

Virtual Worlds

A Primer

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A snow-capped mountain range stretches over the town's northern border and tapers down to a southward-facing, concave bay embracing a small archipelago of glittering islands. Homes are clustered in predictable locations: on the islands, against the seaside, and close to the mountains. This is the community of Blazing Falls, a town with over 25,000 inhabitants—roughly the size of Timbuktu or Poughkeepsie. Its young and attractive twenty-something inhabitants can be found chatting and working together in their eclectically furnished dwellings. Most live with roommates, with whom they share both rights of ownership and the duties of taking out the garbage, washing the dishes, and paying for parties and furniture. In their leisure time, they chat with neighbors, attend shows, dance at nightclubs, work out, and visit local attractions. Undoubtedly, many Blazing Falls residents are engaged in such activities at this very moment. As you are reading this, they are eating, sleeping, or resting on comfortable couches in front of television sets while they discuss politics and the latest movies with their roommates.

All manner of social groups exist in Blazing Falls—Christians, Wiccans, Goths, Punks, and poets. Many professional types are represented: Some work as telemarketers; others work as repairmen; some are aspiring musicians; and there are even people who manufacture lawn gnomes for a living. Most people do business honestly, but there is a shady side to Blazing Falls. Some Blazing Falls residents are confidence men, preying on gullible newcomers. There are even a few brothels and strip clubs, though the legality of these establishments is dubious.

THE STATE OF PLAY

LAW, GAMES, AND VIRTUAL WORLDS

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All this seems familiar. Yet there is much about Blazing Falls that is decidedly unfamiliar. A casual visitor might at first be nonplussed by the common social practices in the community. Homeowners in Blazing Falls generally encourage strangers to enter their property, lie in their beds, eat their food, use their bathrooms, and monopolize their possessions. When these visitors break their pinball machines and exercise equipment, the owners may complain a bit, but for the most part they cheerfully repair the items and let the visitors have a go at them again.

Other aspects of Blazing Falls are harder to explain. No one there has ever been ill. And though marriages occur often enough, no children have ever been seen. Strangely for a town of 25,000, even if one of the nubile and newly married residents were to become pregnant, she would find no hospital where a child might be delivered. Most importantly (for the purposes of the legal scholar) there are no courts, no halls of Congress, and not even a visible police force—yet not one murder has ever been reported.

If you ask the average resident of Blazing Falls what she thinks about the absence of familiar legal institutions, however, she will generally seem more intrigued than alarmed. In Blazing Falls, she will ask, is all that messy business of law and government truly necessary? After all, none of this is real.

Blazing Falls, as you have probably guessed, is a virtual world. Using less lofty language, you might call it a computer game. Blazing Falls is just one town in the larger environment of *The Sims Online*, a popular game with reportedly over 100,000 subscribers.¹ Other contemporary virtual worlds include the tropical beaches of Tiki (There.com's *There*), the fantasy world of Norrath (Sony's *EverQuest*), the interstellar expanses of the Milky Way (Electronic Art's *Earth & Beyond*), and even a galaxy far, far away (Sony's *Star Wars Galaxies*). In Blazing Falls and these other places, millions of people with Internet connections are currently living large portions of their lives, forming friendships with others, building and acquiring virtual property, and forming social organizations.² In South Korea, the game *Lineage* is currently more popular than television, with some 4 million registered participants.³ In the United States, *EverQuest's* Norrath is the most popular virtual world, with over 440,000 subscribers at last count. *Ultima Online* and *Dark Age of Camelot* are serious competitors, having 250,000 and 200,000 participants, respectively.⁴

This is obviously a new concept in games, if it is even properly characterized as a game at all. Non-networked computer games resemble the

mental world of a two-year-old: everything revolves around you and nothing happens when you are not present. Virtual worlds are different. *The Sims Online*, like all virtual worlds, is both persistent and dynamic. Even when you are not in Blazing Falls, the environment continues to exist and changes over time. While you sleep in real life, other people's representations may be eating and dancing in your home in Blazing Falls; your neighbors' virtual houses will be remodeled and redecorated while you commute to work; virtual weddings will take place while you chat at the physical world water cooler; and new social structures will emerge while you have dinner. By the time you get back to Blazing Falls in the evening, you may find that the entire infrastructure and character of your neighborhood has changed.

