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INTERNATIONAL JOURNAL OF TECHNOETHICS

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Table of Contents

RESEARCH ARTICLES

- 1 Chicken Killers or Bandwidth Patriots? A Case Study of Ethics in Virtual Reality
Kurt Reymers, Morrisville State College, USA
- 23 College Students, Piracy, and Ethics: Is there a Teachable Moment?
Jeffrey Reiss, University of Central Florida, USA
Rosa Cintrón, University of Central Florida, USA
- 39 Boys with Toys and Fearful Parents? The Pedagogical Dimensions of the Discourse in Technology Ethics
Albrecht Fritzsche, Technical University of Darmstadt, Germany
- 48 Without Informed Consent
Sara Belfrage, Royal Institute of Technology, Sweden
- 62 Laboring in Cyberspace: A Lockean Theory of Property in Virtual Worlds
Marcus Schulzke, State University of New York at Albany, USA

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Chicken Killers or Bandwidth Patriots?

A Case Study of Ethics in Virtual Reality

Kurt Reymers, Morrisville State College, USA

ABSTRACT

In 2008, a resident of a computerized virtual world called "Second Life" programmed and began selling a "realistic" virtual chicken. It required food and water to survive, was vulnerable to physical damage, and could reproduce. This development led to the mass adoption of chicken farms and large-scale trade in virtual chickens and eggs. Not long after the release of the virtual chickens, a number of incidents occurred which demonstrate the negotiated nature of territorial and normative boundaries. Neighbors of chicken farmers complained of slow performance of the simulation and some users began terminating the chickens, kicking or shooting them to "death." All of these virtual world phenomena, from the interactive role-playing of virtual farmers to the social, political and economic repercussions within and beyond the virtual world, can be examined with a critical focus on the ethical ramifications of virtual world conflicts. This paper views the case of the virtual chicken wars from three different ethical perspectives: as a resource dilemma, as providing an argument from moral and psychological harm, and as a case in which just war theory can be applied.

Keywords: Cyberspace, Ethics, Just War, Resource Dilemma, Virtual Reality, Virtual Worlds

THE ETHICAL IMPLICATIONS OF VIRTUAL REALITY

Throughout history new approaches to ethics have emerged along with social change. With the development of agriculture and the attending emergence of early civilizations, new ethical guidelines guided group life within the context of urban settlement (some of which became the basis for foundational religious texts). As the development of capitalism emerged, ethical frameworks were developed to deal with

contractual law and property ownership. With the industrial revolution driving the growth of the applied sciences and technologies in the twentieth century, ethics have become focused upon the impact of science and technology upon individual and collective subjects. As we move into the twenty-first century, an information revolution is transforming social organization in ways that demand a return to new ethical considerations. Technoethics, the interdisciplinary research area related to the moral and ethical aspects of technology in society, helps to embrace the questions that stem from such technological developments, as it can with the recent adoption of virtual reality as a place of

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residence, business, entertainment and education for millions of people.

The ethical implications of virtual reality are only beginning to be taken in a serious and scholarly way. This is perhaps due to the fact that many popular virtual reality interfaces involve video gaming and similar entertainments, relegating them to the sphere of play and separating them categorically from the realm of the serious. For instance, World of Warcraft, now the most popular interactive, three-dimensional computerized virtual reality interface, involves a fantasy role-playing architecture through which twelve million users, more or less, interact (as of October 7, 2010, www.worldofwarcraft.com). Yet it is considered merely a game by most. While the ethics of interaction in these types of virtual worlds would be subject to as intense a scrutiny as possible if it were to take place in face-to-face reality, because such a virtual reality is "only a game," the impacts are typically minimized: such games are deemed irrelevant outside of the context of the virtual world and their feedback into the face-to-face world is deemed by many to be negligible. However, there is evidence to suggest that the relevance of virtual worlds to face-to-face interaction may be growing.

The most popular human-computer virtual reality interfaces today are known as MMORPGS (massively multiplayer online role-playing games), or simply MMOs. Examples of such MMOs beyond World of Warcraft include Eve Online, Blue Mars, Entropia Universe, Alpha-World, There.com, D&D Online, EverQuest, Lineage, Final Fantasy, Runescape, Asheron's Call, Cybertown, WorldsAway, and many others. Today, the development of virtual worlds has gone beyond the video gaming genre and has become a unique form of social interaction. With the emergence of avatar-built virtual realities the user has gained control over elements of the development of their online three-dimensional experience, following the limitations of the virtual reality laid down by the software they are using (for example, gravity, sun movement, and other universal, if simulated, forces). This introduces to virtual worlds the quality of

frontier genesis, or social spaces where new boundaries are being developed, new norms created, new status arrangements negotiated and new territories contested. With only a loose set of rules provided by the developers of the software, these virtual frontiers can be seen as sociological laboratories, giving glimpses into the continual process of the (re)development of society and the inevitable ethical choices made by participants. As Malaby (2009, p. 132) puts it, "What should command [our] attention... is the way in which it is now possible to build, with the help of game design and other techniques, complex spaces designed to be spaces of possibility but without the conventional boundaries that mark games. This generates a remarkable opportunity for us to explore issues such as creativity, governance, ethics, and many others... Institutions, it seems, may be changing in their ability to govern themselves and others, and the advent of virtual worlds is at the forefront of this transformation."

This study will investigate a case of contested boundaries in the virtual world of Second Life. Second Life was developed by San Francisco's Linden Research, Inc. (aka Linden Labs) and released to the public in June 2003. Several books have recently been published about Second Life and Linden Labs (Boellstorff, 2010; Malaby, 2009; Au, 2008; Castranova, 2008; Meadows, 2008), analyzing core issues of virtual reality such as personal identity, the organization of governance, economic behavior and creative capitalism. Interaction in Second Life is driven by avatars, a three-dimensional representation of a human, animal, hybrid, or any other of a number of representations limited only by the imagination and Linden Scripting Language (the computer code that makes objects look and act as they do). What is clear is that the participants of Second Life have signed up in great numbers. As of October 20, 2010, Linden Lab reports just over twenty million signups. The actual number of users is more difficult to establish due to the existence of alternate avatars, or "alts," created by the same user (Linden Lab, 2010). At any given time "in-world" (in the virtual reality of Second Life), there are typically

over 50,000 avatars being animated by users behind the other side of the computer screen (Linden Lab, 2010). These avatars are typically used to allow users to bond with one another and become committed to shared cultures and communities that range from the healing to the perverse (not unlike face-to-face reality). Building virtual objects is made possible by anyone in Second Life, though it requires the development of some skill in manipulating such objects in a three-dimensional virtual environment using the familiar mouse and keyboard input devices. Further involvement can come by adding coded scripts to objects to allow them to perform certain functions (such as firing a virtual gun). A few users have maximized the utility of their second lives, turning them into a means for making a profit in face-to-face life.

Take, for example, Second Life avatar Anshe Chung. In *I, Avatar: The culture and consequences of Second Life* (2008), Mark Stephen Meadows describes the rush of businesses into virtual worlds and the following disappointment. In May 2006, Chung appeared on the cover of *BusinessWeek* magazine. She was known in the real world as Ailin Graef, a woman who had multiple avatars in multiple game and social worlds. In Second Life, she moved into the virtual real estate market and, as the value of land in Second Life increased, she earned more than US\$100,000 and had assets totaling over L\$1,000,000 (the unit of currency in Second Life, known as the “Linden”). Seeing Second Life as a new market opportunity, many companies (including Microsoft, MTV, NBC, AOL, BBC Radio, Fox, Reuters, Sony, Popular Science, Playboy, Mercedes-Benz, Nissan, Pontiac, Toyota, BMW, AMD, Dell, Coca-Cola, Sears, Adidas, Reebok, and many others) rushed to acquire a presence in Second Life (Meadows 2008: 64-65). Nonetheless, traditional marketers still saw Second Life as too risky for mainstream business. After the *BusinessWeek* article ran, Allison Fass of *Forbes.com* concluded that Second Life was not a healthy place for business. Her article (titled “Sex, Pranks, and Reality”) finishes with

a quote from Erik Hauser, creative director of Swivel Media, Wells Fargo’s agency: “Going into Second Life now is the equivalent of running a field marketing program in Iraq” (Meadows, 2008, p. 65).

Many users choose not to create and they participate primarily for the gratification of the social interaction itself. One of the predominant institutions in Second Life today is the dance club. Ahuge hit upon their development in 2004, the number grew exponentially in a short time (Malaby, 2009, p. 112). With a huge number of themes (beach club, formal dance, jazz, honky-tonk, space themed, etc.), they continue to attract large numbers of users who socialize and virtually dance the night away. Other pastimes include playing virtual bingo-like games called Tringo (and now its successor, Zyngo), as well as other variations, often socially. Role-playing is a common endeavor for users of virtual worlds and a number of communities ranging from fantasy to science fiction, steampunk to post-apocalyptic themes have emerged in Second Life. Like social groups and communities which emerged via past computer technologies (for example, bulletin board systems, AOL, the WELL, USENET, IRC, etc.), Second Life offers the same opportunity for any interest group willing to invest time and energy into building the social relationships that define that community. In 2008, a newly released product in Second Life, the “virtual chicken,” spurred the organization of a new group affiliation: cyber-pastoralists who self-identify as the “New World Virtual Farmers.” Particularly, chicken farming has become very popular. The repercussions of this choice provide the focus of this case study of ethics in Second Life.

Chicken Farming in Second Life

In 2008, a virtual creature called the *sionChicken*, which is designed to be lifelike in certain aspects of its simulation, was developed by a Second Life resident named Sion Zaius (Figure 1). In face-to-face reality, Zauis is “a young college student whose first language is not English,” according to Nika Dreamscape (2010),

Figure 1. Second Life avatar Sion Zaius (Source: Mistral, 2009)



a journalist in Second Life. "He's described as "painfully shy" by those who know him."

The virtual chicken he created required food and water to survive, was vulnerable to physical damage, and could reproduce (Figures 2 and 3). Though created as a project for friends, he soon found that they were popular in the virtual realm of Second Life and began a business selling chickens and associated products in the various marketplaces of Second Life (Dreamscape, 2010).

This development led to the creation of chicken farms and the mass sale and distribution of these curious virtual entities, a kind of minimally intelligent "bot," or virtual robot.

Second Life is organized economically as a free-market space within which developers are privy to profit from their creations, and the incentive for distributing these virtual chickens was fiduciary on *all* levels, from producer to consumer. The consumer's stake involves virtual reproduction. When chickens lay their eggs, the color scheme is important for determining their age - scarce eggs are worth more on the

egg-trading market (Figure 4). These markets determine the value of eggs and, ultimately, the flock that one has accumulated. Trading in this way, people have accumulated thousands of Lindens, the virtual world currency of Second Life, which are then transferable into real-world currency.

Like other aspects of cultural development in Second Life, chicken farming was hardly neutral in its impact on residents of the virtual world. Chicken breeding became an investment activity and one estimate put the number of virtual chickens at over 100,000 (Davison, 2009). The virtual chicks, once hatched, would roam around their pens (or, if unpenned, eventually walk away and disappear "off grid") and bump into each other and the walls of the pens. Each collision needed to be tracked by the computer server running the simulation (or sim), and if enough chickens were present, the combined calculations slowed the performance of the sim significantly. Many chicken farm neighbors in the same sim complained of lag, the generic label for the experience of slow

Figure 2. Virtual chickens and feed (Source: Mistral, 2009)



simulation performance which reduces the synchronicity of the virtual experience and makes it frustrating to interact. The code which allows the chicken's greater accuracy in their virtuality compromised neighboring experiences and affected the social and experiential realism which sustains meaning in the virtual world. As a result, the reaction of some was violent. Neighboring residents took to kicking the offending chickens to death, or even shooting them with virtual guns (Figure 5).

Many virtual realities, including Second Life, have "combat systems" which allow users to track the "health" of their avatars – if they are struck by a virtual bullet (or crossbow bolt, or stone, or laser, etc.), the system keeps track of the "damage" done to the avatar (damage which is not lasting and does not truly compromise the "life" of the avatar). The virtual chickens work in a similar matter and are sus-

ceptible to such "physical" damage, though unlike a user's avatar, they can only "heal" with the aid of first-aid kits purchased from Sion Zaius and can sometimes "die" outright. Some particularly devious programmers began a kind of "bio-warfare" campaign against chickens in Second Life, creating an object in the virtual world called the sionChicken Killer (Figure 6) that acted as a food decoy, but when "eaten" would provide no sustenance - the chickens would die of starvation after a few days.

This prompted avatar journalist Pixeleen Mistral, author of an "in-world" newspaper article in the *Alphaville Herald* about the sionChicken war, to muse on the economic nature of Second Life in asking "Will this then create a market for chicken killer detectors?" (Mistral, 2010a). The opportunity for an arms race in the chicken wars was ripe. The text of the sionChicken Killer product reads as follows:

Figure 3. Virtual chickens and feed (Source: Mistral, 2009)



sionChicken Killer

Hate chickens? Tired of all the sim lag that they cause? You've asked your neighbor nicely to please reduce or remove their chicken population, to no avail. Now it's time to get tough!

The sionChicken Killer is a carefully scripted food decoy that will distract your neighbor's chickens from their food trays, starving them to death within several days. The sionChicken Killer has a 96 meter range, and has been tested with both v12 and v11 chickens.

Simply rez the object called "sionChicken food" on your parcel, as near as possible to the target chickens, then move the unit until the arrow points to them. That's it! Deploying multiple units will not kill the chickens any faster but it will give you a better chance of affecting them. NOTE: The unit must be in the same sim (region) as the target chickens.

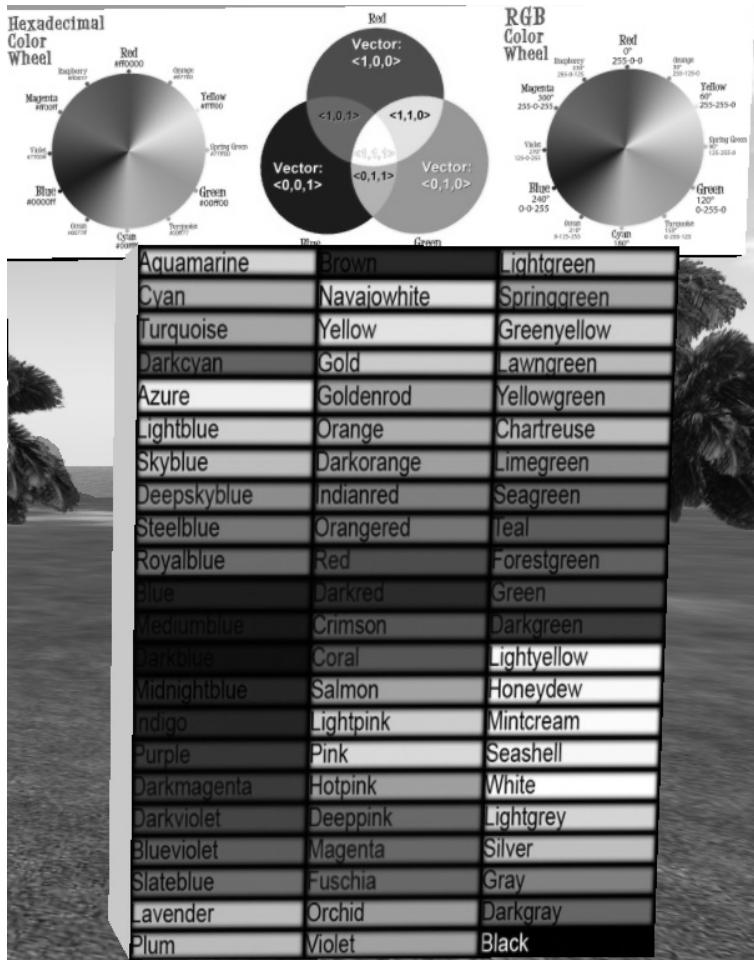
PLEASE do not use this to grief random sionChicken owners! It is meant to be used on uncooperative neighbors who refuse to consider how these chickens affect everyone around them.

Lastly, I have spent a lot of time perfecting this. I am sympathetic to your plight, but please

don't ask me for a discount... Cost: L\$1000
(Mistral 2010a).

At this point, the conflict came down to software versus software. The point made in the sionChicken Killer description about “griefing” random sionChicken owners is an important one, as it helps to distinguish between two different types of “chicken killers”: those who were attempting to eliminate lag in their regions, and those who were playing a game, intentionally killing chickens for the sheer sport of it. The most famous of these griefers in the chicken wars of Second Life became known as the “Soviet Woodbury” faction, apparently tied to Woodbury College in Montpelier, Vermont. According to Davison (n.d.), “Realizing that (a) there are a group of chicken owners who care about their pets, and (b) their [sic] are chicken-killing weapons available for purchase, a group of griefers, allegedly younger residents allied with Woodbury College begin killing “innocent” chickens on purpose.” Some of these griefers had their accounts banned and the Woodbury College presence in Second Life was eliminated by Linden Lab on April 20, 2010, citing only that “this decision [is] based on historical and recent events that constitute a breach of the Second Life community standards and terms of service. We ask that you please respect the

Figure 4. Virtual chicken color schemes (Source: Reymers, KJJewell Chicken Farm, Second Life, 2010)



decision and do not take part in the Second Life platform in the future" (Young, 2010).

In an attempt to remediate the lag issue, creator Sion Zaius updated the version 11 and 12 chickens to reduce the lag that came from collisions. Furthermore, he released a new version of a device used to ensure the safety of one's eggs and keep them from breaking, called the "Proteggitor." The new version was programmed to delete all of the old, lagging eggs so that old laggy chickens would not hatch from them. Unfortunately, the initial release deleted ALL eggs, including newer, "lagless" versions.

Chicken farmers were angry and demanded compensation. After repairing and updating the new Proteggitor, Zaius claimed to have no responsibility for lost or broken eggs related to his unannounced "Proteggitor" update. This infuriated many of the New World Virtual Farmers, enough to threaten real-world lawsuits against Zaius's real-life driver. A noticeable backlash against Zaius also appeared in blogs and news websites related to chicken farming specifically, and Second Life generally (Dreamscape, 2010; Mistral, 2010a; Davison, n.d.). "Keep in mind that Sion Zaius created a lot of bad will in

Figure 5. Chicken killing incidents (Source: Mistral, 2009)*Figure 6. sionChicken killer product (Source: Davison, n. d.)*

Category: Home -> Weapons -> Other Weapons

sionChicken Killer

Hate chickens? Tired of all the sim lag that they cause? You've asked your neighbor nicely to please reduce or remove their chicken population, to no avail. Now it's time to get tough!

The sionChicken Killer is a carefully scripted food decoy that will distract your neighbor's chickens from their food trays, starving them to death within several days. The sionChicken Killer has a 96 meter range, and has been tested with both v1.0 and v1.1 chickens.

Item Details
Prims : 2
Permissions : Copy

Buyer Reviews (0)
Item Discussion (8 posts)
Also Purchased

PLEASE do not use this to grief random sionChicken owners! It is meant to be used on uncooperative neighbors who refuse to consider how these chickens affect everyone around them.

Lastly, I have spent a lot of time perfecting this. I am sympathetic to your plight, but please don't ask me for a discount...

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Xstreet + LIFE
Xstreet is now officially part of Second Life

his customer base due to what appeared to be abusive business practices" (Mistral, personal communication, October 25, 2010).

As a result of the chicken debacle, "petable" turtles and bunnies known as "Ozimals" are becoming more popular as of 2010. New products are being developed by innovative Second Life residents who have recognized the niche opening in this very popular viral market of cyber-pastoralism. In some cases, they too have been targeted for termination, albeit to a far lesser degree than were the now infamous sionChickens.

This case reveals several ethical dilemmas that are unique not in their substance but in their context: virtual worlds. These dilemmas could be characterized in three ways. First, the conflict revolves around a resource allocation dispute, which in the context of the virtual world could be considered a resource dilemma (ultimately ending in a "tragedy of the commons"). Secondly, as a conflict borne out of the behavior of psychologically engaged actors, it could be examined from the point of view of moral hazard and psychological harm. In terms of ethical theory, this case lends itself

to examination through deontological and consequentialist perspectives. Thirdly, inasmuch as the conflict took on the characteristics of a “war,” it could be considered through the lens of just war theory. To generate further thought about ethics in virtual reality, I will briefly examine the case from each of these perspectives in the following sections.

A Tragedy of the Commons

The case of the chicken wars could be examined as a resource dilemma, also known as a “tragedy of the commons” (Hardin, 1968). This ethical dilemma exists when actors behave only out of rational self-interest, depleting the shared resources available for their collective well-being, resulting in conflict. In this case the capacity for the computer that is creating the simulated environment to calculate collisions was the shared resource. When stressed with too much information, the server slows down, creating a phenomenon called *latency* (also known as *lag*). “Second Life sends packets to your computer. There are about 10-30 pipes in between you and the grid servers, depending on where you’re located. The amount of time it takes to traverse that length is called *latency* or *ping time*. More latency means things are just that little bit less responsive” (Nino, 2006). More latency also means greater “packet loss” from the information being sent to your computer from the Second Life server that controls the simulation within which one’s avatar is acting. The impact that this lack of responsiveness can have on the experience of avatar embodiment can be disturbing. “Packet loss is generally pretty nasty. It causes all sorts of weird side-effects. ‘Rubber-banding’ is one, where your avatar is walking or flying a short distance and suddenly snaps back... Slow rezding of textures (or not rezding at all). Avatars that are invisible except for their attachments. Being *Ruthed* (suddenly changing to the default female shape [named Ruth]) or seeing someone else as *Ruthed*. All sorts of odd things like this are caused by packet-loss” (Nino, 2006).

The property of latency is related to *bandwidth*, a measure of data transmission rates. The rational self-interest of the chicken farmer is to grow their livestock for fun and to profit from the unique eggs that are created. The rational self-interest of the neighbors of chicken farmers may be to dance, role-play, educate, or take on some other form of socialization. In a resource dilemma it is when the property is overtaxed and the shared resource runs out that conflict emerges. The analogy in virtual reality occurs when the “lag meter” spikes.

Questions inevitably arise. Is lag simply a technical error, or are phenomena that impact the virtual environment, such as slow server response time and bandwidth packet loss, ecological variables of virtual reality? If so, do these ecological variables present the basis for a shared “reality” that constitutes a “commons” which can be tragically overused? And who is to bear the cost of the developer’s programming error? Is the developer responsible for chickens killed out of the frustration of neighbors whose resource was being depleted by the chickens? Or is this responsibility solely on those performing the chicken slaying? These questions point out the fact that ethical dilemmas are at hand, ones that involve common commodities (server time and bandwidth). In fact, the resource dilemma is resolved by sharing the cost, though admittedly much of it is borne by the chicken farmers, due to a lack of regulation and enforcement over personal property in Second Life.

