at all, not because they exhibit the geometry of physical space but because they are places where people can go.

Here we return to the theme with which we began. Virtual reality should not be about cloning reality. New technology will make new reality if it finds a place in peoples' lives, if it empowers them in new ways, and if it offers them new possibilities. I have argued that technology we have today is already doing that. Virtual reality in this important sense is not something to wait for in the 25th century; it is something we are already bringing with us into the 21st.

¹ A specialist audience might think that the 'virtual' of 'virtual reality' reflects the engineers' usage in 'virtual regulator', the physicists' in 'virtual particle', or the programmers' in 'virtual computer'. It diverges from those usages as well, but the point here is that 'virtual reality' has misleading connotations in its popular use.

² Star Trek's holodeck is closer to reality than the Matrix, of course, because space in the simulation corresponds to real space on the holodeck and peoples' bodies in the simulation are their own bodies. That caveat aside, the holodeck provides another barometer of intuitions about VR.

³ Since the corner and the front desk have figured as examples in my paper, perhaps they are ipso facto part of the conference.

Works Cited

Kadrey, Richard. "Reach out and touch someone" in Shift, November 1999. 45-6.

What, then, if the Statue of Liberty figures as an example in my paper?

⁴ Although he says that people are most excited by the idea of teledildonics and electronic LSD, Rheingold argues that the greatest near-term value of VR research will be for training and for operations in hostile or restrictive environments. Although training simulations should mimic reality as closely as possible, this application is the exception rather than the rule. The objective of teleoperations is to accomplish a task at a distance. The operator should be given the best and most efficient interface for accomplishing the task, which will often mean representing the data and allowing him to manipulate the remotely controlled device in ways which make the experience unlike 'being there.'

⁵ One could attempt to confine Nagel's schema to particular modalities of interaction, but this is a nonstarter. If we said that the escalating awareness must involve a visual component, for instance, then it would be impossible to have sex in the dark.

⁶ This, admittedly, is only the teaser line for Richard Kadrey's column.

Nagel, Thomas. "Sexual Perversion" in Mortal Questions. Cambridge University Press, 1979. 39-52.

Rheingold, Howard. Virtual Reality.
New York: Simon & Schuster, 1991.

Rudwick, Martin J.S. The Great
Devonian Controversy. The University
of Chicago Press, 1985.

About the Figures

The figures are pictures of VR gadgets in the usual sense of 'VR'. They are inserted for style and admittedly add little to the paper by way of substance. Below is a brief description of each, along with a URL where you can learn more.

Figure 1 is from Virtual Motion's patent for MotionWare, an experimental device designed to "extend movement and directional cues within a virtual reality scene" (Campell). This "Direct Brain Interface Device" is not yet commercially available.
<http://www.vm3.com>

Figure 2 is the Cyberfin platform. It "offers an intimate virtual encounter with a group of friendly and inquisitive dolphins."
<http://www.aquathought.com>

Figure 3 is a pair of i-glasses, a 3D visual device from i-O Display Systems.
<http://www.i-glasses.com>

Figure 4 is Sony's Glasstron head-mounted display, technology so dangerous that their website warns, "This product should not be used by children age 15 or younger. Individuals with eye or heart disease or injury or high blood pressure should consult a doctor prior to use."
<http://www.sony.com>

Figure 5 is the Responsive Workbench, a 3D interactive workspace originally developed by Wolfgang Krueger. Several papers describing applications can be found at the website.
<http://graphics.stanford.EDU/projects>