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Avatars and Mobile Identities

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INTRODUCTION

With the growing pervasiveness of screen-based communication tech-
nologies, including personal computers and mobile phones, face-to-face
communication is increasingly becoming augmented and in some cases
even replaced by mediated screen-to-screen communication. With this
growth of screen-based communication, the self is continually being
mediated, remediated,[1] and intermediated[2] as it is networked and distrib-
uted through a variety of different media forms. We present ourselves as
visual images on Web sites, in blogs, games, virtual worlds, IM windows
and chat sites, and on mobile phones. As well as traditional indexical
images such as photographs and videos, the avatar—a graphical 2D or 3D
representation of the self—is increasingly becoming a familiar presence
in online and computer-mediated environments such as games, virtual
worlds, chat spaces, and now mobile phones. This chapter investigates
how avatars are increasingly starting to act and interact as proxies for our
physical selves, and looks at the sociotechnical forces shaping the design
and use of these new avatar identities as they migrate from games and the
Web to mobile phones.

Just as the Internet has become an increasingly image-rich environment
since the introduction of the World Wide Web and improved bandwidth
rates and download speeds, we are seeing a similar trajectory with mobile
phones. Although mobile phones are still primarily used for voice com-
munication and SMS, with increasing technology convergence they are
now increasingly being used to access, create, and distribute a variety of
image-rich media content. In countries like South Korea and Japan, where
the data rates charged for mobile phone usage are relatively low and the
transmission speeds are high, mobile phones are often used as the primary
mode of Internet access. And, with new and improved convergent mobile
devices like Apple's much-hyped new iPhone, released in mid-2007 in the
United States, mobile phones look set to become even more significant
devices for media production, distribution, and consumption, as well as
for interpersonal communication including the use of avatars.

However, while the virtual body of the avatar offers some interesting and productive opportunities for new forms of technologically mediated identity and 'presentations of self',[3] it also represents an increasing consumerization and commodification of identity. Dominant sociocultural stereotypes (gender, race, class) are reinscribed on the virtual body of the avatar, both through the choices of users and via computer software programs where they become parameters and presets that perpetuate and reinforce existing social stereotypes and cultural norms.

AVATAR IDENTITIES

Virtual environment researchers Jeremy Bailenson and Jim Blascovich define an *avatar* as "a perceivable digital representation [in a virtual environment] whose behaviours are executed in real-time by a human being."[4] As the Internet has become increasingly media-rich, graphical environments and graphical avatars have largely replaced the earlier text-based environments and identities of role-playing games such as MUDs (Multi-User Domains) and MOOs (MUDs Object Oriented).[5] By assuming a graphical avatar, an individual can become digitally embodied in a virtual environment, and he or she can interact with other avatars and objects within that environment in real time. Research shows that using avatars as communicative proxies creates a strong sense of intersubjective presence and copresence in virtual environments.[6] This experience of real-time interaction has much in common with the feeling of 'shared presence' or 'presence at a distance' with which we are familiar in our everyday telephone interactions. With conventional telephony, this sense of shared presence is established by voice alone, but with the increasing media convergence enabled by digital technologies, mobile phones now combine the intimacy of voice communication with graphical signifiers of identity such as photographs, video, and avatars. On mobile phones it is becoming common to assign photographs as the caller IDs of friends and family or use them as screen savers and wallpapers. We also use our mobile phones to take and distribute photographs and videos of ourselves. When images are shared on a moment-by-moment basis, they can create a sense of shared experience that connects individuals in the visual reality of each other's lives even though they are physically separated. Mizuko Ito's investigation of mobile-phone use in Japan suggests that the sharing of photographs and viewpoints can create a shared "intimate visual co-presence" between groups of friends or intimate others such as boyfriends and girlfriends.[7] And because the mobile phone is carried with us everywhere we go, it enables individuals and intimate groups to maintain 24/7 this sense of "presence at a distance"—a "being here and being there," as Larissa Hjorth and Heewon Kim describe it.[8]

With the use of animated avatar images, real-time interaction and presence can be signaled graphically through facial expression, gaze, head orientation, and body movements, as well as by speech, which on the Web is

typically represented in speech bubbles that appear above the avatar's head or in text boxes at the bottom of the image window. As avatars migrate to the mobile phone, however, text will be replaced by live speech, creating an even stronger sense of immediacy and copresence.

Although the avatar shares this quality of real-time interaction with other real-time images of the self, such as those offered by webcams, video-conferencing, and videophones, it offers two significant advantages. First, the animated graphical image of the avatar needs far less bandwidth than the real-time video image, so that problems with image lag and jerky movements are decreased. This makes the avatar image a particularly attractive option for mobile phones. Second, unlike the video image, which is anchored in the physical reality of the body, the graphical avatar allows individuals to access more transformative modes of visual identity, enabling them to present a much more editable and customizable version of the self than is possible with the indexical video image. In this context it is interesting to note that one of the key reasons (in addition to technical constraints) that videophones have never really taken off is because they reveal too much of the individual's "backstage" environment. One of the key benefits of voice-only phone communication is that aspects of the individual's physical appearance and location can be successfully hidden. With the use of graphical avatars individuals can continue to successfully hide their aspects of their physical appearance and "backstage" environment while presenting a visual persona of their choice. Inappropriate clothing and/or locations and embarrassing behaviors such as blushing or sweating can be conveniently eliminated in the avatar presentation, giving the individual far greater control over the front stage "face" or "faces" they present to the world.[9]

