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Virtual Guinea Pigs: Ethical implications of Human Subjects Research in Virtual Worlds

ABSTRACT

In recent years, virtual worlds have increasingly become a focus of researchers across a multitude of disciplines, as researchers are beginning to discover the previously untapped research potential of virtual worlds (Bainbridge, 2007). However, with new technologies and methodologies for research come new ethical concerns or at least the need to re-evaluate existing codes of conduct. Currently, many researchers appear to see little harm in meddling in the virtual realm. In fact, the lack of harm is touted as one of the advantages of virtual world research. Often, researchers rationalize that virtual worlds are fair game for a number of reasons – some reasonable, others questionable. These rationalizations are a product of an oversimplification of the reasons why people participate in virtual communities and virtual worlds. This paper will discuss the ethical issues and implications surrounding the use of virtual worlds as a sandbox for research.

The first section of this paper provides a brief historical overview of the founding ethical principles of human subjects research, abstracting and highlighting fundamental procedures and practices. The second section discusses and elaborates on the potential ethical issues and problems of doing human subjects research in virtual worlds. The third section examines the ethical implications of virtual world research through the lenses of several traditional ethical theories. In the fourth section, several virtual world research scenarios are extrapolated to demonstrate the complexity of the ethical issues at hand. In the final section, recommendations to mitigate or resolve ethical concerns in human subjects research in virtual worlds are proposed and discussed.

HISTORICAL OVERVIEW OF ETHICS IN HUMAN RESEARCH

History has repeatedly demonstrated that horrible atrocities can occur without proper ethical guidelines and enforcement. Using historical landmarks in human research, several parallels between research involving humans and research involving avatars can be seen. While issues of ethics and human research have been intertwined through the annals of history, the fundamental developments on the ethics of human research are concentrated during the 20th century. Much of the work towards a set of universal moral codes in terms of human medical and behavioral research bore out of a series of infamous events, the most distressing being, the eugenics movement in the United States, the Tuskegee Syphilis study, and the Nazi human experiments during World War II.

The eugenics movement, which began in the mid-nineteenth century by English scientist Sir Francis Galton, was based on the idea that only genetically fit individuals should have the right to reproduce, having been based very inaccurately on the principles of evolution (Cowan, 1985; Gray, 1999). This idea led to a “scientific” movement became very popular through the mid-twentieth century in many parts of the world, particularly in the United States. Along with reinforcing the racism and sexism of the time, eugenics became the inspiration for a

wide array of laws mandating the compulsory institutionalization, sterilization, or even extermination of persons with physical and mental disabilities (Jaeger & Bowman, 2002; 2005). These laws in the U.S. inspired many other nations—Britain, Canada, Australia, Denmark, Norway, and Sweden, among them—to pass similar laws (Jaeger & Bowman, 2005). California's eugenics laws were so draconian that their text served as the basis of the laws of Nazi Germany used to justify the slaughter of hundreds of thousands of persons with disabilities in Europe (Reilly, 1991). Ultimately, most eugenics laws were permanently abandoned when the practices of Nazi Germany became known (Jaeger & Bowman, 2005).

During World War II, the Nazi regime also committed a significant number of horrifying human medical experiments on prisoners of war and concentration camp inmates (Proctor, 1988; Weindling, 2005). These experiments included infecting non-voluntary 'participants' with malaria, freezing them for frostbite research, performing pressurization experiments with high altitudes, exposing their boides to various industrial materials, and introducing them to various deathly gases, bacterium, viruses, and poisons (Spitz, 2005). These experiments were often carried out in sadistic manner with no concern for scientific principles and the participant's ultimate well being. Many survivors suffered severe pain and experienced horrible deaths in large numbers, with little to negligible gain in the area of knowledge for their unwilling sacrifices (Weindling, 2005).

After the war, the Nazi doctors and officials who carried out the experiments were tried before an international tribunal in Nuremberg, Germany. While the doctors were found guilty and punished, there was a sense in the international medical and scientific communities that proper rules of conduct should be established to prevent such atrocities from reoccurring in the form of the Nuremberg Code (Barnbaum & Byron, 2001). The Nuremberg Code consisted of ten ethical principles on medical human experimentation, including requirements of voluntary and informed consent, properly formulated scientific experimentation practices, and a lack of coercion and deception.

Informed consent is the concept that a participant understands the facts and implications of a given situation. In the research context, informed consent is an important ethical component, as informed consent gives the power to the participant and prevents abuses from a lack of understanding. By giving the power of choice to the participant, this eliminates most potential for participants to be used as a means to an end, which follows deontological ethics, notably Kantianism. Informed consent has become an important staple of ethical human research.

