Virtual Harms and Virtual Responsibility: a Rape in Cyberspace

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Abstract

Julian Dibbell [4] reported a "rape in cyberspace" in 1993. In this paper we use the case to explore the moral nature of actions in virtual environments. We emphasize the themes of harm and responsibility and conclude with some tentative lessons learned, and extend the analysis to virtual sex.

1. Introduction

LambdaMOO is a multi-user dimension (MUD) program, a database maintained inside Xerox Corporation and open to the public via the Internet. The program allows users to create and design the interaction space and context; a user can describe his or her character any way they like, and can build new objects, including rooms and furniture. While users interact with one another as the characters that they have created, they see a stream of dialogues and stage descriptions. One night a character, Bungle, entered LambdaMOO. Bungle had designed a subprogram, Voodoo doll, which could attribute actions to other characters. Using the voodoo doll subprogram, Bungle took control of two other characters, legba and Starspinner, and ascribed sadistic actions to them, including eating pubic hair and sodomizing one of the victims. Legba and Starspinner were helpless throughout the incident. The episode ended when another character, Zippy, used a subprogram to freeze Bungle's commands.

The virtual rape caused enormous ripples in LambdaMOO. One of the victims, Legba, wanted Bungle to be "toaded" – that is, to have his account removed from LambdaMOO. On the evening of the third day after the incident, the users gathered in LambdaMOO to discuss Bungle's fate. There were four arguments: (1) The techno libertarians argued that rape in cyberspace was a technical inevitability and that a solution would be to use defensive software tools. (2) The legalists argued that Bungle could not legitimately be "toaded" since the MOO had no explicit rules at all; they proposed the establishment of rules and virtual institutions to exercise the control required. (3) The third group of users believed that only the programmers, or wizards as they are known in MOO, have the power to implement rules. (4) The anarchists wanted to see the matter resolved without the establishment of social control. There was no agreement between these groups. To Bungle, who joined midway through the conference, the event was simply a sequence of events in virtual reality that had no consequences for his real life existence.

After weighing the arguments, one of the programmers, the Wizard JoeFeedback, decided to "toad" Bungle, banishing him from the MOO. As a result of this incident, the system was redesigned so the programmers could make changes based on action or a petition of the majority of the LambdaMOO community. Eight months and 11 ballots later, widespread participation produced a system of checks and capabilities to guard against the type of violence that occurred. As for Bungle, he is believed to be reincarnated as the character, Dr Jest. (Adapted from [9] based on [4].)

This case has been widely discussed, including by Lessig [11] and Turkle [13]. When Dibbel first presented it, he seemed as fascinated with the reaction of the LamdaMOO participants as with Bungle's behavior. He noted the outrage of participants who expressed feelings of volation and struggled to respond to Bungle's behavior. This raised the question of the differences between virtual reality (VR) and real life (RL), or more specifically the difference between behavior in VR and behavior in RL. The fact that the VR behavior was sexual and violent makes the question more salient and it also makes it more complex since virtual reality behavior and sexual behavior are both symbolic.

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Because of the highly symbolic meaning of the act of rape that one can react to the 'rape in cyberspace' with contradictory thoughts. On the one hand, it seems unfair to real rape victims to equate what happens to them with the experiences of LamdaMOO participants who witnessed a representational rape. On the other hand, it does seem appropriate to say both that Bungle did something wrong (bad) and that the real person who was controlling Bungle did something wrong (bad). Both, it would seem engaged in a form of violent sexual behavior. So, the case is worth exploring if only to find appropriate language for talking about virtual behavior in moral/ethical terms.

2. Analyzing the Actors

A good way to begin is by identifying the stakeholders. LamdaMOO participants only knew the names of the virtual characters: Bungle, legba, JoeFeedback, and the rest. The usual assumption is that each virtual character is controlled by a flesh-and-blood person, and that is probably correct most of the time. However, other possibilities exist. For example: a single virtual character could be controlled by committee; a virtual character could be controlled by a program simulating keyboard commands from a LamdaMOO participant; or a virtual character could be a program that was part of the LambdaMOO interface, written by the LambdaMOO wizards. There are other possibilities, but these are suggestive.