Indeed, with the digital avatar, it is possible to be "whoever you want to be" (or at least look like them) without being limited by the physical specificities of your gender, age, race, or even species. In an online article "Get Real! Creating a Sim in *The Sims Online*™," Bob King, the lead artist for *The Sims Online*,[10] invites users to experiment with the look of their avatar identity by literally stepping into a new skin:[11]

> Have you ever wanted to know what it feels like to be someone else? Ever dreamed of the ability to step into a totally different skin than your own? Would you like the ability to create a persona for yourself that could have your social and communicative qualities, and yet look nothing like you? Imagine being able to walk up to a good friend, hold a complete conversation with him, and have him never recognize you. Would you like a skin-colour change? Have you ever fancied a gender change? Ever thought of becoming an alien? You can enjoy this type of charade and many more online in *The Sims Online*.[12]

Although these types of avatars are only just starting to emerge on mobile phones, they are already a significant presence on the Web and in games

and virtual worlds; so it is instructive to look at the kind of avatar identities that are emerging in those contexts to gain some insights into the types of avatar identities that we may soon see more of on mobile phones and other portable convergent devices.

The promise of inhabiting a new skin and creating a fantasy alter ego or second self through the avatar identity lies at the heart of the popular Second Life® virtual world.[13] Rather than just watching our favorite media identities on television or in films, through avatars we can now become cartoonlike media identities in our own right as we interact with each other in the new media terrain of games and virtual worlds. While some Second Life® virtual-world residents, particularly those who have a recognizable and marketable real-life identity, inhabit avatars that resemble their offline selves (albeit frequently glossier and younger graphically rendered versions of themselves), one of the pleasures of online worlds is being able to construct an idealized fantasy identity and the lifestyle to go along with it. In Second Life® virtual world you can be a model or a rock star; you can wear designer clothes, drive in expensive cars, and live in palatial mansions.

Although maintaining a consistent avatar identity can be an important factor in establishing trust and building up a reputation in virtual communities, individuals often have a "wardrobe" of different avatar identities from which they choose to show different facets of their personality or to experiment with new identities.[14] For example, individuals may have a "work" avatar, an "intellectual" avatar, a "sporty" avatar, a "party" avatar, and so on.

AVATAR IDENTITIES AND PRESENTATIONS OF SELF

In *The Presentation of Self in Everyday Life* (1973), sociologist Erving Goffman describes the various "presentations of self" we enact in our everyday real-world interactions where we present different versions of ourselves in different social contexts.[15] Using a theatrical metaphor, Goffman describes these presentations as a type of performance, where we move between "front-stage" (public) and "backstage" (private) arenas, manipulating our appearance (clothes, accessories, makeup) and behavior to present different personas in different social roles and interactions—for example, student, daughter, girlfriend, friend, employee. This idea of individuals carefully constructing and performing their different social identities through a range of techniques of impression management provides a useful framework for analyzing the technologically mediated presentations of self that are currently being enacted on the Web and are starting to emerge in the mobile-phone environment.

In online environments, individuals can achieve much greater levels of control and "impression management" over their presentations of self than they can in their real-world interactions. In personal home pages,[16] blogs, and social networking sites like MySpace and FaceBook, photographs and text can carefully be selected and edited to present the individual's desired

persona within that particular environment. With avatar identities, even more "impression management" is possible, as the individual can control and transform his or her visual identity beyond their real-life specificities of age, gender, race, and appearance. In online environments, the individual's real-world physical appearance and physical environment can remain completely hidden "backstage" so that only the desired "front-stage" avatar identity is visible. Individuals can also move seamlessly between different online "windows" or "social frames," where they can activate and play out different performative identities.

The difference between the "front-stage" online presentation of self and the "backstage" reality is the focus of a series of digital prints created by Australian-Malaysian artist Emil Goh (see Figure 17.1). Goh's *MyCy* (2006) series of digital prints is based on South Korea's hugely popular online community *Cyworld*,[17] which is accessed via mobile phone and the Internet.
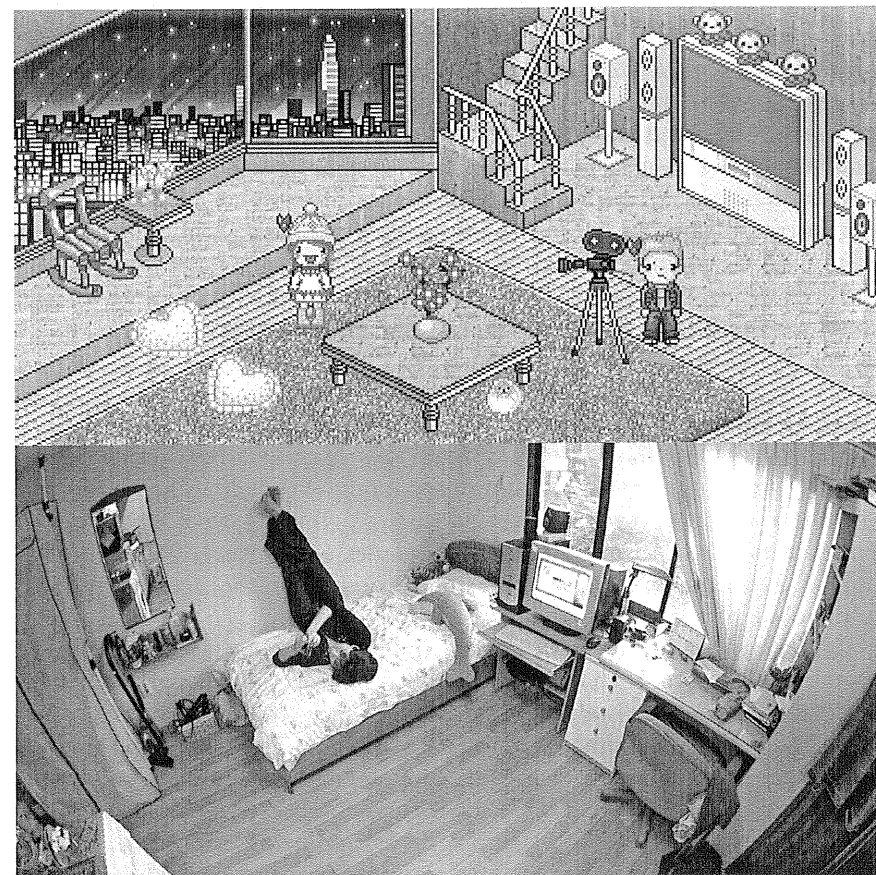