The Tuskegee Syphilis experiment, which began in 1932 and continued until 1970s, was a study were the participants were denied proper medical treatment for Syphilis (Barnbaum & Byron, 2001). The study was particularly notorious as it used and abused poor people who were uneducated or misinformed about their medical conditions and who were overwhelmingly African American (Barnbaum & Byron, 2001). Beyond that fact that patients were denied treatment, they were also intentionally deceived. Crucial information about the study and the explanations of the researchers' activities were withheld, which, if understood, would have affected the

decision making process of the participants, potentially leading to the unnecessary suffering and deaths of many of the participants (Barnbaum & Byron, 2001).

The infamous Tuskegee Syphilis experiment ultimately led to the Ethical Principles and Guidelines for the Protection of Human Subjects of Research, better known as the Belmont Report. The Belmont Report was created in 1979 by the United States Department of Health, Education, and Welfare. In the report, three ethical principles were established: respect for persons, beneficence, and justice. Respect for persons instills the idea that all participants should be treated with common respect and decency. The beneficence principle states that researchers should maximize the benefits for humanity, while minimizing the potential harm. The justice principle refers to the need for researchers to fairly distribute the benefits and costs of research.

The Tuskegee Syphilis study and the Belmont Report helped lead to the creation of the National Human Investigation Board and the establishment of the concept of Institutional Review Boards (IRB). Institutional Review Boards are, in essence, an ethical oversight committee that analyzes research work, both before and periodically throughout the research, to ensure that the rights and welfare of human participants are protected (Barnbaum & Byron, 2001). The Belmont Report continues to be used a core indispensable reference for IRB members to consult.

In the realm of psychology, the American Psychological Association has created a set of guiding ethical principles, Ethical Principles of Psychologist and Code of Conduct (Kimmel, 1996). These guidelines build on much of the principles from other established guidelines such as the Nuremberg Code. Some more notable cases of research studies that should not happen under current ethical guidelines include the Milgram obedience study, the Stanford prison experiment, and the Monster Study.

The 1931 Monster Study was a stuttering experiment that used orphans, who were belittled to determine if negative speech therapy would induce stutters (Goldfarb, 2005). The Milgram obedience experiment was a social psychological experiment that occurred during 1960-1964 to determine obedience when personal values conflicted with personal conscience. Researchers deceptively led participants to think that they were torturing real human beings with electrical shocks (Kimmel, 1996). The Stanford prison experiment was a psychological study that involved participants acting as prisoners and guards. The experiment was shut down as it began to grow out of hand, as the participants would were acting as guards become more sadistic in the treatment of the participants who were acting as prisoners (Kimmel, 1996). Effectively it, much like Milgram study, demonstrated issues of obedience, authority, and cognitive dissonance.

The Monster Study occurred before the post-World War II push toward better ethical practices in the medical and behavioral sciences, while the Milgram study was conducted before the Belmont Report. However, the Stanford study occurred after the ethical practices of the Belmont Report were in place. The ethical problems surrounding those cases involved the deception and distress of participants and the proper scope of informed

consent. Since then, the APA has responded by tightening and clarifying the scope of informed consent. This demonstrates that even with proper ethical practices in place, loopholes can exist and need to be corrected.

Elemental ethical principles, such as informed consent, in combination with community oversight, provide a powerful structure to eliminate ethical abuse. While the ethical ideals may require little change over time, ethical codes and practices must evolve to reflect and accommodate changes in society and technology.

RE-EVALUATION OF ETHICS AND TECHNOLOGY

With the introduction of any new technology, there exist both new potential opportunities and new unforeseen ethical pitfalls. As a new technology is introduced, we must as a society determine its proper role within the context of the ideals to which we esteem to live by. The introduction of a new technology does not necessarily force us to throw out previous ideas; technology is grounded in the past, by its ancestors. We formulate our understanding by using a bridge of familiarity to help better understand technology. For example, a cell phone is much like a telephone. A cell phone fills much of the same sociotechnical role as a landline telephone, yet it also creates new situations and possibilities that need to be considered. Therefore, as a society, we must adjust accordingly.

The need to reanalyze technologies in scientific research with respect to the greater ethical context is no different. With the creation of new research platforms and technologies, we must look to the past for understanding, yet we must also look to see what differences exist and adjust accordingly. Now that a broad overview of ethical frameworks in terms of human research has been introduced, let us now look from at the ethical issues from the side of technology.