Historically, the eighteenth century provided much of the foundation for governance over personal property and market economies which fostered the development of capitalism. John Locke, Jean-Jacques Rousseau, Adam Smith and many other philosophers, economists and political thinkers established treatises and ethical guidelines that lead to the social contracts that govern over economic and property relationships today. Constitutional democracies and contractual law are the form of governance deemed to keep the world’s nations politically stable and economically prosperous today. Enter virtual reality.

In Second Life, a virtual world not even a decade old, governance is generally maintained by a small group of developers at Linden Lab who have neither time nor interest in every small dispute that goes on in Second Life, nor provides an established contract beyond their Terms of Service. Like a wild frontier, the sheriffs are few and far between and the arm of the law is not so long. Posse and vigilantes frequently decide the outcome of property dilemmas under such conditions. And the vigilantes killing chickens were not the only offenders. Chicken farmers who had little regard for neighbors sometimes placed a large number of chickens in a small area, deeply intensifying the lag problem. These small, populous virtual chicken breeding operations could be compared to the concentrated animal feeding operations (CAFOs) of the food factory systems common today in industrialized countries (Gurian-Sherman, 2008). Here, the ethics of animal breeding intersect with virtual chickens, but I will leave that to another discussion. What of the ultimate source of the chickens themselves? What responsibility does the developer of the virtual chicken, Sion Zaius, hold? Zaius did attempt to remediate the problem, but in some cases (as with the "ProtEggTor" product) the solution was worse than the problem.

Few involved seemed to act within a context of enlightened self-interest, seeking compromise and negotiation, but rather resorted to the most expedient solution: violence in the case of neighbors, retrenchment in the case of farmers, or disclaiming responsibility on the part of the developer. No infrastructure of rules or ability to enforce existing community standards was evident. As an experiment in near-anarchy, this case is illustrative of anomic communities, or social groups within which the rules of law and social norms break down. Sociologically speaking, at least some parts of Second Life resemble ethically the state of moral decay experienced in some of America's inner cities (Anderson, 1999).

However, since the human ecology of Second Life typically involves far fewer people than an urban environment, perhaps it may be

more illustrative to compare this example to one found in a face-to-face confrontation over chickens in a small town near the college where I teach. In this case, an eccentric resident living within, but near the edge of, the village limits sought to raise chickens on his property and was granted that right (according to him) by a town councilman prior to a recent turnover in administrations. When a new administration sought to limit that right, the resident balked, and the town council sanctioned a new law banning the raising of chickens and other farm animals within the village limits. The resident protested (Figure 7) and ultimately the case went to court. After the local court upheld the law, the resident appealed to the county court which upheld the citizen's right to own chickens. One side of this story can be read at the resident's website, www.EarlvilleChickens.com.

This case highlights two facets of difference between the face-to-face world and the virtual world. The first difference is the established and often intransigent political and legal process by which the case proceeded and the availability of courts of law to mediate the dispute. The second difference is the avenues of attention the resident had at his disposal to protest what he considered to be an unfair demand by the village, ranging from wearing a sandwich board in the town center to establishing a (rather bizarre) website about his case. These are the positives and the negatives of an established face-to-face community that many residents of Second Life seek to avoid. Nonetheless, Second Life does have its own boundaries, fuzzy and indeterminate though they may be.

One of the chief methods Malaby (2009) identifies for establishing order and governance both within the virtual world of Second Life and that of its maker, Linden Lab, involves the transition from traditionally executed norms and cultural rules for the workplace (negotiated through traditional media) to the use of what has been called "code/space" (Kitchin & Dodge, 2006). Institutionally, this meant the turn from memos, face-to-face meetings, and other traditional vertical, "top-down" bureaucratic methods of communication at Linden Lab to

a software product called *Jira*. *Jira* is an open-ended communication tool “designed to help a group of people keep track of the development of a software product and [it] allows for the relatively straightforward coding of further tools that can be layered onto its software to make use of the information it tracks” (Malaby, 2009, p. 68). Individually, this transition in the workplace led to the use elements of contingency and indeterminacy – games, in fact -- to negotiate the new media platforms used to convey the tasks and strategies necessary to create the virtual world, which itself is a kind of game. Much of the interface of Second Life is predicated on the developers intimate knowledge of video games (frequently played within the Linden Labs office, which is set up almost exclusively around this type of play) of all varieties: race games, arcade games, combat games, strategy games, “God” games, first-person shooters, and so on. Offline games, such as “Nerf battle” were common as well. “Games,” says Malaby (2009, p. 85), “are socially constructed by a shared commitment to their legitimacy as contrived spaces where indeterminate outcomes can unfold.” This injects an intentionally irrational element of unpredictability into the business of Linden Lab and its product. During his time at Linden Lab, Malaby describes the place as constantly teetering between success and failure.

This irrationality (in the Weberian sense) and unpredictability, however, harnessed the creativity of the masses and pushed Second Life in successful directions that would not have been otherwise known. For instance, the dance clubs and Zyngo parlors, castles, spaceports and, of course, chicken farms, were all outcomes of the nearly complete freedom given to users to create their own world. The sionChicken developed by Sion Zaius was one such “game” that represented both a rational and successful business strategy, but one that created an irrationality in the form of a dilemma within the framework of the resources important to the community. The debate about whether the experience simply was in fact, “just a game,” also was central. “[This] debate asks if chicken killing is a legitimate form of gameplay in a player-created game,

and whether meta-gamers should be able to hijack the narrative of others. In practical terms, one has to assume that not everyone will share your notions of fair play and either find a way to exclude those people or incorporate their narrative into your own. In other words, either lock the griefers out, or include the idea of “bad guys” in your game’s narrative structure” (Mistral, personal communication, October 25, 2010). Without the authoritative structure of law that we have constructed in the “real” world our virtual counterpart can expect this condition of unpredictability and irrationality to unleash more such dilemmas. What is an interesting new development is the role which cooptation takes in negotiating the boundaries of acceptability: if you incorporate the bad guys into your narrative, and they cease to be able to do any harm! Is narrative the replacement for law in the virtual world?

Moral Hazard Perspectives

Another ethical dilemma present in the sionChicken case involves the treatment of objects in simulated environments and the moral hazards involved therein. Is it ethically permissible to kill a virtual chicken in a premeditated fashion? Does the moral hazard of doing so lie solely on the infringement of property rights, or is there a deeper reason why simulations of living things be regarded with ethical pause? Is there an argument from moral development or from psychological harm? Does something need to be “real” to be subject to moral hazard? And to what extent is the degree of accuracy of a virtual experience related to its believability, its impact on our psyche as a real experience, and thus its condition as an entity deserving of moral consideration? Here we enter a *Blade Runner* world of postmodern definitions of reality.

In a now classic article on virtual reality in the 1990s titled “A Rape in Cyberspace,” Julian Dibbell (as cited in Vitanza, 2005) anticipated the tension between simulated and actual experience. In that article, Dibbell describes a MUD, or multi-user domain (a kind of text-based only virtual reality that preceded

Figure 7. Earlyville Chickens: “Honk for EarlyvilleChickens.com” (Source: Reymers, 2008)



three dimensional graphic user interface virtual reality) named LambdaMOO. In the MUD, one user manipulated the computer code so as to force another user's character to "perform" (within the context of their shared reality, which is merely the text description that defines the MUD) certain unsavory sexual practices upon the character of the perpetrator. The afflicted user reportedly experienced emotional trauma not unlike that of an actual rape victim. Reid (1995, p. 165, as cited in MacKinnon, 1997) writes, "Users treat the worlds depicted by MUD programs as if they were real. The illusion of reality lies not in the machinery itself but in the user's willingness to treat the manifestations of

his or her imaginings as if they were real." The line between the virtual and the real is thinner than common sense might allow us to believe.

In two further anticipatory articles that were published prior to the emergence of most well-subscribed virtual worlds, researchers have noted that in the ethics of representation and action in virtual reality the degree of realism is important. "[Virtual reality] applications differ in the kinds of *reality claims* they make, i.e., the implicit or explicit promises about the realism of (features of) the virtual environment," says Brey (1999, p. 12; original emphasis). He continues, "When certain reality claims are made, the application can be expected to live up to certain

standards of accuracy." In the case of Second Life, the features of the chickens that created their realism (their "physicality," need for food, shelter, etc.) was also the feature that created the resource dilemma and allowed neighboring residents to kick or shoot the chickens to death. In this case, the degree of realism has led to the creation of certain ethical choices not anticipated by the users, choices that mirror ones made necessary in the world of non-virtual chickens and non-virtual neighbors, but ones without the institutional infrastructure and support of established law and developed social norms. Brey (1999, p. 13) notes that it is "the developers [that] should hold the responsibility to take proper precautions to ensure that modeling mistakes do not occur, especially when the stakes are high... [and] the responsibility to inform users if such mistakes do occur and are difficult to correct." From this perspective, Sion Zaius would clearly be taking much of the blame for the creation of the lag problems and subsequent exterminations. To his credit, creating new, "lagless" chickens (versions 11 and 12) provided a satisfactory resolution to the dilemma. But with them came a strict End User License Agreement removing any future liability to him due to the behavior of his product, about which many virtual chicken owners were quite unhappy. Virtual chicken owner Nika Dreamscape wrote a story on *The Chicken Blog* ("The Saga of Sion," April 1, 2010) describing the perspective of the owners.

Suddenly there was a license which they [the chicken owners] felt left them defenseless against any maligned business practices. It was one-sided and bound the buyer completely... As a result, people left. They moved on to the new AI pets popping up in the marketplace that promised bigger and better things... While the group was maintained by his two customer service reps, Sion seemed to vanish, and has since rarely been seen or heard from. His chickens have not seen an update or new content in half a year now. I was one of Sion's most challenging critics. I wrote, in depth, about some of his most fumbling missteps. I highlighted his lack

of communication with his community... I'm not asking if, in specific incidents, Sion was right or wrong. I'm asking if perhaps it was to [sic] much too soon for a single, unassuming young student in college to readily endure success, demands, public scrutiny, public service with complete rationale [sic]. I don't think I would have been able to [sic].

This owner, for one, could sympathize with the plight of Sion Zaius in recognizing his limited ability to cope with the problem. But she also held this person clearly responsible during the conflict, holding his conduct up to public scrutiny and demanding restitution for investment losses.

Interestingly, a Second Life estate owner, Intlibber Brautigan, also initially took offense to the scripting problem of the old chickens, but saw an opportunity to help the cause rather than create conflict. A transcript of Brautigan's work with Zaius was recorded by journalist dana vanMoer of the *Daily SL News*:

Today I had an IM from Intlibber Brautigan, he said he had a story for me and asked if I knew about 'Sion chickens' ...

IntLibber Brautigan: they lag the crap out of sims, physics and script lag. They've been spreading like an infection across the estate - I spent last night dealing with lag complaints all over the estate. 10 chickens make 1 ms of script lag but each chicken makes 150 potential collisions!

He was so infuriated he considered an AR [Abuse Report] against the creator citing griefing issues but instead decided to speak to the designer and point out the problems.

Sion Zaius worked with Intlibber to fix the issues and had this to say:

Sion Zaius: yes, there have been problems with sion chicken causing physical lag. I'm working on the update which is called "version 11 lagless"

Originally the chickens were updated from the feed but this was changed about a week ago so I asked Sion what people needed to do as I understand you can't just pick them up and re-rez them.

Sion Zaius: since you cannot pick up chickens or eggs into your inventory without breaking them, you have to use chicken transport boxes or proteggors to do so, if you use those objects, your chicken/egg will be updated automatically.

Sion Zaius: then, people would have to box up living chickens once, and free them again lag-improvement should then occur instantly - its awesome, this chicken has as collision score of 3.4 ... it had 140 before

IntLibber Brautigan: We will be requiring all of our residents who have chickens to update them if they want to keep them. The lag improvement is just tremendous, its going to improve sim life for everybody.

This shows the possibility of cooperation rather than competition as one of the resolutions to the ethical dilemma of resource competition. The commons need not be trampled by the self-interested masses: enlightened self-interest empowered a cooperative strategy in this case, resolving the problem for many by reducing the need for the resource at the source.

Brey also notes the function of meaning in virtual environments. "VR simulations of objects may approach the perceptual complexity and interactive richness of everyday physical objects, and may for this reason more easily generate belief in their veracity and objectivity than other sorts of representations" (1999, p. 13). According to Ford (2001, p. 118), who expands on Brey's article to include multi-user environments, "people often become emotionally invested in online personae within the context of a community." The important question then is, "Can virtual chickens be considered personae?" They exhibit many of the characteristics of real chickens. They are

valued by their owners, who must actively care for them in order to benefit from them. They can be terminated, like a real chicken. The term *personae* comes from the Greek word meaning *mask*. Is the mask of virtuality enough to argue that the chickens are no more than pixels and/or electrons and deserve no more rights than their constituent parts? Or is their status as "bot" enough to confer even minimal ethical considerations? Do the feelings of the chicken owners or the chicken killers count, despite the virtual nature of the chickens themselves? Does a representation or a simulation have a claim to any moral rights? These are certainly difficult questions to tackle theoretically. The answers to most of these questions in the actual case of the sionChickens were resoundingly negative. In response to the question "What were the reasons given by the chicken killers (or bandwidth patriots, if you like) for their behavior?" Pixeleen Mistral says "there were two rationales: the grievers said it was just part of the gameplay, and those concerned about the degraded performance of sims said they were trying to keep the chicken farms from slowing the sims down for everyone (i.e., the chicken farmers were taking more than their share of the sim resources)." Regardless of the fact that these chicken-bots were seen to be a "real" part of the Second Life community, by the New World Virtual Farmers at least, it is hard to believe that those involved in the "slaughter" paused to consider if the bots themselves had any natural right to exist. After all, in the minds of many this was only a game and it was simply necessary to redistribute resources appropriately so that all players could have a lag-free experience: the right-to-bandwidth clearly trumped the chickens' right-to-life.

Of course, lives are not at stake in this case. Life, or more particularly the premeditated end of it, predisposes moral discussion. While it is clear that there is an exchange value for virtual chickens, from a deontological perspective the question remains: is there any *inherent* value in simulated objects? Plato denied this possibility, privileging the ideal and the real over the "sham," or virtuality (Vitanza, 2005, p. 1).

An ethical thinker of this ilk, critical of consequentialism, might ask if the termination of simulated life could lead down a slippery slope to a position whereby some people, unwilling to strip simulation from nature, fantasy from reality, allow the impulses of the lawless virtual world to drive their behavior in the face-to-face world. The application of virtuality ethics in our face-to-face world, from this point of view, might have profound negative repercussions. It would be equivalent to the most hardened and harsh forms of libertarianism. Furthermore, the position of truth suffers when one merely need change ones narrative in order to deal with deviance. From a deontological perspective this condition is untenable. Inherent truths are indeed masked by the personae of virtuality and the entire game of the New World Virtual Farmers can be seen as a sham which need not gain our consideration, until the impacts of such behavior are encountered in the face-to-face reality that contains the inherent truths of life.

A more utilitarian consideration, on the other hand, would allow for such virtual and face-to-face crossovers provided they could be evaluated in terms of serving the greater good. This might follow a more classical liberal logic, that of the laissez-faire free market. Allow developers to create virtual chickens; expose these chickens to the marketplace; if they are valued they will succeed and if they create social problems which the market cannot bear, they will fail. The greater good served is to enhance the social relationships of those participating in the virtual world; the market externalities are the latency issues. And, if what Dreamscape (2010) says is true, the turn to a new product (Ozimals, for instance) may signal the demise of the offending sionChicken and the end of any resource conflicts and ethical controversy. The invisible hand of the market both creates a greater social value and mitigates ethical problems. From this point of view, because they are driven by completely economic rules (with all of the attending commodities ultimately taking the form of bits and bytes), virtual worlds are a perfect case to employ consequentialist ethics.

The common “runaway train dilemma” has little bearing on virtual reality, for instance. In this dilemma, a runaway train is heading toward a group of people stuck in a car broken down on the tracks. You stand at a switch for the tracks and have the ability to divert the train onto a path where only one pedestrian is standing. Is it ethical to take the action of switching the train’s path, despite the fact that your actions would in turn lead to the death of the pedestrian? Consequentialists argue that saving the lives of many counterbalances the loss of the life of the few (or the one). In the case of virtual reality, however, such actions are moot because all action is an illusion of the mind. Let the train hit the car, then just restart to begin anew. “No harm” defenses of violence in video games have been mounted from a similar perspective, particularly by evolutionary psychologists (Ferguson, 2010; Ferguson & Rueda, 2010).

Objections to such cold and calculating ethics necessarily involve the examination of the term “virtual.” Brey (2008, p. 4) notes that one meaning of the term does not mean “unreal,” but rather “practically but not formally real.” For example, the statement “buffalo are virtually extinct” is not meant to indicate they are the opposite of real, but that they have been practically wiped out. Likewise, although avatars can fly and not die in Second Life, they are driven by human intent, emotion and a deep, immersive psychological engagement. They are the personae of human actors. Avatars thus deserve a similar respect as their corresponding drivers, or “meatpuppets,” to use the language of cyberpunk. Social constructionists would approve of such a definition. This perspective suggests that traces of “reality” do intermingle with virtual worlds people inhabit, which could disarm a purely calculative utilitarian ethics of virtual reality.

Just War Theory

A third ethical perspective from which this “lag war” could be examined from the point of view of Aristotelian virtue ethics, in particular focusing upon the cardinal virtue of justice.

Upon examination of the issue of justice in the framework of a truly positive pacifism, Carhart (2010) connects virtuous character to the act-based ethical framework of just war theory. "By recognizing that the use of force may sometimes be permissible or even necessary as part of the pursuit of peace, the positive pacifism described above departs from the consistent ideal of absolute pacifism and may be identified with a cautious version of the just war theory."

The classic just war tradition of medieval philosophers dismisses normative agreements regarding rules of war agreed upon by each party in a conflict. Rather, rules of justice defined within the context of virtuous behavior should define the terms of engagement. Since the Second Life chicken conflicts were taking place in a new frontier, only loosely bound by convention and social norms and where few significant rules of conduct and combat existed, this seems a valuable approach. The principles of just war are commonly held to be: "having just cause, being a last resort, being declared by a proper authority, possessing right intention, having a reasonable chance of success, and the end being proportional to the means used" (Moseley, 2009). These principles cover a broad range of ethical perspectives including elements of virtue ethics, teleological ethics, Kantian duty ethics, and consequentialism.

Before hashing out each of these principles in the Second Life chicken war case, let us establish once again that the "field of battle," so to speak, is the virtual world, a shared experience mediated through the computer and its input and output mechanisms. The world is broken down into regions called "sims," each controlled by a unique computer server. The establishment of the accuracy of the simulation is the chief public good being fought over. Technically, this resource can best be exploited when bandwidth is maximized and lag is minimized. And the contestants in this fight involved avatars, or virtual personae driven by users. Now, recalling these conditions, can principles of just war be applied in this case?

First, was there just cause for the neighbors of the chicken farmers to terminate the

chickens without negotiation? Certainly they felt so. The culprits striking the first blow, by their account, were the agents responsible for placing the chicken-bots in the sim, thereby creating what was deemed to be an excessive amount of lag. They were only reacting to an untenable situation introduced by the chicken farmers. But what if the farmers were unaware of the impact their chickens were having on the sim? In fact, this condition was recognized by the developers of the sionChicken Killer (the food distracter "bio-weapon"), when they wrote on the product advertisement "PLEASE do not use this to grief random sionChicken owners! It is meant to be used on uncooperative neighbors who refuse to consider how these chickens affect everyone around them" (Mistral, 2009). Nonetheless, the need to create such a plea was an indication that some of the sionChicken killing had gone beyond the boundaries of just war and had become "griefing," or "activities designed to make another player's life or experience in Second Life unpleasant" (Second Life Wiki, 2010).

Second, was chicken killing a last resort for residents? In some cases, chicken killing may have seemed a last resort when chicken farmers did not respond to neighbor's requests to reduce lag, and the larger governing authority in Second Life (Linden Labs, to whom one can report abuse of the Terms of Service contract) was unresponsive. And while the costs of teleporting (the main form of travel in Second Life) to another sim which was unladen by virtual chickens was nil, for one who invests in renting or buying property in Second Life and takes the time and energy to create one's own personal space, the idea of moving due to a neighboring avatar's behavior can be undesirable and costly. Property, in other words, takes on vestiges of reality in Second Life, and that boundary of civic engagement was as real as the boundary in the EarlvillesChickens.com case.

Third, the declaration of war by a "proper" authority was impossible, due to the fact that such an authority does not exist in virtual reality. Governance is at the dictatorial behest of Linden Labs, who (in following the generalized

ethic found in the origins of the Internet) created a virtual world where freedom and communitarianism are centrally valued and rules and roles left up to the individual (Reymers, 2004). As in most virtual communities, griefing (alternatively called “flaming,” “phishing,” or “trolling,” though each term has a specific nuance) is more than happenstance and often has a central place in the definition of the community (it is often absorbed into the shared narrative of the actors in Second Life). This is precisely due to the fact that no central authority exists and laws and norms are left to each unique community to establish. Occasionally Linden Labs will mediate a dispute, but they certainly did not sanction the chicken killing that was going on. As Davison (2009) suggests, it was precisely due to the collapse of boundaries between normative expectations in different communities that the sionChicken incidents occurred. The third principle for just war in this case is not clearly definable due to the fact that there is no agreement on the propriety of authority in Second Life.

Fourth, did the chicken killers possess the right intention in perpetrating their violent solution to the lag problem? It seems that if the chicken farmers were provided warning that such solutions would be forthcoming, and they did nothing to respond, the intention would have been clear. But was it the *right* intention? Given that bandwidth is the lifeblood of virtual reality, the air that avatars breathe, anything that compromises this valuable resource may be said to compromise the very existence of the interactive interface itself. Therefore, if one considers interaction (with the virtual environment) to be central to both the purpose and the capacity of one’s presence in Second Life, and accuracy of interaction is a direct result of bandwidth availability, protecting bandwidth availability is akin to protecting one’s existence. From this perspective, “chicken killers” may be seen more heroically as “bandwidth patriots.” The right intention principle seems to be met. However, one can see this principle spiraling out of control. Would it be acceptable in virtual worlds, for instance, to somehow disable (or

“kill”) another user’s avatar if you deemed they were using up too much bandwidth (as a result of wearing heavily scripted objects, such as fancy hair, shiny jewelry, etc.)? Certainly a balance needs to be struck between stylizing ones avatar with “bling” (or ones land with virtual chickens) and bandwidth considerations. Griefers who indiscriminately killed chickens without warning and without the purpose of reducing the lag problem would not have been acting with the right intention (and thus might be considered a kind of “chicken war criminal” – although there is no equivalent of The Hague at which these avatars could be tried for their crimes, unless you consider the developers at Linden Labs to be playing that role, as in the Soviet Woodbury case).