Figure 17.1 Emil Goh, *MyCy*, digital print, 2005.

In *Cyworld*, community members create and customize their own cartoonlike avatars and mini-homepages. Each *Cyworld* member has their own miniroom, created by selecting various backdrops, wallpaper, furniture, and other appliances and accessories. The miniroom operates as the backdrop for the avatar and plays an important role in creating the avatar's identity. For many young South Koreans who still live at home and go out to socialize, the miniroom is their opportunity to create their own ideal fantasy living space which can express their tastes, aspirations, personality, and group affiliations.

In *MyCy*, Goh presents a series of prints which show the "front-stage" view of *Cyworld* avatars in their minirooms, paired with a "backstage" view showing the *Cyworld* members in their real-world bedrooms. The prints highlight the discrepancy between the fantasy self projected in the idealized avatar identity, with its aspirational lifestyle, and the individual's real-life identity and environment.

Goffman's analysis of front-stage and backstage behavior and the different social frameworks and environments within which social interaction occurs has also been widely applied in the study of mobile-phone usage.[18] However, in contrast to the clear distinction between front stage and backstage that we see on the Web, with the public performance of mobile-phone conversations this distinction is not so clear-cut. Mobile-phone users, particularly in public places like cafés or on public transport, typically have two audiences, the person on the other end of the phone and the audience that surrounds him or her in the physical environment. While the recipient of the mobile-phone call may only get to see the front-stage presentation, those in the immediate environment of the person making the call also get to see and share in the participant's backstage environment.[19]

AVATARS IN THE CROSS-MEDIA ENVIRONMENT

With the growing popularity of avatars, along with increasing media convergence and cross-media activity, we are starting to see avatars (or simplified versions of them) migrate from games and virtual worlds to other applications and platforms such as chat rooms, Internet messaging (IM), and mobile phones.

While a strict definition of *avatar* would limit its use to the description of animated graphical characters controlled by users in real time, in general usage the term *avatar* is also often used more inclusively to include a variety of still or minimally animated images that represent users in online environments such as home pages, chat spaces, IM, and mobile phones.[20] The popular Yahoo! avatars[21] used in their IM service are constructed by choosing different identikit facial features, wardrobe items, and accessories from a library of items. The avatars' facial expressions can also be controlled by sending emoticons so they can perform simple gestures and facial expressions.

Other examples of simple avatars that can be used either on the Web or on mobile phones are WeeWorld's WeeMee avatars[22] and Skype's Klonies avatars.[23] In the United Kingdom, the Glasgow-based DA Group and their consumer entertainment brand Yomego®[24] offer a range of animated avatars and virtual characters for television, the Web, and mobile phones. In 2006, Yomego launched MTV Flux, a new cross-media (TV, Web, mobile) virtual community where members can create an animated 3D Flux avatar that can appear on the MTV Flux television channel. Members can communicate with other "fluxers" by texting their avatars, and can request videos or upload media content on the MTV Flux channel either by SMS or through a Web interface.

However, while some of these avatar examples are being designed for use on multiple platforms and devices, in many cases competing proprietary standards and problems with interoperability will continue to make it difficult for users to have a "universal" avatar that they can port across different media applications or platforms. Your *Sims Online* avatar won't work in Second Life® virtual world or on your mobile phone and, although it is possible to export still avatar images and prerecorded animations and machinima[25] to different media platforms and applications, the real-time interaction of the avatar is only possible within the application in which it was created. Interoperability issues and the complexities of different mobile phone standards and platforms may also limit the uptake of avatars on mobile phones.

Creating viable mobile-phone avatars that can be controlled in real time depends on increased improvements in bandwidth and transmission speeds, as well as new software applications and hardware modifications. In the mobile-phone environment, there is also an increased emphasis on the spoken voice instead of the speech bubbles and text windows which are the norm in virtual communities and chat environments. New improvements in synchronizing avatar lip movements and facial expressions with real-time speech inputs (in addition to prerecorded voice and text inputs) are necessary for real-time avatars to be a success on mobile phones, and it is likely that these developments will in turn flow back into virtual worlds.