The controllers of virtual characters act in an environment created via software. The interface mediates the actions of virtual characters and flesh controllers. In Figure 1, circles represent virtual characters, ellipses represent software, and squares represent flesh people; solid straight lines represent real time control, and dotted lines represent asynchronous control (such as a programmer has over object code that runs without direct supervision).

So, who are the stakeholders in this case? Are the virtual characters stakeholders? Or are only the flesh-and-blood controllers stakeholders? Morality is generally confined to flesh-and-blood individuals; generally only human beings qualify as moral agents. (This view is not universal. For example, see [5].) The case is interesting in part because it seems to challenge this idea of restricting morality to flesh-and-blood persons; after all, Bungle raped legba and Starspinner.

Even if we restrict our focus to the flesh-and-blood participants, there are other actors in addition to participants in LambdaMOO. The software system itself and the designers and controllers of the software system (the "wizards") are agents in the the virtual environment.

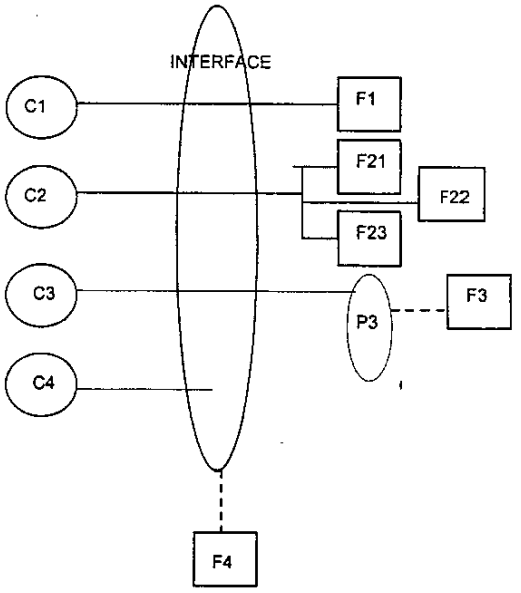

Figure 1. C1, C2, C3, and C4 are virtual characters. Each Fi is a flesh person. F1 controls C1. F21, F22, and F23 are a committee that controls C2. P3 is a program, written by F3; P3 controls C3. F4 is a "wizard" who developed the interface; the interface controls the virtual character C4. (Note that F3 and F4 could be a group of programmers as well as an individual.)

We have to make a decision parallel to the one we made about virtual/real participants: should we say the software interface is an agent or restrict ourselves to flesh-and-blood persons who design or control the software interface? These flesh actors are stakeholders in the case insofar as they may or may not be harmed by the actions of Bungle or his flesh controller, and because they may be implicated in accountability for the incident if they facilitated Bungle's bad behavior.

3. Harms to the Players

3.1 Three Dimensions of Harm

The case involves morality because it involves harm. Rape is a heinous act: it involves coercion, it violates the autonomy of the victim, and it is an exercise of power that demeans the victim. Our ideas about sex and harm are deeply tied to flesh. The cyberspace rape is puzzling

because it suggests that rape can happen to characters that are not flesh. While there was no physical contact, LamdaMOO participants were distressed about what happened to the virtual characters. Bungle's actions affected and may have harmed the flesh-and-blood LamdaMoo participants.

The case illustrates the symbolic nature of rape; even a representation of a rape can have powerful effects. Moreover, in the virtual environment there is some physical behavior that does not equate to rape but parallels its coercive aspect. Johnson [9] argues that the controller of Bungle did two things wrong. First, he/she took control of characters he/she had no right to control, legba and Starspinner. Second, the controller of Bungle exposed all of the participants in LamdaMOO to a high level of violence and pornography without permission.

Given the nature of virtual reality environments, there are a limited number of ways that a virtual character can rape another virtual character. 1) One controller can control two characters; 2) two controllers (each controlling a separate virtual character) can agree to act out a rape; or 3) what happened in the Bungle case. Bungle broke into the software and took control of virtual characters that were not his. If either 1) or 2) had taken place, the participants in LamdaMoo might have been upset, but what actually happened seems more parallel to rape because it involved coercion. The controller of Bungle broke into the system and violated the autonomy of the controllers of legba and Starspinner. While the controller of Bungle did not commit physical rape, he/she did something real and the something real involved coercion and the violation of the informal rights of individuals.