Fifth, the chances for the reasonable success of exterminating the problem chickens was relatively high, due to the fact that sims are isolated from one another and eliminating the chickens from one sim, while not addressing the more global problem of chicken lag, solves the problem from the point of view of the “bandwidth patriot.” Furthermore, such local “raids” drew attention to the fact that a more global problem existed; thereby creating the kind of awareness that ultimately motivated Sion Zaius to alter his product (virtual chickens) into a “lagless” version. In retrospect, these “bandwidth patriots” did succeed in their objective to rid Second Life of most of the laggy initial versions of the sionChicken.

Finally, the consequentialist question comes up again: did the ends justify the means? Or, more accurately, were the means used to protect bandwidth proportional to the value of the bandwidth obtained? How *bad* a problem was the lag issue, and did chicken owners *deserve* to have their flocks culled? Was there a greater good produced by the chicken wars? The problem of the extent of lag can be answered technically, as it was in the following response to an article written about the chicken wars in the *Alphaville Herald*, Second Life’s online newspaper:

With the Version 11 Lagless model, the collisions produced by sion chickens have dropped

from 150-250 down to 3-30 under most circumstances. The script lag still runs from 0.1-0.3 ms per chicken. For this reason I recommend that estate owners impose a covenant limit of no more than 1 chicken per 1k sqm of land. In our Ancapistan estates, we've found that these limitations keep sims healthy and enjoyable for the most part, however we do recommend an upper limit of about 50-60 chickens per sim ONLY if these are the only objects in the sim. The more prims in the sim, the more collisions that will happen, and other scripted objects of course will take up some of the total script time (Intlibber Brautigan, as cited in Mistral, 2009).

Whether or not the chicken farmers deserved to have their flocks terminated is a value-based question whose answer varies depending on the supplicant. From the point of view of the “bandwidth patriot,” laggy chickens earned their just desserts: death. From the point of view of the New World Virtual Farmer, there was no honor, integrity or merit in the unilateral decision of the chicken killers to exterminate their flocks – an extreme view might have held that it was a “bot genocide” imposed upon them from the outside, a kind of “electronic ethnic cleansing.” The very culture of the virtual farmers was at risk. A less extreme view might simply acknowledge the loss of investment property that cost, in some cases, a significant amount of real money. And from the estate owners’ point of view, it became necessary to hold a balance between the interests of the many renters upon their estates and the economic advantage that chicken farming brought. The resident above continues:

When these chickens started spreading across our estate, we considered banning them, but considering the economic activity they stimulate, we sought instead to help the makers at Sion Labs reduce lag as much as possible. Provided these tips are followed, there's no reason why chickens cannot be permitted in any sim in the numbers specified.

Estate owners IMHO should look at the chicken craze as a means of expanding occupancy,

particularly by imposing limits in numbers of chickens per 1k sqm, this obviously means a chicken farmer needs a lot of land to farm a lot of chickens (Intlibber Brautigan, as cited in Mistral, 2009).

The consequences of the chicken war were variable. Was a greater good achieved? Perhaps for Sion Zaius, who continues to reap great profits from his chickens and the associated products needed for them to survive. Perhaps there was a greater good served to the Second Life community at large, for whom the growing problem of laggy chickens was resolved through the actions of a few “bandwidth patriots.” However, a greater good was not likely to be seen by the aggrieved chicken farmers who lost valuable (even if virtual) livestock as a result of the conflict. And it is uncertain without further research, but perhaps a greater good was not served for the face-to-face communities of the users behind the avatars, whose first lives may have been influenced in their Second Life roles as patriotic chicken killers, victimized farmers, or grief mongers. A just war minimizes casualties, and the casualties of this virtual war, while physically negligible, may have taken a psychological toll.

CONCLUSION

No ethical dilemma has a simple solution or one that satisfies all parties. Nonetheless, the structure of the community within which such dilemmas arise influences the outcome for all. Where resources are limited, communities come into conflict around the behaviors that exploit those local resources. A resource dilemma, or tragedy of the commons, challenges those trapped within it to take the allegedly irrational step of bowing to a group interest over one’s own perceived self-interest, but as many have discussed (Axelrod, 1984; Sagan, 1998), this strategy can be more lucrative (and thus rational) for all individuals involved in benefitting from a common environmental resource. In this case, lag and bandwidth are the environmental resources being taxed, and so an ethically sound

position advocates eliminating the elements of the virtual reality that put an undue burden on this resource on a shared basis. The definitions of "undue" and "shared," however, are the sticky points left to be negotiated by the actors involved within the context of their circumstances. One of the difficulties in deciding where these lines should be drawn are the multiple sources of lag and the lack of good information about what exactly is slowing one's Second Life experience.

From a consequentialist perspective, then, if the achievement of the greatest good for the greatest number of people requires the extermination of the offending laggy chickens by those other than their owners, so be it. However, this argument offends the more principled ownership argument regarding said chickens. We would certainly not feel this to be the right course of action if the terminated chickens were our own, particularly when a technological fix was right around the corner. The extermination of laggy chickens in an arbitrary and capricious (as it was in many cases, such as the Soviet Woodbury attacks and others), could not be justified using this argument. Nevertheless, from a consequentialist argument, the chicken-killers were in the right – the end of the chicken wars in Second Life (brought about by a software upgrade introduced by the creator), overall, justified the means by which this conflict was resolved.

A second ethical dilemma regarding the virtual entities known as sionChickens involves the degree to which they are virtual. This dilemma stems from the relationship between simulation/belief and agency. With the representation of behavior in avatars, it is assumed that users have enough self-coherence to willingly suspend their disbelief. But is this a safe assumption? As the degree of accuracy of the representation provides a virtual world that more and more closely approximates the parameters of the face-to-face world, it can be expected that phenomena outside of the control of the designers of the virtual world – let's call them environmental contingencies – will lead to many different reactions and consequences that must be dealt with on a social level. Malaby (2009) goes so far as to suggest that Second Life

is explicitly designed to allow the development of such contingencies (yet just as explicitly avoids governing over the consequences of users' creations – it is left to users to hash this out on their own). The degree of responsibility that Linden Lab took in the chicken lag problem was minimal. Rather, the mantle of responsibility was passed to Sion Zaius, the creator of the offending chickens. A lack of responsiveness on his part clearly evoked the violent and negative responses from residents that were fed up with lag. In market terms, the situation took care of itself. But this still leaves the question of psychological harm unanswered.

Third, the notion that conflict can be based on principles of just war leads to the conclusion that cyberwar is one of the complexities of virtual reality that challenges the bedrock notions of our culture. While questions of just cause, last resort, intentionality and having a reasonable chance of success are as clear, or fuzzy, as the case may be, as in face-to-face situations of conflict, the chief difference in the case of Second Life involves the place of authority within the structure of disputes. Without a distinct political authority and system of comprehensive rules (beyond the TOS, or Terms of Service provided by Linden Lab) the establishment of authority is weak or non-existent. Occasionally, Linden Lab bans users or whole groups (as in the case of Woodbury College), but typically Linden Lab stays out of a conflict if there is not a clear violation of the TOS. This may be a result of earlier conflicts in which Linden Labs was involved, as in the case of the Jessie Wall described by Au (2008, pp. 103-117). Estate owners can establish a covenant and ban those who break it, but the offending parties can return in mere moments after creating a new Second Life account (with a different name, but with a near equal ability to harass). This basic anonymity and powerlessness to prevent griefers is what typifies most online communities. The sole effective form of resistance against such griefing, flaming, trolling or phishing is to ignore the offending parties until they go away, or to incorporate them into one's online narrative. The establishment of

law in virtual reality is unlikely, except where existing face-to-face world law (such as the Digital Millennium Copyright Act) may impede on behavior in the virtual world.

This intrinsic lack of a coherent social contract beyond custom can be taken as a symptom of a much larger movement involving a greater crisis of metaphysics. In connecting virtual reality to modern philosophy, Colin Beardon argues that the artifice of virtual realities and simulation are such a symptom:

The idea that modern philosophy is in crisis is not new. Some postmodernists express this by saying that we are at the end of the project that began with the Enlightenment (Dews, 1989). Laufer (1991) has shown how philosophy has moved through three stages since the Enlightenment: the first (from 1790 until 1890) was dominated by Newtonian science and Kantian philosophy; the second (from 1890 until 1945) was dominated by Comtean positivism and what we would call "modernism"; and the third (the period since 1945) is the period of deepening philosophical confusion and the emerging concept of the "artificial".

If this analysis is correct, then the emergence of virtual reality at this point in time is a reflection, not just of technical, economic and political developments (which are of course also very important) but of the fact that our traditional philosophical system is now collapsing at its most central point - metaphysics. Our concern with the ethics of virtual reality is therefore doubly difficult. Ethics has been severely attacked and has been in a state of confusion for at least fifty years (Ayer, 1936), and virtual reality is a reflection of deep philosophical confusion (Beardon, 1992, p. 4).

Though he doesn't name it, Beardon eludes to the postmodern condition of Lyotard (1979) and many others who might claim that in the new era, one of pastiche and simulation, the interactive virtual world experience is the end of the grand narrative of broadcast dominance and the beginning of something new. The events

and technologies that shape what is new—virtual reality in this case – do in fact reveal cracks in the façade of traditional ethics. Those cracks may eventually be filled in by some future Locke or Rousseau, but for now they represent holes in the fabric of our socially constructed virtual worlds.

If it is the case that the simulations created in virtual realities reflect a shift to a postmodern era, we can expect that traditional and modern modes of ethics involving enlightened self-interest, individual responsibility, ends and means, and arguments from moral development to be less than apt for describing and anticipating the actions and reactions of free agents in Second Life. In fact, even free agency comes under scrutiny in postmodernism. The case of the virtual chicken wars in Second Life seems to confirm these expectations of Beardon (1992). The crisis of philosophy is intensified as new, postmodern virtual realities bear down upon our old, modern face-to-face reality. This crisis leads to one of Beardon's final questions, "What is the nature of the responsibilities one has when offering a new version of reality?" In Second Life, and increasingly in cyberspace generally, this crisis is realized through the modality of the construction that people collectively create as they compete for resources in virtual worlds, share social bonds, create communities and factions, and work out amongst themselves what it means to kill a virtual chicken.

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Kurt Reymers is a cybersociologist studying the social construction of virtual worlds. In virtual reality, he can be reached as Kurt Karsin in Second Life and has a laboratory at the Nature.com island, Elucian Omega. In face-to-face reality, he is a professor of science and technology studies, sociology and anthropology at Morrisville State College of the State University of New York.

College Students, Piracy, and Ethics: Is there a Teachable Moment?

Jeffrey Reiss, University of Central Florida, USA

Rosa Cintrón, University of Central Florida, USA

ABSTRACT

This study explores the nature of piracy prevention tools used by IT departments in the Florida State University System to determine their relative effectiveness. The study also examines the opinions of the Information Security Officer in terms of alternative piracy prevention techniques that do not involve legal action and monitoring. It was found that most institutions do not use a formal piece of software that monitors for infringing data. Furthermore, institutions agreed that students lack proper ethics and concern over the matter of copyright, but were not fully convinced that other prevention methods would be effective. The authors conclude that monitoring techniques are a short-term solution and more research must put into finding long-term solutions.

Keywords: College Administrators, College Students, Ethics, Higher Education, IT, Monitoring Software, P2P, Piracy, Student Development

INTRODUCTION

With pressure from the Recording Industry of America (RIAA) and federal policies introduced in 2008, post-secondary institutions must implement software to monitor network activity to keep students off P2P software, dorm servers, and any other online method of transferring media illegally (Joachim, 2004; Worona, 2008). Though some larger universities, such as the University of Florida, had already implemented software prior to the 2008 revision of the Higher Education Act, the remaining community colleges and smaller institutions

were required to follow suit. Furthermore, as the new rules currently stand, institutions will not, at the present time, suffer any penalties for failing to follow the procedures. After the appropriate committees interpret the rules, it is likely, however, that institutions will lose federal financial compensation for implementation failure, making the process burdensome for smaller, financially starved institutions (Worona, 2008). Though software will always play an important role, an expensive software solution becomes useless if students find an alternate route around the software. As a result, an institution may ultimately waste money on an ineffective solution only to replace it with another solution with a limited life-span due to technology's constant evolution.

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The P2P blocking software, however, is only one part of the problem. With most institutions also blocking dorm servers and other potential piracy outlets, students feel that their personal freedoms are hindered. Despite the plethora of legal uses for P2P, its adoption was stifled due to the focus on illegal use. The dorm server ban is also problematic in a historical sense. The popular search engines Yahoo! and Google, two companies that made major contributions to the overall state of the Internet, began as dorm servers. By preventing students from utilizing these resources, institutions could easily and unknowingly prevent the next major Internet innovation satisfying a large private interest (Joachim, 2004). Thus, by exploring solutions that rely on more than software and legal threats, a university could potentially eliminate digital piracy without denying freedoms to students.

The following research question guiding the present study, focused on ethics, is part of a larger study investigating the multifaceted challenges of piracy in higher education: What alternatives are being considered to discourage piracy by college students at a lower cost than monitoring software? Although throughout this paper the term ‘ethics’ is used, the reader should understand that we are making particular emphasis on the field of study and research of technoethics. For the purpose of this paper we have aligned our definition of technoethics with that of this journal. That is, technotethics is concerned with the “technological relationships of humans with a focus on ethical implications for human life, social norms and values, education, work, politics, law, and ecological impact” (Miah, 2010). Similar perspectives have been posited in the past by Bunge (1977) and more recently by Luppincini (2010).

REVIEW OF THE LITERATURE

According to Forester and Morrison (1994), software piracy first occurred in 1964 when Texaco was offered \$5 million in stolen software. Other cases occurred over the years but

were solely private corporate programs such as air-traffic control programs and CAD software. Although these instances of software piracy were a different form of stealing trade secrets, mass software piracy only surfaced with the advent of the desktop computer and Microsoft. Bill Gates created the software programming language, BASIC, as part of a package with the desktop computer kit, the Altair. While the computer was poorly constructed, the software proved more useful, and some people made copies of the program to prevent others from purchasing the entire package (Forester & Morrison, 1994).

This view combined with the more powerful viewpoint of a software package being too expensive helped fuel consumers’ justification to pirate or sell counterfeit copies. With the help of the early form of the Internet, counterfeit software became easier to distribute. In 1992, a major crackdown occurred on an Internet bulletin board known as Davy Jones Locker that sold pirated versions of expensive programs such as AutoCAD, and a number of Lotus and IBM products. Considering the pirated software from this site crossed national boundaries into nations such as Iraq (Forester & Morrison, 1994), the notion of a hostile nation obtaining software that could lead to the creation of a weapon to be used against the United States or its allies could prove dangerous. Another crackdown in 1992 yielded approximately \$9 million of pirated software across 10 sites. These sites not only included pirated versions of programs like MS-DOS but also possessed counterfeit versions of manuals, holograms, and even the packaging (Forester & Morrison, 1994).

In the courtroom, software piracy becomes harder to define. As Edgar (2003) noted, the term plagiarism may appear to be an appropriate term for piracy, but while a person is making a copy of another’s work the copier is not claiming authorship of the file. At the same time, piracy can expand the range of one or two files or programs to the mass warehouses as described in the 1992 counterfeit software crackdown. This brings up the question as to the limits of policy (Forester & Morrison, 1994). The dilemma has

been to find common ground for a policy to be applied to those who feel software should be free under any condition, and those who feel piracy is reprehensible in any situation. If a person pirates only one software program or song, it may be so minor that such an infraction, while still illegal, may be ignored. Though one infraction may be tolerable, there is the slippery slope issue as to how many infractions are permissible before the acts become intolerable.

With the prevalence of pirating and P2P, one questions the types of users on the piracy stage. Molteni and Ordanini (2003) conducted a study to identify different types of file sharers and determine potential solutions to reduce the probability that they would continue to pirate. Based on a sample of 204 individuals who answered a questionnaire on the Bocconi University website where 95% of the sample were students, the authors were able to create five different groups via cluster analysis. One group consisted of occasional downloaders who download some, but predominantly purchase, CDs. This group is essentially the control group because online strategies would least affect this group. The second group, the mass listeners, had a high dependency on P2P sites and rarely purchased CDs. Their file sharing practices are generally to obtain music for their own entertainment. The authors suggested strategies that could provide a heightened experience or possibly a streaming service could benefit them. Third, the explorers/pioneers group used downloaded content to influence CD purchases. This group could be beneficial to new artists if free songs are provided to their consumption. Fourth, the curious group used the act of downloading as a form of entertainment. Determining a solution for these people is almost impossible. Finally, the fifth group was the duplicators who downloaded music solely for making copies. Like the curious group, finding a simple solution is difficult, but legal action may be the only solution (Molteni & Ordanini, 2003). This study provided a solid foundation for the process of identifying solutions to such a massive problem involving diverse groups of downloaders.

Cohen and Cornwell (1989) conducted one of the earliest studies that replicated prior studies of Schuster (1987) and Christoph, Forcht, and Bilbrey (1987, 1988). According to Cohen and Cornwell, both of the prior studies held no real merit alone but if combined there could be significant results. Christoph et al. (1987) examined the ethical beliefs of Information Systems students at James Madison University but could not draw any conclusions from the results because there were no expert opinions with which to compare the student responses.

IDENTIFYING ETHICS, AND MOTIVES

Taylor (2004) conducted a study to connect software piracy and ethics between standard business majors and music business majors using a five-point Likert scale questionnaire. Overall, those surveyed agreed with the standard premise that students believe piracy was a faceless crime and hurt few if any. Though music business majors were more likely to view piracy as unethical, when both majors were combined, the results were fairly neutral. Furthermore, students from either major who never pirated music thought that piracy was unethical and hurt the music industry.

Rob and Waldfogel (2006) conducted a study based upon the download habits of students and the value they placed on music they either purchased or illegally downloaded. The survey asked about whole albums either purchased or downloaded in 2003 along with a list of hit albums from 1999. By having the two lists, Rob and Waldfogel (2006) were able to explore a theory that music could be viewed as "(1) an experience good, (2) subject to depreciation as the listeners grow tired of music, or (3) both" (p. 44). Under this theory, students would download or purchase an album, enjoy the album, and grow tired of the album to the point of never listening to it again. The researchers tested this theory in their 2003 survey that was used to investigate students' habits. The list of songs from which to choose contained a list of

new music and the top albums of 1999, allowing a distinction between new music a student may instinctively download and older music of which students may have become tired. The significance of this viewpoint also lends itself to a reason behind student downloading. If a student purchased an album thinking it would be good, only to realize otherwise, that student wasted money on an album. If the student downloaded the same album, the music was simply deleted. Although the purchase scenario resulted in a sale for the record label, it dissatisfied the student. The download scenario resulted in no sale for the record label, but the student's dissatisfaction was mitigated by not wasting money on a sub-par album. At the same time, if an album was generally popular via means such as the Billboard charts they would be more widely available than a less popular or more obscure track (Bhattacharjee, Gopal, Lertwachara, & Marsden, 2006). Rob and Waldfogel concluded that such an analysis tended to become obfuscated when facing individuals who both downloaded and purchased music. These individuals would contribute to a positive trend on both sides and were equally likely to experience the same after-effects of music depreciation. Thus, downloading becomes more of a "try before you buy" scenario acting more on utilitarian methodologies to maximize the individual's happiness. Even with the justification of trying to save money, deontological and virtue ethics still support that the act is immoral (Edgar, 2003).

A study by Gupta, Gould, and Pola (2004) explored student software piracy along with ethical considerations related to the issue. Based upon some of their research, it was viewed that piracy, while immoral, has less severity and level of harm than other, more heinous acts such as breaking into a store and stealing a physical good. Their study aimed to connect the perception of software piracy with a student's habits via ethics, legality, criminality, parties harmed, and social impact. Those surveyed were 90% male, about half were under the age of 25, and the majority of the respondents were college educated. It was found that persons less

concerned over ethics were more likely to pirate software. Furthermore, the social landscape of websites that encourage software piracy further strengthened the belief that piracy was acceptable. In fact, the researchers noted the strong correlation between the belief and their survey question that mentioned the ease of pirating because a person could not get caught. The legal aspect, however, did not correlate with the social one. The researchers did mention that while this result was contrary to the norm, the study had taken a more ethical focus which could have caused skewed results. Similar to Rob and Waldfogel's (2006) implications, a free demo of music would allow a potential customer to determine if an album is worth purchasing. Gupta et al. (2004) suggested that software companies put more emphasis into trial and beta versions of commercial software. Hence, free samples appear to be one outlet to help curb digital piracy. Finally, the authors have stated their beliefs that the public will not view software piracy as an ethical concern. This would indicate that there may be a need to teach ethics as early in life as possible.

SOFTWARE DETERRENTS TO PIRACY

In 2006, the Electronic Frontier Foundation (EFF) performed a study of the flaws in many of the P2P monitoring software systems. According to the EFF, all types of monitoring software or software alternatives have either contained an exploitable loophole or have restricted student rights on some level. For example, firewall software may block P2P traffic across a specific port, but the savvy student could use another port to circumvent the restriction, resulting in a massive "cat-and-mouse" scenario. Furthermore, a student may also hide the data in a port that a firewall will never block such as port 80 for standard web traffic (Nyiri, 2004). Though content-monitoring software has been considered to be the primary means to stopping piracy, file-sharing programs and crafty students can use SSL encryption to hide their

tracks. Because the connection is encrypted, a monitoring program would only see nonsense due to the encryption. The EFF has also mentioned traffic-shaping programs that can alter the amount of resources for specific functions, but it also falls prey to circumvention methods. From a student rights perspective, students will not be comfortable knowing that their institution is tracking their every move online. In other cases, the measures could also generate false positives where a student is downloading a file through P2P for educational use as described through the fair use doctrine.

Considering the vast size of a campus network, it is foreseeable that there is a massive amount of traffic flowing through it. With that considered, IT professionals need to use some form of software in order to filter through the equally massive raw data. Though some software packages will do their job,

. . . many of the solutions generate only a slightly smaller amount of data than the raw network. The next group of companies sells a product that takes the output of the first layer and tells you what your problems really are. A third group of companies sells yet another layer of products to finally produce actionable items (Rosenblatt, 2008, p. 9).