Of course, all these changes occur in a represented reality, and the inhabitants of Blazing Falls know each other through representational proxies that may or may not reflect the physical attributes of their controllers. Representational proxies in these virtual spaces are known as "avatars," a word of Hindu religious origin.⁵ Avatars, unlike prior video game alter egos, can be richly customized and are designed primarily for social interaction. Currently, the avatars of virtual worlds speak with each other through either textual chat windows or "speech bubbles" that float over their heads. Avatars express themselves through appearance as well. You can choose the face, clothes, and body shape of your avatar and communicate with others through body language. For instance, in *The Sims Online*, avatars yawn, clap, shout, shake their fists, cry, hug, kiss, dance, and perform hundreds of other ordinary human actions to let others know how they're feeling.

Perhaps because virtual worlds support this kind of rich social interaction, many of those who have chosen to visit virtual worlds remain residents of them. The average *EverQuest* player and Norrath avatar, for instance, spends about twenty hours a week within the virtual world.⁶ Virtual-world participants design costumes, furniture, and houses for their avatars, and sell their creations to others. They buy and barter virtual chattels on eBay.⁷ They form clubs and organizations devoted to mutual aid and protection. They pressure their roommates and organizational members to spend more time in the virtual world in order to foster the common good.

Virtual worlds are unreal: They are artificial, fictitious, imaginary, intangible, and invented. Yet virtual worlds are real, as well. All things artificial or invented do not fall entirely outside the ambit of reality. If they

did, we would need to banish from reality all manner of human actions and creations, including buildings, languages, and—most important for our purposes—laws. As Jack Balkin and Julian Dibbell have noted, while laws may be invented and intangible, they are hardly insignificant.⁸

We suggest that the laws of virtual worlds are significant for three primary reasons. First, virtual worlds are attracting an ever-increasing population of participants who believe that the social interactions that occur within these environments are important.

When economics professor Edward Castronova undertook a study of the economics of *EverQuest*, he was challenged by the impression that others within his field might have thought he was wasting his time on something lacking in real-world relevance. His explanation for why this “silly game” really mattered was as follows:

Economists believe that it is the practical actions of people, and not abstract arguments, that determine the social value of things. One does not study the labor market because work is holy and ethical; one does it because the conditions of work mean a great deal to a large number of ordinary people. By the same reasoning, economists and other social scientists will become more interested in *Norrath* and similar virtual worlds as they realize that such places have begun to mean a great deal to large numbers of ordinary people.⁹

Castronova is right. Millions of people spend a large portion of their waking lives in virtual worlds. A significant number of users even claim primary citizenship in virtual worlds. In Castronova’s study, 20 percent of participants in a large survey of *EverQuest*’s users attested to living their lives mostly in *EverQuest*’s *Norrath*, 22 percent expressed the desire to spend all their time there, and 40 percent indicated that if a sufficient wage were available in *Norrath* they would quit their job or studies on earth.¹⁰

A second reason why virtual worlds are worthy of consideration is that the economic boundaries between the real and the virtual world are not as distinct as they might appear. If you’re going on a virtual date with a new acquaintance you met in the online game *There*, you’ll probably want to dress to impress. So perhaps you’ll pick up some baggy Levi’s jeans, a Nike sweatshirt, or maybe a snazzy new hoverboard for your avatar. You may even want to fine-tune your avatar’s face and haircut. All these virtual chattels and services will set you back a tidy sum of Therebucks at the *There*-controlled rate of 1,787 Therebucks to the U.S. dollar. Your nonvirtual credit card will be charged for these purchases. Nike and Levi Strauss

seem to be intrigued by a market for virtual “goods” which requires no costly physical inputs.¹¹

Even where the creator of the virtual world does not facilitate markets for virtual goods, the residents may take it upon themselves to do so. For instance, if one spends enough time in virtual worlds, one can accumulate property that other people value: virtual castles, swords, silk sashes, and even one’s own avatar. By listing a well-developed avatar and its virtual castle on eBay, you can convert your virtual asset from a virtual value to real U.S. dollars.¹² In fact, these transfers happen so often that one can calculate an exchange rate between virtual- and real-world currencies.¹³

Simply put, the real and the virtual overlap from an economic perspective. For better or for worse, it is now possible to work in a fantasy world to pay rent in reality.¹⁴ The process differs little from, say, a Filipino overseas contract worker who works in another country for a period and sends money back to the Philippines. The implication is that some day people will walk their well-dressed avatars to virtual offices, where they, through their avatars, will labor to convince other avatars to cough up real cash for virtual goods. One obvious question that emerges from these transactions is how to deal with the jurisdictional issues presented by the disputes that will inevitably arise over virtual assets and transactions. It is unclear how existing property rules apply to such virtual rights and properties.