Virtual worlds have their historical beginnings in MUDs (multi-user dungeons) and MOOs (MUD object oriented), which were early text-based multi-user environments that combined role-playing with social chat rooms. From these early proto-ancestors evolved the graphically complex and highly immersive MMORPG (massive multiplayer online games) that serve as virtual worlds. The early academic research into MUDs and MOOs has helped to shape how researchers ethically approach virtual worlds. Furthermore, virtual worlds are essentially grounded in the Internet. While no definite overarching set of ethical codes for Internet based research exist, many organizations have attempted to address the unique aspects of online environments. The Association of Internet Researchers has proposed a document entitled the “Ethical Decision-Making and Internet Research” to assist researchers in understanding the complexities of Internet based researcher including a variety of mediums. It should be acknowledged that while helpful in framing issues, the document is merely a set of guidelines and recommendation and not as it says an exact “recipe” in comparison to the more concrete ethical codes (Ess, 2002). Therefore, in the absence of more definitive guidance, it is necessary that we look at what possible issues affect the virtual world platform.

VIRTUAL HARM – ETHICAL ISSUES AND POTENTIAL PROBLEMS

This section examines potential ethical problems areas that are introduced or enhanced because of the virtual world platform.

The Magic Circle and Damage to the Social Ecology

The magic circle is a concept from ludology first introduced by Johan Huizinga (1938). The magic circle of play is a term used to describe the “voluntary contractual structure that is limited in time and space” that participants agree upon to determine the boundaries of what activities are playful in respect to the game (Montola, 2007, p.1). Therefore, the magic circle could be seen as defining the boundaries, rules, and acceptable behavior, which allow a game to exist. Breaking the magic circle would involve something contrary to this agreed upon standard and would take the 'fun' out of the game. For example, in a game of poker, if a player is found to be cheating by using hidden cards, the circle is broken and the game ceases to be fun.

In terms of virtual worlds, a magic circle of play exists as well. The problem for researchers is that players come to virtual worlds to play, while researchers come to conduct research. Therefore, the issue is whether research can happen without breaking the magic circle. In some cases, it is possible that researchers can avoid breaking the circle, using certain techniques and methods that minimize their direct contact and manipulation of the virtual world. However, in most cases, avoiding direct contact with the virtual world becomes quite impractical given the nature of the study and of the virtual world itself.

The magic circle could be crafted in similar terms to that of a social ecology. The damage to the social ecology is a major area of concern for researchers in other areas of study, specifically in that of ethnographic research, where they seek to minimize or mitigate damage (Oliver, 2003). It is important that the environment must remain undisturbed to prevent the taint of intervention in the research data and to prevent negatively affecting what is being studied. Therefore, since the magic circle is a crucial element to the game, the world, and the players, all researchers should respect it and any violation of it should be carefully considered before proceeding.

Emotional Attachment

As demonstrated through previous ethical frameworks, careful attention is required to protect the interests of the participant from multiple forms of harm, both physical and emotional. While the potential for direct physical harm to occur during research of virtual worlds is almost non-existent, participants can suffer still suffer serious emotional harm both directly and indirectly.

Emotional attachment to the virtual world, particularly in the form of a participant's avatar attachment has been documented (Wolfendale, 2007). Whether this type of attachment is a healthy expression can be debated, such attachment has been shown to occur. Further, people can become distressed when virtual people, i.e. an

avatar, are in virtual 'pain.' Researchers retooled the infamous Milgram experiment to determine if the participants felt distress when shocking a virtual person (Slater et al., 2006). While this study was not performed within a virtual world, it does have several implications for virtual worlds. The first implication is that people can become distressed when watching a virtual person suffer what appears to be pain. While the subjects of the study fully understood that the virtual person was not real, and were repeatedly reminded that the entire situation was completely artificial, the subjects of the study were still shown to exhibit signs of stress via skin conductance and ECG analysis readings (Slater et al., 2006).

The idea of emotional discomfort is not uncommon in a research context, and is allowed as long as it is minimal and within an acceptable level. The problem becomes how to come up with a quantifiable metric to judge emotional discomfort in the virtual world context. One issue to consider is how to remotely measure the distress of a person virtually. Researchers may not have direct access to the participant, which would make distress hard to measure just through witnessing changes in the actions and behaviors of the participant's avatar.