Companies such as Motorola Labs and California-based company 3-Dmsg are starting to develop more complex animated 3D avatars that can "talk" on behalf of users on mobile phones, and there is a lot of research going into developing applications that can generate real-time avatar-mediated messages by using speech recognition and video image recognition to generate the avatar's speech, facial expressions, and movement[26] (Jana 2006).

SeeStorm, a subsidiary of the Russian company SPIRIT, offers a range of ready-made and customized 3D avatars that can be animated by real-time voice inputs. The animation is generated by matching the avatar's mouth movements with the live voice input using speech phonemes recognition.
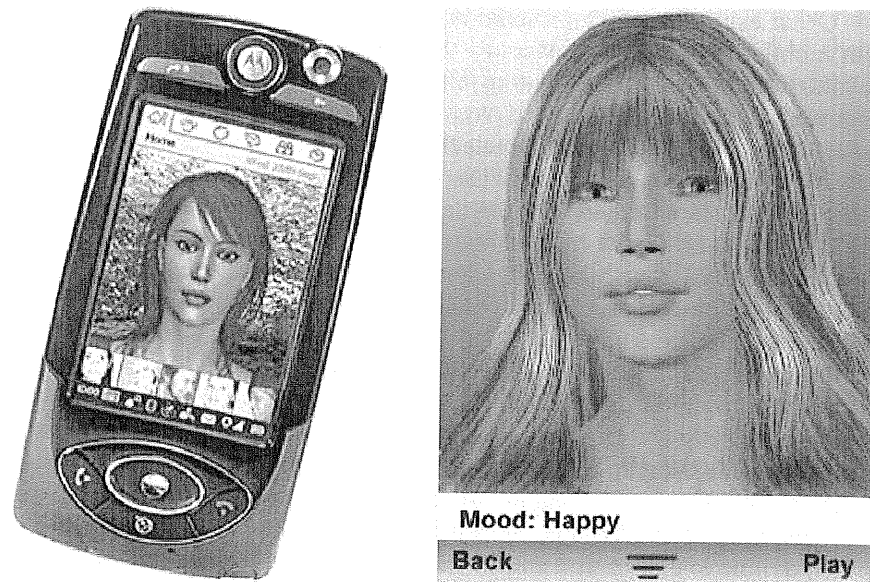
Figures 17.2 and 17.3   3D mobile phone avatars designed by Motorola Labs. Images courtesy Motorola, Inc.
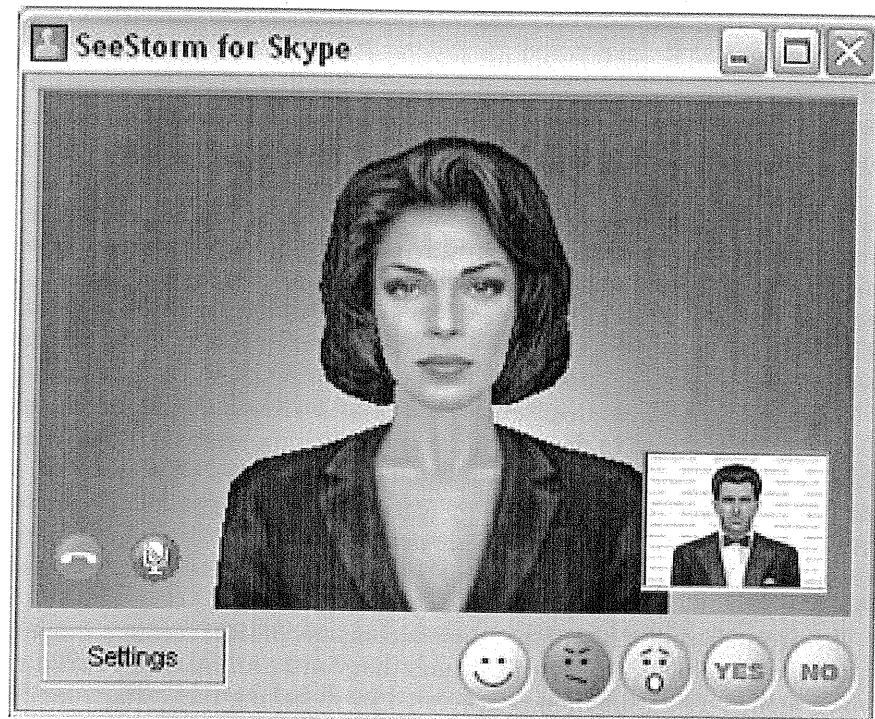
Figure 17.4   SeeStorm's 3D talking head avatar for Skype phones. Image courtesy of www.seestorm.com.
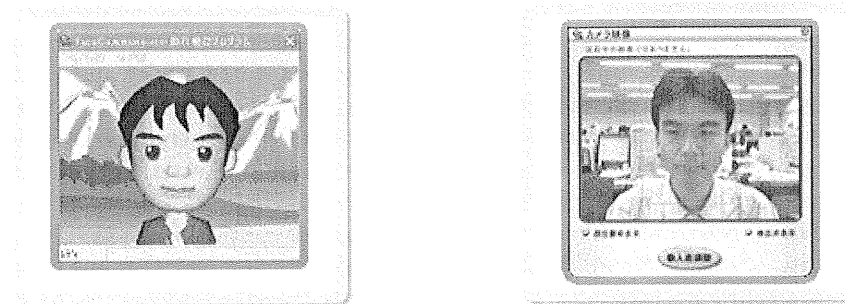
Figure 17.5   OKI Electric Industry's FaceCommunicator®-BBE uses a camera and its FSE™ (Face Sensing Engine) to map users' facial expressions on to avatars.