Thus, while IT software products may be effective, they can easily become numerous and costly (Rosenblatt, 2008). With different copyright monitoring solutions available, determining the best one is at the very least time consuming. The Common Solutions Group (2008) is a collective of IT professionals from 30 universities, 28 of which are research institutions. Common Solutions Group has further supported the EFF's findings with its own study. In this study, three major copyright-prevention software packages: CopySense, cGrid (formerly ICARUS), and Clouseau were considered. It was found that CopySense and Clouseau both relied on the vendor for blocking parameters. Students may bypass CopySense by downloading files that are not registered into the CopySense database or use SSL encryption. Clouseau sets its

parameters by allowing and blocking vendor-set communication routes which operators may not modify. Though blocking whole communication channels sounds ideal, some channels may already have legitimate and legal uses through the campus. Since the network operators have no control, another piece of software may become worthless. Finally, cGrid was determined to be the most advanced of the three programs but was also the most expensive and resource intensive. cGrid differed from the others by reporting patterns rather than using outright suppression but could also be configured to act similarly to the other two programs in the ICARUS incarnation (Nyiri, 2004). This caused added network strain and more network administrators to interpret cGrid's output. It was concluded that while this type of software would improve in both quality and price in the future, the current offerings were expensive and inefficient. More importantly, the universities involved in the study concluded that software alone will not end student copyright infringement violations. They expressed the belief that constantly educating and reinforcing ethics to students would yield better results. Though the software approach appeared effective in 2004 (Spanier, 2004), the improving technology and student craftiness eventually rendered the software ineffective.

In Gopal, Sanders, Bhattacharjee, Agrawal, and Wagner's (2004) study of piracy's economic impact, the authors found that two broad types of controls exist to help combat piracy. The first control was the deterrent control that contains methods that attempt to deter users from pirating media. Legal action, educational, and media campaigns are just some of the general categories of these deterrents (Djekic & Loebbecke, 2007). Deterrent controls do not directly influence but attempt to indirectly dissuade a person with threats. At the time the article was written, the RIAA was beginning its legal campaign (EFF, 2008) which was the first and primary deterrent control for music piracy. Another deterrent control is one may that be self-inflicted by the copying community--computer viruses. Viruses, however, may only act as an effective deterrent to students if they

are also bothered by legal action. Those who do not care about the threat of legal action will feel the same about viruses (Wolfe, Higgins, & Marcum, 2008).

Preventative controls operate from the viewpoint of making the process too time, labor, or financially intensive to make pirating less worthwhile (Djekic & Loebbecke, 2007). Although this has been a common practice in the software industry, the music industry has also embraced these practices. Such practices include DRM and similar fingerprinting techniques to make digital files harder to share, and software encryption to make copying files off of CDs more difficult. Like the P2P prevention programs, all preventative controls contain an exploitable weakness that a determined individual may avoid. The only difference comes from the increasing difficulty in overcoming these barriers. Considering the speed with which technology progresses, such a situation may never occur. Djekic and Loebbecke, in their study of preventative controls for computer software, provided proof that preventative controls are ineffective and that software companies would be wise to invest in deterrent controls.

ETHICS AND COMPUTERS

Rogerson (1996) recounted a speech given by professor Terrell Ward Bynum where he argued that information technology (IT) plays one of the leading roles in shaping and changing society. Compared to other societal revelations such as the Industrial Revolution, IT was thought to create a larger impact because of its ease to seep into a person's life. Furthermore, human values would exhibit the most change from IT. Bynum provided examples of IT slowly seeping into society through the ease of news travelling from person to person and the functionality IT provides for disabled people. Looking at these implications from both utilitarianism and Kantian theory, the two ethical theories share similar outcomes. From the utilitarian perspective, because IT will allow more people to take care of themselves who previously were unable,

more people will find a way to achieve happiness. From the Kantian perspective, allowing IT to grant more people autonomy and control of their lives is an ethical and moral act. Regardless of the theory used, people need to consider the impacts and implications of a new form of technology (Rogerson, 1996). P2P technology and digital media easily fall into this category. Both are relatively new technologies and both have significantly impacted the way people live their lives. The impact and implications of such technologies, however, may not have been thoroughly considered, and actions may be required in light of current events.

COMPUTER ETHICS

Considering the level of harm a person could cause with a computer, having an appropriate code of ethics becomes paramount to keeping the virtual population safe. As with an offline society, unsavory characters always exist but when factoring in the global scale of the online society, strong ethics may be the only way to safely police the Internet. Forester and Morrison (1994) indicated that computer safety requires education in three principles: encouragement of more ethical behavior, better understanding of social problems brought on by computers and the digital age, and sensitivity towards computer-related moral dilemmas that will surface over the course of people's lives. Forester and Morrison viewed these principles from the perspective of a computer science program, and they believed that simply adding a required course on computer ethics to the curriculum was not sufficient to solve the problem. In actuality, they advocated that ethics should be integrated and be a recurring theme throughout all computer science courses. They recognized, however, that not all computer science professors possessed the preparedness to teach ethics in such a manner. Finally, Forester and Morrison noted that teaching ethics and morality was not a cure for all the ills of the virtual society but could significantly contribute to alleviation of many problems.

One of the most pressing issues in ethics has involved transitioning classical ethics theories into a less-defined environment:

- 1) it is logically argumentative, with a bias for analogical reasoning, 2) it is empirically grounded, with a bias for scenarios analysis, and 3) it endorses a problem solving approach.*
- ..4) it is intrinsically decision-making oriented.*
- ..5) it is based on case studies (Floridi, 1999, pp. 37-38).*

Although computer ethics follows three general guidelines of classical ethics in points one through three, it also utilizes the driving force of point four and the methodology in five. With the addition of the other two factors, it also uses the driving force of computer ethics built itself as a more applied version of ethics focusing more on real-world applications than a theoretical nature. According to Floridi (1999), this applied viewpoint of computer ethics, known as microethics, is the common viewpoint, and even though the moral implications created by computers have no non-digital equivalents little consideration goes into a theoretical component. Floridi believed that the classical theories will never fully satisfy all the conditions behind computer issues or may even risk placing computers in an anthropomorphic light. Brey (2000) supported the viewpoint that computer ethics focused heavily on application, but argued against Floridi who advocated that applied ethics could affect policies and practices if properly applied. Though applied theories require a foundation of theoretical ethics to function properly, they do not require the reliance on any particular type of ethical theory. In other words, a theoretical base used for digital piracy may not be applicable for hackers who would require the implementation of a different ethical theory. Brey also discussed applications of computer theory, noting that many seem to have ignored computer ethics' ability to solve a preexisting problem caused by a policy vacuum as well as to make the computer portion transparent so that only the ethical portion remains visible. In the case of

digital piracy, this would involve removing all the computer and technological components to boil the act down to outright stealing.

STUDENT ETHICS STUDIES

In one of the first studies on computer ethics and students, Slater (1991) revealed that "information systems and business students appear to worry less about computing ethics than do today's executives" (p. 90). He reflected on a study conducted at James Madison University where over half of 300 students between the ages of 19 and 45 had admitted to using computers for some form of unethical use including software piracy. Some students had indicated they would purchase at least one copy of a program and make copies for other computers they use with the hopes of promoting the product in the future, but they could not deny that piracy took place. Slater believed that ethics must be taught from an earlier age, and the younger the better but also indicated that partnerships between IT and students would be the only way ethics will actually be applied beyond academic coursework.

Slater (1991) identified an initial problem of students using computers for unethical reasons. In a study conducted by Athey (1993), the ethical beliefs of students were compared to those of experts in the field for the purpose of determining the ethics gap between the professionals and the students and determining curricula to fill the gap. In the study students were compared by gender, income (low, middle, high), and major (computer science and computer information systems). The experts were those professionals who first examined ethical scenarios in the computing field. Of 19 different scenarios presented in the survey, females and males disagreed with seven and eight of them respectively. By major, males and females disagreed equally with 10 scenarios each, and the economic groups fared about the same. Despite all the disagreements, there were seven scenarios where all student groups agreed with the experts. Athey (1993) concluded that the sce-

narios should be addressed in course curricula. Although this study was not directly focused on digital or software piracy, it did provide insight into students' ethical perspectives. If students act in unethical ways due to constant exposure, stronger ethics curricula should be developed for not only computer science or computer information services students, but for the entire campus population.

Leonard and Haines (2007) conducted a study in which they attempted to determine if any differences in ethical beliefs were present when students completing a survey alone or in a group. After completing the survey alone online at computer stations, the group was divided into smaller groups of five to nine depending on the size of the group being tested at the time and allowed to chat online with group members while taking the second survey. The results of the two surveys showed that the virtual group actually strengthened the responses. If the general response to a question was considered ethical on the individual test, the group test results leaned further towards ethical and vice versa. Though the main constraint in this study was the use of students rather than IT professionals with experience, this did provide evidence regarding the influence of group behavior on decisions.

Thong and Yap (1998) conducted a study to test the ethical decision-making process theorized by Hunt and Vitell's (1986) deontological-based model. Though they did not analyze the entire model, they found that the model adequately described the ethical decision-making process in Information Systems students (Liang & Yan, 2005). Shang, Chen, and Chen (2008) followed up on Thong and Yap's work by surveying students with a similar model. They provided a scenario and alternatives of varying ethical value alongside intentions based upon a seven-point Likert scale. They found that people who pay for the use of P2P systems feel less guilty about piracy even if sharing on the P2P system breaks copyright laws. They also came to the generally shared conclusion that piracy was rationalized by students and was not considered to be a problem to them. Shang et al.'s instrument, however, was flawed in that

it contained 110 items, many more than most students would want to complete.

DESIGN OF THE STUDY

The present study utilized quantitative methodology with a survey to obtain a number of descriptive statistics. The survey instrument was administered through a website on a personal, private server in order to improve safeguards against potential third-party tampering. By manually designing the webpage for the survey instrument, a correctly completed survey was guaranteed with a number of validation safeguards. The items themselves were based on (a) issues defined in the literature review and (b) an automated morality framework that questions if monitoring software could mimic human ethical behavior (Stahl, 2004). The finalized data were analyzed through SPSS software to obtain the needed results to answer the research questions.

The population consisted of the IT department's security officers for the 11 Florida State University System (SUS) institutions. Each IT department contained at least one administrator for each institution who was knowledgeable about the operation of copyright infringement detection software. Because IT departments were responsible for the deployment and maintenance of monitoring software, they were an ideal group to survey regarding the effectiveness of monitoring software.

The role of the IT department chief security officer or information security officer was relatively new at the time of the present study, but its importance has increased as universities became more connected with the digital age. Information security officers are in charge of determining university security policy and are at the forefront of the campus network's security. Their duties include but are not limited to incident management, policy development, forensics, risk assessment, and coordination with law enforcement (Goodyear, Salaway, Nelson, Petersen, & Portillo, 2009). They were the individuals who develop policies such as the University of Central Florida's (2009)

three-strike policy for P2P usage and make sure the policy was enforced. Furthermore, the information security officer also possessed the authority to monitor the network to ensure that all users followed campus policy and disconnect or restrict access to offending users.

Because of the small number of information security officers in the Florida State University System, the sample consisted of the entire population, making it a census. As a result, the census was representative of the Florida State University System, but not representative of all universities in the nation. A total of 10 sample points were taken rather than 11 because two institutions share the same Internet connection. Furthermore, a 100% response rate to the survey instrument was a requirement of the researcher in order to compensate for the small population.

INSTRUMENTATION

Considering this study was the first of its type, an original survey instrument was constructed. Due to the lack of prior research in this area, the researcher relied upon the theory of automated morality as a framework for the instrument. The theory of automated morality explores computer software as a moral agent, an entity capable of making moral decisions. According to Stahl (2004), a program would be considered a moral agent if it can pass the Moral Turing Test, a test that determines whether or not software could pass for a moral being by an independent observer. In the end, the amount of trust the information security officer instills in the monitoring software reflects to what extent the software serves as a moral agent and reflects the software's overall effectiveness.

Information security officers possess the authority to monitor the campus network and remove any offenders based on policies that the officers helped develop (Goodyear et al., 2009). The Common Solutions Group (2008) looked at three programs that scour the network for data transfers that contain copyrighted material. Realistically, the information security officer cannot spend the entire day

scanning the network for infringing material, so using an automated program to scan was a logical choice. The Common Solutions Group, however, based its analysis of the programs on infringements discovered and the ease of modifying the criteria. Furthermore, the software will also go so far as to restrict access to devices identified, one of the other main authorities of the information security officer. This led to the question of whether the software was capable of making ethical decisions in the same manner as an information security officer when handling network violations. The instrument consists of a web-based questionnaire. This method of surveying was chosen because web-based questionnaires provide a more enhanced method of presentation and collection than other survey methods. Although Dillman (2000) stated that web surveys may become problematic from a technological and computer penetration standpoint, the population was from a technologically-oriented profession, and such problems did not hinder the study.

The 36-item survey was divided into four sections. After the respondents logged in to the survey via credentials provided in an e-mail, they proceeded to answer questions in the first section geared towards the policy aspect of copyright monitoring software (Higher Education Act of 2008). The second, and longest, section (Items 8-20) of the instrument related to challenges to implementing monitoring software such as price, staffing/training, overall acceptance of the software, and relative effectiveness of the software. Section three (Items 21-28) explored the alternatives to monitoring software ranging from ethics, alternative programs and deals, or just stricter standards. Both sections two and three were designed using Likert scale questions. The final section inquired about demographics. As Dillman (2000) noted, demographic information is best left to the end of the questionnaire. The demographics section also contained a comment box for the respondents to add their own thoughts in order to further enhance the study.

Once the pilot data were obtained, a Cronbach's alpha test was performed to determine

the reliability and validity. An alpha level of .858 was obtained, showed a strong level of reliability, but was not the most accurate value due to the small sample. Furthermore, the actual study also suffered from this problem due to a low sample size.

DATA ANALYSIS AND FINDINGS

Figure 1 shows that all of the respondents stated students would resort to P2P once they left the restrictions of the university campus. Additionally, nine of them believed that students had little concern over the consequences of their actions. As to whether ethics would help stem piracy, the respondents were divided with four agreeing, five disagreeing and one remaining neutral. In regard to its impact on monitoring software, four respondents agreed and six disagreed that such action would lessen the need for monitoring software.

According to Figure 2, the respondents were divided in regard to whether legal alternatives such as downloads would encourage students to obtain goods via legal means. Seven of the IT security directors, however, believed that having more legal means of obtaining goods would decrease the need to find them illegally. Four respondents stated that their institutions were in the process of obtaining means of providing discounted goods. Five remained neutral on the issue.

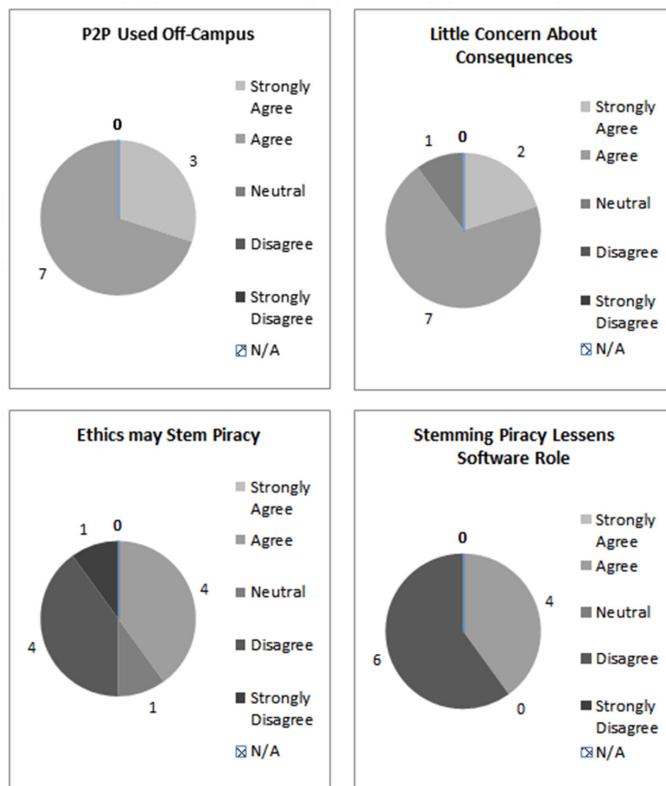
According to Figure 3, six of the respondents agreed that repeat offenders were rare occurrences. All but two agreed that students care more about their Internet connections than the act of piracy itself.

DISCUSSION

All participants responded to the items in this section completely and without use of the "Not Applicable" response, making the responses for the three variables more reliable. The first variable in question was the Ethics variable. It combined the opinions of a student's potential

unethical behavior with opinions about ethics as a solution. The responses for the two variables related to student behavior were almost unanimously agreed upon. All of the respondents felt that students would begin using P2P once they were out of the limitations placed by the institution. Furthermore, all but one respondent agreed that students had little concern over the consequences of digital piracy. Unfortunately, this type of behavior relates directly to findings from LaRose, Lai, Lange, Love, and Wu (2005) and situations such as the Tenenbaum Trial (Anderson, 2009a, 2009b). Even with all of the security measures in place, the students viewed it as a temporary block until they reached a site where they could download. All of the respondents had strong feelings about how students will act with and without P2P restrictions, but they were divided in regard to the effectiveness of ethics as a tool to combat piracy. Considering that researchers who had focused on student ethics advocated for it in some form (LaRose et al., 2005), this response was surprising. At the same time, ethics has not been perceived to be a stand-alone measure. It is possible that the responses acquired in the present research reflect this viewpoint. Colleges and universities have been known for teaching ethics and values to students as well as providing traditional academic curricula. Considering that digital piracy is an ethical issue, the fact that students refuse to change their opinions on the matter is somewhat alarming. Universities may need to consider treating digital piracy in a fashion similar to other popular educational topics such as drinking.

Respondents were divided in their opinions as to whether providing discounted legal goods would serve as a deterrent to piracy. Although researchers have found that some pirates illegally download in order to act out against the larger corporations, many simply pirate for the sake of pirating or for social reasons (Higgins, 2005). Since discounted legal goods may account for only one of these groups, it could explain the diversity of opinion in the data. When looking at legal downloads from a perspective of simply

Figure 1. Frequency for ethics sub-variables

cutting down piracy, most of the respondents were in agreement. This could be attributed to a belief that anything to reduce piracy would be effective to some degree. With some companies providing free or heavily discounted software, students who may pirate these programs for their personal use may reconsider. Those who pirate for the sake of pirating are less likely to be impacted by such options. Finally, the respondents were divided in their opinion as to whether a sufficient number of goods were available at discounted prices would impact on decisions to pirate. This difference could be dependent on the number of goods the institutions offered. In the case of the neutral and disagree responses, this could be a signal for these institutions to look into potential arrangements with major software vendors.

Finally, the impact of Legal Actions on piracy was examined. Most of the respondents agreed with the concept that students cared more about losing their Internet connections than any legal consequences that may result from the infraction. This also linked directly to respondents' perceptions that students had little concern over the consequences of their actions. This finding provided further support for teaching students more about the ethics and consequences of digital piracy and illegal downloading. Students who were caught downloading illegally tended to avoid a subsequent offense at the majority of the institutions. Although a student not involved in a second offense is a positive notion, it is unclear if the student truly learned anything from what transpired. The student could easily have decided to go

Figure 2. Frequency for legal alternatives sub-variables

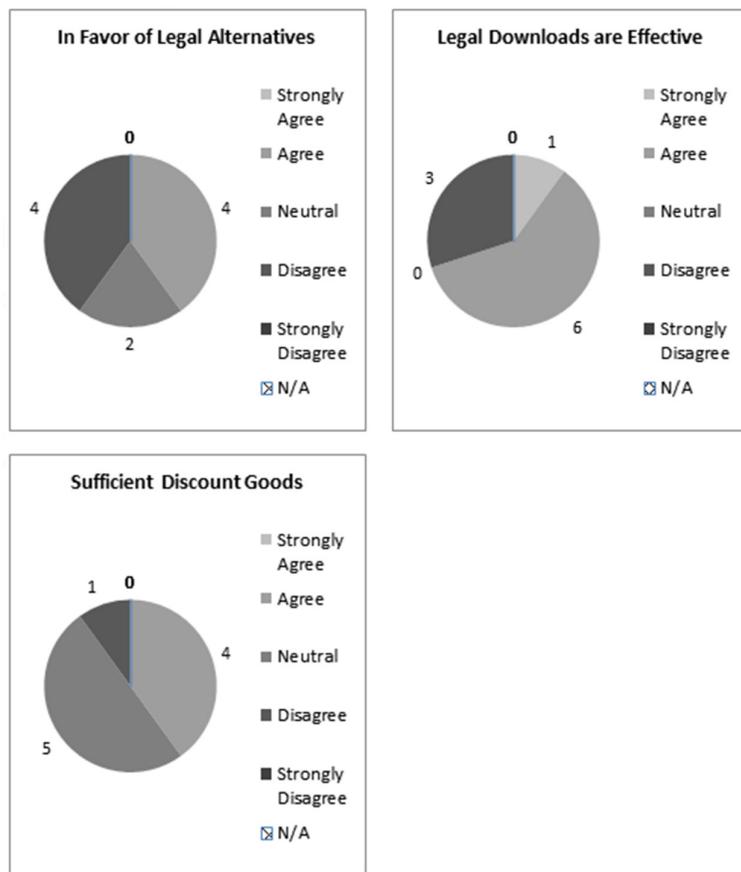
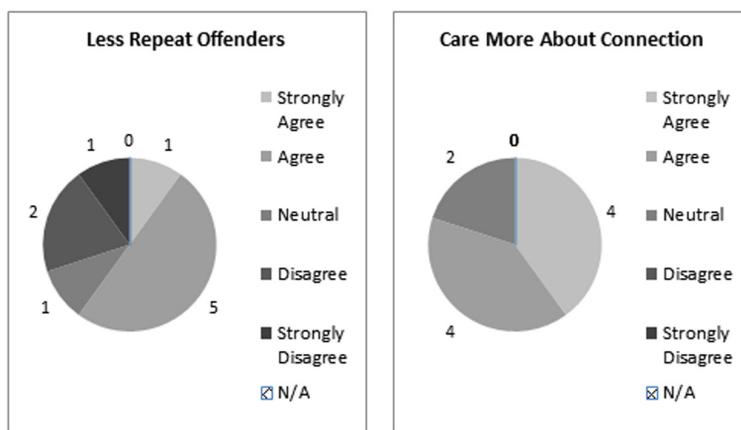


Figure 3. Frequency for legal actions sub-variables



off-campus for any P2P needs, counteracting any teachings from what transpired. Since there is no way to track students after they leave the campus, finding a method to address this situation would be difficult.

SIGNIFICANT FINDINGS

The institutions were unanimous about students utilizing P2P off-campus outside of the eye of the software, and that students held little concern over the consequences about piracy. This would imply that in the long term, software has been relatively ineffective in changing the habits of students. Considering that many authors advocated for the importance of ethics, the division of opinion was unexpected. It could mean that while important, ethics has not had the intended impact that the researchers were expecting (LaRose et al., 2005). It could also mean that implementation of ethics in an institution is difficult and may be costly in the long run. Considering that most of the solutions used to combat piracy have not been directed to content monitoring, the disagreement with the role of software being lessened makes sense. There are still other security issues prevalent in a campus network such as network attacks through open ports that the current solution still combats.

