

DOCTOROW: My peer group and I are almost only virtual, right. I have almost no physical contact with my peers. And when I do, it's usually while traveling. I sometimes will have a day at Disneyland with my friends and that's a very physically social activity.... I subscribe to game designer Raph Koster's idea that the point of most games is to figure out what the point of the game is. And I think that is true of Second Life [SL], too. That many SL players treat the big game of SL as figuring out what game they should play in SL. So, lately I've been feeling very nostalgic for a time in my life when I would go to summer camp every summer. At the summer camp, I would spend a lot of time sitting out in a hammock by the lake. And I don't do anything like that anymore. I don't know that there is any activity like that using computers or the Internet. And it's the only thing I can think of that isn't trying to figure out what game to play, is the sitting alone by yourself, reflecting in a hammock.

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Putting a Face on Things

The Virtual Is Older than Simulation

Historian and theorist of modern media culture Anne Friedberg, in her discussion of virtuality from the age of perspective painting to the current period of computer-mediated simulation, makes the key point that how we see changes who we are (how we see ourselves). It is often technological innovations in the visual field that stimulate this change. Friedberg argues that through our manipulation of media—the applied mathematics of perspective painting as she discusses—we perceive the world differently.

She gives the example of Leon Battista Alberti, who in his 1435 treatise on painting and perspective, *De Pictura*, became the first to articulate the transfer of the three-dimensional world to a two-dimensional plane.¹ Alberti perceived the world differently, as something that could be made schematic and virtually rendered. That difference comes to be reflected back in how we understand ourselves; we begin to see in the physical world around us geometric order and points of harmony that previously had only appeared as disordered acts of nature: the harmoniously ordered world of Renaissance paintings

1. Anne Friedberg, *The Virtual Window* (Cambridge, MA: MIT Press, 2008), 1.

2. Ibid., 4.

reflected the aspirations of the philosophy and technology of the time.

From the Renaissance to the present, Friedberg states of the history of visual simulation: "Virtual images transformed the twentieth century understanding of reality."² I cite Friedberg's argument for her insight that a technical change of perspective can stimulate changes in human perception. She relates the mechanics of vision and visualization with the idea that the world is always a construction as such (the virtual in her language). For the current generation, a networked one, we find a revivification of the visual and perceptual. In effect, we are putting a face on things. In this chapter I discuss the visual history of avatars before they became embodied figures. I also describe a model of cognitive perception of mediated images from experimental research. I put into relation discourses of technical design, cultural comprehension, and a science of perception.

Emoticon Rising

In the 1980s, an era of dial-up modems and expensive connectivity, real-time text chat represented state of the art. For most computer users until 1991, almost the entire Internet was text-based, but that did not mean users lacked expressive graphical means (1991 hailed the launching of the World Wide Web and emergence of general image compression codecs such as jpeg). For a long time, emoticons, the graphical manipulation of regular punctuation, were the primary use of "avatars" in everyday computing.

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If you, dear reader, have never before seen an image like this except as absurd punctuation, please cock your head to the left and you will see the icon represents a winking smiley face. Or, consider (n_n), which is the Japanese emoticon for smiley face. The emoticons indicate a human emotion, a smile, assembled from punctuation marks. In this vein, computer text graphically

conveys human sentiment; one also finds along this line computer art made of ASCII code. In both cases, we find code (of different orders) enlisted in the work of human communication by simulating images. We can read these images because we have the ability to create meaning around abstraction, i.e., we have a terrific drive for image making, image decoding, and, as I discuss below, attributing personality to the inanimate. In effect, with emoticons, we are making faces out of things in a manner that hails a long history of iconicity. Media theorist Florian Cramer writes of an irrepressible human urge to create icons:

Emblems, allegorical images, were hugely popular in the Renaissance since Italian humanist scholar Andreas Alciatus published the first emblem book in 1531. Just as desktop icons on computer operating systems were invented in the 1970s in the Xerox PARC labs in order to simplify interaction with the computer as a machine performing formal-logical manipulations of coded symbols, emblems served to simplify and popularize interaction with religious and philosophical meaning.³

As Cramer argues, making emblems or icons traditionally makes something complex easier to decipher.⁴ In addition to the human interest in making something complex simpler, I see a human interest in conveying emotion. The iconic and the graphic, in my estimation, have continuously been enlisted in making our relation to media and our mediated relations between each other more social. We mark our things with faces or other forms of proprietary markers to customize them in such a way that they feel habitable. If we apply this logic to pervasive media, we now have a broadly expanded territory we might call home.

From Text to Animation: Avatars as Figures of Transition
Virtual worlds describe one such expansion of evocative, communicative space we have inhabited with emoticons, icons, and images on the road to pervasive media engagement.

3. Florian Cramer, *Words Made Flesh* (Rotterdam: Piet Zwart Institute, 2004), 23.

4. Coinciding with the innovation in computer graphics over the past two decades, user interface (UI) designers have developed many kinds of graphical interface structures. In 1985, Apple Inc. (then Apple Computer) changed the tenor of popular computing with the creation of an operating system that used icons, such as images of folders and files, instead of the standard text-based DOS system.

The history of computer-simulated virtual worlds is essentially as long as the history of computing. The worlds span the most basic text exchanges to the most complex of graphical and procedural simulations. A virtual world exists on a computer server or a series of servers configured to allow many people to access the same information at the same time. The virtual worlds allow real-time interactions among the players. This means we can have synchronous conversations and direct feedback. Built of computer code, a virtual world presents persistent information to players about where they are, what is happening, and what it looks like.

Text-based virtual worlds are more than twenty years old now. For text-based worlds, visualization takes place in the imagination, as one must read through descriptions of fellow players and context. In graphical worlds, the computer network generates an image that everyone can see. Additionally, when I add something to the world—a new room to a dungeon or a red hat on my avatar's head—everyone can see that virtual object as well.