A third reason for exploring the laws of virtual worlds is that they provide a parallel alternative to existing legal systems, where new forms of social regulation can be explored. This point was made several years ago by Professor Jennifer Mnookin in her discussion of the virtual world of *LambdaMOO*. As Mnookin observed in regard to *LambdaMOO*’s emerging legal system, “Virtual communities like *LambdaMOO*, odd hybrids between games and worlds, simulations and society, may prove to be spaces for institutional reimagining, for questioning and reshaping conceptions of self, politics, and law.”¹⁵ The same arguments Mnookin applied to *LambdaMOO* apply to the far more prevalent phenomenon of today’s virtual worlds, which have progressed far beyond the small communities and textual interface of early virtual worlds like *LambdaMOO*. The laws of virtual worlds, where hundreds of thousands of individuals interact and form social bonds, can provide researchers with interesting insights into the emergence of law within new societies that exist purely through the medium of computer software.¹⁶

How did virtual worlds come to be? The original virtual worlds were created in fiction. Fictional geographies, often lovingly detailed, are fre-

quently an important part of imagined literary worlds. The most important twentieth-century popularizer of virtual worlds, J. R. R. Tolkien, created comprehensive maps of Middle-Earth and its Shire, the imaginary places where *The Hobbit* and *The Lord of the Rings* trilogy take place. One of the distinct pleasures of reading Tolkien stems from the richness of his imaginary topography, expressed through his hand-drawn maps. One can trace the movement of the protagonists across a landscape of forests, mountains, and marshes, and wonder at the nature of those regions that his text does not explore. Perhaps because of the richness of Tolkien's world-building, his works have had an enormous and varied influence on contemporary fantasy novels and, arguably, have given birth to the fantasy-literature genre as it exists today.

Those who designed the precursors of today's virtual worlds were not immune to this influence. Among Tolkien's earliest devotees were medievalists, some of whom enjoyed the hobby of staging battles involving miniature lead soldiers. In 1974, two medievalist war-gamers, Gary Gyax and Dave Arneson, transformed Tolkien's richly imagined world into a game called *Dungeons & Dragons* (D&D). While billed as a war-game, D&D was a far cry from traditional historical reenactment. The D&D game simulated the adventures of individual dwarves, elves, hobbits, and humans. The players of the game identified with their individual avatars rather than controlling armies of game pieces, leading to the description of D&D as a "role-playing" game.¹⁷

In the game, a "dungeon master" creates opponents and obstacles for the players and describes them verbally. These challenges usually consist of hostile monsters such as dragons and orcs, as well as deadly puzzles. After defeating a certain number of obstacles according to the game's rules, a player's avatar increases in power. This process is known as "leveling"—a beginner starts as a weak level 1 avatar, progresses to become a more powerful level 2 avatar, and so on.

The Byzantine rules and imagination-taxing quality of the game prevented D&D from ever achieving the popularity of Monopoly. However, for the niche market of computer programmers, Byzantine rules and unreal environments were par for the course. Perhaps as a result, Tolkien and D&D ended up playing a crucial role in the development of computer-based virtual worlds.¹⁸ The process began in 1976, when Will Crowther, a Tolkien and D&D aficionado, wrote a computer game called ADVENT.¹⁹ The game, which Crowther wrote to amuse his children, presented a navigable textual database based on the real-world Mammoth

Cave in Kentucky, spiced up with D&D elements to make it more interesting. The game emulated the conversational style of a D&D dungeon master: "You are standing at the end of a road before a small brick building. Around you is a forest. A small stream flows out of the building and down a gully."²⁰ Nothing further would occur in the game unless the player typed a textual command. For instance, if the player typed the word "enter," thus ordering the avatar to enter the building, the computer would respond by displaying the sentences: "You are inside a building, a well house for a large spring. There are some keys on the ground here." Like a D&D game, Crowther's program was replete with complicated puzzles requiring players to perform certain tasks with specific objects to avoid death and to progress in the game.²¹

The weak point of ADVENT and similar games was that they were not social. Only one avatar could exist within the textual space. In 1979, Roy Trubshaw and Richard Bartle created the first social textual world, MUD₁, at Essex University in England.²² In MUD₁ and its derivatives, avatars could talk with others in the same "room" via simple text commands. If an avatar named Alice was in the same room as another avatar named Gulliver, the computer would alert Alice and Gulliver to each other's presence. If Alice wanted to speak, she would type "Gulliver hi," and Gulliver would then see the words "Alice tells you 'hi'" appear on his terminal. This feature had substantial appeal simply as an early instant messaging system.²³