IMPLICATIONS FOR PRACTICE AND POLICY

Though ethics may be one of the keys to solving the piracy problem, teaching ethics may be problematic. One institution banned servers after their numbers became problematic. There were teaching attempts, but those attempts did not get through to the students. If an ethics program is constructed, it must be able to do more than simply inform about ethics. In most cases, informational intervention tactics are the easiest to conduct but are the least effective. At the same time, ethics is neither tangible nor concrete. This forces the material to stay in an informational state and be open for interpreta-

tion. As shown in the review of the literature by Edgar (2003), ethics can take a variety of viewpoints. Even when narrowing the discussion to computer ethics, there has been considerable debate on the proper way to handle ethics. One potential solution to this conundrum involves combining both applied computer ethics and theoretical ethics. By blending the two types of ethics together, a better understanding can be achieved. Theoretical ethics provide the basis for why piracy is perceived as immoral while the applied computer ethics provide a way to show how the concepts work in a real-world situation. Considering that there are a plethora of ethical theories, by selecting the theories that best highlight the viewpoints of both sides of the piracy debate students could understand pros and cons to the reasoning behind the pirates and the corporations. This may also lead to students obtaining a better understanding of the issues behind piracy and allow them to make more educated decisions when they encounter a piracy situation.

CONCLUSION

Digital piracy is a problem that may never disappear from society. As long as people want to obtain music, movies, and software without paying for it, there will always be someone on the Internet to provide it. Furthermore, colleges and universities will always be one of the major outlets of digital piracy because of their advanced network resources. Despite digital piracy being a global phenomenon, a combination of the extensive resources and the typical college student's lack of funds makes it more lucrative for a student. Even before programs such as Napster made the act of piracy relatively easy, the type of student who would engage in piracy remained generally unaltered. Pirates have always been predominantly computer-oriented majors or students with a high level of computer knowledge.

With students abiding by the rules when they are on campus and disregarding them when they leave, it implied that future research should

begin to look at more long-term solutions such as ethics in order to ensure that students will learn and accept the truth about digital piracy and uphold these lessons when they leave the institution. It was also implied that IT departments will need to be properly funded in order to ensure that the institutions can stay up-to-date on their systems since any of the current technology may be circumvented (EFF, 2006). Although digital piracy is a problem, methods to appropriately mitigate the damage do exist. Proper implementation and prevention of these methods, however, will require cooperation from all parties.

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Jeffrey Reiss is a Systems Analyst at the University of Central Florida (UCF). He holds a BS in Statistics, an MS in Statistical Computing and Data Mining, and an EdD in Higher Educational Leadership, all from UCF. Dr. Reiss also serves as an adjunct professor of Statistics at Seminole State College and works as a private statistical consultant, assisting students and organizations in need of methodology and survey support in education and the social sciences. His research interests lie within the realm of technology in higher education, whether related to prevalence, usage issues, or its effects on students and faculty.

Rosa Cintrón is an Associate Professor at the University of Central Florida, Department of Educational and Human Sciences in the College of Education. Her first career was in the mental health field working as a Bilingual Psychotherapist in Puerto Rico, Connecticut, and New York. Her academic career started in the early 1980s in SUNY/College at Old Westbury. Since then she has occupied various positions as staff, administrator and faculty in the states of Illinois and Oklahoma. She is the past chair of the NASPA Faculty Fellows and holds various other leadership positions in professional associations. Her latest book, College Student Death: Guidance for a Caring Campus (co-authored with Erin Taylor and Katherine Garlough) has been listed among the most important academic resources dealing with crisis intervention. Her expertise is in the area of access, retention and issues of social justice in American colleges and universities.

Boys with Toys and Fearful Parents? The Pedagogical Dimensions of the Discourse in Technology Ethics

Albrecht Fritzsche, Technical University of Darmstadt, Germany

ABSTRACT

Based on recent complaints about the neglect of the human in the philosophy of technology, this paper explores the different ways how technology ethics put the relation between the human and the technical on stage. It identifies various similarities in the treatment of the human in technology and the treatment of the child in education and compares Heidegger's concerns about the role of technology with the duplicity of childhood and adulthood in conflicts of adolescence. The findings give reason to assume that technology ethics and pedagogy are closely related. A brief review of selected topics in technology ethics illustrates exemplarily how a pedagogic interpretation of the current discussion can contribute to further progress in the field.

Keywords: Adolescent Conflicts, Childhood and Education, Existentialism, Foundations of Technology Ethics, Heidegger, Philosophical Anthropology

1. THE ROLE OF THE HUMAN FOR THE DISCUSSION IN TECHNOLOGY ETHICS

Despite all progress in the field during the last decades, it often remains the biggest challenge for studies in technology ethics to explain why they are necessary. Economic interests already exert a strong selective pressure on the development of technology that forces tools and machines to become more efficient and better adapted to the needs of their users. Ethical approaches only seem to add another dimension to the decision making process about technology.

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In the eyes of many engineers and managers, they are more likely to complicate the situation than to improve it. In order to make clear that the creation and use of technology requires further attention, ethical approaches have to address the implications of tools and machines for human life beyond the horizon of efficiency, usability and convenience. Technology ethics, like any other kind of ethics, can therefore not be reduced to the study of a certain phenomenon. Implicitly or explicitly, it always includes a general reflection about the human condition. The anthropological aspect of technology ethics currently does not seem to attract a lot of attention, but it would be wrong to assume that it has lost its importance.

For Ernst Kapp, technology is a consequence of the fact that human beings, unlike any other animal, are not bound to a certain form of life. They use tools and machines to expand and transform their bodily functions. Similar to Aristotle, Kapp describes technical devices as a projection. They expand, enhance or replace the function of natural organs (Kapp, 1877, p. 41, cf. Micham, 1994). The hammer increases the force of a hand, the microscope improves eyesight and the telephone extends the distance in which a voice can be heard. With reference to Hegel, Kapp describes technical progress as a dialectic movement (Kapp, 1877, p. 124). The projection of natural organs to technical devices allows the recognition of the potentials of human nature. By watching technology from a distance, the consciousness realizes how powerful it is and it also gains insight into the responsibilities to use its power in the right way. If, however, the human is not considered as an unbound, but instead as a needy being, the line of conclusions changes direction. Technology does not appear as a projection of organ function, but as an aid to overcome deficiencies (Linton, 1936). Human beings rely on technical devices to survive in the world. They use clothing, weapons or fire to make up for missing fur, claws and bad adaptation to climate and vehicles, houses and other aids relieve them from too much strain (Gehlen, 1980, p. 8). With the creation and use of tools and machines, humans try to overcome their weaknesses, alienating themselves at the same time from their real nature (Freyer, 1955). Looking at technology this way, it is essential to make sure that technological progress remains adequate to the necessities of human existence, moving the focus of technology ethics from strategic and organisational considerations of what should be done with technology to the critical analysis of its implications for human life.

Ethical reflections about the usage of tools and machines have a long tradition, going back to Plato, Aristotle and ancient mythology (cf. Hubig, 2000). Nevertheless, it was not until the late twentieth century that technology ethics – or Technoethics, as Mario Bunge suggested to call it – started to evolve into a separate field

of research (cf. Bunge, 1977). The topics of technology ethics are quite diverse, ranging from surveillance and ubiquitous computing to intellectual property and artificial life. Due to the different expertise required to work on these topics, research in technology ethics is usually a quite interdisciplinary activity, involving full-time philosophers and ethicists as well as scientists and engineers (cf. Luppicini, 2009). As a result, technology ethics has become a very heterogeneous field with many separate lines of discussion. All contributors claim to be concerned with technology. Their perspectives, however, are so different that it is hard to say if they are really talking about the same thing, particularly if the public forces them to assume very specific roles in the discussion. Advocates of free access to the internet, for instance, imply that technology is beneficial to the human and everybody should have access to it, while many critics of bioengineering argue on the basis that technology poses a threat nature. This disparity in the treatment of technology can be explained by differences in the anthropological foundation of the arguments. The single lines of discussion in technology ethics, however, are rarely confronted with this disparity, because they remain within the context of one topic. For them, there does not seem to be much need to consider the role of the human element in technology. Many philosophers consequently do not include the people involved in the creation and use of technology in their research.

According to Joseph Pitt, the “failure to include the decisions and actions of the appropriate individuals results in philosophical accounts that appear isolated from the remainder of the philosophical conversation, and this is often why philosophers have been seen as having failed to provide an adequate account of technological issues” (Pitt, 2000, p. 66). The exclusion of the anthropological element from the study of technology is mistaken for an outside look at technology. In reality, it is just a neglect of the point of view from which technology is approached. Instead of helping us to understand technology, it contributes to the formation of certain attitudes towards it (Pitt, 2000, p. 70),

making it practically impossible to reconcile the different positions in the debate, because the underlying conflict is not recognized to be related to the conception of the human element in technology. In order to overcome this obstacle, it is necessary to step back from the discussions in the field of technology ethics and to take a look at the setting in which the relation between the human and the technical is put on stage. The following pages explore the hypothesis that this setting actually reflects the double nature of human existence on earth: as a child and as an adult.

2. THE DUPLEXITY OF CHILD AND ADULT AND THE CONFLICT OF ADOLESCENCE IN MODERN SOCIETIES

Many of the current ideas in the debate about technology can be traced back to Friedrich Hegel. Hegel never considered technology as a philosophical topic. His portrayal of the conscience in the process of becoming, however, has laid the groundwork for the studies of technical progress in the following centuries and his description of the dialectic relation of means and ends in human action is a common element in contemporary theories about the role of technology in human life (Hubig, 2006, pp. 71, 113). Hegel's writings are based on the study of an individual mind, but he did not just think of the individual as a single human being. Quite in the contrary, Hegel was rather interested in the cultural history of the world in general, which he studied as if it was one person. Narratives of technical progress tend to proceed in a very similar way. They describe the beneficial or detrimental effect of technology on human life, as if it was the life of one individual. Technology, however, affects a succession of different individuals with different expectations, convictions and abilities. Referring to all these people as one person only presents one possible way to study the implications of technical development. Every one of us is affected by technology in a different way and

within a different period of time. If mankind is considered as one individual living on this planet since the Stone Age, phylogenesis is blended with ontogenesis. As individuals, we do eventually not have much choice other than to approach the world on the basis of personal experience. One can therefore say that phylogenetic studies always have to go through an ontogenetic filter. Nevertheless, it is important to understand that the treatment of humanity as if it was one person is a reduction.

With this background, it is interesting to note that treatment of the human by Kapp and Gehlen shows many parallels to the treatment of children in modern education. Since children have not finished their physical and mental development, they are not yet able to perform like adults. As compensation, childcare institutions protect children from exposure to adult life and provide an environment appropriate to their age. According to the UN convention on children's rights, countries also have to assist children in matters like family conflicts, social security and health or the representation of their interests before the law (Verhellen, 2000). The convention also states that the education of children should be directed "to the development of a child's personality, talents and mental and physical abilities to their fullest potential" (art.29). Inasmuch as childcare and education compensate for deficiencies, relieve the pressure of adult life and enable children to develop, they have the same role for the individual human being that, according to many philosophers, technology has for humanity in general. In this sense, one can therefore say that the philosophy of technology has translated pedagogical motifs to the phylogenetic level. The contrast between the approaches to technology in terms of enablement on the one hand and in terms of compensation on the other mirrors an ongoing conflict in education. While some say that it is necessary for children to learn as much as possible to lead a successful life, others emphasize that too much learning can have a detrimental effect on children and that education has to be appropriate to their individual needs.

If mature individuals are at the same time immature members of a developing society, they can be treated both as adults and as children. This paradox has always been part of human existence. The engagement of human beings in philosophy gives the best evidence for the fact that adults continue to consider themselves to be unknowing, incomplete and growing, despite their maturity. Interestingly, the opposite has also been true for many centuries. Until the eighteenth century, it was more or less understood that children participated in adult life. The sensitivity for the differences between children and adults was much lower – a fact that is, for example, illustrated by the portrayals of children in old paintings. The proportions of the body, the extremities and the face are similar to those of an adult, ignoring the changes that take place during in physical development of an individual. Children look like smaller versions of adults and there is evidence that they were also treated in this way. They had for the most part the same social responsibilities as anyone else; in particular, child labour was a common phenomenon (Cunningham, 1990). The modern perception of childhood as a separate phase in human life in which different rules applied than in adulthood first gained popularity through the pedagogical approaches of the enlightenment (cf. Nash, 1970). The increasing exploitation of children in the economies of the industrial revolution added significantly to its momentum. Ellen Key's proclamation of the century of the child in 1900 can be considered as another milestone on the way of pedagogy into public conscience (Key, 1909). In the twentieth century, the idea that children needed special treatment had become common sense.

This changing perception of childhood was accompanied by the growing awareness for adolescence as a phase of conflict (Hall, 1904). With the reduction of child labour and the expansion of the educational system, young people remained longer in a state of economic and intellectual dependency. As a consequence, they experienced the reaching of personal maturity without being able to finish the transition to adulthood. Up to this point, the term adolescence

had been used as a synonym for growing up or maturing. Now it became a description of the phase in life in which young people are stuck somewhere between childhood and adulthood, belonging to both at the same time. Inasmuch as the prolongation of the economic and intellectual dependency of young people is a symptom of the increased separation between childhood and adulthood, the conflicts of adolescence can also be described as a result of change in the perception of the child. As long as the child was in general considered as an adult in transition, the conflicts of this process were already an inherent part of the child's existence. When childhood and adulthood were increasingly perceived as two exclusive phases in human life, the transition between both turned into a separate process. Childhood now actually had to be left to become an adult. The fact that adolescence became a painful and controversial experience is in many ways evidence for the fact that the exclusivity of childhood and adulthood that modern societies implied is only superficial.

3. HEIDEGGER'S PHILOSOPHY OF TECHNOLOGY AS A REFLECTION ABOUT INCOMPATIBLE POINTS OF VIEW

Approaches to the philosophy of technology that start with describing a need of the human for improvement seem to base their understanding of technology on an anthropological reflection. They assume that technology answers to human nature. However, the talk of an enhancement, expansion or replacement of natural organs by technical devices only makes sense if the organs themselves already have the characteristics of tools or machines. In order to improve human nature, it is first of all necessary to consider it improvable. More than anybody else, it was Heidegger who made clear that anthropological approaches to technology are therefore in fact technological approaches to humanity (Luckner, 2008, p. 34). Technical functioning, one can say, provides the framework for the

discussion of the human condition. With the idea that technology can free the human from natural restrictions, the human becomes an object of technical reflection.

Speaking of the human being as a victim of technology is very popular in technology ethics. Critical approaches in Marxist tradition, for example, use Hegelian ideas to diagnose a dissociation of the means from the ends in modern technology and a consequential loss of authority for the individual; or they study the structural influence of technical systems on the way human thinking proceeds and the attempt to overcome it in the mode of a negative dialectic and free discourse. It is a common mistake to think that Heidegger's approach is based on the same premise. His argument, however, proceeds on a more fundamental level. From Heidegger's point of view, the danger of technology does not lie in the way it is treated. Unlike Horkheimer and Adorno, he does not think that reason has to be saved by reason (Adorno & Horkheimer, 1979; Dallmayr, 1991). Quite in the contrary, Heidegger believes that the reliance of modern societies on instrumental reason is itself the problem. In that sense, Heidegger's argument about technology is directed against Hegel. He wants to overcome the dominance of instrumental reflection through means and ends in the relation of the human being to the world. For Joseph Pitt, Heidegger's philosophy is exemplary for an approach that diverts the discussion away from the study of technological issues (Pitt, 2000, p. 67). Heidegger has moved the philosophical interest in technology to the fundamental role that it plays for the way we relate to the world and to ourselves. In a time where electronic devices have penetrated practically every human activity, his approach seems to have become more important than ever before. It remains unclear, however, how the awareness of the ubiquitous involvement of technology in human life affects decision making about technology. With Pitt and many others, we have to ask if Heidegger's concerns about technology have really contributed to progress in the field, or if they have just popularized a social criticism that makes us uneasy about technical progress (Pitt, 2000, p. 71).

One of the most crucial parts of Heidegger's argument against technology is his comparison between the work of modern technicians and the work of a silversmith in ancient Greece (Heidegger, 1977, p. 6). Heidegger uses the example of the silversmith to point out the shortcomings of the way modern societies relate to the world with technology. The reading of this example plays a critical role for the understanding of the alternative that Heidegger has in mind. Roughly speaking, Heidegger claims that the silversmith understood his work as bringing together the different causes that are responsible for something being in the world. Modern technicians, on the other hand, identify their work with the application of technical devices that carry out a determinate operation. The decision to apply these devices already anticipates the outcome of their operation. Heidegger is concerned about technology in modern societies, because it forces things to appear in a certain way. Technology has become an "enframing", a structure that puts nature into the harness of our means and ends. The problem of this comparison is that the accounts of the way the silversmith proceeds and the way modern technicians proceed do not seem to fit together. According to Christoph Hubig, Heidegger confuses technology in ancient Greece with a conceptualization of technology in Aristotle's theory of action (Hubig, 2006, p. 102). What Heidegger describes as the thoughts of the silversmith at work are in fact reflections about its meaning. When it comes to the application of an instrument, there is no difference between the silversmith and a modern technician. Ever since the Neolithic Revolution, when humans started to use natural objects systematically as tools, technology has always been an enframing, a system and a challenge to nature (Hubig, 2006, pp. 37, 103). The silversmith therefore does not represent an alternative to the way modern societies relate to the world with technology. Nevertheless, Heidegger's argument can still help us to get a better understanding of what has changed in the last centuries, if we consider it as a complement to the object of his concerns. Heidegger is by far not the only one who is dissatisfied

with everything we can accomplish with technology today. Strong reservations about technology are just as much a characteristic of modern societies as the penetration of human life with uncountable technical devices. What makes ancient Greece and the modern world in Heidegger's argument different is not the way humans relate to the world through technology, but the way they deal with the conflict between being involved with technology and being apart from it. While the silversmith seems to have been able to resolve the tension between the two positions, Heidegger argues against an involvement with technology that is so comprehensive that it does not leave space for such a resolution. The two positions have become fundamentally incompatible.

The previous sections of this paper have shown how the relation between the human and the technical is put on stage in the reflection of technology as an improvement to human nature. This staging has been connected to childhood as a state of growth and development. Heidegger changes the setting to a more fundamental level. The contrast between involvement in technology and being apart from it shows similarities to the contrast between childhood and adulthood as a state of completeness and saturation in which progress is not relevant. In previous centuries, human beings often found themselves in both states at the same time, able to make decisions and still subjected to a divine plan, wise and naive, powerful and exposed, free and equal but also enslaved. The natural order remained stable despite technical development. With the dawning modern age, the duplicity of a fixed state and a continuous development turned into a painful experience, embodied in adolescent conflict. In many ways, Heidegger's concerns about technology resemble the concerns of adults about the immaturity of their children. If they are mistaken for the concerns of an older generation about a younger generation, the Heideggerian approach becomes very susceptible to social criticism. Heidegger, however, does not speak about the decline of moral values or competences through technical progress. He

addresses different human perspectives. With the motif of the incompatibility of childhood and adulthood in modern societies, this may become easier to understand.

4. PEDAGOGICAL INTERPRETATIONS OF THE DISCOURSE IN TECHNOLOGY ETHICS

Pedagogy is the scientific reflection of education. It studies the question how human beings should be treated to bring about a change that is beneficial to them. This question has a normative and a technical quality. It therefore does not receive a lot of attention among philosophers who engage in the study of the human condition in general. According to Pitt, however, the discussion about technology is often diverted away from the general philosophical discourse. After everything we have found out so far, there is good reason to believe that it has turned from philosophy to pedagogy. Because of the disregard for the human element in technology, this turn has so far remained unnoticed, but a look at the staging of the human and the technical in the discussion makes it easy to bring it to light. The questions that are raised in technology ethics are in many cases very similar to the question of pedagogy. They are concerned with the human as a developing being and the influence of external structures on its direction. They study different artefacts that bring about change through their effect on the human and the appropriateness of this change to the human condition. On a deeper level, both pedagogy and technology ethics are confronted with the duplicity of the developing and the saturated human being – and the exclusiveness in which modern societies seem to approach it in terms of the first (cf. Freire, 1997; Giroux, 1992). Saying that technology ethics are a form of pedagogy certainly does not do the field justice, but there can hardly be doubt that they are closely related. It therefore sounds conceivable that we can gain further insight into many discussions in

technology ethics by treating them as if they were pedagogical discussions.

If, for example, the current controversy on surveillance, data mining and data profiling is considered from a pedagogical point of view, it assumes a new dynamic. The surveillance of infants and small children is hardly questioned. Quite on the contrary, adults are morally obliged to keep track of everything they do in order to minimize the possibility of an accident. Children are, in that sense, constantly under suspicion and have to earn the trust of their caretakers before they are left alone. Arguing against the permanent surveillance of children is very difficult. It is possible to assume that the surveillance has a potentially detrimental effect on them, because they never learn to be on their own or because adults might abuse their power. These assumptions, however, only seem to address technicalities of the way the surveillance is performed and controlled. Arguments about human dignity are applicable to the surveillance of adults (Haggerty & Samatas, 2010), but when it comes to children, trading safety for dignity seems highly problematic. It is very difficult to apply the same standard to adults and children on this aspect (Korczak, 1992), and this may be the reason why surveillance is such a critical issue. Thinking about the human in terms of development and change allows tradeoffs between different rights of the individual over time and disrupts the idea of general equality. Pedagogy is constantly confronted with this problem. What we can learn from Janusz Korczak is the importance of sharing the position of those who are unequally treated to make the impact of this treatment at least partially bidirectional (Joseph, 1999).

The discussion on remote warfare using radio controlled robots and drones connects to various different fields of research in technology ethics (Singer, 2009; Royakkers & van Est, 2010). One of them is media ethics, a field that can in many respects be said to have originated in pedagogy and that often falls victim to the so-called third-person-effect (Davison, 1983). Scholars usually describe how the usage of technical devices affects others, but not themselves,

creating another inequality in the treatment of the human that commonly results in cries for censorship and the abolishment of certain lines of technical development (Perloff, 1993). From a philosophical point of view, this phenomenon points once more to the incompatibility between the conceptions of childhood and adulthood in modern societies and the misinterpretation of this problem as a generation conflict that leads towards social criticism. Similar to schools that are often the last to adopt a new technology, technology ethics therefore often miss the chance to have a formative influence on the development and reduce themselves to belated critical reflections. In the particular case of remote warfare, the scholars in technology ethics therefore have to ask themselves to what extent they are willing to participate in the activities in the military sector instead of watching it from a distance.