The first text-based multiuser dungeon (MUD) lived on the intranet at Essex University beginning in 1979. Graphically simulated virtual worlds appeared in nascent form as early as 1985. The rich graphical and interactive experience we have now in networked virtual worlds arose in the 2000s with the dawn of the massively multiplayer online game (MMOG) and the accessible price of processing power. The primary difference between text-based and graphical worlds is that graphical worlds present dimensionality. There is a virtual embodiment that adds shared perceptual experiences of visualized objects, motion, and directionality. Not only can we see (and sometimes create) images that live in the world, but also the images are animated, they have depth, and they adhere to “physics.” For example, when I drop something in a text-based world, a line of code appears announcing to all that “Player X has dropped the cup.” When I drop something in a graphical world you see it leave my hands and hit the floor. The same terms of shared sensory perception go for the experience

of navigating a graphical space. Instead of text that narrates my actions, you see an avatar walk up and down the steps to the castle. Additionally, I can have a face, a body, and gestures in the form of the avatar.

The importance of putting a “face” to networked communication plays itself out along several lines of technical development, information visualization, and human communication interests. I relate in the following section the history of twenty years of virtual world design in order to point out that this is not the first time we have had a go at networked worlds. However, these spaces have combined with several other factors to make graphical real-time multiuser spaces not new but *newly important*.

We see at this time a shift in real-time communication media that we have not witnessed since the advent of the telephone. I discuss here two phases of virtual world development and use in order to decode what is happening currently in pervasive networked media. The first period I discuss, which includes text-based worlds as well as the early graphical ones, essentially spans 1979 through 1991, when the World Wide Web launched. The second period I address, 1995 to the present, includes the major innovations in graphical web. In phase one, we see primarily design, use, and adoption of real-time multiuser platforms among researchers and niche communities. In phase two, the technical changes as well as the cultural changes in network use have created a context for an emergent popular adoption of virtual world platforms.

Walled Gardens and Other Rare Flowers

In 1979, one of the nascent characteristics of early virtual worlds was that they functioned essentially as closed universes. To visit was to take a vacation from the real world and enter a walled garden. A walled garden describes both a fantasyland where real-world rules and consequences do not come into play and a hermetic space that is not influenced by external factors. For example, writer C. S. Lewis's character Lucy may be a princess in the kingdom of Narnia, but she remains just a little girl on the other side

5. Bartle, *Interactive Multi-User Computer Games*, technical report, BT Martlesham Research Laboratories, Dec. 1990. <<http://www.mud.co.uk/richard/imucg.htm>>.

of the magic wardrobe, in real life. Historically as a society, we have found a great many valuable uses for walled garden experiences, particularly for children. They often create the space for us to explore new roles (a reigning princess as opposed to a powerless little girl), even as they offer a safety net of little or no consequence for our actions.

We have begun to exchange closed worlds for open, and walled gardens for porous nets. In the past thirty-some years, I see an evolution in virtual worlds away from insular experiences and toward persistent networked relationships. That evolution plays out in the design of applications as well as in the engagement of platforms.

In their early text-based period, virtual worlds had to be found, usually by word of mouth through a friend. You had to get on the network. And, you had to deal with often glitchy code and imperfect design (not everything has changed since 1979). A self-selecting group, often composed of the same young computer scientists who worked on the university network during the day found their way into electric dungeons at night.⁵ MUD1 (multiuser dungeon) written by Roy Trubshaw and Richard Bartle of Essex University on a DECsystem-10 mainframe, trail blazed the genre and remains to this day one of the most famous applications of text-based adventure games. The popularity of *Colossal Cave* followed by *Zork*, single-player computerized adventures, inspired Trubshaw and Bartle to create the code for MUD. Their innovation of the multiuser format changed online game history.

To begin with, only Essex students on the university intranet could access MUD1. A year after its debut, word had spread and outside players began accessing the game by calling into networked modems from their homes. MIT computer scientist Hal Abelson describes coming home one evening to find his eleven-year-old daughter calling into the network modem of the MIT Computer Science and Artificial Intelligence Lab (where he worked) to access the MUD. (In the early 1980s, the password RMS, the initials of Richard Stallman, the initiating author of GNU code and the Free Software movement, got you onto the system.

The password for the network paid homage to Abelson's student Stallman, just as Abelson's work in object-oriented programming languages became part of the inspiration for two game designers who would make the first graphical multiuser game, *Habitat*.) After a few weeks of obsessive play, Abelson's daughter was running her own dungeon.⁶

The talents needed to run a multiuser dungeon reside with two kinds of writing. On the design end, one needs the ability to work within the "framework of discrete [code] objects," as Bartle describes it, that create the technical workings of the game.⁷ On the user end, the part that the players see, one needs to be able to vividly describe a world. Literally, players would navigate through mazes of text that described environment, objects, and other players. Bartle underscores the importance of good writing for MUD game design: "For text-based [Multi-User Adventures]...the impact of well-written room and object descriptions on new players cannot be underestimated."⁸ In the two layers of "code" that create MUD1, I draw attention to a pattern that will come fully into use in the development of networked media from those early days to the present: the technical platform remains essentially open and the participants design the particular use of the space, place, and temporality of engagement. The marking as *habitat*, whether in language or graphical image, becomes an important precedent for how we have entered an age of avatars.

Age of Avatars

Avatars and their virtual worlds have tweaked the curiosity of the generation that came of age with the a graphical Internet, i.e., the web. By the spring of 2008 there were an estimated thirty-five million people playing in virtual worlds in North American and European territories.⁹ An estimated 150 million played worldwide.¹⁰ *World of Warcraft*, a game world, accounts for about eleven million paid subscriptions of that number.¹¹ *Second Life*, a social world, reported seven million visitors to the platform. The saturation numbers in South Korea for *Cyworld*, a 2D Web and mobile virtual world, were 40 percent of the population,

6. Hal Abelson, personal interview, May 16, 2007.

7. Bartle, *Interactive Multi-User Computer Games*, 17.

8. *Ibid.*, 25.