MUD₁ and the other original MUDs, however, were not primarily friendly chat rooms. The primary game goal of MUD₁ was navigating the textual environment while killing opponents and gathering treasures to score points and level up. The ultimate goal of the game was to reach the level of "wizard," at which one became an all-powerful entity within the game environment. When choosing targets, perhaps the most interesting way to score points was by killing other players. If Alice decided to kill Gulliver, she would simply type "Kill Gulliver" rather than "Gulliver hi." Gulliver would then need to type either "retaliate" or "flee." If Alice killed Gulliver (which would depend mainly on her avatar's skill and weaponry) she would gain points, and Gulliver would need to start his virtual life anew.²⁴

Through the 1980s, Trubshaw and Bartle's original MUD₁ spawned hundreds of derivative MUD-type environments, known variously as MOOs, MUSHes, and MUCKs, on university computer systems.²⁵ Some MUDs actually made money: When commercially released in the United States on CompuServe, MUD₁ cost \$12.50 an hour to play. Probably the

most interesting development in MUD history occurred in 1989, when James Aspnes wrested MUDs away from their D&D roots by writing a short and easily portable MUD program known as TinyMUD. TinyMUD deemphasized traditional D&D elements, such as killing for points. Instead, the program gave avatars greater abilities to describe themselves and invent objects. In the multiple TinyMUDs that were quickly established, avatars did not kill each other quite so often. Rather, they spent a lot of time simply hanging out, chatting, and amusing each other with new virtual objects. This dimension, of course, appealed to a whole different social set, and TinyMUDs quickly branched out from Tolkienesque settings to encompass more diverse themes. Some were based on *Star Trek*; some were set within specific novels; and some were even set in real-world locations such as a virtual California.

Perhaps the most widely known social MUD is LambdaMOO, initially created in 1990 by Pavel Curtis of the Xerox Palo Alto Research Center. LambdaMOO still has over a thousand active participants, of whom one or two hundred are active at any given moment. The first virtual spaces of LambdaMOO were based on Curtis's home in California, although the environment has since greatly expanded. LambdaMOO is not a remarkable MUD in any way, except that it can be altered by its participants and it has served as a focal point for research of virtual space. Its popularity has led its community to post an unusual disclaimer on the welcome page: "Notice for Journalists and Researchers: The citizens of LambdaMOO request that you ask for permission from all direct participants before quoting any material collected here."²⁶

Each avatar in LambdaMOO has the power to create a set of rooms and unique programmed objects. Members of the community have programmed interactive textual gardens, robots, Frisbees, butlers, toys, helicopters, puzzles, and fireworks in order to amuse and impress other participants. In the living room of the LambdaMOO mansion (the de facto social hub), there is a cockatoo programmed to repeat random lines of overheard dialogue at regular intervals; a fireplace that will burn or toast objects placed inside; a large couch, which one can reupholster in garish patterns and which consumes objects from one's pockets. Objects such as a blender and a black hole allow avatars entering them to commit "MOOicide," or virtual suicide—destroying their avatar existence in order to force the players to return to their "real" lives.²⁷

Yet MUDs, for all their liveliness and social complexity, are not the most popular virtual worlds today. MUDs are like poetry compared to

television. While MUDs offer what is perhaps a more valuable and rewarding medium for those who participate in them, people seem to be drawn to visual spectacle. Indeed, while most MUDs are free, millions of individuals pay to interact with visual virtual worlds. A picture, it seems, is worth a thousand words—and quite a few dollars as well.

Until recently, one could not commingle visual representation with interaction. When this technology arrived, its most popular embodiment was, perhaps unsurprisingly, amusement. Thus, the history of interactive visual virtual worlds has been largely a history of video games. This is not to say that Internet chat rooms, business teleconferencing, flight simulation, and other instances of nongame computer-mediated virtual environments are not important. However, from a historical point of view, video games have been on the cutting edge of socially significant visually interactive technology.