The user can also change the avatar's facial expressions by selecting the appropriate smiley emoticon (see Figure 17.4).

In Japan, OKI Electric Industry has developed FaceCommunicator®,[27] a proprietary software application that enables users to control the movement and expressions of their avatar by using a camera to detect the movement of the users' eyes and eyebrows, and then using those inputs to generate synchronized movements in the animated avatar (see Figure 17.5).

COMMODIFICATION AND STEREOTYPES IN AVATAR IDENTITIES

While avatars offer some interesting and productive opportunities for individuals to control and craft their online identities, and to experiment with new identities, they can also be seen as representing an increasing consumerization and commodification of identity. In our media-driven consumer culture, where identity has become associated with physical appearance and possessions, consumption has become a primary site of identity formation as we seek to obtain the various identities that are promised along with the purchase of brand-name clothes and other consumer goods. In the virtual terrain, the selection of an avatar identity can be seen as just another consumer choice; in this case, however, as well as selecting clothes and accessories, we can also choose the more personal determinants of our identity such as gender, age, face, skin color, and body shape.

In Neal Stephenson's cyberpunk novel *Snow Crash* (1992), users who don't have the skill to design their own avatars typically buy ready-made off-the-shelf versions such as those described next.

Brandy and Clint are both popular, off-the-shelf models. When white-trash high school girls are going on a date in the Metaverse, they invariably run down to the computer-games section of the local Wal-Mart

and buy a copy of Brandy. The user can select three breast sizes: improbable, impossible, and ludicrous. Brandy has a limited repertoire of facial expressions: cute and pouty; cute and sultry; perky and interested; smiling and receptive; cute and spacy. Her eyelashes are half an inch long, and the software is so cheap that they are rendered as solid ebony chips. When a Brandy flutters her eyelashes, you can almost feel the breeze.[28]

Versions of these Ken and Barbie clones along with other cute cartoon characters proliferate in games and virtual worlds and are also beginning to appear on the mobile platform. It is ironic (but perhaps not surprising) that, in this new virtual arena where theoretically we can be anything we want to be, homogenizing social stereotypes and idealized media types dominate the virtual landscape. These real-world norms and stereotypes are reinscribed in the virtual terrain both through the types of avatars made available for users by virtual-world developers and through the choices of avatars made by users themselves.

At the moment there are very limited options available for users to select or create their own animated avatars on mobile phones, but in the popular Second Life® virtual world, a thriving online marketplace has developed where users trade avatar skins, body shapes, clothes, and accessories. Users who don't have the skills to customize their own avatars can buy whatever attributes they desire, and in this marketplace sexy, idealized avatars dominate. Although there are a few offbeat "alien" or "monster" avatars, the most popular types of avatars are overwhelmingly made up of idealized Ken and Barbie clones and their updated popular culture cousins such as Japanese-style *manga* and *anime* characters. In Second Life® virtual world, it is easier to buy a glamorous idealized avatar identity than it is to design one that actually looks like your real-world self. These idealized identities are far more prevalent in the virtual terrain than in real life because they can be attained much more readily. Modifying your digital avatar is much easier, cheaper, and less painful than plastic surgery, and if you don't like your new look you can easily change it.[29]

The freedom of users to construct their own avatars is also limited by a number of design constraints. Designers and programmers make choices about the type of world or environment your avatar will inhabit, and they also determine the overall visual style of your avatar and its possible behaviors. Some of these decisions are a result of technical considerations (for example, hardware, software, and infrastructure limitations), but they are also the result of social, cultural, and aesthetic choices. As media theorist Vilem Flusser points out, our technological apparatuses are part of our culture, and "consequently this culture is recognizable in them."[30] Just as Flusser describes the photographer as the "functionary" of the camera because the actions are constrained by the functional abilities of the camera,

so too are computer users the functionaries of the computer hardware and software systems they use:

> Photographers select combinations of categories . . . It looks here as if photographers could choose freely, as if their cameras were following intention. But the choice is limited to the categories of the camera, and the freedom of the photographer remains a programmed freedom. Whereas the apparatus functions as a function of the photographer's intention, this intention itself functions as a function of the camera's program. It goes without saying that photographers can discover new categories. But then they are straying beyond the act of photography into the metaprogram—of the photographic industry or of their own making—from which the cameras are programmed. To put it another way: in the act of photography the camera does the will of the photographer but the photographer has to will what the camera can do.[31]

Individual users or functionaries may challenge and subvert the cultural norms and stereotypes inscribed in the apparatus and its program, but only to the extent that the program itself allows; otherwise, as Flusser points out, they need to initiate change in the metaprogram itself. It is at this level of the metaprogram where the apparatus is constructed and programmed that sociocultural ideologies, practices, and norms are inscribed into the virtual terrain.[32] Different virtual environments have very different graphical styles or "looks," which range from cute cartoonlike avatars such as the WeeMees, Klonies, and Yahoo! avatars to the more highly rendered 3D avatars in Second Life® virtual world.