9. The Virtual World News, an online periodical that chronicles business news on virtual worlds reported these numbers in 2008, posting to <<http://www.virtualworldnews.com>>. The group subsequently renamed itself Engage Digital and redirected its content to <<http://www.engagedigital.com>>.

10. George Jobi, "Virtual Worlds: The Story of Two Waves, 2.5D vs. 3D," October 28, 2008, <<http://origin-software.intel.com/en-us/blogs/2008/10/28/virtual-worlds-the-story-of-two-waves-25d-vs-3d/>>.

11. Blizzard Entertainment press release, October 28, 2008.

with twenty million unique users monthly. Why has there been such a proliferation in these platforms over the past five years? What is the value of avatars to network culture? Or perhaps let's begin with an even more basic question. What are these things?

The tipping point for an age of avatars came in 2005, which saw a proliferation of graphical virtual platforms designed for all kinds of activity: social worlds, medical training worlds, business worlds, kids' worlds, and game worlds. These were commercially produced virtual worlds designed for general users. Influential companies such as IBM, Disney, Google, and Viacom created branded multiuser spaces that played with new ways of expanding the experience of the Magic Kingdom or MTV. First out in 1999, well in advance of the trend, Viacom's Webkinz world connected virtual play with real-world stuffed animals. Instead of an imaginary space where stuffed animals could talk to children, players had an actual shared virtual space where that happened.

Disney opened a popular Magic Kingdom virtual world to celebrate the anniversary of the theme parks (the parks when created in the 1950s were already a type of virtual world of their own). The enthusiasm for the virtual forum was such that when Disney chose to shut down the virtual Magic Kingdom after it had run its course, the players staged a protest to keep it open. Disney extended its virtual world holdings in 2005 when it acquired Club Penguin, a youth-oriented virtual world populated by penguin avatars, developed by a Canadian media design group. With its combination of causal games, customizability, and group activities, Club Penguin has proven to be one of the most popular and lasting virtual worlds. Internationally, Korea, Finland, Japan, and China all have major offerings in the virtual worlds. From Japan, the Hello Kitty virtual world came online in 2007. Habbo Hotel, the Finnish-server young adult world, became the first virtual world with its own Hollywood agent in 2008.

In terms of avatars and virtual worlds in a narrow sense, particularly in Western countries, children and young adults

adopted them in great numbers and ease. For adults it remained largely an alien technology, used by people on the fringe of the culture. As I describe in looking at the Second Life hype cycle (see chapter 1), the media coverage of virtual world properties subsided after this three year period (2005–2008) of explosive growth and attention. We find in 2011 a virtual world landscape described by robust participation in fantasy, fighting, and other game worlds and expansive growth in what I describe as another kind of avatar engagement: social media such as profile pages, VoIP, IM, and SMS. In effect, we practiced in the early years of avatar adoption how a broader adoption of pervasive media might work.

3D Web

Whether you know it or not—and most people have had little reason to pay attention—the 3D web made a strong showing in 1998. The 3D web indicates a shift from a text-based Internet to a graphical one, and one that is three-dimensional in terms of how information is configured. We do not yet have a fully functional 3D web, and it remains debatable whether we would truly desire to have a majority of our interactions augmented with dimensionality. Nonetheless, in 1998, when the second international Virtual Worlds conference of computer scientists and media designers met in Paris, the discussion focused on engaging the social aspect of network relations as a newfound power as well as on the graphical explosion in interactive design. In a sense, everything that we see currently from 3D animated avatars to persistent virtual worlds was test driven a decade ago.

By the time of the Paris conference several commercial virtual world platforms existed in addition to the ones designed for research purposes. AlphaWorld, The Palace, Onlive!, all had opened up shop for public use with 3D interface and avatars.¹² Business schools published papers mentioning Blaxxun Interactive's Community as a rich model for real-world training. Sony's Community Place foreshadowed by a decade its recent PlayStation-console virtual world

12. Bruce Damer, *Avatars!* (Chicago: New Light, 1998).

13. Frédéric Kaplan, Angus McIntyre, Chisato Numaoka, and Silvère Tajan, "Growing Virtual Communities in 3D Meeting Spaces," in J. C. Hendin (ed.): *Virtual Worlds 98*, LNAI 1434, 1998, 286.

called *Home*. Computer scientists and segments of industry lobbied hard with media producers and the public to adopt VRML (virtual reality markup language) and universal standards for 3D imaging.

At the 1998 conference, four computer scientists delivered a paper entitled "Growing Virtual Communities in 3D Meeting Spaces" in which they state:

This new understanding of the Internet as a social medium constitutes a basic assumption for many developers of browsers for 3D virtual worlds. Environments such as Blaxxun Interactive's Community, Cryo's Deuxième Monde, OnLive! Technologies' Traveller, and Sony's Community Place are all based on a similar model—a *more or less realistic visual world in which people meet to socialize* [emphasis mine].¹³

Who reading this currently has an active account with Community Place or Deuxième Monde? In regard to those pioneering 3D interactive worlds, the problem with sustainability echoes the problem with new media adoption. Historically, "new" fails to be popular until it becomes old enough for people to fathom. "Old enough" means a new technology has been sufficiently vetted by the early adopters and the hobbyists; and then the rest of us join in *if* there is sufficient motivation, which persists as a powerful caveat.

Two coinciding factors prepare the stage for the emergence of pervasive media as social media engagement: the arrival of immersive platforms, such as massively multiplayer online games (MMOs or MMOGs), and increasingly rich-media social network platforms, such as Flickr (the photo sharing site). Online multiuser video games advanced the technology for graphical avatar-based play so profoundly that by 2004 millions of gamers had essentially trained for more expansive uses of navigable 3D space. In parallel, we have used social media platforms to practice ever increasing degrees of connectivity. For example, the unprecedented massive use of a multimedia social

network site such as Facebook builds on these combined histories of networked media.