Despite their increasingly sophisticated graphics, arcade games lacked a world that could persist over time. Once the "GAME OVER" message appeared, a player's investment in the virtual world was set back to zero. Only with the introduction of personal computers could designers explore the possibilities of persistent visual virtual worlds. Persistence through local data storage led to a new breed of immersive games. For instance, *King's Quest: The Quest for the Crown*, introduced in 1984, popularized visual virtual worlds as much as ADVENT had text-based worlds. *King's Quest* let users pilot a tiny but vivid-enough avatar (you could see the feather in Prince Graham's cap) across the screen of the first IBM PC in order to solve puzzles in the virtual world of Davenport. *King's Quest* was immensely successful and spawned seven subsequent titles.²⁸

Prince Graham, like the solo ADVENT player, was alone in Davenport. Only a year after *King's Quest* was released, however, and only a few years after MUD1 created a networked version of the ADVENT-type game, Lucasfilm created a persistent visual virtual world called *Habitat*. *Habitat*'s graphics were crude and cartoonish by today's standards, in part because it was designed for the primitive Commodore 64 personal computer. *Habitat* players customized their avatars mainly by selecting among a variety of fanciful heads for avatar bodies. As in *The Sims Online*, avatars communicated through speech bubbles appearing above their heads. The environment was built to accommodate as many as 20,000 avatars present simultaneously.²⁹

Like TinyMUD, *Habitat* didn't emphasize leveling up so much as hanging out virtually. Two of its lead designers, Chip Morningstar and F. Ran-

dall Farmer, explained that the greatest challenge for *Habitat*'s creators was simply figuring out what all the avatars were supposed to do. Originally, the planners had intended to organize group events for the whole community, but the first attempts at central planning were disastrous. As a result, the *Habitat* team "shifted into a style of operations in which [the designers] let the players themselves drive the direction of the design."³⁰

The *Habitat* experiment ended with the obsolescence of the Commodore personal computer for which it was designed. Since the demise of *Habitat*, connection speeds have increased and computers have become more powerful; as a result, visual virtual worlds have become larger, more finely detailed, and populated with an increasing number of avatars.³¹ The most popular worlds are profit-driven. A prospective avatar can generally sign up for about \$40, with an extra \$10 monthly subscription fee.

Sony's Norrath (*EverQuest*) is the most popular virtual world among U.S. citizens, with over 420,000 monthly subscribers. *EverQuest* fits squarely within the tradition of D&D-based virtual worlds. Participants begin the game by selecting a "shard," or game server, a subset of *EverQuest*'s virtual world containing several thousand participants. After selecting a shard, the new player chooses an avatar. The game begins when the player presses a button labeled "Enter World" and views on the computer display a real-time three-dimensional image of the virtual world. The player sees other avatars nearby and "hears" their conversations in a chat window. The other visible avatars may be "bots" or "nonplayer characters," meaning that they are controlled by a computer program and not another human. Generally, one can ascertain whether an avatar is a bot by simple observation: real avatars move erratically and generally don't speak medieval English.³²

The *EverQuest* "Level 1" avatar is penniless, carries a flimsy weapon, and lacks any significant skills or abilities. He or she starts in a "beginner's section" of the *EverQuest* world that has a nearby area conveniently overrun with computer-generated killing fodder such as rats, bugs, or snakes. Prior to reaching Level 5, which may take a day or a week, depending on one's level of commitment, an avatar will generally be too frail to venture outside this area. Most players, however, quickly get down to the business of increasing the power of their avatars, or "leveling," as it is more commonly known. This does not mean that players do not interact. Indeed, the game encourages avatars to group together to accomplish an objective. Avatars that combine their skills in teams or guilds are more effective at defeating enemies and, therefore, can "level" more quickly. The most intimate inter-

actions usually occur during the lulls in combat, while avatars are waiting for their bodies to "heal." During this down time, individuals often discuss their real-world lives and identities. The avatar bonds formed between individuals may extend to the formation of more elaborate *EverQuest* guilds with binding rules of membership and websites promoting social events. A close association with another avatar over a long period of time may even lead to an in-game *EverQuest* marriage, which may in turn lead to a real-world marriage—or the dissolution of one.

Other Tolkienesque leveling worlds such as *Ultima Online*'s Britannia and the three realms of *Dark Age of Camelot* operate in much the same manner as *EverQuest*, though each has some notable variations. *Ultima Online*, released two years before *EverQuest*, creates more significant opportunities for avatars to specialize in nonviolent skills, such as blacksmithing or baking bread. One interesting feature in *Ultima Online* is the possibility of home creation and ownership. A current advertising campaign for *Ultima Online* features the availability of new tools for the creation and customization of virtual castles. The more recent *Dark Age* is one of the most visually lush virtual worlds. *Dark Age* generally hews closely to the *EverQuest* and *Ultima Online* model of success, though it differs by coding into the environment an interesting factional system, where one must align one's avatar with one of three realms based on medieval British, Celtic, and Norse cultures.