A second wrong is that the controller of Bungle exposed participants in LamdaMOO to a level of violence and pornography which they did not chose. We have to be careful for there is nothing intrinsically wrong with exposing other individuals to visual representations. Rather it is the nature of the representations; explicit sexual content requires prior consent.

In exposing participants to representationally violent acts without their permission, we might think of the harm done as "merely" psychological harm. But psychological harm is a real harm, and it should not be trivialized. It is commonplace to separate psychological harm and physical harm, but the distinction can be over-emphasized. Doing harm to a person's mind is similar to doing harm to some other part of the body. An extensive discussion of the issue of mind and brain [3] is outside the scope of this paper. Instead we will include psychological harm as a "physical harm" for the purposes of our exposition. (Those unconvinced that psychological harm qualifies as physical harm can imagine that one of Bungle's virtual victims was controlled by a person who developed ulcers after Bungle's attacks. Or perhaps another person got so incensed by the Bungle affair that she had a heart attack. These effects would be physical even though Bungle is virtual. Although such a physical manifestation is not required for the classification of psychological harm as "physical," it seems sufficient.)

Virtual behavior can have effects both on virtual characters and on flesh persons, and virtual characters do not act unless physical individuals act. Thus, even when there are physical effects from virtual acts, there are also physical acts controlling the virtual acts. Using the notations suggested in Figure 1, we can think of direct, indirect, physical, and virtual harms. Figure 2 shows four examples.

Source	Action	Target		HARM
1) C1	shoots	C2	▶	direct, virtual
2) F1	shoots	F2	▶	direct physical
3) F1	manipulates	C1		
	and			
C1	shoots	C2	▶	direct virtual
	and			and
shooting	offends	F2	▶	indirect physical
4) F1	controls	C1		
	and			
C1	controls	C2	▶	direct virtual
	and			
C1	offends	F2	▶	indirect physical

Figure 2. Four examples of actions and harms

These types of behavior can be distinguished in terms of their culpability by drawing on the work of Harré & Secord [6,7]. They distinguish intentional harm, negligent harm, and accidental harm. In addition to this threefold distinction, the case we are addressing suggests a difference between direct and indirect harm. Direct harm is the result of the action or omission of the person. Indirect harm requires mediation through some third party or entity. For instance, I might kick my neighbor's dog as a way of insulting my neighbor. Figure 3 represents the possibilities just discussed.

A Scheme for types of harm					
Physical Harm			Virtual Harm		
	Direct	Indirect		Direct	Indirect
Intentional			Intentional		
Negligent			Negligent		
Accidental			Accidental		

Figure 3. Types of harm classified

3.2 Combining Physical and Virtual Harm

Combining virtual and physical harm produces complex cases. If a virtual character C1 abuses a virtual character C2 and F2 takes offense, the harm to F2 is indirect but physical (a flesh person has taken offense). If F1 intended to offend F2 by abusing C2, then the harm is intentional. It is interesting to note that this sort of case can take place outside of virtual reality. Suppose that F1 publicly spits on a picture of F2's mother to insult and infuriate F2.

Now let us consider complexities. What if the controller of virtual character C1 is a program? Assume that C1 is controlled by P1, a program developed by F1, a system designer. If, as above, F2 takes offense at an action of the programmed C1, then the harm is indirect (mediated both by the program and by the abuse of C2). But perhaps F1 didn't know that the programmed behavior would be offensive to F2; or perhaps F1 made a programming error; or perhaps F1 programmed P1 with a random pattern of behavior that happened to produce something offensive to F2. To evaluate any of these possibilities requires an analysis of the foresee-ability of the harm by a reasonable person. In the latter case of programmed control, it would seem that a standard of the 'reasonable programmer' is called for, a specification of what a reasonable programming expert could foresee and control about the likely effects of a program on users and participants.