In regard to MMOGs, in the span of a few years, with the emergence of multiplayer platforms and the increased accessibility of broadband Internet in developed countries, we stumbled upon an entirely changed landscape. Ultima Online (Origin Systems/Electronic Arts), a multiplayer fantasy game or role-playing game (RPG), did not invent the genre in 1997, but it did change the game, becoming the first "massively" played networked game with hundreds of thousands of players at its peak. Everquest, the 1999 Sony/Verant interactive MMO offering, became fondly known as "evercrack." It broke the mold not only in player numbers but also in player addiction, the strong feelings around the games and the communities of friends developed in the play across DSL lines.

From the point of view of popular culture, what we saw of MMOs at the end of the 1990s still constituted "fringe" engagement; despite growing numbers, gamers continued to be viewed as shut-ins and social outcasts.¹⁴ Yet what did not become obvious until nearly a decade later was the change in the network engagement that the MMO gamers were beta testing for the rest of us. In a big way, interactive dimensional space had opened up for network users outside of niche-use groups.

The hobbyists and enthusiastic computer scientists of 1998 can say they were right about the potential of these virtual spaces. They just got the timeframe and the technology wrong. The graphical online world of that period was made up of objects and operations still too ugly, too difficult, and simply too nerdy to have broad appeal. As for VRML, fate did not deal it a winner's hand. The seismic flux in mediation that HTML (hypertext markup language) had created in 1991 regarding the adoption of the World Wide Web fizzled later in the decade with the would-be visual companion to the Internet protocol. I asked a respected computer scientist active during that period why VRML did not fly. He replied simply, "It was too hard."

14. T. L. Talyor, *Play between Worlds: Exploring Online Game Culture* (Cambridge, MA: MIT Press 2006).

15. Media theorist Friedrich Kittler, who analyzes the social history of technical media, says we err greatly on the side of the anthropomorphic relation to technology, particularly in the American ethos. He suggests that in finding human narratives for machines we miss the ways in which machines affect human narrative. See John Armitage, "From Discourse Networks to Cultural Mathematics: An Interview with Friedrich A. Kittler," *Theory, Culture & Society* 23, 2006 (7-8): 28.

Designing Media

The research on embodied agents of the 1990s takes very seriously the question, what does "adding a face" mean for human use of computers? In this moment in the early twenty-first century, we shift our focus from human-computer relations to human-to-human mediated relations, the C3 interaction of communication, community, and collaboration. In looking at the legacy of avatars, we find embodiment agents driven by *users* not by computers. Developing AI no longer provides the goal for the design strategy, but rather something more old-fashioned yet diabolically complex: human-to-human communication... at a distance.

The line I am drawing takes us from the very earliest text-based graphics, such as emoticons or ASCII art, through the automation of agents to the user-manipulated 3D avatars we find today. The technology that facilitates each level of representation differs, but the urge to create an image that imparts basic human emotions in mediated communication remains consistent. The anthropomorphic drive to create a likeness, to find the familiar, may very well make us feel more at home, but it can also cover over important information about what we are doing in the course of mediation and how we are doing it.¹⁵ We have added image and animation channels to what had previously been audio only. Does this make for better communication? Not necessarily; more information is not always better. Does it make for rich new combinations of information? Yes.

Media use, as media theorists from Norbert Wiener to Marshall McLuhan have argued, changes the user. With each shift and often each increase in automation, simulation, and transmission, we discover not only new technologies but new ways by which we extend our presence. I have suggested that the direction in media design over the past three decades to create increased visualization brings up new questions about how we engage media and, specifically, networked forms. If we have an anthropomorphic urge to humanize our things with faces, what are the consequences of a pervasive media engagement where we stay

present to each other via real-time and often visual simulation? As we change modalities of mediation, in what ways do we also change our "human" perspective?

The Media Equation: The Computational Persona

X-reality, a continuum of experience across real and simulated sites, is not necessarily a new phenomenon if we look at issues of perception. When it comes to media use, Stanford professors Byron Reeves and Clifford Nass say that we have always blended the virtual and the real. In our minds we blend signals from the living and the animated. We grant animated forms—things that give the appearance of being alive or humanlike—agency. In effect, we cannot distinguish between real and simulated signals.

In the 1980s, inspired by the fast-emerging world of personal computers and the networks that linked them, and after nearly forty years in communication research, Reeves framed the question: How do people react to a mediated image? To answer this question, Reeves and colleague Nass, a research scientist focusing on communication and computers, designed a series of laboratory experiments to assess how subjects responded to traditional forms of media—like television—as well as the new media simulations of computers. In what became the groundbreaking findings, they discovered that people cannot perceive a difference between a mediated image and a real person or object before them.

In the fields of psychology and communication, one can find a great deal of research on the impact of media on people—behaviorally, culturally, and emotionally, particularly in childhood development. In technical and design fields of media, studies abound on how users behave and what they like. Nass and Reeves were the first to ask seriously and systematically about the ways in which this new media is perceived not as content or culture but as phenomenon. In the literature across the fields of communication, HCI, and psychology, this phenomenon has come to be known, after the research by Reeves and Nass, as the media equation.

16. Byron Reeves and Clifford Nass, *The Media Equation: How People Treat Computers, Television, and New Media Like Real People and Places* (Stanford: Center for the Study of Language and Information, 2003).

17. Developing the media equation thesis in regard to current networked engagement communication scholar Kwan Min Lee writes: "Modern media, computers, and simulation technologies defy the adaptive value of rapid application of the causal reasoning modules to all incoming stimuli. [P]eople keep using their old brains—i.e., causal reasoning modules—when they respond to mediated or simulated objects" (emphasis added). Kwan Min Lee, "Why Presence Occurs: Evolutionary Psychology, Media Equation, and Presence," *Presence* 13, no. 4 (August 2004): 499.