Multifaceted Value and Motivations

Multiple models have been supplied to delineate the differences in the activities of virtual world participants such as Bartle's classic model of “Achievers, Socializers, Explorers, and Killers” (1996) and Yee's model of “Achievement, Relationship, Immersion, Escapism, and Manipulation” (2006). While these models vary in theory, they do help to illustrate that participants seek different things when they participate in a virtual world. Beyond the simple “to play,” participants might, and often do, use virtual worlds for socialization. Research that does not take these other reasons for participation into consideration risks negatively affecting members of the virtual world.

Economic and financial damage

Beyond the issue of emotional attachment to avatars and virtual worlds, there is also the potential for economic and financial damage to occur, which can have more direct real world consequences. Some virtual worlds have become viable thriving economies and become the center for economic research (Castronova, 2001). Among virtual worlds, Second Life is of particular interest as it allows its participants to own, license and sell intellectual property rights on digital goods they create and buy (IP Rights, 2007). This economy is encouraged by the fact the users are allowed certain intellectual property protections, which allows them to benefit from selling or trading their creations. Also important to note, unlike most virtual worlds, the Second Life currency, the Linden, can be easily converted into real currency. Any damage to virtual property has very explicit and immediate monetary ramifications.

Anonymity, Reputation, and Trust

The issue of anonymity might appear to be a moot ethical point when researching people in virtual worlds, as the nature of participating in the virtual worlds usually requires a person to forgo their own namesake for that of a pseudonym/avatar. This assumption might be valid in some situations, but the growing importance of one's avatar's reputation in a virtual world can complicate this issue. Players can spend considerable time developing an in game reputation based on their avatars. Beyond damaging an avatar's reputation, it is highly possible that a popular reputation might lead participants to connect their real life name to their popular avatar for various reasons, thus negating the assumption of anonymity. An example of this would be the popular virtual real estate broker, Ansche Chung, who is the online avatar/personality of Ailin Graef in Second Life (Sloan, 2005).

Further, online communities and virtual worlds have become a major part of the construction of social networks for many people. Trust in digital information is an important research topic that requires significant additional research (Kelton, Fleischmann, & Wallace, 2008). The exchange of information has become a very important of online interactions, with some people relying on online social networks to provide trusted information (Burnett & Jaeger, in press; Burnett, Jaeger, & Thompson, in press). Experiments in online communities not only threaten an individual member's anonymity or online reputation, they have the potential to disrupt social networks and information channels that are relied upon and trusted.

Participation

A common and overly gross simplification of virtual worlds is that player participation is optional. While fundamentally correct, this logic does not incorporate the importance of virtual worlds to the participants. Quitting is not a reasonable, rational choice for certain individuals who may have an emotional or economical investment in the virtual world community.

Minors

There are a considerable number of minors who participate online in virtual worlds (Yee, 2006). Distinguishing between minors and adults, like many other characteristics, can be difficult to discern in a virtual world. Almost all ethical guidelines take into consideration the special circumstances surrounding this certain group of people. Minors are typically viewed as not having the ability to provide informed consent without the direct involvement of a parent or guardian. In addition to the issue of informed consent, the risk/benefit analysis should be calculated differently for minors. This mirrors the same issues that occur in other issues of Internet research where identifying characteristics are difficult.

Public Spaces

What constitutes a public space in the virtual world is not as easily recognizable as it is in the physical world. Even the issue of the possible existence of public spaces in virtual worlds is a much debated topic. On one side

of the debate, some have argued that virtual worlds are, in fact, public spaces as they represent the essence of public space (Oliver, 2002). Others have argued that virtual worlds are not public spaces as they are carefully controlled with certain rules and regulations crafted by the owners of the virtual world environment (Taylor, 2002). In terms of corporate ownership and intellectual property rights, virtual worlds and spaces contained in them would function as private spaces. In a physical world comparison, a virtual world would be similar to a shopping mall, meaning a private space that is often perceived as being a public space.

For researchers, the distinction between whether a virtual world functions as a public space or as a private space is an important factor in determining the expectation of privacy of those participating. Without proper and mutual understanding of a public space, researchers may exceed their scope and participants may feel as if their privacy has been violated. In the continually absence of more formal clarification, the distinction between public and private space will remain a gray area. Researchers should take reasonable precautions and avoid selectively classifying spaces to fit their research needs.

Since virtual worlds can be considered to be private spaces, there exists the potential need to collaborate with the owners and administrators of the virtual worlds. In this regard, virtual world administrators function as gatekeepers, as they effectively control access to the community that the researcher wishes to study (Oliver, 2003).

BEYOND CODES AND GUIDELINES: A TRADITIONAL ETHICAL PROSPECTIVE

Beyond looking at established ethical codes of conduct for human research and scenarios, further ethical analysis can be derived from normative ethical theories as lenses to view the problems of human subjects research in virtual worlds.