A pedagogical interpretation of artificial intelligence can be helpful to identify the different controversies that are mixed up in the discussion. On the one hand, the creation of intelligent machines can be interpreted as an educative measure that gives us better insight into ourselves and guides us towards intellectual maturity. This point of view is contradicted by Hubert Dreyfus and others who say that research on artificial intelligence turns the development into the wrong direction and that it is inadequate to the human, or, more generally, that it is not justified to speak about human development in these terms at all (Dreyfus, 1992). On the other hand, the discussion about artificial intelligence also expresses doubts about the maturity of the people involved in it (cf. Weizenbaum, 1984). Depending on the point of view, either all scientists or the managers in contrast to the engineers are accused to be irresponsible and naive, leading to the question whether those involved in the creation and use of technology need more education. This question is in many respects essential to the whole field of technology ethics, illustrating once more its proximity to pedagogy. With the assumption that machines are in fact on the way to develop a consciousness, research in artificial intelligence gains

another pedagogical dimension. The machines that engineers create can be interpreted as their children. This thought makes it possible to look at the responsibilities of engineers from a different angle and to ask if it is necessary to talk about the moral enablement of machines.

5. CONCLUSION AND OUTLOOK

In many ways, it is surprising that philosophical studies of technology focus so much on adults. Technology does not come into our lives when we reach maturity. Most of us probably got acquainted with technical operation at a much earlier age, when we played with wooden blocks, model cars and plastic hammers. The first experiences with technology take place in nurseries and children's rooms, where infants learn from their toys how tools and machines work. The presence of their parents or other adults reassures that the technology can do them little harm and encourages them to engage in it. Without much need to consider its consequences, children can treat technology in a playful manner and enjoy it; and it does not seem unreasonable to assume that these experiences shape the attitude towards technology for life. There is a general connection between the notion of using tools and machines and being childish. The playing child is a recurring motif in public debates about technology. It is used to describe the behaviour of irresponsible managers who ignore technical risks and reckless engineers who do not think of the impact that their work will have on the world. Ignorance for technical risks is often explained by immaturity and soldiers who use advanced weapons are said to treat warfare like a computer game. Another popular topic of conversation is that grown-up men behave with their cars like boys with their toys. Women show similar tendencies when it comes to what is called social technology, for example when mothers dress their children like puppets. On a more general scale, supporters and critics of technical progress mutually accuse each other of being naïve, hanging on to fairy stories instead of real fact.

References to childish behaviour are not necessarily beneficial to an adequate understanding of technological issues. They can easily be abused to discredit a point of view which is worth considering. Nevertheless, this paper has identified so many different ways how the discourse in technology ethics can be related to the pedagogic discourse that it seems quite clear that role of childhood deserves to receive more attention. Being attentive to the duplicity of the human as a child and an adult can be beneficial to technology ethics in various ways. First, it can bring the involvement of the human in technology to light; second, it can explain why it is so difficult to reconcile the positions in the discussion; third, it can refine the distinction of different points of view; and forth, it can help to find new approaches to decision making about technological issues. In short: it can help us to develop a better understanding for our own work and to keep it on the right track.

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Albrecht Fritzsche graduated from Albert-Ludwigs-University in Freiburg with degrees in Mathematics (Diplom-Mathematiker) and Educational Science & Philosophy (Magister Artium). He worked for many years as a technology consultant in the automotive industry. He received a doctoral degree in economics from Hohenheim University, Stuttgart, and another one in philosophy from the Technical University of Darmstadt. His doctoral dissertation in economics studies heuristic methods of decision support for industrial planning activities in complex networks. His doctoral dissertation in philosophy is concerned with indeterminacy in technical systems. His current research interests include intellectual property rights, knowledge management, narratives of progress and the cultural foundations of technical expertise. In addition to his academic activities, he continues to work as a consultant in Germany and abroad.

Without Informed Consent

Sara Belfrage, Royal Institute of Technology, Sweden

ABSTRACT

The requirement of always obtaining participants' informed consent in research with human subjects cannot always be met, for a variety of reasons. This paper describes and categorises research situations where informed consent is unobtainable. Some of these kinds of situations, common in biomedicine and psychology, have been previously discussed, whereas others, for example, those more prevalent in infrastructure research, introduce new perspectives. The advancement of new technology may lead to an increase in research of these kinds. The paper also provides a review of methods intended to compensate for lack of consent, and their applicability and usefulness for the different categories of situations are discussed. The aim of this is to provide insights into one important aspect of the question of permitting research without informed consent, namely, how well that which informed consent is meant to safeguard can be achieved by other means.

Keywords: Advance Directive, Debriefing, Informed Consent, Proxy Consent, Research Ethics

INTRODUCTION

Research where human beings are involved as objects of investigation may be of many different kinds. There is wide agreement that no such research should take place without the practice of informed consent, in order to ensure that all human research subjects participate voluntarily. However, it is not always possible to obtain informed consent. This has been acknowledged in particular for research of some kinds, typical of biomedicine and psychology, while the absence of informed consent in other kinds of research has been largely ignored, or at least under-analysed.

The latter kinds of research are more common in fields such as infrastructure research, and may be increasingly important due to the advancement of new technology facilitating

surveillance as well as the collection and handling of large amounts of data. This situates the problems investigated in this contribution within the scope of the growing field of technoethics.

The present paper produces an overview and categorisation of research on humans where informed consent cannot be obtained, based on the reason why informed consent is inapplicable. These reasons are that (1) providing information to participants is counter-productive to the research at hand, (2) prospective participants lack decisional capacity, (3) it is excessively costly to ask for consent, and (4) the collective nature of the study rules out voluntary participation. Again, some of these – the first two categories – have previously been extensively discussed in the literature whereas the other two, have received much less attention. These last two kinds of cases also bring problems to light that are significantly different from those of the first two.

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Of course, an important question becomes whether research should be permissible without informed consent, when the necessity of consent is commonly so strongly insisted upon. At least three aspects are of relevance for answering that question, namely to what extent the lack of informed consent can be compensated for, the scientific value of the research and the risks that research participants are exposed to. This paper treats the first of these, by reviewing methods proposed as substitutes for informed consent. These methods are arranged into five groups: (A) provision of information without consent, (B) consent based on partial information, (C) advance directive, (D) proxy consent, and (E) collective decision making. It will be discussed for which types of situations each group of methods is applicable, and how well they compensate for the lack of informed consent. Furthermore, it will be pointed out what the merits are of these methods, merits that are not restricted to how well they compensate for the lack of informed consent.

SITUATIONS WHEN INFORMED CONSENT IS NOT APPLICABLE

Informed consent is commonly viewed as a necessary but insufficient condition for permissible research where human beings are involved. It is necessary in order to ensure that people do not participate in research against their will. It is insufficient because people should not participate in research projects that do not pass the scrutiny of research ethics committees (ascertaining, in addition to participants' consent, that they are not exposed to great risks of harm, do not participate in projects with low scientific value etc.) *even if* they would accept to participate in such research.

The aim of informed consent is to ensure that a person who participates in research does this *because* she wants to do so. The best way to achieve this is to make sure that she herself decides whether to participate or not. In order for such a decision to constitute valid consent, it must contain three elements: information,

decisional capacity¹ and voluntariness. The information element is relatively straightforward: it means that the subject must have all relevant information available. There is, however, a tension between the view that potential research participants must in fact assimilate the information provided,² and the view that it suffices that the information is offered – the potential participant may or may not choose to take it all into account (Beauchamp & Childress, 2001; Hayry & Takala, 2001). The latter of these views is favoured in this paper. The element of capacity is more complex; it means that the subject must be able to understand the information, to form a will and to make decisions in line with that will. Furthermore she must understand that she is making such a decision, and *perceive* this decision as voluntary. She must not, for instance, believe there to be anyone threatening her to participate or that she is ruled by some superior force etc. Finally, in order for her capacity to decide to be effective, she must be able to communicate her decision to others. The element of voluntariness means that there must not only be perceived, but also de facto voluntariness. This includes the absence of threats or undue inducements making the subject accept participation. Furthermore, the person must not be outright forced into participation through the decisions of others or by the exclusion of all options other than to participate.

So, informed consent serves the laudable purpose of ensuring that people who participate in research do so because this is what they, and not (merely) others, want.³ In some research situations, however, informed consent cannot be used. In this section, four categories of cases will be described where informed consent is impracticable.

Category 1: Providing Information is Counter-Productive to Research

The first category consists of situations where informed consent is impracticable because informing potential research participants renders the research project impossible, or at least meaningless. These are cases when the

authentic behaviour of individuals is the object of investigation, and it is reasonable to believe that letting people know that, or in what way, they are being studied would alter this behaviour (consciously or unconsciously – the result remains distorted regardless of which). This would make the research outcome unreliable, perhaps even useless. This category includes cases where people cannot be informed about the mere fact that they are being observed, as well as cases where people know that they are being studied but not the purpose and layout of the study.

Studies of this kind are common in psychology and sociology. A famous example is Stanley Milgram's (1963) obedience study. Examples can also be found in other areas, such as traffic research. One example is a study of people's willingness to participate in car pools.⁴ The researcher put in an advertisement in a newspaper, pretending to be a citizen looking for others interested in starting a car pool with him. He reasoned that if he had written in the ad that the aim was to investigate the response to such an ad, fewer – or maybe even other – people would have replied.

Other examples from the traffic field are when people's driving behaviour (e.g., stopping at red lights, not exceeding speed limits) is studied.

In one case of this type, from the medical field, patients were asked to consent to a follow-up after a stroke, but not to randomisation into two groups (Dennis, 1997). The purpose of the study was to measure the effects of contact with a "stroke family care worker", which one group was offered. The researchers suspected that if patients and their families were informed about the potential help from the care worker, and then randomised into the control group without any such contact, they would feel disappointed and worse than if they had not known about the possibility of the care worker. In other words, full information to the patients was believed to endanger the scientific quality of the study.

Category 2: Prospective Participants Lack Decisional Capacity

In the second category, informed consent is impossible because the potential participant lacks decisional capacity. People can lack decisional capacity in different ways and to different extent.⁵ An infant is much further away from having this capacity than an older child or an adolescent, individuals can be more or less mentally impaired, and they can suffer from milder or more severe dementia.⁶ Some lack this capacity in general, such as mentally impaired persons, whereas others only lack it in certain respects, like in cases of phobias.⁷ There is also a distinction to be made between persons who possess the capacity under normal circumstances but lack it temporarily because they are unconscious, and those whose normal condition is to lack the capacity.

Furthermore, there are variants with regard to the temporal duration of the incapacity. The most important distinction is between those who have never had the capacity and those who had it at an earlier point in time. Children and many mentally impaired persons are examples of the former, while the temporarily unconscious and people with dementia are examples of the latter.

A distinction can also be made between those who are expected to eventually (re)gain the capacity, such as children, people whose incapacity depends on a treatable condition (including people who are temporarily unconscious) and those who will not have the capacity in the future, such as permanently injured or demented persons.

It is a common standard to try to avoid including persons lacking decisional capacity in research. Some research, however, cannot be performed on other participants, such as research on medical treatments for children.⁸ Emergency medicine is another example. Clinical research on temporarily incapacitated patients is essential for the improvement of treatments of acute illnesses or injuries.⁹

Category 3: It Is Too Costly To Ask For Consent

The third category of cases where informed consent is impracticable consists of cases where it is too costly, or too demanding, to obtain consent from the participants. It is disproportionately costly – in terms of time, effort and money – for the researcher and/or the participants. These cases can generally be described as situations where it is not known beforehand who will come to participate, such as big research projects taking place in the public space,¹⁰ or situations where changes and additions to what is being studied are made long after the procedure of informed consent has been carried out, such as research on personal information collected in databases or biological material in biobanks.¹¹ Concrete examples of the former kind could be the testing of different types of train cars on a subway line, comparative studies of two types of escalators in an airport, or investigations of alternative paving on motorways. The participants in such trials are those who just happen to pass by. They have not been actively recruited or chosen to be part of the trial – they are just those who by chance end up participating in research. The central feature of situations in this category is *not* that there is only one option available for all (that is instead a characteristic of cases in the next category) – as there can be alternatives at hand. In the examples above, both new and old train cars can be in operation, different escalators or even a lift can be available, and there can be different pavings on different lanes. A specific individual, however, ends up in one of the alternatives.

In cases like these it is very difficult to implement informed consent. Researchers would have to stop all people coming close to the train, or escalator, or road, on which a trial takes place, provide full information, adapt it in order for all persons to be able to comprehend it, and furthermore ask each individual to consent. This would obviously consume a lot of resources for the researchers as well as for the research subjects. In the examples mentioned it is reasonable to think that most prospective

participants would be unwilling to spend time on an informed consent procedure. It seems to be a common feature of projects like this that many people would most likely choose not to be informed, and not to be asked to consent.¹²

In the other kind of cases in this category, the difficulty is that a long time has passed since the individuals agreed (given that they did) to give out information about themselves or to donate biological material and it may be problematic to retrace those individuals, if they are still alive. Arguments have been presented against applying the informed consent requirement in cases of this kind, in the interest of both researchers and donors (to save time and money, and to avoid being disturbed, respectively).¹³

Category 4: The Collective Nature of the Study Rules Out Voluntariness

In the fourth and last category, informed consent is impossible because the project's collective nature rules out voluntary participation of any one individual.

In cases in this category either all individuals in a certain wide group, such as those living in a particular region, participate, or none.¹⁴ There is no way for a single individual to say no, or if we do allow one person to say no, then the project cannot be carried out at all (for example – if one person can say no to testing a new roundabout, then the roundabout has to be removed or not built, hence, nobody can try it.)

Examples of this category are (mandatory) social experiments of, for example, effects of different social security systems, where inhabitants or citizens in a certain region face one system, while others face another.¹⁵ For a particular individual, no alternative to participation is available.¹⁶

It seems reasonable to include in this category both cases where there is in fact no alternative to participating in research and cases where there is such an option but it is associated with very high costs. Some social experiments, mentioned above, can belong to the latter of these two if it is for instance possible to avoid

research participation by moving to a different state or region. Other examples, again, can be big traffic research projects, where the alternative to participate in a trial – for instance to drive on a new road surface, on a road with a new type of rumble strips or the like – is to choose another road which may be significantly longer/slower/more expensive, or even not to go at all. If the alternative to participating in research is to move or to drastically change one's travel habits, then we may say that there are in fact no alternatives available.

It is difficult to delimit exactly how costly the option not to participate in a collective research project has to be in order to be viewed as a non-option, or in other words, to turn the choice to participate insufficiently voluntary.¹⁷ For our present purposes it suffices to say that there can be cases where research participation can only be avoided at costs that are so high that participating cannot reasonably be seen as voluntary.¹⁸

COMPENSATING FOR THE LACK OF INFORMED CONSENT

In the previous section it was established that there are indeed situations where informed consent cannot be employed, and that these situations are of different kinds depending on the reason why informed consent is inapplicable.

This section will discuss what can be done in cases where informed consent cannot be obtained. First, it should be underlined that while in most kinds of situations discussed above, informed consent is impossible to apply, it is in fact possible to use in others (those in category 3) but at a very high cost.¹⁹ For the latter kind of cases, it could be argued that if we are serious about the requirement of informed consent, it should be enforced even if the costs are high. If we instead choose not to insist on this in these cases, we face the same alternatives as for cases where informed consent is literally impossible to use, namely either not to allow the research to take place at all, or to allow it even without informed consent – perhaps conditioned on attempts being made to compensate for this lack.

Whether there are justifiable exceptions from the requirement of informed consent seems to depend on three factors: the potential benefits of the research, the size of risks of harm, and how well the lack of informed consent can be compensated for. It is the third of these factors that will be discussed below.

A number of methods meant to compensate for the lack of informed consent can be found in the literature. These will be arranged into five groups, according to their key characteristics. Each group will be described, and then the kinds of cases in which it is applicable will be identified. It will be discussed whether the methods do well as substitutes for informed consent, and also whether they do well in other respects – if they provide something of value apart from what is related to the aim of informed consent.

Group A: Information Provision

In some cases where it is not possible to ask for participants' consent, it is still feasible to provide them with relevant information. For children or others who are not considered to have decisional capacity but who can understand some information about a research project (i.e., some, but not all, cases in category 2), this seems to be appropriate (and is indeed demanded in central research ethical guidelines).

Similarly, in cases of category 4, when people cannot decide whether or not to participate in a collective study, they can be properly informed about it. The same holds for cases of category 3 where informed consent is impracticable because it would consume too many resources. Although providing information is costly, it is generally less costly than carrying out the full informed consent procedure. Information can for instance be distributed by means of newspaper advertisements, roadside signs, etc.²⁰

For cases in category 1, when providing information would be counter-productive to the research, debriefing is an option. Debriefing means that the participants are informed *after* having participated. Debriefing can also be used in some cases in category 2, for

example when research has been carried out on an unconscious accident victim who has thereafter regained consciousness.

Although debriefing, as well as other methods of information provision, can at least partly compensate for the information element of informed consent, it does not make up for the lack of the third element of informed consent—it does not render research participation voluntary. In other words, *consent* is not obtained,²¹ and the aim of informed consent, that people participate because they want to, is not achieved.

It seems to be valuable, however, for people to be aware of what is going on around them and what they are or have been involved in even if they cannot decide on those matters. Providing information to participants is also a requirement in research ethical guidelines that stands on its own right – it is not merely a means to achieve informed consent. Furthermore, in the case of debriefing, informing people that they have been observed may arguably to some extent compensate for the privacy intrusion that they were victims of. It could even be claimed that their dignity is to some degree restored.

Group B: Consent Based on Partial Information

Another set of methods applicable in situations where participants cannot be informed about the research project can be called “partially informed consent”.²² This means that people are asked to sign agreements in which they consent to being participants in a study without being provided with full information about the study.

The category of cases where partial consent could be a relevant option is the first one in which the detailed information about the study is the obstacle for informed consent. However, the method of partially informed consent is not always applicable. In some cases, knowledge that one is being observed (even without knowing exactly in what way or for what purpose) may affect one’s behaviour and hence distort the result.²³

In principle, partially informed consent could consist in agreeing to participate in a

number of studies (as opposed to one specific), about which details are not provided. Such a method, which is sometimes labelled *blanket* or *broad*²⁴ consent, is of particular relevance to research on biological material collected in biobanks (which is discussed within the framework of category 3 above). In the biobank context, such unspecific consent can be justified either because there are *at present* a number of different studies to be carried out on the material to be donated, or because it is expected that *in the future* there will be a number of studies to be carried out (of which some are at present not even conceivable). In the latter case the method should perhaps better be described as an unspecific advance directive, a method to be explained in the next subsection.

Partially informed consent is of no use for cases in categories 2 and 4, since no consent at all is possible in situations of those kinds.

It is not obvious that a decision to participate in a research project does not amount to proper consent just because the information is only partial. It would, as a matter of fact, be possible for people to decline participation altogether. Furthermore, it may be argued that partially informed consent does in fact constitute valid consent, as the potential participants accept and are aware of not being fully informed. A case where a person is informed about her not being fully informed and yet accepts to participate is similar in important respects to one in which she is offered full information but declines parts of it and yet accepts to participate.

If it is indeed the case that people would prefer not to be informed in any depth, then the method of partially informed consent can rightly be said to have the benefit of not burdening unwilling people with information they wish to avoid.

Group C: Advance Directive

For many cases of category 2 and possibly also cases of category 3 regarding database research, the method of advance directive seems applicable. Advance directives are like informed consent, or partially informed consent, except

for the fact that they concern possible future research participation and are given at an earlier point in time. People fearing to fall into dementia could use such a method, as can people who wish to prepare for a situation where they end up in emergency care. Advance directives can be of two kinds: *unspecific* and *specific*. An unspecific advance directive, mentioned in the previous sub-section, is an individual's consent, based on partial information, to participate in future research projects if the opportunity arises while she is unable to provide informed consent. She does not consent to any particular project, and cannot therefore be sufficiently informed. A specific advance directive refers to specified research projects of which information can be revealed and communicated. A form of specific advance directive, would be *randomised controlled trial cards* that people in risk groups for certain diseases or conditions have in their wallets, thereby consenting to participate in well-described studies of treatments for these diseases or conditions (Lindley, 1998). This method has been discussed under the label of *prospective consent*, which is supposed to be obtained from a large group of people, who would be included in trials were they to suffer from certain injuries.²⁵ Both randomised controlled trial cards, and other versions of prospective consent, can however also be of a more general nature, hence constituting unspecific rather than specific advance directives.

Even for categories 2 and 3 mentioned, advance directives are not always an option. In category 2 they require that the incompetent individuals have been competent at an earlier stage, which is not always the case. In category 3, advance directives may be relied on for research on biobank material (database research), but for other cases of type 3 – those concerning large projects in the public space for instance – advance directives do not seem much easier to apply than the procedure of informed consent itself.

In principle, unspecific advance directives could be used for cases of category 1 above. In order for such directives not to have the same negative impact on research findings as

informed consent in these cases, the directives must be very unspecific and perhaps also given a long time before the research takes place in order for the person not to actively remember it and consequently letting it influence his or her behaviour.

For cases of category 4, advance directives are of no use as the question regarding research participation is still not to be settled on the level of the individual.

The more specific an advance directive is, the more does it approach the fulfillment of the aim of informed consent. Unspecific advance directives, like partially informed consent, obviously fail to ensure that peoples' decisions are informed and as long as the provision of full information is a requirement for valid consent, unspecific advance directives consequently fail to fully compensate for the lack of informed consent. The aspect of advance directives that distinguishes them from informed, or partially informed, consent is that it is given before the prospect of research participation is realised. It must therefore be asked for how long an advance directive should be recognised as valid. It seems reasonable to assume that decisions made a long time ago do not necessarily reflect the will of the person at present,²⁶ and it is reasonable to argue that the aim of informed consent is to ensure that it is the will of the person who is presently to participate in a research study which is to be decisive, rather than the will of the person in the past.

Group D: Proxy Consent

For persons lacking decisional capacity (i.e., category 2), proxy, or surrogate, consent is a common measure to compensate for the absence of informed consent. Proxy consent means that another person – typically a close relative or friend – is provided with adequate information and accepts or rejects the conditions of participation on the incompetent person's behalf. The proxy can either be chosen beforehand by the person to be represented, or appointed by someone else. The former method, which is often called delegated consent, is obviously preferable

but requires the person to be represented to have been competent enough to choose a proxy at an earlier point in time.²⁷ It can be argued that a person can be competent enough to choose her own proxy, yet not competent enough to decide on her own research participation.