The users' freedom to personalize their avatar identity is a "programmed freedom" typically made by selecting from a predetermined array of mix-and-match options, body parts, and accessories. Users can generally change the gender and skin color of their avatars and select different facial features, clothing items, and accessories, but it is not always possible to change things like body shape or age. Slim, young (and usually white) adult is typically the default setting.

Even in more sophisticated virtual environments like the virtual world of Second Life®, where users are offered a vast range of options to customize their avatars' appearance, the slim, young adult is still the default setting. New users entering Second Life® virtual world are offered a choice between male and female versions of six default avatars. Until recently, the options included a Furry (a fox character), Girl/Boy Nextdoor, City Chic (young urban professional), Harajuku (an *anime*-styled character), Cybergoth, and Nightclub. Like the majority of avatar default types available online, all of these avatars (even the Furry) were young, slim, and white/Asian. The new default avatar selection has a few new avatar types; the Furry and Asian-styled Harajuku avatars have been removed and a black avatar
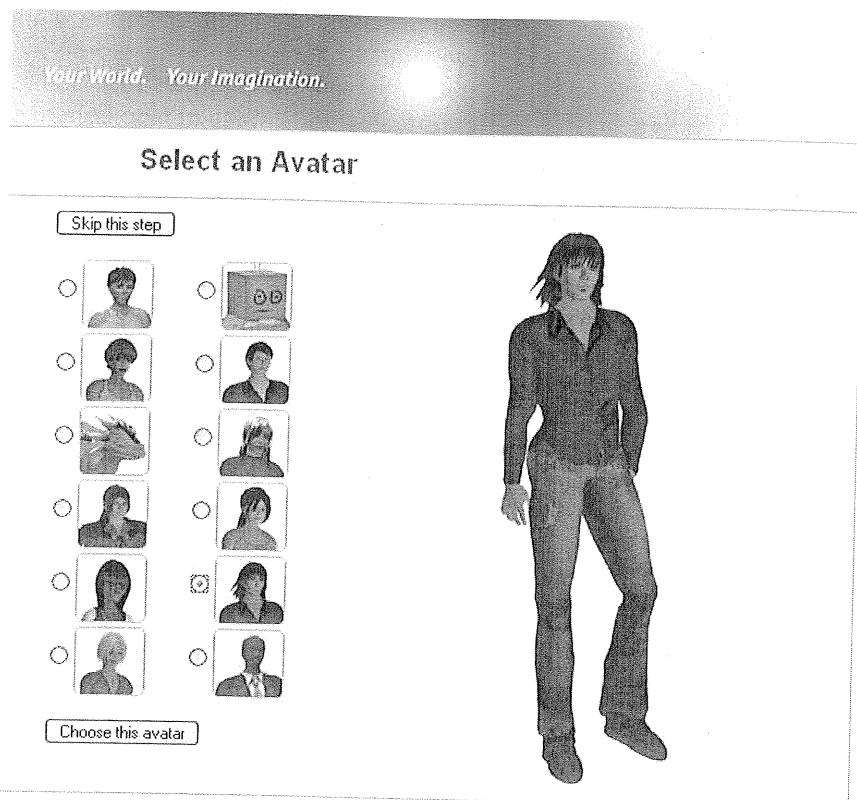
Figure 17.6   Default avatar selection in the virtual world Second Life®. Image reproduced with the permission of Linden Research, Inc. COPYRIGHT © 2001–2008 LINDEN RESEARCH, INC. ALL RIGHTS RESERVED.

has been added along with the nonhuman avatar options of a dinosaur and a cardboard box (see Figure 17.6). While these stereotypes may reflect the (presumed) preferences and demographics of users, they also serve to emphasize and privilege these particular identities and to suggest particular types of interaction and behaviors.

Your control over your avatar's movements, facial expressions, and gestures is also limited by the preset animations available within different environments—for example, waving, crying, blowing kisses, smiling, dancing, frowning, and so on.[33] These behaviors are typically quite stylized and exaggerated, and in some cases they are also heavily gendered—for example, if you want your Second Life® virtual world avatar to blow a kiss, you have to choose the male or female version of that action. In some cases, it is possible to create your own individualized movements and gestures, either by designing your own animations or by buying them from other players, but in many cases you are stuck with the preset options.

Although Second Life® virtual world residents are actively encouraged to modify the virtual environment and the appearance and behaviors of their avatars, this "freedom" is still constrained by the overall framework of the system and the design and programming skills of its residents. Residents who can't design and program their own avatar identities are limited to selecting from among the built-in features and items and behaviors available for purchase in the online marketplace.[34]

As demand grows for avatars on mobile phones it is likely that similar types of user-generated avatar designs will also start to emerge as long as they meet the technical specifications of different mobile platforms (and those specifications are made available to users and other third-party developers). But as we have seen with the Second Life® virtual world example, even when users can design or buy their own mobile-phone avatars rather than just choose from the limited selections offered by developers, it is likely that stereotypical avatar identities will continue to be dominant.