In my analysis of networked media engagement, research such as the media equation helps to illuminate our actual new media use. Because of our increasing use of computational and interactive formats, how media affects us—or how we find media affective—gains increasing importance to understanding our world, designing for it, and acting in it. For my purposes, in understanding a generational shift toward an accelerated mediation, where we engage avatars and other forms of media simulation on a nearly daily basis, I am suggesting that the media equation has strong implications for how we understand mediated presence and networked agency.

I look at the implications of these findings for a networked generation and issues around X-reality use and design. Reeves and Nass summarize their findings in *The Media Equation*, citing over two decades of experimental research to prove their hypothesis.¹⁶ They argue that humans suffer a cognitive lapse in reacting to empirical stimulus (activity in the world) and synthetic stimulus (the simulated activity): we perceive them to be the same.

If the media equation rings false—or at least tinny to the ear—that is because it is counterintuitive. We have all had the experience of successfully distinguishing between a character we saw in a movie and the person we see across the dinner table. And, certainly, experience, intelligence, and other factors help us negotiate the difference between real and simulated events. But, on the level of perception, Reeves and Nass explain that we are still prehistoric brains reacting in a fight or flight manner to what is before us. The reptile part of the brain did not evolve special sensors for video games; we respond to stimulus in a manner that keeps us safe in a dangerous world, and not necessarily for the purpose of blowing up digital asteroids on a screen.¹⁷ As it turns out though, our brains are good at that too.

In regard to pervasive media, such experimental research supports my analysis of the different forms of networked presence we manifest—particularly for the real-time and visualized human signal. If we already animate with our imagination the mechanical or the simulated, we

now have the experience of making actual our human presence via computational and synthetic transmission.

Of course, not all animated forms are created equal in our perception or our treatment. As I have previously discussed, we tend to get fed up very quickly with machines that impersonate people (see chapter 1). On the one hand, we are good readers of the difference between human and nonhuman signals (semantic communication), i.e., the conversation with a person versus one with a chatbot; the limits of the machinic conversation are, for the most part, easy to discern. On the other hand, simulation, when derived from human gesture, works very powerfully. For example, the recording of a baby crying can elicit the same feelings of anxiety in the listener as hearing an actual baby cry. As Reeves and Nass describe with the media equation, the distinction between a real and simulated signal proves very difficult to discern. Their findings in experimental research correspond with my analysis of networked media engagement: whether it is live or mediated, a human signal provokes a human response. (See figure 2.1.)

In a time of accelerated simulation such as ours, I ask what are the implications of the media equation. If our use of avatars is deeper and broader than ever before, if we are nearly constantly mediated, then how are we making judgments between the real and the virtual? The answer is: we are not.¹⁸ In my analysis of the media equation, the issue at hand is not a change in technology. Rather, the primary importance of Reeves and Nass's insight relates to social rather than technical engagement of networked media.

As a species, we are largely defined by sociality. We use language, we cooperate, and we share information. All of these attributes are profoundly social ones.¹⁹ Reeves and Nass characterize our response to media stimulus as social. Personality is the key to the media equation. "Give anything eyes and a mouth, it would seem," they write, "and personality responses follow."²⁰ We can describe personality as a profoundly human attribute, one that speaks to key characteristics of humanness. And yet, we grant personality

18. Reeves and Nass write, "These studies provide strong evidence for the psychological equivalence of real and mediated worlds." In effect, we perceive the real and the simulated the same; on the level of cognition, we do not make significant distinctions. *The Media Equation*, 82–83.

19. A work such as anthropologist Michael Tomasello's *Why We Cooperate* (Cambridge, MA: MIT Press, 2009) summarizes arguments and experimental literature on the subject of cooperation as an indicator of human sociality in cultural anthropology, with commentary from Carol Dweck, Joan Silk, Brian Skyrms, and Elizabeth Spelke.

20. Reeves and Nass, *The Media Equation*, 83.



Media equation: We treat images that appear on a screen as real. Image of Desire Strangelove, of the series "13 Most Beautiful Avatars." With this series artists Eva and Franco Mattes explore the visual impact of Second Life avatars. Credit: Eva and Franco Mattes, Postmasters

Fig.2.1

to things that occupy the realm of the nonhuman—the mechanical, the computational, and the synthetic. The media equation implies that we not only respond in a social manner to media technologies themselves, such as computers, but we also treat images that appear on a screen as real. In addition to these two categories, I would offer a third category of engagement that relates to pervasive media: we now create conditions in which machines augment our personality and presence.

In terms of human-machine interactions, as viewers, we fill in the blanks that turn an abstract pattern into a face or a line of text into a personality. In the 1995 paper "Can Computer Personalities Be Human Personalities?" Reeves and Nass, with additional researchers, find that it takes only the most "superficial manipulations" of a computer program to imbue it with a personality that affects the user's experience.²¹ It affects us in the sense that we ascribe intention, tone, and agency to the machine. One does not need extensive graphics or natural language to create a machine with a persona.

In the experiment outlined in their article, the researchers find that even the most remedial text interaction can convey basic human expression like dominance or submission.²² If the machine says, "Do this now!" or "Please follow this procedure," we have a very different experience of the persona of the computer, even if we understand on a logical level there is no intention behind the tone, only programming. The importance of their findings for an analysis of pervasive media is that we interpolate machines into our world as social actors.

The anthropomorphic urge is not a new one. Computer science and science fiction share a long history of machines that seem human or endowed with human persona.²³ But the shift in scale and speed of engagement with pervasive media relates to our sense of ongoing and intimate proximity with media objects. Both the size of media technologies, in the arrival of the handheld device, and their nearly constant physical proximity add to our social relation with technology. Our faculty of perception is not always reason-

21. Clifford Nass, Youngme Moon, B.J. Fogg, Byron Reeves, and Chris Dryer, "Can Computer Personalities Be Human Personalities?" *International Journal of Human-Computer Studies* 43, no. 2 (1995): 223-239.