Despite the socializing that takes place in these D&D-type worlds, the clear goal in each is to become a more powerful avatar. If one wishes to obtain the pinnacle of virtual success in Norrath or Britannia, such as becoming the powerful leader of a guild or a flashy and impressive wizard, one must (in theory) earn that status through hours and hours of "play" at killing things.

The Sims Online is the leading example of a nonleveling world. Most nonleveling worlds also abandon the trappings of fantasy: instead of choosing to become an elf or a hobbit, one customizes one's avatars by choosing from hundreds of doll-like physical components, including tuxedos, leather jackets, and T-shirts. If a goal exists in *The Sims Online*, it is never stated. However, most people seem interested in making money, and the primary means of making money is engaging in work activities. Increased skills can bring wealth to an avatar, as well as provide the avatar with improved capabilities, such as the ability to play a musical instrument.

A new avatar generally arrives on the sidewalks of Blazing Falls (or one of the other towns in *The Sims Online*) with a modest amount of cash and

few skills. The owner of the lot where the avatar arrives normally offers the newcomer a friendly greeting, inviting him or her to enter, get something to eat, and take a look around. Unlike *EverQuest*, *The Sims Online* has no death-dealing mobs of rodents—so there is little risk in exploring all the homes in the environment. Given the lack of any clearly defined goals, most avatars in *The Sims Online* seem content just finding interesting places and people with whom to chat.

As these examples indicate, each virtual world is different, making categorical statements about virtual worlds suspect. Still, the lines drawn between worlds might not be as bright as they seem at first. For instance, while *The Sims Online* does not involve gaining power and wealth through leveling, prestige and affluence are motivating forces for many participants. And while leveling worlds such as *Ultima Online* often force players to engage in repetitive killing exercises, what makes this bearable seems to be the social bonds formed among players, who may find more fulfillment in being virtual seamstresses, alchemists, and blacksmiths.

As this virtual-world primer has shown, current virtual worlds are the end products of a long tradition of interactive representational environments, and this history helps illuminate both the social practices found in today's virtual spaces and the likely potential of future environments.

NOTES

1. Bruce Sterling Woodcock, An Analysis of MMOG Subscription Growth—Version 7.0, at <http://pwi.netcom.com/<diff>sirbruce/Subscriptions.html> (last visited Oct. 7, 2003).

2. See Geoff Keighley, The Sorcerer of Sony, *Business 2.0*, Aug. 2002, at 48, available at <http://www.business2.com/articles/mag/0,1640,42210,FF.html>.

3. Lineage, at <http://www.lineage-us.com> (last visited Aug. 5, 2003). Brad King, Online Games Go Multicultural, *Wired News*, Jan. 30, 2002, at <http://www.wired.com/news/games/0,2101,50000,00.html> (last visited July 26, 2003).

4. Woodcock, An Analysis of MMOG Subscription Growth; Brad King, Gamers Click Home for Holidays, *Wired News*, Dec. 11, 2002, at <http://www.wired.com/news/games/0,2101,56759,00.html>; Edward Castronova, On Virtual Economies 2.11.1 (CESifo Working Paper No. 752, July 2002), available at <http://papers.ssrn.com/abstract=338500> (last visited Aug. 8, 2003); *Dark Age of Camelot News*, May 9, 2002, at <http://www.darkageofcamelot.com/news/> (last visited Aug. 8, 2003).

5. See Castronova, On Virtual Economies, at 7. The term was adopted in the context of computer-generated games by the creators of Lucasfilm's *Habitat*, and later popularized by Neal Stephenson in his 1992 novel *Snow Crash*.

6. Edward Castronova, Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier 25 tbl. 3 (CESifo Working Paper No. 618, Dec. 2001), available at <http://papers.ssrn.com/abstract=294828> (last visited Aug. 4, 2003); see also Nick Yee, The Norrathian Scrolls: Real-Life Demographics, at <http://www.nickyee.com/eqt/demographics.html#3> (last visited Aug. 8, 2003); Nick Yee, Codename Blue: An Ongoing Study of MMORPG Players 3 (2002), at <http://www.nickyee.com/codeblue/Report.PDF> (last visited Aug. 8, 2003).