Kantianism

According to Kant's first formulation of the Categorical Imperative, we should only act according to moral rules that we would be willing to follow universally (Quinn, 2006). The translation of this scenario into a moral rule would be: I may use virtual worlds and virtual world participants for research purposes without informed consent. However, if this rule were applied universally, virtual world participants would never know when the virtual world was being used for its original purpose and when it was being appropriated for research purposes. The magic circle would be broken and the game would lose its meaning which, as a result, would cause people to stop participating in virtual worlds for the purpose of 'playing.' If this were to occur, there would be no participants to study, which invalidates this rule as a moral law. Therefore, since this act fails as a universal law, it would be unethical according to Kantianism.

Furthermore, when doing research using virtual worlds with human based subjects, via avatars, to better understand a problem, without going through a process of informed consent, researchers are using people as a means to an end, violating Kant's second formulation of the Categorical Imperative (Quinn, 2006). The only way to prevent virtual world participants from being used as a means to an end is to properly inform them of the purpose and nature of the research. Kantianism would dictate that conducting research on participants in a virtual world could only truly be ethical if the participants were both informed and willing. Without proper consent, all research would be ethically wrong. This core belief of both wiliness of subject and informed consent is included in most ethical guidelines of human research in the physical world, such as the Belmont Report.

Utilitarianism

From a utilitarian perspective, we would look at the consequences of doing research on the participants of virtual worlds. Utilitarianism follows the principle of utility. The consequences that lead to increasing the total happiness of all stakeholders are viewed as morally right and those actions that lead to decreasing the total happiness are viewed as wrong (Quinn, 2006). Using this ethical theory, we would formulaically look at the type of research being done, the potential for a greater positive outcome for all those involved, which include researchers, participants and society as a whole, and the potential negative outcome of including virtual world participants in the research.

The weakness of this ethical theory is that it has the potential to disenfranchise the desires and needs of the minority in a typical situation. Historically, abuses in human subjects research have often been directed at specific minority groups. Another weakness of using this ethical theory is that it greatly depends on various methods of weighing the outcome. One of the major issues with human subjects research is determining what harm is. This idea of weighing the potential positive good to society that could come with the research against the potential negative harm to the participants is espoused in the aforementioned ethical guidelines of human research. However, the weighing of potential good against negative harm is greatly simplified to ensure that maximum potential is achieved while only little or no potential negative harm is received, which could lead to abuse for the greater good (Barnbaum & Byron, 2001).

Relativism

Relativism in ethics is the theory that there are no universal moral norms of right and wrong (Quinn, 2006). Rather than have universal rules for morality, relativism states that morality can only be judged in terms of context of the subject or culture. In terms of normative ethics, relativism is usually considered an unworkable ethical theory as it provides no universal and consistent method for determining morality. While it cannot help us to judge whether the researchers' actions are moral it can provide supporting insight that can help to determine what kinds of actions have potential harm towards virtual world participants.

Most virtual worlds, especially MMORPGs, could be considered to have their own distinctive culture. Within a virtual world culture, the community often dictates what types of practices are considered socially permissible. Actions that might escape codified rules yet are viewed poorly by communities should not be ignored. Powers argues that 'real' wrongs can occur when using moral relativism in conjunction with community practices (Powers, 2003). For example, Powers argues that the infamous ‘virtual rape' incident described in Dibbell's “Rape in Cyberspace” (1993), was wrong and did cause harm. In this 'virtual rape' case, while no physical harm was created, nor was any technical or legal rule violated, the 'virtual rape' incident did constitute a moral wrong and the attacker did cause significant psychological and emotional distress on the victim and the other participants.

The relevance for researchers is that harmful actions could be extracted from a virtual world community's culture. Researchers and IRB members need to understand the distinctive cultures of specific virtual worlds as well as the general features of virtual worlds in order to understand what actions cause distress and, more importantly, what degree of distress is caused by an action. Such an understanding is an important requirement for developing universal guidelines such as a social contract.

Social Contract Theory

Social contract theory states that morality is dependent and judged upon the social agreements or contracts that are developed by rational people for their mutual benefits in the formation of society or government (Quinn, 2006). While each virtual world is unique, most virtual worlds require players to agree upon certain contractual documents to participate. These contractual documents include end user license agreements, terms of service agreements, and 'codified' community standards documents. These documents usually accompany the software, which is required for users to participate in a particular virtual world.