22. Ibid.

23. A famous example in computer science and psychology, the ELIZA program, a text-based computer therapist program, written by Joseph Weizenbaum, had good results in working with patients based on a Rogerian psychotherapy method: the analyst primarily replies to the analysts' statements by making their words into questions, thus exploiting the best use of a computer vocabulary. ELIZA did not have to generate information or autonomous intelligence; the program simply had to be "a good listener" and reflect back what the patients told it. Despite the fact that the program did not have a human face or even a screen (it was based on printer output), Weizenbaum had designed a effective media foil for participants to fill with persona. In short, ELIZA was designed to be a good therapist.

24. Reeves and Nass,
The Media Equation, 83.

able, which makes our interaction with an increasingly animated world progressively anthropomorphic.

The second factor to keep in mind when we talk about mediation and perception is that we not only respond in a social manner to media appliances, we also treat images that appear on a screen as real. As Reeves and Nass write, "The studies show that social responses are not just applied to the appliances that deliver media; they also apply to fictional representations, human or otherwise, that appear on a screen."²⁴ Their findings suggest that we perceive the real world and simulated ones the same way. In people's engagement of pervasive media (and mediation), I see this phenomenon born out in the movement toward a societal recognition of the actual.

We are equal opportunity agency attributors—we see personality in almost everything, which helps to explain the power of avatars as representatives of self. I am suggesting that the critical distinction we draw every day is not between the real and the simulated but, rather, between the actual (which includes trusted modes and tropes of mediation) and the inauthentic (which describes the kind of failed signaling produced by chatbots or other low-level AI).

In addition to a long history of making machines anthropomorphic and endowing media images with personality, today we have media that tethers us to other people in real-time rich media connections. Our brains are now juggling a new combination of factors: an unreal image that we take to be real with an actual person managing its motions. This happens everyday in multiplayer online games as it happens, in different formats, on VoIP, IM, and SMS. If we had been previously mistaken about the human capacity of our machines and their synthesis of simulation, we now step toward a media engagement that actually does channel the presence of another person.

The age of computation changed the speed of transmission but not the terms of human perception. In effect, our ancient brains are not equipped to discern real violence from simulated violence, or any other form of simulated

signal. But this does not mean we have not changed in rather profound ways in relation to the adoption of accelerated networked media. One can see the impact most clearly in the dynamic forms of engagement we find within network culture. Avatars play a critical role in the next levels of simulation and networks, as they are our messengers, the front line of interaction.

If avatars are perceived as real, as Reeves and Nass suggest, then we take them at face value to a certain extent. Yet, intellectually, we understand that each avatar, or the sum of images, action, and texts that make up one's network avatar, is a collection of media—that we are putting a face on things in effect. I am suggesting that both sides of a media equation can be sustained: first, we believe what we see even as we know what we see is effectively a façade; second, we negotiate the difficulties of perception (the deception as it may be) by gauging the located use of media. We determine our sense of agency in pervasive media engagement in terms of "situated action," as I have discussed in chapter 1.

The media equation thesis—that we do not perceive a difference between the real and the simulated—has particular value for my estimation of networked subjectivity. I am suggesting that there is no second, virtual life—a cyberspace outside of our actual space of engagement. Rather, there are only variations of avatars as one moves through different territories. Actual things happen across a continuum of space, place, and temporality. And, the insights and actions we take in these sites may change our minds or even our worldviews.

In my assessment of accelerated mediation on a societal scale, I see that virtual figures and territories possess increasing capacity to affect our experience of the world. We feel this shift in how we value and engage mediation most deeply not in the outer reaches of media design but in the humble media of daily life: the things we bump into in our homes and daily travails. It is the quotidian experience of media, not the avant garde or exceptionally expensive, that speaks to what we actually do with media and best forecasts the future of mediated worlds. It is within

25. Media scholar Lisa Nakamura has argued that representation of racial identity online in any format (text, visual, or a variation) is typically treated with racist hostility by a normatively white hegemonic male Internet culture. Lisa Nakamura, *Cybertypes: Race, Ethnicity, and Identity on the Internet* (New York: Routledge, 2002).

26. Paul Hemp, "Avatar-Based Marketing," *Harvard Business Review* 84, no. 6 (June 2006): 48-57.

this construct of quotidian media engagement that we must attend to issues of simulation and perception to better understand how it is we are addressing each other via mediation. Avatars are effective in conveying a human expression even if we cannot be sure who that human is.

Avatar Identity

Avatars provoke strong human responses because they send strong human signals. Taller avatars gain greater social power in their relations. Female avatars are feted and flattered or, conversely, harassed—all in greater degree than male avatars. Avatars that represent ethnicities other than white—black, Asian, Latino, and so on—often are treated by strangers in a stereotypically racist manner.²⁵ Gender-ambiguous avatars are treated with suspicion. Openly gay avatars get gay bashed. These social phenomena carry over from the real world into the virtual because we take our worldviews with us when we go online. If we take avatars at face value, the question becomes: To whom are we responding, the winged pixie we see animated on the screen or the person who runs her?

In a 2006 *Harvard Business Review* article written more as polemic than reportage, Paul Hemp asked that very question in querying why companies do not market to avatars.²⁶ "Avatar-Based Marketing," as he named the concept, would speak to our online alter egos. Hemp brought up a legitimate point. If, as the media equation suggests, we take each other's online persona as real entities, then who exactly are we addressing? Is it the player behind the screen or the synthetic figure in front of our eyes?