7. See Julian Dibbell, The Unreal Estate Boom, *Wired*, Jan. 2003, at 106, at <http://www.wired.com/wired/archive/11.01/gaming.html> (last visited Aug. 8, 2003); eBay Listings, Internet Games, at <http://listings.ebay.com/pool2/listings/list/all/category4596/index.html> (last visited Aug. 8, 2003).

8. See Julian Dibbell, *My Tiny Life* 74 (1998) (“[I]t may seem that [sociopolitical reality is not that different, finally, from the virtual kind, and that a human being never inhabits a physical landscape without also inhabiting its ghostly, abstract counterpart—the geography of language, law, and fantasy we overlay, collectively, on everything we look at.”); Jack Balkin, The Proliferation of Legal Truth, 26 *Harv. J. L. & Pub. Pol’y* 5, 6 (2003) (“Law creates truth—it makes things true as a matter of law. It makes things true in the eyes of the law. And when law makes things true in its own eyes, this has important consequences in the world.”).

9. Castronova, *Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier*, at 3, 7.

10. *Id.* at 23.

11. Leslie Walker, Will Women Go There? *Wash. Post*, Jan. 12, 2003, at H7. Nike and Levi Strauss have reportedly entered into licensing agreements with *There.com* whereby the clothing companies promote their real products through the sale of virtual renditions of these items to *There's* avatars. The virtual transactions for Nikes and Levis, however, are also sales for virtual equivalents which are transacted using Therebucks.

12. See eBay auction listings for in-world assets, at <http://listings.ebay.com/pool2/listings/list/all/category1654/index.html?from=R11> (last visited July 26, 2003).

13. Castronova, *supra* note 9, at 2; Edward Castronova, Synthetic World Economic Data, at http://business.fullerton.edu/ecastronova/Synthetic%20Worlds%20Economic%20Data/economic_data.htm (last visited Aug. 8, 2003).

14. Julian Dibbell, the author of *My Tiny Life*, recently attempted to break into this profession. His weblog recounting his experiences can be found at <http://www.juliandibbell.com/playmoney/> (last visited Aug. 1, 2003).

15. See Jennifer L. Mnookin, Virtual(l)y Law: The Emergence of Law in Lamb-

daMOO, 2 J. Computer-Mediated Comm. (1996), available at <http://www.ascusc.org/jcmc/vol2/issue1/lambda.html> (last visited July 26, 2003).

16. See Dan Hunter & F. Gregory Lastowka, To Kill an Avatar, *Legal Affairs*, July/Aug. 2003, at 21, 24.

17. See Benjamin E. Sones, Here There Be Dragons, *Computer Games Magazine*, Dec. 18, 2001, <http://www.cgonline.com/features/011218-fi-fi.html> (last visited Aug. 5, 2003); FAQ, Games Domain, <http://www.gamesdomain.com/faqdir/rec.games.frp.dnd-3.txt>, at C9 (last visited Oct. 7, 2003). The use of "avatar" in this sentence is an intentional misnomer. Gygax and Arneson actually used the term "character" to describe the player's alter ego, Gary Gyax. *Player's Handbook* 9–10 (1978). The term "avatar" is generally used to describe a player's alter ego in visual virtual worlds.

18. See Sherry Turkle, Lord of the Hackers, *N.Y. Times*, Mar. 7, 2002, at A31.

19. See Chris McGowan & Jim McCullaugh, Entertainment in the Cyber Zone 49–52 (1995).

20. Dibbell, My Tiny Life, at 56; Julian Dibbell, A Marketable Wonder: Spelunking the American Imagination, *Topic* (Autumn 2002), at <http://www.topmag.com/articles/02/dibbell.html> (last visited Aug. 5, 2003).

21. Rick Adams, Colossal Cave Adventure Page, at <http://www.rickadams.org/adventure/> (last visited Aug. 4, 2003). Adams's website provides several variants of the original game in a "downloads" section.

22. See Infocon Timeline, at <http://www.csd.uwo.ca/Infocon/Articles/timeline.html> (last visited Aug. 8, 2003); Lauren P. Burka, A Hypertext History of Multi-User Dimensions (1993), at <http://www.apocalypse.org/pub/u/lpb/muddex/essay/> (last visited Aug. 8, 2003); McGowan & McCullaugh, Entertainment in the Cyberzone, at 88. The original MUD₁ developed by Trubshaw and Bartle has been renamed British Legends, and is still in operation. MUD₁ was an acronym for Multi-User Dungeon 1, again a nod to D&D. Some MUDers believe the MUD acronym now stands for "Multi-User Dimension," though apparently this is a euphemistic variation. Trubshaw, the original MUD₁ creator, acknowledged a debt to an earlier Adventure-type program named "DUNGEN" and to D&D. Dibbell, My Tiny Life, at 57–58.