In this regard, since every participant is bound to the same 'moral' principles and practices, these contractual documents in the aggregate would form, in essence, a social contract. Players that fail to follow these guidelines are viewed as wrong and are usually subject to some type of punishment. Moreover, the rules that bind virtual world participants are often very different from the traditional rules that bind members of society in the physical world. For example, griefing, kill stealing, ninja looting, camping lurking and gold farming are all examples of practices or behaviors that are considered wrong in virtual worlds, but have no realistic parallels in the physical world. However, without moral rules against these activities, a virtual world would fundamentally break down, reinforcing the idea of the need for social contracts.

Following social contract theory, to participate in a virtual world, researchers are inexorability tied, both socially and legally, to the same rules of conduct that other players are obliged to follow to maintain order and structure. Since this social contract exists to benefit the virtual world participants and ensure that the virtual

society does not collapse, respecting them should be considered paramount by researchers. When conducting research or formulating research methodology, both researchers and IRB members should consult the respective contractual documents for the virtual world in which they wish to conduct research and determine if any of their research activities violate its principles or rules.

Of particular concern is the potential for researchers to circumvent the 'law' and avoid punishment. Since the social contract rules exist to maintain the virtual world society, those that have no considerable stake in maintaining that virtual world will show little regard in abiding by those rules. A researcher may agree to the social contract, then directly violate it to conduct research. A researcher, once the questionable research is done, would not fear any punishment that the virtual world could provide, including the most severe punishment, banning. Therefore, it is particularly important that researchers and IRB members understand these rules, so they can avoid and prevent circumvention.

Moral Universalism

Building on the area of social contract theory is the idea of moral universalism. Moral universalism is a meta-ethical theory that states that a system of ethics can be applied universally to all people. A popular example of moral universalism would be the United Nations Declaration of Human Rights. In terms of virtual worlds, this theory has two potential applications.

The first application is that regardless of the environment, virtual or physical, people have a certain set of human rights, such as the UN Declaration of Human Rights, that apply to their virtual self. However, this application quickly breaks down, as most human rights are violated in the scope of play, via the magic circle. While arguments for or against the extension of human rights into the virtual world has been debated, as a current matter of practical they will be excluded.

The other more relevant application of moral universalism is the growing movement towards a participant-oriented declaration of rights. Proposals and earlier frameworks have been suggested, specifically in the Declaration of Virtual World Policy at the First Synthetic Worlds Congress (Malaby, 2007) and in Koster's hypothetical Declaration of Rights of Avatars (Koster, 2006). These declarations attempt to universally apply certain moral principles among all virtual worlds, while still maintaining enough exceptions to be less structurally rigorous than declarations of rights in the physical world. Currently, no declaration proposed has been seen as successful. Therefore, moral universalism has no immediate impact on human research ethics. However, they arguably exist as a future concern and may have the potential to parallel the historical evolution in the codification of human rights and human research guidelines in the physical world or raise more questions than they answer, as in the case of similar declarations such as Barlow's “Declaration of Independence of Cyberspace” (1996).

SCENARIOS IN VIRTUAL WORLD RESEARCH

To help contextualize the problem, three real research scenarios will be hypothetically expanded to further discern ethical issues and problems.

Scenario #1 – "Social" Bots

In a recent study, researchers wanted to learn more about spatial social behavior and proxemics in virtual worlds, specifically Second Life. The study attempted to determine if people via avatars displayed any distinct social behavior in communication. (Friedman, Steed, & Slater, 2007) The researchers created fully automated 'bots' disguised as avatars. These bots were programmed to seek out other human controlled avatars in the virtual world and then attempt to engage them in simple scripted conversations. Once it's programmed engagement was completed, the bot would then begin to automatically seek out the next available avatar, or shut down until one could be found. The 'bots' also served as data collection instruments, as they were able to automatically recorded and collected data the movements and activities of the avatars interacted with it.

Friedman, Steed and Slater determined that no ethical problems arose as a result of their study, mentioning that while they considered the ethics of their study, they found that the manipulation of the subjects was "clearly insignificant" (Friedman, Steed, & Slater 2007). However, they assert that future research in this area using similar methodologies may require a more in depth ethical analysis given context, particularly acknowledging the importance of online personas and the potential need for informed consent in future studies (Friedman, Steed, & Slater, 2007). The researchers also discussed that the creation of more advanced bots might carry out more meaningful social interactions which would greatly increase the deception on the part of the researchers, forcing the need for stricter ethical consideration, such as informed consent, which would make the research purposes of the interactions more transparent (Fleischmann & Wallace, 2005).