A relevant question in the context of proxy consent is on what grounds the proxy should make the decision. In Dworkin's words: "Ought the representative act as the principal would have acted, or as the principal should have acted, or in the interests of the principal, or in pursuit of his welfare?" (Dworkin, 1988, p. 87). There are two established ways of dealing with this issue; either the proxy is asked to decide that which the incompetent person *would have wanted* had he or she not been incompetent, or to decide that which is considered to be best for the person, in other words in his or her *best interest*.

The first alternative, the *substituted judgment standard*, aims at respecting that which the individual would decide, had she not lacked decisional capacity. For cases where the incompetent person has never, or at least not for a long time, been competent (i.e., many cases of type 2), this standard is problematic since it requires us to determine what such an individual would have wanted, had he or she possessed decisional capacity, i.e., had he or she been *different* in a significant way.²⁸ In practice the proxy is then likely to decide in accordance with what he or she him- or herself would have wanted or what most normal people would have wanted, if placed in the same situation but having decisional capacity. For cases where the potential research subject is only temporarily incompetent, or was recently competent, the substituted judgment standard seems more appropriate. The proxy has to determine what decision the person would have made if she had been conscious at the moment (or had not recently lost important cognitive capacities), which is a much more feasible task, in particular for someone who knows the person well. It could even be argued that such a person's will can in fact be *fully respected*, given that he or she has given the proxy the authority to provide or withhold

consent on his or her behalf, i.e., when proxy consent amounts to delegated consent.

The second alternative, called the *best interest standard*, means that the proxy is to decide in accordance with what one believes to be in the decision-incapable person's best interest. This alternative is more paternalistic in nature, as the proxy's decision is to be based on what is in the interest of the individual, as opposed to what the individual would have wanted.²⁹ Beneficence, rather than respect for autonomously formed preferences, seems to be the guiding light behind this standard.

For cases of category 1, proxy consent could perhaps be used in order for the research output not to be distorted by participants' awareness of their being studied. In such cases, a proxy could be asked to decide, on the (uninformed) participant's behalf, whether the details of the study are acceptable.

For cases of categories 3 and 4 proxy consent does not seem to be applicable.

Group E: Collective Decision Making

For cases in categories 3 and 4, individuals' opportunities to be involved in democratic decision making regarding research participation for a collective they belong to, could perhaps to some extent compensate for the lack of informed consent. For cases of categories 1 and 2, on the other hand, such methods do not seem to be useful. In cases of category 1, participation in collective decision making requires access to the same information that would be detrimental to the research at hand in an (individual) informed consent procedure. In cases of category 2, the potential research subjects lack decisional capacity for decisions on the collective as well as the individual level.

Democratic collective decision making, can be either direct or representative. Direct democracy, in this context, can be exemplified by members in a particular group together deciding whether to take on a research project or not. This method is sometimes called community

consent.³⁰ There seems, however, to be no accepted definitions of the concept of community consent. It is sometimes taken to mean that some representative of the community makes the decision.³¹ In such cases, community consent would rather be a matter of representative democracy – given that the representative is democratically elected which is not necessarily the case. Such procedure would perhaps better be called an ombudsman, or group proxy.³² A system with ombudsmen for groups with special interests or views regarding research participation could potentially do rather well in protecting the will of the individuals involved, especially if the ombudsmen are democratically elected by those represented.³³ Such a group proxy could perhaps come close to using the substituted judgment standard. If instead the ombudsmen represent large and heterogeneous groups (and particularly if they are not democratically elected), their function would rather be to double the role of the research ethics committees.

Apart from the use of an ombudsman, representative democracy in this context could be limited to people's pre-existing possibilities to be engaged in the political life of their society – either on the local, regional or national level. Thereby they can influence what rules and regulations are to be followed by researchers, what kinds of research projects to be permitted and so on.

Collective democratic decision making can, in other words, mean many different things. Of relevance is the size and composition of the demos, as well as the functioning of the decision making process. For instance, how is a relevant community to be delimited (geographically, or with respect to who is likely to face a certain risk, etc)? Is the democratic structure created for the specific purpose of determining the issue of research participation at hand, or is it the political structure already in place that is used?

The advantage of democratic collective decision making is of course that people to some extent are involved in deciding matters that concern them. The extent of this influence varies between different versions of democratic participation. In some cases of community con-

sent, there is an ambition to make decision by consensus, which means that from the point of view of the individual the method approaches the right to veto and informed consent. For the most part, however, democratic collective decision making seems to aim at achieving the common good, that which is good for society as a whole, rather than ensuring that the will of each individual is respected.

Furthermore, procedures of democratic decision making allow people to have their voices heard which seems to be valuable even if they are not permitted to decide for themselves.

A specific benefit of using ombudsmen could be that they may be better informed in some ways than the individuals to take part in research. They obviously do not know more about their wills and preferences than do the individuals themselves, but they may have a better knowledge and understanding of the subject matter at hand.

CONCLUSION

In Table 1 categories of cases when informed consent cannot be used are tabulated against the methods intended to compensate for this lack.

This paper has put focus on the relevance of examining the applicability of informed consent in contexts that have previously received fairly little attention. If we believe that people should voluntarily decide about whether or not to be involved in research in some cases, such as those in categories 1 and 2, then they should arguably do so also in cases of categories 3 and 4. It has been shown what the difficulties are in also those cases, and what methods that can be used in order to compensate for the lack of informed consent.

As pointed out above, the question whether it can be justified to allow for research when informed consent cannot be obtained is not answered in this paper. Instead the focus is on one factor of relevance for answering that question, namely how well the lack of informed consent can be compensated for. Other factors, in particular the scientific value of the research

Table 1. "Yes" means that the group of compensating methods can be used and would constitute an improvement as compared to no compensating methods being used; "No" means that the group of methods cannot be used and/or would not constitute an improvement

		Categories of cases where informed consent cannot be used			
		1. Providing information is counter-productive to research	2. Prospective participants lack decisional capacity	3. It is too costly to ask for consent	4. The collective nature rules out voluntariness
Groups of methods compensating for the lack of informed consent	A. Information provision	Yes (debriefing).	Yes, for conscious individuals.	Yes, for large public space projects.	Yes.
	B. Partially informed consent	Yes, to a limited extent.	No.	Sometimes.	No.
	C. Advance directive	Yes, to a limited extent.	Yes, if the person had capacity before.	Yes, for database cases.	No.
	D. Proxy consent	Yes.	Yes.	No.	No.
	E. Collective decision making	No.	No.	Yes.	Yes.

and the risk of harm faced by those participating need to be considered when deciding whether research without (full) informed consent should be performed in these cases.

It deserves mentioning that it can be questioned whether the practice of informed consent itself is a guarantee for achieving its aim – that people participate in research because this is what they want. There are many lines of argument to the contrary, focusing on for example people being incapable of understanding even basic information about standard research methodology (see for example Dawson, 2004) or the difficulty of making decisions that truly are in line with one's will (Schwab, 2006).

If there is scope for such doubts, in addition to the problems of obtaining informed consent discussed above, as well as the applicability of methods that to a varying degree compensate for there being no informed consent, this lends support to a tentative conclusion of this paper, namely that there may be reason to challenge

or at least broaden the view on how and by whom decisions regarding research participation ought to be made.

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- cf. Buchanan and Brock (1989, pp. 26-28) who argue that while competence (or capacity) is really a matter of degree, it is more reasonably to be viewed as a threshold concept. This means that what matters is whether the person is competent enough to decide on a certain matter.
- The case of mental impairments, when a person is to be considered incapable of providing informed consent, and what substitutes are appropriate in different situations are questions thoroughly discussed in the report “Research Involving Persons With Mental Disorders That May Affect Decisionmaking Capacity” by the National Bioethics Advisory Commission in the US, and the papers commissioned to the report (United States. National Bioethics Advisory Commission, 1998).
- Note however, that also mentally impaired persons may be capable of making many decisions in their everyday life, and yet be incapable of making difficult decisions about research participation (see for example Palmer & Iserson, 1997, p. 731; Buchanan & Brock, 1989, pp. 18-19).
- Note that it may be to the disadvantage of groups lacking the capacity to form autonomous choice to be excluded from research participation. Such participation may be needed to adapt treatments to their needs—see Svensson and Hansson (2007, p. 109) and Elks (1993).
- See for example Jones et al. (2005).
- Hansson (2006, pp. 151-152) discusses this problem under the label of “consenter identification problem”. Martin & Schinzingher (1989, p. 67) mention the problem in relation to engineering projects, which they frame as experiments.
- Note, however, that it is not obvious that the same informed consent requirements should be applied in cases where biological material are the objects of investigation as when individuals themselves are the subjects of research (Helgeson & Johnsson, 2005, p. 315).
- To support this claim—see Martin and Schinzingher (1989, p. 68), who write that people in general are often unwilling to be informed of engineering projects.
- Hansson (2004, p. 321) discusses this in relation to biobanks.
- A related question arises in cases where (all) members of a certain group are to participate

ENDNOTES

¹ There are several possible terms for *decisional capacity*, the main alternatives being *competence* or *decision competence*. In this paper these terms are used interchangeably.

² Faden et al. (1986) seem to favour this, as they propose methods of ensuring that patients or research subjects have understood the information disclosed by the physician or doctor (pp. 326-327). They do however, also argue in favour of *substantial* as opposed to *full* understanding – meaning that what matters is that the patient/subject is provided with and understands information that is material to him or her, as opposed to information that is considered relevant by others (e.g., p. 302). The testing of understanding refers, or so I gather, to that latter kind of information and not to that (which may be none!) which the patient/subject finds important.

³ One hugely important question, of course, is whether the practice of informed consent actually succeeds in its aims. There are certainly reasons to investigate this matter, but the present paper makes no contribution in this respect as it is limited to discussing cases where the practice of informed cannot be used at all.

⁴ This example was provided by Peter Bonsall at The First Conference on the Ethics of Traffic and Transportation, the Royal Institute of Technology, Stockholm, Sweden, 29-30

⁵ Note however, that also mentally impaired persons may be capable of making many decisions in their everyday life, and yet be incapable of making difficult decisions about research participation (see for example Palmer & Iserson, 1997, p. 731; Buchanan & Brock, 1989, pp. 18-19).

⁶ Note that it may be to the disadvantage of groups lacking the capacity to form autonomous choice to be excluded from research participation. Such participation may be needed to adapt treatments to their needs—see Svensson and Hansson (2007, p. 109) and Elks (1993).

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¹⁰ To support this claim—see Martin and Schinzingher (1989, p. 68), who write that people in general are often unwilling to be informed of engineering projects.

¹¹ Hansson (2004, p. 321) discusses this in relation to biobanks.

¹² A related question arises in cases where (all) members of a certain group are to participate

in a study, while (all) members of another group are not to participate but may still be negatively affected by it. Brown (1975, p. 95) discusses the example of certain social experiments, for instance on the effects of housing allowances, where the group not participating does not receive the benefit, and hence is made *relatively* worse off than before. Would it be appropriate to ask also members of this group for their consent, given that we could?

¹⁵ Social experiments are described by Greenberg et al. (1999) as “field studies of social programs where individuals, households or (in rare instances) firms or organisations are randomly assigned to two or more alternative policy interventions” (p. 157). They note that participation in such experiments can be either voluntary or mandatory (p. 160), and out of the cases beginning after 1982 which the authors have investigated, almost 40% of the experiments were mandatory.

¹⁶ The same problem arises of course in areas outside of research. O’Neill (2003, p. 4) mentions it in relation to the selection of public health policies.

¹⁷ cf. Feinberg’s (1986, pp. 199-228) discussion on this.

¹⁸ Other typical examples of there being no acceptable alternatives are when treatments for diseases are tested, and there are no other treatments available for the patient than the one to be tested. Such cases do not belong to this category, however, because the reason for there being “no choice but to participate” is not the collective nature of the research project. Furthermore, in these cases the voluntariness of potential participants is compromised because research participation is extremely tempting, and not because it is preferable to avoid participation. This is related to the discussion on coercive offers, and to the idea of voluntariness in general. See for instance Feinberg (1986).

¹⁹ This is not the same thing as in category 4 where it may be very costly for an individual to avoid research participation. For such cases, informed consent is not present even if there may be individuals who muster the strength to decline participation, because this decision would arguably still not have been voluntary enough.

²⁰ The method of information provision is sometimes used in Swedish traffic research. Apart from newspapers, information is also provided by means of signs beside the roads, pamphlets distributed to households etc.

²¹ Despite this, the method of debriefing is sometimes inappropriately called *post-debrief consent*. In some studies, however, there is an element of consent involved if people, after being informed, are asked to consent to their data remaining in the study or if it is to be withdrawn. This is not always an option, for instance when group dynamics or interactions are studied. Then the input of a particular individual cannot be singled out and removed. In the Belmont Report (United States. National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research., 1978, C:1), this type of method of incomplete disclosure of information is discussed.

²² Note that there is a fundamental difference between informing potential participants that there is information that will not be disclosed, and providing false information about the study as did Milgram (1963) in his obedience study. The decision on whether to participate or not, can hardly be seen as consent if based on false information.

²³ Hansson (2004, p. 322) uses the term *blanket consent*, while Hansson et al. (2006) use the term *broad consent*.

²⁴ Fost (1998) mentions this in the context of brain injury.

²⁵ ²⁶ A similar problem, but in the context of the substituted judgment standard for proxy consent, is discussed by Broström et al. (2007). Foëx (2001, p. 201) argues that *only* in such cases is proxy consent at all valid. Sometimes this type of “delegated consent” is what is meant by “waived consent”, but the latter term can also include the person’s letting go of the consent requirement without appointing anyone specific to decide instead, also in cases where the person is not incompetent but only wishing to avoid decision.

²⁷ ²⁸ Dworkin (1988) raises this issue on pp. 98-99, and concludes that “we need a theory of what it is to respect an incompetent person as a person” (p. 99).

²⁹ Capron (1982) is using the labels of *substituted judgment doctrine* and *best interest doctrine*. Dworkin (1988, pp. 91-92) relates these categories to other categorisations of the notion of proxy representation.

³⁰ Such procedures could also be called “community consultation”, although this concept seems to most often mean not that the community members are involved in the decision making process, but rather to denote a tool for research ethical committees to identify relevant interests and concerns of certain groups (as well as their members) who may take part

or will be asked to take part in a certain study. For discussions on the appropriate use, if any, of community consultation, see for example King (1999), Dickert and Sugarman (2006), Marshall and Berg (2006), and Kraybill and Bauer (1999).

³¹ Schultze (1975, pp. 122-124) also discusses the legitimacy of such a model but under the label of "institutional consent", in the context of social experiments where schools and other

³²³³

institutions consent to research participation on behalf of all its members/clients/customers. Martin and Schinzingher (1989, p. 69) propose this kind of method, which they see as a form of proxy consent.

Hansson (2006, p. 151) discusses this option. The method implies that there would be one person representing the interests of all participants, but the representative would still not necessarily know each and every individual involved.

Sara Belfrage is at the Division of Philosophy of the Royal Institute of Technology in Stockholm, Sweden. Besides philosophy, she has a background in political science and human rights. Her research focuses on ethical issues arising when people are involved in research as objects of investigation. She has for instance published a paper together with Professor Sven Ove Hansson involving a comparison between how research subjects are protected in and affected by biomedical and traffic research. Currently, she deals with questions concerning voluntariness, coercion and exploitation that have bearing beyond the scope of research.

Laboring in Cyberspace: A Lockean Theory of Property in Virtual Worlds

Marcus Schulzke, State University of New York at Albany, USA

ABSTRACT

This paper examines property relations in massively multiplayer online games (MMOGs) through the lens of John Locke's theory of property. It argues that Locke's understanding of the common must be modified to reflect the differences between the physical world that he dealt with and the virtual world that is now the site of property disputes. Once it is modified, Locke's theory provides grounds for recognizing player ownership of much of the intellectual material of virtual worlds, the goods players are responsible for creating, and the developer-created goods that players obtain through an exchange of labor or goods representing labor value.

Keywords: John Locke, Massively Multiplayer Online Games (MMOG), Property, Video Games, Virtual Worlds

INTRODUCTION

Virtual worlds, or massively multiplayer online games (MMOGs), are increasingly the site of property disputes between the developers who design the worlds and the players who occupy them. Although these are games, they can be very serious for players, many of whom spend twenty to thirty hours a week on average playing them (Castranova, 2007). Some players are so heavily invested in MMOGs that they earn incomes from the sale of virtual goods and services. Ownership and trade have become so important to virtual worlds that many have their own economies comparable to those of real countries (Castranova, 2007). With much at stake for developers and players, it is unsurprising that virtual property has become a

source of dispute. Virtual property strains the existing categories of ownership, introducing such difficult questions as the status of virtual theft (Arias, 2008; Brenner, 2008) and the right to tax virtual goods (Lederman, 2007; Seto, 2008, 2009).

The debate over virtual property fits into the interdisciplinary study of technoethics, a branch of scholarship that is concerned with exploring the moral dimensions of emerging technologies and their effects on society. Because these only exist in a digital form, they challenge existing moral categories used to assign ownership. Technoethics provides a way of reconsidering the concept of property and the moral and ethical implications of property in light of the way digital technologies have altered it.

One way of determining property rights is by using John Locke's labor theory of property, which holds that people become owners of un-

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claimed materials by adding their labor to them. Locke's theory is one of the most important in the debate over ownership of virtual property, as players claiming property often justify their right to own and sell property on the grounds that they have labored to create it or to procure it (Kayser, 2007). The problem is that developers can claim to own virtual goods on the same grounds; they initially create them and host the virtual worlds that serve as the setting for the players' labor. Most Lockean studies of virtual property have concluded that all or most virtual goods belong to the developers (Horowitz, 2007; Kennedy, 2008), giving players limited rights to do what they wish with virtual property. This paper will argue that this conclusion has much to do with a misapplication of Locke's theory of the common. When this part of the theory is reconsidered to account for the differences between real and virtual worlds, Locke's theory provides strong grounds for granting players ownership over many virtual goods.

Steinberg (2009) finds that three classes of virtual goods are at the center of the debate over virtual property: currency, items, and player accounts. This paper focuses on the ownership of the virtual common, of player accounts, and of the virtual worlds themselves. It shows that the first of these is owned by players collectively, the second by individual players, and the third by both the developers and the players. This paper will also argue that players can have strong claims to virtual money and items, especially when these are created by the players themselves, but that players only become owners of these things that developers have created when the property is gained through labor that is equivalent to the value of the good or by exchanging goods that represent their labor value. This only addresses property ownership as a moral issue. The laws regarding property ownership will have to be made by each country and will reflect existing property law in these jurisdictions. The legal question is one that must be resolved, but the purpose that the laws governing virtual property should serve is clarified by examining the extent to which there are moral justifications for ownership of virtual goods.

VIRTUAL PROPERTY RELATIONS

Virtual world developers differ in the extent to which they recognize user's claims of ownership of virtual goods. *World of Warcraft* represents one extreme of property relations. Blizzard, the company responsible for it, forbids players for selling their accounts or their items for real money or goods; only trade within the game world for other virtual goods is permitted (Lastowka, 2004). Most virtual worlds follow the same model, giving players little control over the items they find or produce and forbidding or restricting the sale of avatars and items outside the virtual world (Lastowka, 2004). By contrast, *Second Life* allows players to create products in the game world, and to copyright them, patent them, and sell them (Steinberg, 2009). This has led to the rise of a diverse economy within that world, with users creating their own products for other players to buy, much as manufacturers do in the real world. *Second Life* acknowledge a very high level of user-control over property (Horowitz, 2007), yet even it has experienced property disputes because developers have the power to exclude users from access to the virtual goods that they own (Glushko, 2007). This indicates that whatever level of player ownership virtual worlds acknowledge, property disputes are likely to arise because of the developer's gatekeeper role.

From a legal standpoint, developers have a strong claim to the ownership of the worlds and the goods they contain. EULAs usually state that the developers have ultimate control over the worlds and that they may seize player property if they wish (Caramore, 2008; Horowitz, 2007). For this reason, players are at a disadvantage when seeking to assert their rights over property they have created or earned while playing MMOGs (Jankowich, 2005). However, the problem of whether players can make a legal claim to the ownership of virtual property is different from the problem of whether there are moral grounds for recognizing their ownership claims. Players may have a moral right to their virtual property, even if they cannot assert their property claims through the law. Thus far, most

of the work done on virtual property has been done from a legal perspective, but it is essential to develop a moral basis for virtual property. This is especially true because there are often problems resolving legal disputes over virtual goods, even when the goods are regulated by EULAs (Glushko, 2007).

One of the most popular ways of theorizing property rights in virtual worlds is with Locke's labor theory of property (Horowitz, 2007; Steinberg, 2009; Westbrook, 2006). It is also one of the most influential theories of property in legal theory in general (Mossoff, 2002). Locke's theory will be discussed in detail and adapted to the virtual world in the following sections. For now, it can be stated in terms of three central claims. First, all people have the right to take control of things that are held in common, i.e., things that belong to all members of a community, provided they leave enough for others and refrain from taking more than they can use. Second, individuals own their labor. Third, because individuals own their labor, any person can use their labor to take things that are common by adding their labor to them. Thus, the theory states that adding labor to something that is collectively owned confers property ownership because the labor adds value to the object.

Many studies applying Locke's theory to virtual worlds have concluded that the theory gives developers stronger property claims than players (Caramore, 2008; Horowitz, 2007; Kennedy, 2008). Kennedy says that "If Lockean theory grants property rights to game objects to anyone, it is to the developers who have invested their labour in creating the game in the first instance" (2008, p. 102). Horowitz (2007) argues that users could have a strong claim to virtual goods based on their labor, but that developers own the common from which players extract goods and that this pre-existing claim supersedes players' claims. Nevertheless, players also use Locke's theory to support their own property claims, arguing that they are entitled to the things that they have earned through labor, even when the EULA forbids players from owning virtual property (Glushko, 2007). This probably has

much to do with the intuitive appeal of conferring ownership of things that have taken time and energy to acquire. Castranova expressed the players' perspective on labor perfectly: "If I spend thousands of hours developing assets of various forms (equipment, real estate, and avatar capital), is it not mine?" (2005, p. 157).

Adapting Locke's theory to MMOGs poses a significant challenge. It requires some modification to apply in contexts in which the common and labor have a much different character than in the real world. Horowitz finds three questions that a Lockean account of virtual property must answer: "what constitutes the common from which all property might be drawn," "what counts as labor," and "what is the content of the property right attained through labor-desert?" (2007, pp. 451-452). He finds the second question, about what counts as labor, is relatively easy to resolve. Horowitz proposes treating all production, even when it is enjoyable and done as a recreational activity, as labor, rather than thinking of labor as a painful activity (2007: 452). This is a sound suggestion given the overlap of work and play in virtual worlds that will be discussed later in this paper. The first and third questions are more difficult and require a careful making some alterations to Locke's theory. These questions will be discussed in the following sections. Before they can be dealt with, it is necessary to say something about the kinds of property that exist in the virtual world.