23. See Sherry Turkle, Life on the Screen: Identity in the Age of the Internet 181, 183 (1995); Howard Rheingold, *The Virtual Community: Homesteading on the Electronic Frontier* 161–64, 184 (rev. ed., MIT Press, 2000) (1993); Richard A. Bartle, MUD Glorious Mud, at <http://www.mud.co.uk/richard/gnome.htm> (Jan. 31, 1999).

24. Rheingold, *The Virtual Community*, at 167–68; Bartle, MUD, *Glorious Mud*; Turkle, *Life on the Screen*, at 181; Richard A. Bartle, *Adventures on the Magic Network*, at <http://www.mud.co.uk/richard/chfeb85.htm> (last visited Aug. 8, 2003). Bartle has posted a rough map of the original MUD₁ world on

his website, <http://www.mud.co.uk/richard/mud1map.gif> (last visited Aug. 8, 2003).

25. Authoritatively describing the taxonomy and nomenclature of MUD derivatives is a daunting task. The Open Directory's attempt to do so can be found at <http://dmoz.org/Games/Internet/MUDs/> (last visited July 26, 2003), and its explanation for its results can be located at <http://dmoz.org/Games/Internet/MUDs/desc.html> (last visited July 26, 2003). See generally Lauren P. Burka, A Hypertext History of Multi-User Dimensions (1993), at <http://www.apocalypse.org/pub/u/lpb/muddex/essay/> (last visited Aug. 8, 2003); Lauren P. Burka, *The MUDdex* (1993), at <http://www.apocalypse.org/pub/u/lpb/muddex/> (last visited July 26, 2003).

Generally, the appellation "MOO" stands for "MUD Object-Oriented," denoting the programming methodology—object orientation—which was used to build the MUD. According to most participants, "MUSH" stands for "Multi-User Shared Hallucination" and is generally reserved for MUD environments with a strong and enforced role-playing convention. Exactly what "MUCK" stands for is subject to debate: some say it refers to muck (in other words, something like mud) while others argue it stands for "Multi-User Consensual Kingdom." In any event, MUCKs are generally much like MUSHes in their emphasis on role play, but place more emphasis on achieving goals.

26. See Welcome to LambdaMOO! at telnet://lambda.moo.mud.org:8888/ (last visited July 26, 2003); Dibbell, My Tiny Life; Turkle, *Life on the Screen*.

27. For an excellent account of the history and features of the various rooms in LambdaMOO, see Elizabeth Hess, Yib's Guide to MOOing: Getting the Most from Virtual Communities on the Internet, ch. 7 (2003), at <http://www.yibco.com/ygm/ygmpdf/Chapter7.pdf>.

28. McGowan & McCullaugh, *supra* note 19, at 58, 86–87.

29. Chip Morningstar & F. Randall Farmer, *The Lessons of Lucasfilm's Habitat*, in *Cyberspace: First Steps* (Michael Benedikt ed., 1991), available at <http://www.fudco.com/chip/lessons.html> (last visited Aug. 9, 2003). *Habitat* lacked most of the features we expect of games, such as a goal and puzzles. It was much more like a social MUD in which the interactivity among avatars was a goal in itself.

30. Chip Morningstar & F. Randall Farmer, *The Lessons of Lucasfilm's Habitat*, at 189–92.

31. See Virtual Reality: Multi-User Systems, Open Directory Project, at http://dmoz.org/Computers/Virtual_Reality/Multi-User_Systems/ (last visited Aug. 9, 2003) (listing various virtual-world platforms).

32. Many avatars speak in leetspeak (a.k.a. "1337sp34k," "133+5pe4k," and so forth) and other chat room conventions that will mystify those not fluent. See Kris Axtman, "r u online?": the evolving lexicon of wired teens, *Christian Sci.*

Monitor, Dec. 12, 2002, at 01. For instance, "brb afk" means "I'll be right back; I'm going away from my keyboard." For those more comfortable with 1337 than English, Google actually offers a leetspeak hacker ("h4xor") language version of its search engine. See <http://www.google.com/intl/xx-hacker/> (last visited Aug. 8, 2003).



Game Gods and Game Players