The process of automating conversations for the purpose of study rather than conversation runs parallel to the idea of spam. This practice would run into conflict with Kant's imperative not to use people as a means to an end. Furthermore, this practice of using a bot to solicit responses could run in conflict with Second Life's Terms of Service (TOS). Breaking the Second Life TOS would be tantamount to ethically breaking the social contract that all players are bound to follow.

Scenario #2 – Virtual Plagues

In September 2005, a developer working to update the code of the virtual world, World of Warcraft accidentally created an in-game plague (Lofgren & Fefferman, 2007). The developer had intended to create a new instance, for the boss Hakkar the Soulflayer, in which he would cast a spell called Corrupted Blood (Corrupted Blood, 2007). This debuff spell, when cast on a player, would negatively affect their health over a fixed period of time.

The Corrupted Blood spell would be shared with players that came in contact with already 'infected' players. The developer failed to factor in the consideration that higher level players, NPC (non playable characters) and character pets might spread the disease to far more people and more geographic areas than as predicated. While the plague had no long term effects and was eventually resolved in another update, the short term effect was devastating, killing large numbers of players.

Virtual plagues, such as the Corrupted Blood incident, are nothing new to virtual worlds. Other virtual worlds have experienced similar incidents, including the Grey Plague of the Kingdom of Loathing (Boman & Johansson, 2007), and the “Guinea Pig Plague” of the Sims (Virtual Plague, 2007). What makes Corrupted Blood particularly unique was that after the disease was reported in the news, several epidemiologists and researchers noticed certain parallels between the human reactions to that of the virtual plague and the possible connections to the reactions of groups of people in during a disease outbreak in the physical world (Balicer, 2007). Researchers have been collecting data from the Corrupted Blood incident, and have begun to discuss the potential to use virtual worlds as a methodology for modeling the spread of disease epidemics in the physical world (Lofgren & Fefferman, 2007).

Since the Corrupted Blood incident was the result of an accident, and not malicious intent, it could be thought of as equivalent to a simple act of nature. Researchers are using the recorded data, post-tragedy, to try to determine if parallels can be drawn between the actions taken by virtual world participants during an epidemic and the actions of a people during an epidemic in the physical world.

But what would happen if the initial outbreak of this scenario was directly caused by an individual who intended to benefit off of the research derived from the event? This hypothetical scenario is particularly concerning considering that no safeguards exist to prevent such activities from the collusion of business and research interests. For designers, there has been little discussion in the realm of ethics in virtual world design beyond a few notable exceptions (Bartle, 2004). In terms of the ethical codes of conduct for game designers, the ACM Software Engineering Code of Conduct could be consulted by game designers, but nothing is required and it is far from enforceable. This gives virtual world designers and administrators immense power of control in the virtual world with minimal oversight. Therefore, game designers could do activities that would be ethical impossible for researchers. With access to the designers, researchers would have a great source of power at their disposable. Morally questionable researchers could use game designers as agents to carry out that which they cannot. Or, even more problematic, researchers can create virtual worlds for research purposes, giving them complete control over the rules and code of the virtual world.

This combination of unethical researchers and the powerful virtual world administrators would be an ethical quagmire as well as nightmare scenario for participants. As, ultimately, individual players would have little method of recourse or restoration when disagreeing with the policies and procedures of the virtual world. This hypothetical may not be too far in the distance future, as the idea of more collision between designers and

researchers exist. For example, since the Corrupt Blood incident, epidemiology researchers have been in discussions with game designers on how further research can be done (Online gamers rehearse real-world epidemics, 2007). This might lead to researchers that treat private MMORPGs as virtual incubators for computational simulations, from studying incidental data to making incidents happen in order to study them.

Scenario #3 - Why Pox

Whyville, developed by Numedeon, is a multi-user virtual environment (MUVE) specifically created for educational purposes. The Whyville virtual world provides educators an instructive tool to allow students to interact in a controlled virtual environment. In this regard, Whyville functions more as a simulation, rather than the stereotypical privately owned virtual worlds as previously mentioned.

The Why Pox 'virus' was created to assist in the teaching process of children for a particular study (Neuligh & Kafai, 2005). Unlike the previously mentioned virtual plagues, its introduction was structured. It was not created to research the children's reaction to an actual viral outbreak but merely to help better illustrate to the students natural infectious diseases and their respective processes. The researchers heralded their study for its educational potential but also because it allowed students to interact with virtual infectious diseases without physical harm to their actual self.