As Horowitz (2007) points out, many of the items in virtual worlds are not actually created by users, only discovered by them or won through the completion of challenges. Players can steal, win, and purchase items and abilities that were created by the developers. These items and abilities will hereafter be called developer-created goods. Although many virtual goods are developer-created, characterizing the debate over virtual property as being primarily concerned with things that the developers have created overlooks the players' creative power. The second class of goods includes those that would not exist in the game world were it not for the players' action. These are player-created

goods. The developers may indirectly contribute to the production of these goods, by providing the raw materials or a space for production, but they do not actually produce these goods themselves. MMOGs differ in the extent to which users can create their own goods. In some, like *Second Life*, this kind of production is common, while others offer more limited options for modification. Nevertheless, player-created goods exist in any games that allow players to modify existing items or to create their own avatars. There can be some degree of creation in any environment that permits combinations of developer-created goods in ways that the developers may not have intended. Creation can be a matter of arranging things that already exist in different ways (Boellstorff, 2008).

Character creation is a universal feature of virtual worlds and probably the best example of player-created goods in any MMOG. Even if players cannot produce any other items, they do create characters and develop their characters through their actions and achievements. Those who participate in virtual worlds often construct avatars that reflect the players' own appearance and interests, that represent an ideal self, or as a means of experimenting with different identities (Taylor, 2002; Turkle, 1997; Wolfendale, 2007). Whatever the motive, character creation reflects the players' own traits, beliefs, desires, and experiences. Moreover, character creation is a labor-intensive process. Much of it happens when players first enter a virtual world and choose their avatar's appearance, basic traits, and skills, but it continues throughout the game as players earn new level, complete quests, and form associational links. Character creation is a productive act that involves the players themselves. Player accounts should therefore be seen as player-created goods. For that reason, all virtual worlds allow players to perform some creative work. Making this distinction facilitates the Lockean reading of virtual property, as this distinction corresponds to who is performing the initial creative work of removing something from the common.

THE COMMON AS A NATURAL SPACE

The foundation of Locke's theory of property is his explanation of how people have any right to add their labor to things. Before anything can be taken, it must be part of a common that belongs to everyone and that can be used to produce individual property. Citing the Bible, Locke (1980) argues that God grants humans collective dominion over the earth and all its contents. This divine donation establishes a collective property right that allows all humans to claim things from nature. The common is a reserve of raw material, but virtual worlds contain no raw material in the conventional sense. It is therefore essential to reconsider what the common is and what it is composed of.

There are two senses of a common in virtual worlds. For clarity, these virtual commons will be distinguished as common₁ and common₂. Common₁ is based on a literal application of Locke's theory to the game world. It is composed of all the virtual raw material that other players in the game have not claimed. Understanding the common in the sense of common₁ places the virtual world's developers in the God role. They are the creators of the raw material and they are therefore free to dispose of it in any way they wish. Most Lockean theories of virtual property use this conception of the common or something very similar to it. They treat the developers as creators who have the ultimate control over the virtual world and the power to use as they wish (Horowitz, 2007). Defining the virtual common in the sense of common₁ is misleading because it is based on an apparent similarity between a state of nature in the real world and the images of nature created by software. This way of defining the common leads to three serious problems.

First, in Locke's theory, God has power over all things and the ability to establish property rights because he has created everything in the world. His power is absolute and derives from his position as the maker of the world and ev-

erything in it, including the human inhabitants (Tully, 1983; Waldron, 2002). Game developers create most of the goods in virtual worlds, but their relationship to the virtual worlds and to the players are much different from the one that Locke thinks God has to the world and its inhabitants. Developers do not create a world from nothing. They build virtual worlds with components developed from earlier games, draw on other sources, and revise the games based on players' feedback. They are creators, but they are not solely responsible for virtual world's existence, nor are they the creators of the players who occupy the virtual world. More importantly, Locke thinks that God is totally independent of the world and that people are entirely dependent on it (Tully, 1983). This does not describe the relationship of developers and players to virtual worlds. Neither players nor developers are dependent on virtual world, because they can live without them. At the same time, neither is independent of the virtual worlds because they can be deeply affected by in-game events.

Second, arguing that developers own the common would defeat the purpose of the common in Locke's political philosophy. Locke's devotes his *First Treatise of Government* to refuting Sir Robert Filmer's claim that monarchs are appointed by God (2003). Locke does this by arguing that God gave property to all humans and not to Adam alone, as Filmer claimed. If property rights were only given to Adam, there could be no common – Adam's descendants would have complete control over all property. Locke is strongly opposed to giving one person or a group of people control of the common. He repeatedly affirms that the common cannot be seen in terms of a private domain: "nobody has originally a private dominion, exclusive of the rest of mankind" (Locke, 1980, pp. 18-19). Throughout his *Second Treatise of Government*, Locke says that the right to claim property is something that belongs to all people. John Rawls explains Locke's point as being that "no one can be excluded from the use of, or from the access to, the necessary means of life provided

by the great common of the world, except from that which we have made our property" (2007, p. 145). Thus, theorizing virtual property from the assumption that the common is owned by a few developers goes against the spirit of Locke's (1980) argument, which is strongly egalitarian.

Finally, the common that Locke describes is a natural world, devoid of human interference. Locke draws a sharp distinction between the natural and social worlds. Only things that are part of the natural world can be part of the common; anything that is modified by humans or produced by them has been removed from it (Locke, 1980). Objects are only common to the extent that they are natural and open to claim by anyone (Locke, 1980). Although objects in virtual worlds are analogous to real world objects, they are distinct in Locke's ontology. In the real world, an untouched tree on unclaimed plot of land can be part of the common because they have not been removed from the state of nature. Virtual worlds include representations of unclaimed trees and plots of land, but their naturalness is illusory (Lastowka, 2004). Some objects may have received more labor than others and some may have only received labor from the developers and not from players. Nevertheless, all objects in the virtual world are equally artificial. There is nothing more natural about a virtual tree than there is about something that is created from it, so common, does not offer any grounds for drawing a distinction between what is common and what is owned.

These problems show that Locke's theory of the common cannot take the form of common, without misunderstanding the developers' role, contradicting one of Locke's intentions in proposing the common, and ignoring the difference between the raw materials of the natural world and the artificial raw materials of the virtual world. It is necessary to develop an alternative view of the common – one that modifies Locke's (1980) theory without leading to contradictions. Moreover, as the point about the difference between natural and artificial raw materials shows, any definition of the common

that can hold true for virtual worlds must be a socially constructed common.

THE SOCIAL COMMON

Developers are primarily responsible for creating MMOGs because they create the structure of the games. In worlds that do not permit user modification, they may even be the only ones responsible for creating the items that players try to accumulate. However, the virtual worlds they create would be inoperative without the thousands, or in some cases millions, of players who devote their time to transforming the virtual world into a community of players. As the previous section argued, any apparent naturalness in virtual worlds is illusory. The worlds are human products and as such, they are largely constituted by the social activities that occur within them. To the extent that MMOGs can have a common, it must be a common that is produced by all who have a role in creating the social world that all players inhabit.

Studies of MMOG have shown that virtual worlds are heavily dependent on players (Marks, 2003; Sicart, 2009). Many virtual worlds are home to fully developed communities that work, conduct trade, and form friendships (Lastowka, 2004). As Taylor explains, the games can only be accurately explained as products of the players' actions:

The collective production of game experience and knowledge does not simply constitute a helpful "addon" to the game, but is a fundamental factor in both its pleasure and sustainability. Most radically put, the very product of the game is not constructed simply by the designers or publisher, nor contained within the boxed product, but produced only in conjunction with the players (Taylor, 2006, p. 126).

Players collectively produce the worlds they inhabit by interacting with other players and sustaining the online social world that constitutes much of the gameplay experience. By doing this, they create the common₂. This

can be thought of as a common composed of ideas, cultures, and institutions, rather than of simulated material objects. It is the lifeworld of the virtual world, establishing the background from which the events and artifacts of the game world derive their meaning.

The cultures of virtual worlds are partially formed by the character classes, geography, and other starting conditions that developers have put in place, but it is up to players to affirm or subvert the characteristics developers have programmed. The same is true of the institutions. Developers may create things like governments, currencies, and organizations. However, these are heavily dependent on the players' actions. The institutions of the virtual are only maintained as long as players continue to acknowledge them and to follow the constraints they impose on the game. If players are sufficiently unified, they can transform these institutions by developing own systems of exchange, organizational structures, or forms of governance. A prime example of players creating their own institutions and cultures are the guilds that they form in MMORPG's (Massively Multiplayer Online Role-Playing Games). These associations are governed by their own rules and norms, created by the players themselves. Players could even transform virtual worlds in more fundamental ways than this. Players in a game based on a gold standard of currency could abandon it in favor of another standard or switch to a barter economy to avoid the inflation caused by gold farming. They may, as individuals or through their cooperation with others, inspire the developers to modify games to suit the players' wishes. Most virtual worlds are not simply created and released in their final form. They are dynamic entities that develop and change over time and the players are one of the strongest forces in shaping this development (Sicart, 2009, p. 175).

The growing literature on the philosophy of society offers some insight into the production of the common₂. Searle (1995, 2006, 2010) argues that people create social worlds by building networks of interrelated institutional facts. By his definition, institutions take a range

of forms. They can be abstract concepts that have no physical existence, like corporations, or they can be embodied in physical objects, as the institution of money is embodied in bills and coins. The social world people inhabit is an assemblage of institutions and each institution is created through collective action. Institutions may take on the false appearance of necessity because they are supported by tradition and maintained out of habit, but they are contingent. Searle argues that to create institutions or to maintain them requires what he calls "collective intentionality." People choose to take part in collective enterprises like trade, governance, and games. These activities are sustained by each person's intention to take part in a collective enterprise and through the actions they perform to support the institutions. In other words, institutions are only meaningful because people agree that they are meaningful. A few individuals may dissent by refusing to recognize certain institutions, but the institutions continue to exist as long as a sufficient number of people continue sustain them.

The institutions Searle describes form a common because they are the collective property of everyone who inhabits the social world. Institutions may grant some people more authority than others, and some people may have a disproportionate power over the institutions, but no one owns them. To take a real world example, people who have a great deal of money have more purchasing power than others, but this greater power to use money does not make them owners of the institution of money. No one owns the institution of money, only individual bits of money. The same is true of the other institutions that structure the social world. In virtual worlds, some players may be more powerful, wealthy, or influential than others, but even the least powerful players have some role in determining the culture and institutions of the world.

This form of common may appear much different than the one Locke describes because it does not have the same superficial resemblance to Locke's as common.² However, it fits well with Locke's definition of the common. It is a

space that all players have dominion over, but that no person has a unique claim to because it is produced through the collective action of the developers and the community of players. It is also similar to Locke's common because it serves as the raw material of virtual worlds. In order to establish a unique claim to any piece of property, players must draw on the institutions and culture of the virtual world that constitute common² and are responsible for player-created, like new items or avatars. With this version of the common in mind, the players' significant contribution to virtual worlds is much easier to recognize and there is a stronger basis for understanding the digital labor process.

LABOR AND THE CREATION OF PERSONAL PROPERTY

Locke assumes that each person owns their own labor and that this is unalienable. Although it might be rented to an employer for a wage, the capacity for work is itself something that cannot be transferred to another person. Starting from this assumption, Locke makes his famous point that everything a person removes from the common becomes their property. "The *labour* of his body, and the work of his hands, we may say, are properly his. Whatsoever then he removes from out of the state that nature hath provided, and left it in, he hath mixed his *labour* with, and joined to it something that is his own, and thereby makes it his *property*" (Locke, 1980, p. 19). Individuals claim property by mixing their labor with that which is part of the common. Labor has the power to confer ownership because it is what makes the largest contribution in determining the value of the finished product. "Labour makes the far greatest part of the value of things we enjoy in this world" (Locke, 1980, p. 26).

One of the points of contention in the discussion of virtual property is whether actions in the virtual world can be described as labor. Some element of difficulty and even displeasure may be necessary for something to count as labor. Waldron (1988) argues that Locke's

theory of property requires that labor involve an investment of time or the activity is difficult, otherwise there would be no reason to think that the process confers ownership. Horowitz (2007) is correct in arguing that players actions often do meet this criterion, as studies of MMOGs have found that game play in is often experienced as work and that it can be nearly identical to tasks performed in normal jobs (Lastowka, 2004; Yee, 2006). Moreover, Taylor (2006) finds that many power gamers become so heavily invested in virtual worlds that they spend as much time "playing" as they do at work. Players may spend hours fighting easy opponents, experiencing no challenge or variety, to help their character earn enough experience to reach the next skill level. Others spend hours mining gold or working as blacksmiths to earn money for virtual goods. The existence of virtual sweatshops and the widespread practice of buying high level characters rather than building them up oneself should also serve as evidence that not all play is enjoyable or purely recreational (Grimes, 2010).

Locke's theory of property makes it relatively easy to assign the ownership of player-created goods. Although the initial creation of an avatar may be simple, players expend a great deal of labor developing these avatars. As this paper already pointed out, avatars are unique to players and a clear product of individual labor. Some elements of them, such as racial characteristics or starting abilities, may be drawn from the material provided by the developers and the common,² but they are created by individuals, and through the expenditure of labor. Thus, avatars should be regarded as the property of the player who creates them. They are the paradigmatic case of the amount of labor invested in a thing making it more valuable. Other virtual items that would not exist were it not for the players' expenditure of labor should also be counted as the property of the player who created them, as they are products of individual labor that remakes material drawn from the common.² By extension, anyone who purchases player-created goods should have the right to them. Although someone who buys these goods is not responsible for creating them, purchasing those things from the laborer represents an exchange the goods

for an amount of money that the seller judges sufficient to compensate for the labor.

It is more difficult to determine the ownership of player-created goods; these must be considered on a case-by-case basis. Initially player-created goods clearly belong to the developers, as the developers have invested their labor to produce these goods. However, the problem that arises is that both developers and players have labor claims to the goods once players are participants in the virtual world. The developers expend labor to create goods and players labor to procure them. The competing labor-based claims may seem to create an impasse. However, it is important to remember that Locke's discussion of labor imparting ownership only applies when things are taken out of the common. Acquiring finished items made by the developers of a game is not an act of removing something from the common, because these items are clearly attributable to the developers. Players can only claim ownership of these goods when they have acquired them by the exchange of a comparable labor or of virtual items representing labor value.

To acquire virtual goods, players exchange labor or objects representing labor value. Most MMOGs require some investment of real money to buy the game and to pay for monthly subscriptions. Some, like *The Sims Online* and *Second Life*, even allow players to buy virtual money and virtual goods with real money. According to Locke's theory, the exchange of real currency for virtual goods and services entitles players to the goods they acquire even if these were initially produced by the developers. The same holds true when virtual goods are exchanged for other virtual goods. So long as the players expend labor to earn money and items, they are entitled to the benefits of their labor. If labor is the mark of ownership, then players have a claim to property that they have purchased, won on quests, or earned working a virtual job. However, just as in the real world, they would usually not be entitled to goods stolen from other players or those that other players have lost.

Although Locke says little about the nature of property once it is transferred through exchange, his thoughts about the nature of

money provide some guidance for theorizing virtual exchange. Initially, Locke sets limits on the amount of property that a single person can acquire. One is the spoilage limit, which holds that a person can only justifiably have as much as one can use. It would not make sense to collect more food than one can eat or trade because food has a shelf life that prevents it from being a permanent store of value (Locke, 1980). In a pre-monetary society, there can be no accumulation, Locke thinks, because all goods are prone to degeneration over time if they are not used. The critical breakthrough is the introduction of money as a durable mark of the value of the labor added to a product (Locke, 1980). For digital property, the spoilage limit may seem to be irrelevant. Digital property can exist indefinitely without decaying. However, virtual goods, whether they are items or money, can spoil in the sense of losing their value. With no limits on the quantity of virtual goods that can be produced, they are highly susceptible to value fluctuations.

There must be trust that when something of value is exchanged for virtual goods – whether it is real money, virtual goods, or the investment of time, energy, and money necessary to play the game long enough to find the goods – that the transfer of ownership will be recognized. To do otherwise, violates the trust that gives representations of labor their value. Players labor to create and acquire virtual property, but they do so with the expectation that their labor will be rewarded. Just as athletes endure painful training regimens to feel the excitement of defeating rivals and sick people undergo painful medical treatment to become healthy, players endure unpleasant moments of virtual worlds so that they can reach some more pleasant payoff. Players may experience level grinding and quests to obtain items as means to an end or as enjoyable in themselves, but in either case, the player is probably working toward some greater goal. Players want to earn achievements, reach higher levels, and find new items. They spend countless hours in virtual worlds in pursuit of these things. Whether or not they enjoy the experience, they are motivated by expectations of things that are yet to come (Rueveni, 2007).

To appreciate the importance of expectation in the value of virtual goods, consider the extent of its effect on the real world. Money has no intrinsic value, even when it is backed by gold or silver, as no objects have value apart from the value that people attribute to them. The only thing that makes money a useful means of exchange is that people trust that it will store value. Its worth depends on the expectation that it can be exchanged for other goods. This is true for exchange more generally. Goods hold their value to the extent that there is a collective trust that they can be exchanged. The result of a breakdown in trust can be catastrophic market failures, bank runs, and inflation. As Locke says, money “has its value only from the consent of men” (1980, p. 29). Players may not create the money or the items that they use in the virtual world, but these things represent the value of the labor the player used to obtain them. These items can only symbolize this value to the extent that there is a general trust that these things will retain their worth and that the value will be recognized as an indicator of the amount of labor required to purchase or obtain them. If anything, trust is even more important in virtual worlds, as these do not even offer a material substance that can be used if exchange value disappears. Developers sometimes change the power of items they have created, causing the item to be less valuable for use and exchange (Kayser, 2007: 69; Meehan, 2006 p. 32). Doing this violates trust in much the same way as devaluing currency.

WHO OWNS THE WORLD?

The final object of property contestation may be the virtual worlds themselves. As Westbrook (2006) points out, users and developers both invest considerable labor and money in virtual worlds, which seems to give both parties rights to claim ownership of them. Based on the account of the common², discussed on the previous section, virtual worlds cannot be considered the property of the game’s developers alone. Although developers labor to produce much of the virtual world and they own the servers that

host the worlds, so much of the virtual world is constituted by the common₂, that developers cannot be the sole owners. This may seem to be an unsatisfying answer, given the necessity of determining who has the right to modify virtual worlds and to control access to them. There is also the problem of whether users have any right to protect their investment in a virtual world should the developers decide to end it. Although the largest virtual worlds have yet to encounter this problem, it is only a matter of time before even the most popular comes to an end. If this end results from waning interest in the world, then it may be undisputed. However, if it is carried out against the wishes of the majority of players and threatens to destroy their investments, it may be contested.

Virtual worlds are extremely vulnerable, as they only exist on the host servers and these are physical objects that must be maintained by someone in the real world (Lastowka, 2004). Given this practically necessity of maintaining the servers, someone must have the responsibility of hosting virtual worlds and controlling them, even though they may be collective products. Developers have the strongest claim to ownership of virtual worlds and the right to gain profits by hosting them because they are responsible for producing much of the content of these worlds and for ensuring that the worlds continue to exist. However, their ownership of the worlds should not imply that they have unlimited power over them, as this would violate players' claims to ownership of the common₂ and the virtual goods that they own.

It would be unfair to force developers to continue hosting a virtual world indefinitely, but they could be obligated to transfer the authority to host the world to the players who have helped to create it and to give the players the opportunity to preserve the world that their labor helped to establish. This would support a more democratic style of governing virtual worlds and it is a subject that Jankowich (2005) has discussed at length. Jankowich argues against Balkin (2004), who thinks that users should not be granted property rights, by saying that failure to recognize players' property claims

would leave players completely at the mercy of the game developers. The failure to recognize property rights would establish virtual world dictatorship, in which players have few rights and the results of their labor could be alienated at any time (Jankowich, 2005). Thus, Jankowich, like Locke, finds that property ownership is desirable because it decentralizes control and empowers ordinary citizens. "Property ownership by participants will help to serve as a stepping stone to greater democracy in virtual worlds" (Jankowich, 2005, p. 206). As he points out, property ownership may be a precondition for establishing virtual rights for users and creating participatory institutions with which to govern virtual worlds.

CONCLUSION: THE RESPONSIBILITIES OF OWNERSHIP

When modified to fit virtual worlds, Locke's theory of property implies that much of the content of these worlds should belong to the players whose labor makes these worlds come alive as sites of social interaction. A Lockean theory of virtual property provides strong grounds for recognizing players as the collective owners of the social common and individual players as the owners of their avatars and virtual goods that they have either created or purchased through an exchange of labor. Viewing virtual property in this way supports efforts of scholars in other fields to show that networked media have undermined the traditional dichotomy between producers and consumers (Jenkins, 2006, 2007; Russell, 2008; Sandvoss, 2007). In virtual worlds, developers and players are each producers. The former produce the environments, the quests, and the structure of virtual worlds. The latter produce the social networks, institutions, and culture of the worlds, as well as the thousands of player-created characters who inhabit them.

The Lockean reading of virtual property proposed in this paper suggests that players should have the right to sell their avatars, goods

they have created, and goods they have acquired through exchange. However, this should not be taken as granting players the right to do whatever they wish with the avatars and goods that they create. Players with property also have responsibilities under Locke's theory. Locke poses several constraints on individual accumulation. In principle, no constraints are necessary, as the scarcity imposed on virtual goods is unnecessary. It is possible to grant all players access to all of the items in the game. However, doing so would undermine one of the elements of gameplay. Without scarcity, the struggle to overcome challenges and to reach new levels of play might seem hollow. The scarcity of the digital world is artificial and unnecessary, but it has a significant effect on gameplay. According to Locke's theory, players must recognize that they are playing in worlds with scarce resources and recognize the needs of other players. Those who own property must leave enough for others, both in terms of quantity and quality (Rawls, 2007). The limit Locke (1980) imposes is that a person can only own what they can use.

Thus, the Lockean theory of property states that those with property have obligations to those who do not. Players have a strong claim to being able to use the common₂ for their own purposes and to consider player-created goods and developer-created that have goods that have been acquired through exchange to be their property. However, by the same standard, players have no right to deny others the use of common₂ or to use their power to prevent others from attempting to enrich themselves through labor. As players continue to assert their rights to their own creations, they must also continue to uphold the rights of future players to freely access the common₂ and to labor to acquire their own virtual property.

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Marcus Schulzke is a PhD candidate in political science at the State University of New York at Albany. His primary research interests are political theory and comparative politics, with special attention to contemporary political theory, moral theory, and political violence. He is currently working on a dissertation about how soldiers make moral decision in combat.

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Correspondence and questions:

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International Journal of Technoethics
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