But indirect harm does not have to be mediated by a program that controls a virtual character. The interface for the LamdaMOO is itself a program, and the program structures the interactions of the characters. The interface has consequences for the virtual characters and for the entities that control them. For example, the interface (and the "wizards" who develop and control the interface) may allow or exclude characters and/or their controllers from the MOO. The interface can "change the rules" for virtual characters and/or their controllers. Much of the behavior of the interface in this respect will be intentional. But any reasonably complex program (and even some simple ones) can produce behavior that the designer did not intend, but might have (or might not have) foreseen.

4. Harms in the Bungle Case

Because the controller of Bungle broke into the system controlling the game, the system designer(s) and the wizards do not, on the face of it, seem blameworthy. On the other hand, they both had responsibilities that might have been ignored. There is the issue of whether security was adequate to discourage attempts to break in and seize control. In the case of the wizard there is also the issue of whether the rules of the MUD were adequately promulgated. While these are issues to be raised, the fact that the flesh controller of Bungle broke in points to his/her blameworthiness. It seems reasonably foreseeable that participants would not want to be exposed to the level of violence this break-in caused since the MUD had been in existence for awhile and that level of violence had not occurred.

An important aspect of the Bungle case is the way Bungle's actions illustrate the layers of meaning in the MUD. For convenience, we will call Bungle's (apparently anonymous) controller F-Bungle. F-Bungle controls C-Bungle. But, using the Voodoo doll subprogram, C-Bungle controls C-legba and C-Starspinner. This adds a new layer of mediation: F-Bungle controls C-Bungle who in turn (through the subprogram) controls C-legba and C-Starspinner. The controllers of C-legba and C-Starspinner ("F-legba and F-Starspinner") took offense and, seeing past the multiple layers of mediation, are furious with F-Bungle. Despite the protestations of F-legba and F-Starspinner, the majority of the MOO's participants did not favor any action that extended beyond the virtual world of the MOO. And after C-Bungle was removed ("toaded"), it was generally believed that F-Bungle created a new character, Dr. Jest, who then joined the MOO.

4.1 Physical Harm and Virtual Space

The harms in the Bungle incident were both virtual and physical (using our definition of these terms). The physical harms are somewhat easier to understand. F-legba and F-Starspinner felt violated, angry, and agitated. Other MOO participants were also upset about the incident and the ensuing controversy. Dibbel's article goes to some lengths to explain how controllers become intensely involved in virtual reality and personally invested in and identified with the character(s) they play. The more invested a flesh controller, the more damaging virtual violence can be. It may be that F-Bungle was also upset

about C-Bungle being toaded, although that distress would have been mitigated by the fact that F-Bungle could reenter the MOO as a slightly different character.

The difference in intensity of feeling between F-Bungle and F-Bungle's victims is not surprising. In most cases of sexual assault, the victims see the incident as highly important and the harm as intense. Perpetrators minimize the offense, even to the point of forgetting it (see [2], chapter 9, for a review).

But in the Bungle case we have an additional factor that may enhance this discrepancy: virtuality. The harm is done in a virtual environment in which individuals are never in the physical presence of each other. Kiesler et al. [10] suggest that this virtuality may make it harder for participants to have empathy for each other. This attenuation of social impact would make it even more unlikely that the perpetrator would feel empathy for the victim, thereby increasing the gulf in perception of the crime. Thus, virtual interaction likely reduces the social influence needed to control the behavior of people like F-Bungle. This will make it harder for virtual societies to come to agreement on the nature and extent of any physical harm that their members may suffer.

4.2 Virtual Harm and Virtual Space

C-Bungle harmed C-legba and C-Starspinner by controlling their characters against their will, a violation of autonomy. When in control, C-Bungle had the two virtual characters perform sexual acts. In this instance, the addition of sexual acts is likely to further degrade the individuals and emphasize C-Bungle's power, rather than being about sex per se. (See [2, 12] for reviews of the work on whether rape in the physical world is about power or sex.)

But can we leave their flesh controllers out of the picture and still feel that a harm has occurred? This seems problematic. Imagine two virtual robots programmed using neural net techniques. We suggest this indirect technique to minimize the connection of the program/robot with any real creator. If we observed one of these agents attempting to disable the other, would we be justified in claiming that a harm had occurred? This question of harm is separate from (and possibly prior to) the question of blame. Must harm occur to a human in order for us to credit it?