CONCLUSION

In the twenty-first-century media and communication environment, the avatar is set to become an increasingly common identity stand-in in our mediated screen encounters. In many ways, these avatar identities offer individuals far greater choice and control over their visual identities than they have with their real-world physical selves. However, as we have seen from the examples explored in this paper, embedded software preferences play a big role in setting the parameters for the appearance and behaviors of our new avatar identities, and also tend to intensify media stereotypes that idealize youth and beauty, creating an online world that is currently dominated by cute cartoonlike entities and hunks and babes. Even when users can go beyond the software limitations of avatar construction kits and design their own avatars and accessories, stereotypes still prevail, as is evident in the thriving online economies where avatar identities or skins, body shapes, clothes, and accessories are routinely traded and ideal types dominate. The "anything we want to be" would appear to be the stereotypical ideal types that proliferate in the popular media—young, buff, and good-looking with a full complement of materialistic accessories, designer clothes, hi-tech gadgets, cars, and palatial houses.

We can learn a lot about the likely types of avatar identities that we will see on mobile-phone platforms by looking at existing practices on the Web and in games and virtual worlds. However, as avatars increasingly start to migrate to mobile-phone environments, the norms and practices of the telephone medium will also have an impact on the style and channels of avatar communication. The importance of live voice will inevitably become a more dominant feature of avatar interaction than it has been on

the Web, where text (via speech bubbles and text chat boxes) still dominates. The combination of real-time avatar images with live voice interaction in future avatar developments for mobile platforms will produce an increasingly stronger sense of virtual presence which blends the existing strengths of the mobile and Web platforms.

NOTES

1. Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge, MA: MIT Press, 1999).
2. N. K. Hayles, *My Mother Was a Computer: Digital Subjects and Literary Texts* (Chicago: University of Chicago Press, 2005).
3. For a detailed discussion of Erving Goffman's description of "backstage" and "front stage" and the "face-work" individuals engage in to present an appropriate face in their social encounters, see Erving Goffman, *The Presentation of Self in Everyday Life* (New York: Overlook Press, 1973) and Erving Goffman, *Interaction Ritual: Essays on Face-to-Face Behaviour* (London: Allen Lane, 1972).
4. Jeremy Bailenson and Jim Blascovich, "Avatars," in *Encyclopedia of Human–Computer Interaction*, ed., W. S. Bainbridge (Great Barrington, MA: Berkshire Publishing, 2004), 64–68 (p. 64). In Hindu mythology, the term *avatar* is used to describe the material incarnation of gods when they take on a physical form to descend to earth and interact with humans. Just as Hindu gods manifested in many different avatar forms, so too can users take on multiple avatar identities in online and computer-mediated environments. The term *avatar* was first used to describe the graphical personas representing users in an online role-playing game called *Habitat* developed in the mid-1980s. See Chip Morningstar and Randall F. Farmer, "The Lessons of Lucasfilm's Habitat," in *Cyberspace: First Steps*, ed. Michael Benedikt (Cambridge, MA: MIT Press, 1991), 273–301. The term *avatar* then became widely popularized by Neal Stephenson's 1992 cyberpunk novel *Snow Crash*. See Neal Stephenson *Snow Crash* (London: Penguin, 1992).
5. For more information about these text-based identities, which are important precursors to the graphical avatar, see Sherry Turkle, *Life on the Screen: Identity in the Age of the Internet* (New York: Simon & Schuster, 1995) and Julian Dibbell *My Tiny Life: Crime and Passion in a Virtual World* (New York: Harold Holt, 1998).
6. See Ralph Schroeder, ed., *The Social Life of Avatars: Presence and Interaction in Shared Virtual Environments* (London: Springer-Verlag, 2002); Jim Blascovich, "The Social Life of Avatars: Presence and Interaction in Shared Virtual Environments," in *The Social Life of Avatars: Presence and Interaction in Shared Virtual Environments*, ed., Ralph Schroeder (London: Springer-Verlag, 2002), 127–45; T. L Taylor, "The Social Life of Avatars: Presence and Interaction in Shared Virtual Environments," in *The Social Life of Avatars: Presence and Interaction in Shared Virtual Environments*, ed., Ralph Schroeder (London: Springer-Verlag, 2002), 40–62.
7. Mizuko Ito, "Intimate Visual Co-Presence." Paper delivered at *UbiComp 2005: The Seventh International Conference on Ubiquitous Computing*, Takanawa Prince Hotel, Tokyo, Japan. (September 2005). Retrieved January 5, 2007, from http://www.itofisher.com/mito/publications/intimate_visual.html.