The answer is both, but to varying degrees. Strong identity markers, such as gender, race, and size, all carry great virtual weight online (see figure 2.2). Experimental and ethnographic research on this subject find that virtual identity markers work analogous to how they work in the real world. Avatar images, as well as gestures and voices, translate cultural information that we believe in: if we see a black avatar, we comprehend this as a black person and treat that avatar accordingly. In their paper



Visualizing networked identity: Our engagement of avatars suggests that markers of race, gender, sexual orientation, and ethnicity all translate across X-reality platforms. Image of Nubian Craven of the series "13 Most Beautiful Avatars." Credit: Eva and Franco Mattes, Postmasters

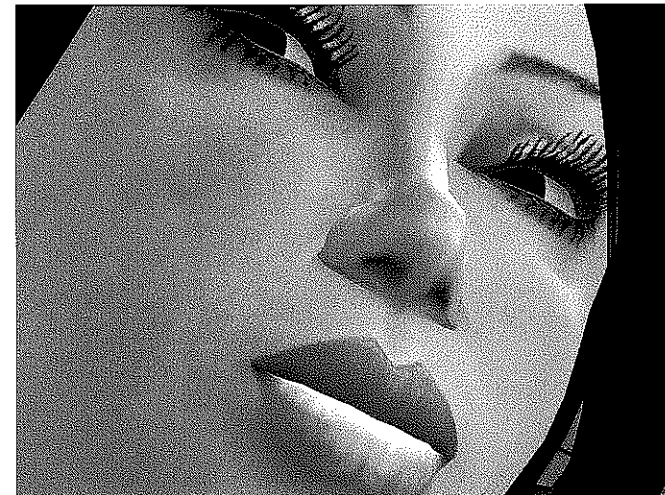
27. R. Dotsch and D. H. J. Wigboldus, "Virtual Prejudice," *Journal of Experimental Social Psychology* 44, no. 4 (July 2008): 1194–1198. See also Paul W. Eastwick and Wendi L. Gardner, "Is It a Game? Evidence for Social Influence in the Virtual World," *Journal of Social Influence* 4, no. 1 (January 2009): 18–32.

"Virtual Race," Dutch psychologists Wigboldus and Dotsch ran a virtual world test where users encountered white young male avatars and Moroccan young male avatars.²⁷ Players had similar responses to the Moroccan avatars as they did to Moroccan young men in real life—negative in general.

For better and for worse, putting a face on things also attaches the societal associations that such a face bears. (See figure 2.3.) An obvious example is that you do not have to be female to appear in a female avatar. And, in fact, historically among networked computer gamers, it has always been that more males represent themselves with a female avatar than vice versa. When interviewed about their choice to play a female figure, male gamers give two primary reasons for doing so. The first is that they would rather look at an attractive female body while playing than a male one, even if the female body is "their own." The second standard response is that female avatars receive more courteous treatment than their male counterparts by other players. In my interviews with men using female avatars, subjects describe experiences that complicate the simple terms of male-to-female game play. If we understand that a virtual figure appears real to a viewer, then we might also look at the way in which our engagement of a virtual figure may affect our sense of self.

The more nuanced understanding of avatar identity depends on a battery of things, such as the player's sexual orientation, the nature of the game environment, and the time investment in a community and platform. Reputation over time greatly diminishes the value of appearance. On first encounter, we may act toward that virtual persona in a prescriptive way, that is, amorously, violently, and so on. Over time, as we get to know that persona, the real-world person begins to bleed across the virtual threshold. We can locate an avatar effect in which we find persuasive signs of virtual identity that are aggregated with the identity of the media participant.

An anecdote from the world of networked gamers illustrates the invitation of a virtual identity and its limits



Anthropomorphic urge: We often create icons and images to translate human emotion across media platforms. Image of Modesty Galbraith, of the series "13 Most Beautiful Avatars." Credit: Eva and Franco Mattes, Postmasters

28. SirBruce, "Confessions of an MMOG Cross-Dresser," 26 Dec 2006 8:00 am, <http://www.escapistmagazine.com/articles/view/is-sucs/issue_77/439-Confessions-of-an-MMOG-Cross-Dresser>.

29. Ironically, when VoIP systems became prevalent in MMOs such as Halo, female players who previously had "passed" for male or at least were unmarked in terms of gender, were often harassed to the point of leaving the game when other male players heard their female voices over the line. The apparent authentication of their actual gender short-circuited the male fighter images they used on screen.

over time. A game blogger, SirBruce posted on the subject of his cross-gender exploits in "Confessions of an MMOG Cross-Dresser."²⁸ His saga outlines a "lesbian" relationship his female avatar had online with another female avatar, who turned out to also be a man. SirBruce describes the titillation of the lesbian romance, but does not discuss any possibility that it might also be a gay relationship between the two men. Once the relationship leaked over into their actual identities, the love affair was over. (SirBruce explains that after the avatar couple outed each other as men, they became very good friends, noting that he even hired his "buddy" for a job.)²⁹

I am suggesting that avatar identity works within a space of the actual as an X-reality phenomenon. We are, in effect, neither purely role playing (pretending to be someone else), nor are we left untouched by our engagement of a persona. In keeping with the findings of the media equation, SirBruce had an experience particular to appearing female online: he was taken at face value. But the limits of his second self, his female avatar, surfaced when it came to a deepening friendship with a player. If we address the question of avatar identity, the first level of response may be to the representational persona. But to comprehend more deftly whom we are addressing, we must find a mesh of the actual—a networked portrait of an interlocutor—and speak to that identity.

Mark Lentczner: Representing Race, Sexuality, and Seeing Oneself

Mark Lentczner has a long history in virtual worlds. He began in the 1990s with his avatar Zarf in the text-based world *Siberian City II*. From 2005 to 2010, he was the senior systems architect at Linden Lab, the creators of the virtual world *Second Life*. In *Second Life* he was represented by two avatars, Zarf and his official Linden persona, Zero Linden. Lentczner, who identifies himself as a Caucasian, Jewish gay man, discusses in this interview his choice to use avatars of color in the graphical virtual world. He reflects on the impact of race, age, and signaling sexual orientation in a virtual community.