We often include (non-human) animals in the category of things that can be harmed. We occasionally speak of "the environment" as something that could be harmed. In doing so, we mean that its pattern, development, or integrity might be diminished. This may cause harm to humans in turn, but we do occasionally speak as though the harm to the environment will occur without it being necessary to trace this back to harm for humans. Thus, we can tentatively think of harm as occurring when the integrity, wholeness, capacity, or goal of an entity is interfered with or diminished. This sort of harm brings with it decidedly less moral baggage than harm against humans. It is a description of a change in state that is thought of as a diminishment. At least in this non-moral sense, we can speak of virtual entities being harmed.

If one has a dedication to this sort of wholeness, one could then attach a moral sense to this diminishment-harm. One might even incorporate in this approach a special status for living entities and more particularly for humans. So we now at least have an understanding of harm (called diminishment-harm) that could apply to our virtual entities with moral force. But we have only accomplished this by imbuing the non-virtual world (including trees and rocks) with an ability to be harmed in some moral sense. This sense of harm is not, then, peculiarly virtual. But it (or some modification for westerners) does allow for us to think of a morally-loaded virtual harm occurring in isolation from any connection to fleshly humans.

5. Lessons to be Learned from Bungle

Our preliminary analysis suggests the following:

1. Virtual behavior can have real psychological and physical consequences. The controllers of virtual characters have responsibilities for those consequences. These responsibilities are similar to those that real people have when they interact with other real people in other contexts. In real interactions, responsibilities vary with context (from poetry slam to stock exchange to love-making). Responsibilities in virtual environments will also vary with the context.

2. The controllers of virtual characters are generally unknown to the flesh controllers of other virtual characters, and this affects the nature of responsibility in virtual environments. On the one hand, flesh controllers must play out their responsibilities through the actions of their virtual characters. On the other hand, their ability to anticipate the reactions of the flesh controllers of other virtual characters is diminished. The virtual nature of the interaction makes it more difficult for players to anticipate the consequences that may result from their virtual characters. This makes it important to have rules specifying behaviors that are and are not allowed in a

virtual environment. This is what some LamdaMOO participants tried to do after the Bungle incident.

3. The developers and controllers of a virtual environment interface have responsibilities to the flesh controllers of other virtual characters. The virtual nature of the immediate effects of the software does not remove responsibility for consequences to people, indirect though they may be. The responsibilities of software developers and wizards are not limited to avoiding intentional harm-doing, for this would mean no responsibility at all. These responsibilities involve anticipating reasonably foreseeable consequences. A designer has power (however unintentional) over those who use the interface (see [8] for a discussion of unintentional power in software design). This might mean, for instance, that designers of virtual systems ought to take into account the diminished social impact of virtual actions, and in response should design systems that enhance social impact and social control. The goal would be to make the virtual reality more *socially* real, and this may not require giving it more of a semblance to physical reality.

4. If justice is to be a goal in computer-mediated environments, then rules should be explicit. When freedom becomes license, harm is more likely to occur. The idea that a virtual environment is "without rules" is false. Computer-mediated environments always have rules, if none other than the software that runs the interface. Software is 'hard' and physical in the sense that it allows and disallows behavior of various kinds. The software grants rights and privileges to different virtual and flesh participants.

By insisting that rules be explicit, the role of the interface is made immediately clear and other rules, not enforced by the interface itself, can also be made explicit. These "extra-interface" rules have to be enforced in a different manner than the rules that are automatically enforced by the interface. Of course, not all rules can be made explicit without an interminable listing. But the fact that physical harm to real individuals can occur should make us aware of the need to more carefully specify conventions of behavior.

5. Virtual harm seems insignificant on its own, without connecting it to some real-world understanding of harm. This connection is most easily made through analogy to real-world physical harm. Even our attempt to come up with a "diminishment harm" that would hold in virtual reality required an analogy to harm to the environment, and was thereby anchored in real world harm

Therefore, the language of 'virtuality' is misleading. It suggests that what we do in virtual environments is 'almost but not fully' real. But we can see how physical harm is the paradigm case of harm, and that virtual harm depends on physical harm for its effects.