8. Larissa Hjorth, and Heewon Kim, "Being There and Being Here: Gendered Customising of Mobile 3G Practices through a Case Study in Seoul," *Convergence*, 11:2 (2005), 49–55.
9. Avatars can also provide an identity "mask" for users to hide behind. Not surprisingly, avatar identities are being promoted to marketing and call-center companies both to protect their operatives' identities and also to provide whatever face or faces might be deemed most advantageous for the company to present. See Reena Jana, "Building Your Own Phone Face," *BusinessWeek* online, retrieved January 19, 2006, from http://www.businessweek.com/innovate/content/jan2006/id20060119_883103.htm.
10. See http://www.ea.com/official/thesims/thesimsonline.
11. Avatar identities are frequently referred to as "skins." These avatar skins, which include the gender, skin color, age, body shape, facial features, and hair color of the avatar, can be put on in and taken off in the online environment in the same way that we put on and take off clothes in the physical world.
12. Bob King, "Get real! Creating a Sim in The Sims Online™," retrieved October 1, 2003, from http://www.eagames.com/official/thesimsonline/features/fun_may02.jsp.
13. Second Life is a trademark of Linden Research, Inc. See http://www.secondlife.com.
14. See Sherry Turkle, *Life on the Screen: Identity in the Age of the Internet* (New York: Simon & Schuster, 1995); and John Suler, *The Psychology of Avatars and Graphical Space in Multimedia Chat Communities* (1996–2007). Retrieved February 5, 2007, from http://www.rider.edu/suler/psycyber.
15. See Erving Goffman, *The Presentation of Self in Everyday Life.* (New York: Overlook Press, 1973).
16. See Charles Cheung, "A Home on the Web: Presentations of Self on Personal Homepages," in *Web Studies: Rewiring Media Studies for the Digital Age*, ed. David Gauntlett (London: Arnold, 2000), 43–51.
17. Launched in South Korea in 1999, Cyworld (www.cyworld.com) currently has 30 percent of the country's population as registered users (eighteen million people) including over 90 percent of Koreans in their twenties. Cyworld has also launched sites in Japan, Taiwan, and China (two million users) and in July 2006 launched a test site in the United States. See Michael Kanelios, "Korean Social-Networking Site Hopes to Nab U.S. Fans," *CNET News. com*, August. Retrieved September 5, 2006, from http://news.com.com/Korean+social-networking+site+hopes+to+nab+U.S.+fans/2100-1025_3-6104794.html.
18. See Richard Seyler Ling, *The Mobile Connection: The Cell Phone's Impact on Society* (Amsterdam: Elsevier/Morgan Kaufmann, 2004) and Richard Ling and Per E. Pederson, eds., *Mobile Communications: Re-negotiation of the Social Sphere* (London: Springer, 2005).
19. See Leopoldina Fortunati, "Mobile Telephone and the Presentation of Self," in *Mobile Communications: Re-negotiation of the Social Sphere*, eds. Richard Ling and Per E. Pederson (London: Springer, 2005), 203–18; and Fernando Paragas, "Being Mobile with the Mobile: Cellular Telephony and Renegotiations of Public Transport as Public Sphere," in *Mobile Communications: Re-negotiation of the Social Sphere*, eds. Richard Ling and Per E. Pederson (London: Springer, 2005), 113–29.
20. Bailenson, Jeremy, Nick Yee, Dan Merget, and Ralph Schroeder, "The Effect of Behavioural Realism and Form Realism of Real-Time Avatar Faces on Verbal Disclosure, Nonverbal Disclosure, Emotion Recognition, and Copresence in Dyadic Interaction," *Presence*, 15(4) (2006): 359–72.
21. See the Yahoo! Avatars at http://messenger.yahoo.com/avatars.php.

22. See the WeeMee avatars at http:// www.weeworld.com.
23. See Skype's Klonies avatars at http://skype.klonies.com.
24. See http://www.yomego.com.
25. Machinima (machine cinema) are movies that are recorded in games and virtual worlds using in-game virtual cameras.
26. See Reena Jana, "Building Your Own Phone Face," *BusinessWeek* online, retrieved January 19, 2006, from http://www.businessweek.com/innovate/content/jan2006/id20060119_883103.htm.
27. See http://www.oki.com/jp/FSC/vc/en/bbe/index.html.
28. Neal Stephenson, *Snow Crash* (London: Penguin, 1992), 35.
29. Avatar skills and abilities are also commodified in the online marketplace. Many of the skill-based attributes of avatars in online role-playing games such as *Everquest* and *World of Warcraft* are developed within the game world itself and require a substantial investment of a player's time and game skills. A shortcut to acquiring an avatar with a high skill level and reputation is to buy an avatar with the desired skills or attributes from another player, and there is a growing market in avatar trading on online auction sites like eBay and PlayerAuctions.com, where avatars may be sold for anything from a few dollars to thousands of dollars. See Edward Castronova, *Synthetic Worlds: The Business and Culture of Online Games* (Chicago: University of Chicago Press, 2005) and Julian Dibbell, *Play Money: Or, How I Quit My Day Job and Made Millions Trading Virtual Loot* (New York: Basic Books, 2006).
30. Vilém Flusser, *Towards a Philosophy of Photography.* (London: Reaktion, 2000), 22.
31. Ibid., 35.
32. New media theorists such as Lev Manovich, Matthew Fuller, and Wendy Hui Kyong Chun write persuasively about how ideologies, stereotypes, and cultural practices are inscribed in computer hardware and software applications, where they perpetuate and reinforce existing social stereotypes, power structures, and cultural practices. See Lev Manovich, *The Language of New Media* (Cambridge, MA: MIT Press, 2001); Matthew Fuller, *Behind the Blip: Essays on the Culture of Software* (New York: Autonomedia, 2003); and Wendy Hui Kyong Chun, *Control and Freedom: Power and Paranoia in the Age of Fiber Optics* (Cambridge, MA: MIT Press, 2006).
33. These preset animations are activated by users clicking on an appropriate icon or, in more sophisticated environments, animations may be triggered automatically when certain words are typed or spoken.
34. In many ways, the nongraphical text-based MUDs and MOOs provided more freedom in terms of identity choice and behaviors, as users could be and do anything they could describe in words.