Location: Coffee shop, Mountain View, California, February 19, 2008

LENTCZNER: My *Second Life* avatar was born in June 2005. My avatar's name is Zarf Vontangerloo. Vontangerloo picked at random, as you know, from a list of possible names. I just thought, that's a cool last name. Zarf is actually a name I've used in virtual communities for decades. I was part of a virtual world environment at MIT many years ago, *Siberian City II*.

INTERVIEWER: Did you participate in other online worlds before you got to *Second Life*?

LENTCZNER: No.

INTERVIEWER: So we're talking about an almost fifteen year break.

LENTCZNER: Fast forward to 2005, and I'm a stay-at-home dad, which I loved. I had actually heard about *Second Life* back in its early beta period and kind of stuck it on my back burner. Well, I ran into it again. In fact, I ran into Corey [Ondrejka, the founding CTO of Linden Lab] demo'ing it at a conference. Back then, it wasn't free to be in *Second Life*, but they were handing out freebies. So I took their freebie code and went home. Normally I just tell people that two weeks later it was clear I was completely hooked. But since you've asked about the creation of the avatar, I'll tell you about this, because I think that is crucial.

So here's what happened in that two weeks. First I created an avatar. Zarf is modeled after, I'd say, a thirty-year-old Hawaiian mix.

INTERVIEWER: Hawaiian mix of what?

LENTCZNER: Well, he's a little Polynesian. He's a little bit Caucasian. He's somewhat a meld.

INTERVIEWER: Talk to me a little bit about Zarf not looking like you but being you. On first blush or at a distance, is Zarf often understood to be black?

LENTCZNER: No. This is an interesting question, because my business avatar is most decidedly black. Not only is my business avatar decidedly black, my business avatar is about sixty-five to seventy [years old]. I mean grey hair and balding. He's an old African-American gentleman.

INTERVIEWER: So when you're representing your company, that's the avatar you use. Let's say it's similar to using the business Blackberry, as opposed to your personal phone.

LENTCZNER: No, it's a tremendous pain in the ass.

INTERVIEWER: Procedurally it's a hassle. But let's put hassle aside, and look at the relationships you've formed. Your business avatar is an older black man. Zarf is a youngish, Polynesian male. You rez [appear] male on both parts. You rez across the spectrum of brownish to blackish.

LENTCZNER: Yes, darker than I am in real life.

INTERVIEWER: If you had to think about how these two avatars have been received in public or private spaces, are there any differences? And I would add one more thing to it. Are your avatars gay or not gay?

LENTCZNER: So Zarf is most definitely gay, because he's in-world married to Bam Bam, who is very decidedly male and who is in fact my real-life partner John. We are up front about that all around.

INTERVIEWER: It is not very common to see people chose an avatar of color if they themselves are white.

LENTCZNER: I see to some degree that Zarf is much more close to my slight distance from the norm. Obviously there's a fair bit of Middle Eastern Jew in my blood, when you look at me physically. And so, there's just a slight difference from the norm. And Zarf, I think, sort of hits that same distance, and that's because that's what feels comfortable to me.

INTERVIEWER: It's not a one-to-one difference that you represent. It's that he represents the same spread.

LENTCZNER: Right, exactly. And you know, it might have to do with a way that I can see to signify it. My Brooklyn accent isn't going to come through online.

INTERVIEWER: Well, a bit now.

LENTCZNER: Well, yeah, we have voice now. So it will.

INTERVIEWER: But with your Linden avatar, are you making a statement?

LENTCZNER: So that's a much more complicated thing. By the time I got around to choosing my Linden avatar, I had been in [the Second Life] world probably five months. I have to say, part of it is certainly a statement. I felt that in the world in general, I didn't see as much ethnographic diversity and specifically African-American representation as I thought there ought to be. So that's certainly part of it. Now, I might be slightly sensitized to that issue, due to my family's racial makeup [Mark and his partner John, who are both white, have two mixed-race children]. So that was certainly true. I also think choosing the kind of character had a lot to do with how I wanted to be perceived on first blush.

INTERVIEWER: Not as a white person?

LENTCZNER: No, you see, it was more about [how] I wanted to be slightly less...hip. What are the qualities I was looking for? Professorial. I wanted to be taken as someone who might have a story to tell or someone who might have something to say that might be worth listening to. I wanted to create a feeling of collegiality. So in fact, Zero almost often wears—it's

horribly cliché—a tweed jacket. He has some other clothes, but he likes to make fun of the fact when he's wearing a t-shirt, because it just looks goofy on an older gentleman.

INTERVIEWER: Part of what you're telling me is the signifiers of age are equally as important as [those] of race and other identity markers. And you can't really separate them. If you were a young, buff, shaven-headed, hip black guy, that would be very different.

LENTCZNER: Completely. It's funny, no one's ever really said anything really racist to me in private or public spaces in Second Life. Oddly enough, people have said homophobic things to me.

INTERVIEWER: Oddly enough?

LENTCZNER: Well, it's not oddly enough. People made homophobic comments, but only after they recognized that I'm gay.

INTERVIEWER: Does race—or another of indication of difference like gayness—possess a kind of realness in a space where other things aren't?

LENTCZNER: Well, I'm guessing a little bit here, but I think it might have to do with the degree of distance, or the way in which you want people to think about you in relation to others. At least in twenty-first century Earth, I think race conveys a truth in a manner that being slightly shorter or not as well muscled doesn't.

INTERVIEWER: Can you explain to me what attracts you to virtual worlds?

LENTCZNER: I will try. But I will warn you, I am doing it with perfect 20/20 hindsight, and I'm doing it with having been in the industry. It's the ability to actually have a persona—even though I hate that term because persona implies artificiality. Actually what is important, [is] not whether the persona is me or is not me. It's the fact that it's complete enough to feel like a person. That's the important part.