6. Virtual Sex

One of the reasons the Bungle case is provocative is that it suggests something like virtual sex. We define "virtual sex" as computer-mediated-communication with the intentional, explicit purpose of sexual satisfaction of at least one flesh person. This definition includes a range of possibilities that involve text-based exchanges, and Internet pictures and movies. It also includes more elaborate mechanical devices controlled by computers for human sexual gratification. As with the MOO described above, participants could be flesh or automated. Our definition only requires that at least one participant be flesh.

It seems plausible that if a flesh person is "coerced" into virtual sex, there is harm. The harm is a combination of the coercion and the exposure to sexual content. The responsibility for the harm belongs to the entity that coerces the encounter. If a flesh controller's character sexually assaults a virtual character that is controlled by a program, the matter is less direct. Presumably software that enables this kind of encounter was programmed in order to facilitate this acting out by the flesh controller. (We can devise situations that violate this presumption, but they would be exceptions that prove the rule.) If software is designed to allow the flesh controller to commit these virtual acts, then the software developer shouldn't take offense when the software is used "as intended." Thus, we do not see an indirect physical harm to the software developer.

However, the software that enables the assault, and the flesh participant who initiates the assault, still can do harm. The effects of encouraging the rehearsal of sexual assault may encourage the act to be repeated in the physical world. If that is a consequence of the virtual act, or if it is likely to be, then the software developer (and marketer, etc.) are responsible for a harm to the flesh person attacked, and to a society threatened by such attacks. However, some believe that allowing people to act out such an attack virtually will help these people avoid committing an attack in the physical world. If that can be demonstrated, then there is good in making this software available to such a person, perhaps by prescription. The crux of the ethical argument would again be empirical: trying to determine which of the consequences is more likely: increase or decrease of sexual attacks. The empirical literature on the effects of violent video games

makes it clear that, on average, we should expect more violence when video games (and likely, virtual reality games) allow individuals to practice virtual violence.

There is also an argument that despite possible benign or beneficial effects of such software, that there is a harm to people who are offended and threatened by the existence and use of such software. Since a physical assault is surely a harm, the argument goes, then the assault's virtual "shadow" is a glorification of that harm. In a culture like the U.S. in which free expression is highly valued, it is unlikely that this second argument will hold sway.

A different situation is consensual virtual sex, either between two flesh participants or between a flesh participant and an automated partner. Is there harm in this kind of encounter? Presuming that the physical act being simulated virtually is considered benign or beneficial, then the potential harm of rehearsing an attack is no longer an issue. Indeed one could argue the benefits of rehearsing sexual encounters considered healthy. But there is another, more subtle possibility of harm. If some flesh participants find that virtual sex is a substitute for, rather than a rehearsal for physical encounters with physical humans, then the encouragement of virtual sex may diminish healthy sex between humans. Some would consider this a harm to individuals and to the society as a whole.

A pattern emerges in our discussion. If the virtual encounter replaces a harmful physical encounter, then the virtual encounter is good. If the virtual encounter replaces a beneficial physical encounter, then a harm results. If the virtual encounter encourages healthy physical encounters, then the virtual encounter is good. If the virtual encounter encourages harmful physical encounters, then the virtual encounter is harmful. Decisions about virtual sex derive from decisions about physical harms or benefits. Although people differ on their opinions of the goodness of some physical acts (for example, homosexual sex), there is far more consensus on other encounters (such as rape). When the issue is which consequences will result, that question is best explored empirically. The use of this pattern could be used in other issues related to Cyberspace. For example, questions about violent computer games [1] could be analyzed this way.

7. Conclusions

This is a preliminary sort of the ethical and metaphysical issues arising from the Bungle case and in general from virtual reality environments. The lessons we have teased out of the case seem promising though there is still further analysis to be done. Perhaps the most important lesson is that virtual actions and interactions have consequences for flesh-and-blood persons and hence, the flesh controllers of virtual action, whether they control directly (as in playing a character) or indirectly (even by designing the virtual world), have responsibilities for their actions.

8. Acknowledgements

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