Unlike previously mentioned virtual worlds, this virtual world and its respective avatars were constructed for the sole purpose of education, specifically for this core education exercise. As a simulation, the researchers are exempt from some of the previously mentioned ethical considerations discussed with in the context of the privately owned virtual world. For example, as a simulation, researchers do not need to be worried about damaging the social ecology or the magic circle as none would exist. Running as a virtual world as a simulation, however, does not except them from all ethical guidelines.

Infecting the virtual avatars of children with goal of helping them in the process of learning may seem like a relative harmless and educationally effective activity, but itself does raise potential areas of ethical concern. The emotional attachment of the children to their virtual avatars and the possible distress or shame that could be generated from having their avatar infected is of particular notice. While these concerns could initially be mitigated through the process of properly informing the children of the activity, it may not be enough considering the potential emotional impacts on young participants (Slater, 2006).

CONCLUSIONS AND RECOMMENDATIONS

Due to the number of disciplines and various types of research involved, one all-encompassing set of ethical guidelines for virtual world research would seem impractical, if not impossible. In addition, virtual worlds themselves can vary greatly from each other in intended use, practice, and experience. Therefore, a

recommendation for the creation of a standalone ethical code of conduct to apply to all virtual world research would not be feasible or practicable.

Beyond the impractically of universal guidelines, such work may be ultimately unnecessary. The majority of the research ethics developed for human subjects research is still applicable and usable in the virtual world context. The basic tenants of properly respecting the participant and the structural oversight in the form of IRB review boards can be utilized to address or mitigate much of the existing concern. The core problem is that the IRB process is done on a case by case basis, which can create inconsistent results. Further, when relatively new technologies are implemented, there is a genuine possibility for an IRB not to understand the full ramifications of certain actions.

The solution to the IRB awareness problem might come from the creation of a document that illuminates ethical issues of conducting human subjects research in virtual worlds. Potential stakeholders of virtual world research could collaborate to create such a document, similar to what the Association of Internet Researchers have done in their ethical guidelines. This bottom-up process is more likely to result in standards for ethical research that all stakeholders agree with and will actively work to uphold, much as a bottom-up process is preferable for other forms of standards-building such as educational standards (Fleischmann, 2007). Such a document would allow more flexibility in terms of scope, and research, than a rigid and finite all-in-one ethical code. The document would illustrate the unique ethical issues that exist in conducting human subjects research in virtual worlds, and the further expand on the potential for harm and abuse.

An increased focus on personal responsibility should be introduced with respects to virtual worlds, to cover areas where IRBs might fail. Just because a research proposal passed approval does not absolve you of additional ethical and legal responsibilities (Sales & Folkman, 2000). There should always be considerable focus on personal responsibility in terms of research ethics.

Law may also offer a means for dealing with many of the issues raised in this paper. New information and communication technologies often force governments to reevaluate laws (Bimber, 2003). Since the rise of the Internet, the amount of law and policy related has exploded, with information issues now take up more time in Congressional hearings than many other social issues (Braman, 2004, Mueller, Page, & Kuerbis, 2004). In this expansion of information policy, laws related to information technologies have begun to more clearly relate to social aspects of information technologies, such as filtering requirements to limit children's access to certain materials and fees created to expand access to the Internet for underserved populations (Jaeger, 2007). It is entirely possible that the evolution of virtual worlds—and the attendant social, economic, and intellectual property considerations—will receive attention from lawmakers, resulting in ethical standards being shaped by parameters created by new laws.

As demonstrated in the analysis of virtual world research and from the discussion abstracted, there is a clear need for more in depth ethical analysis when conducting human subjects research virtual worlds. While

there has been much discussion and debate in the academic world of the potential and validity of virtual world research, there has been very little discussion of the ethical implications of such research. While this debate of validity will continue into the foreseeable future, research in virtual worlds is occurring now and needs to be addressed accordingly in a consistent and concise manner.

This paper serves as an introduction to the issue of ethics in virtual world human subjects research, by highlighting both virtual world interests and research concerns within a perspective of well-established traditional ethical codes and guidelines. While this paper does suggest possible recommendations to mitigating ethical problems, more discussion and further research into this area is clearly warranted. Ethics in virtual world research must be a proactive process that evolves along with the rapidly changing technology and rapidly maturing online social norms.

We must always remember the importance of ethical guidelines and analysis in human subject based research. History has shown us the dangerous consequences when we fail to live up to basic ethical practices and standards. As new technologies are introduced into our society, so comes the need to reevaluate ethical practices to match the changes introduced by technology to match those historical ethical ideals. Virtual worlds are no exception. While technologies are introduced, and ethical guidelines reformulated, the importance and necessity of research ethics must never be overlooked.

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