Presence and the Victims of Crime in Online Virtual Worlds

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Abstract

Several crimes are reported to have occurred in online virtual worlds. If the victim of these offences experiences a strong sense of presence within the virtual world, it is possible that they may experience many of the after-effects that victims of offline crimes experience, such as post-traumatic stress disorder, self-blame, need for retribution and victim blaming. This paper describes what is currently known about the victims of crime in online virtual worlds, and investigates the influence of presence on the potential effects of online victimization. It also identifies the measures which could be instigated in order to aid those who have experienced such victimization. The problems of policing virtual worlds, and the implementation of suitable punishments for offenders are also addressed.

1. Introduction

"I was new and on the receiving end of disturbing sexual behavior. A male avatar teleported right in front of my character. He was so close that my avatar's body prevented me from seeing that he was nude. He stepped back, and then rammed my avatar so hard she was pushed back several steps. Before my character had come to a stand still he was coming at her again. After ramming her a second time he walked several steps passed her and to the right, and then turned so that he was in profile. By stepping further away and turning he ensured that I, a offline, flesh and blood person, was able to see that he was naked and had rammed my avatar with an erect penis. Although simulated, it was a deliberate, calculated, and practiced act of violence. It happened in seconds. I felt the person behind the avatar thought he had raped or simulated rape on my character, and wanted me to know that's what he had done." [1]

The above scenario, described by a resident of Second Life on one of its mailing lists, was clearly disturbing for the human user behind the female avatar that was attacked. Unfortunately, the description does not reveal the full extent of potential online victimization. Several more severe cases have occurred, some of which are described below. However,

the effects of this 'virtual victimization' on the person, and the impact that increased presence may have on the extent of the reaction, have not been considered in detail. It has been repeatedly demonstrated that victims of offline crimes can experience several negative consequences of their victimization – including Post Traumatic Stress Disorder (PTSD), self-blame and victim blaming by others [2,3]. It could be argued that the greater the sense of presence in the online environment, the more likely it is that the victim experiences similar after-effects that offline victims do. If this is the case, then greater care needs to be taken in online virtual worlds to ensure the safety and psychological well-being of their users, particularly after a crime in an online virtual world occurs. Similarly, the online community needs to consider how to deal with virtual offenders – if their offence has real-world consequences, should they be punished offline, or in the virtual world?

2. Crime in online virtual worlds

While there is extensive literature available on cybercrimes such as hacking, online child pornography, identity theft and cyberstalking [see for example 4,5,6,7,8,9,10,11,12,13], relatively little academic literature has been published concerning crime in online virtual worlds. Regardless, several cases have come to light concerning specific crimes in online virtual worlds. These crimes have involved both property offences (such as theft) and crimes against the person (such as sexual assault).

2.1 Property crime

Property crime refers to crimes such as larceny, burglary and theft, that normally do not involve violence or significant interaction between the offender and the victim. There have been several instances of property crimes in online communities [14,15,16]. One case involves CopyBot – software which enabled users of Second Life to copy objects and creations of other users [14], instead of paying for them. As this case involved objects with specific monetary value in Linden dollars, which can be exchanged for U.S. dollars, this

case could be tried offline. A similar case occurred in Habbo Hotel in 2007, where Dutch teenagers allegedly stole €4,000 worth of virtual furniture by tricking other users into divulging their passwords [15]. In this case, at least one teenager was eventually arrested. However, if the value of the stolen object cannot be easily quantified, the theft may not be definable as a real offence, and offline authorities may not be able to identify a clear course of action. One example of this occurred in 2005 when a Chinese 'Legends of Mir 3' gamer, Zhu Caoyuan sold a 'dragon sabre' which he had been loaned by Qiu Chengwei [16]. The sword had been earned through the investment of considerable time and effort playing the online game. Despite the sale value of the sword (approximately £460 GBP), the police claimed that it was not real property when Mr. Chengwei tried to make a complaint. Mr. Caoyuan offered to pay the money received from the sale to Mr. Chengwei, but despite this, Chengwei stabbed Caoyuan in the left chest and killed him. This case is interesting, both for the lack of action that the police took following the alleged crime, and the extreme reaction from Mr. Chengwei, despite the offer to repay the money. It demonstrates that the 'dragon sabre' meant considerably more to Chengwei than its monetary value, and that he obviously experienced an extreme psychological reaction to the event.

2.2 Crimes against the person

Two key examples of crimes against the person have been widely publicized and cited. The first, the case of Mr. Bungle as described by Julian Dibbell [17], is probably the most famous case of crime in a virtual world. It describes the occurrence of a series of sexual assaults in the online world LambdaMOO. A character called Mr. Bungle who is described as "a fat, oleaginous, Bisquick-faced clown" carried out a series of sexual assaults on other players in the text-based online world using 'voodoo dolls', subprograms that attribute actions to other players' characters that they did not intend. Mr. Bungle was actually controlled by several university students acting as one to direct the attacks (as clarified by Dibbell in 1998 [18]). Bungle's rampage continued until he was eventually stopped by a more senior player. The Bungle case is particularly interesting because of the reported after-effects on the victims. One, 'legba', reported severe distress in the aftermath of the attack. Several other players reported their anger at the events, to the extent that many called for Mr. Bungle to be 'toaded' (banned from the virtual world, with the character itself deleted). Interestingly, Mr. Bungle himself indicated that the assault "…was purely a sequence of events with no consequence on my RL (real-life) existence", and as such the virtual attack seems to have had considerably less impact on him than it did on his victims.

The calls to toad Mr. Bungle led to debates amongst the community members, with some arguing that in the virtual world, rape had not been criminalised, and so it could not be considered punishable. It was also queried if the university students who had created the character of Mr. Bungle could be punished offline, perhaps under laws concerning obscene phone calls or punishment from the university authorities, although this course of action did not seem to be popular amongst the players involved. While no final decision was made by the players, eventually a 'wizard' acted alone and toaded Mr. Bungle independently. As such, those who played Mr. Bungle were punished in the virtual world, where their 'crimes' took place, but not offline, where the effects were experienced by the victims. Eventually LambdaMOO developed a ballot system, where players could vote for the toading of a 'criminal' character, and if sufficient votes were received, then the wizards would complete the request. Interestingly, one of the players who controlled Mr. Bungle eventually returned to LambdaMOO with a new character, Dr. Jest, who also behaved in an unacceptable fashion, although he did not engage in sexual assaults. However, the residents of LambdaMOO did not vote in sufficient numbers to toad Dr. Jest. It appears that, at least in the minds of the residents of LambdaMOO, the character was the entity that needed to be punished, not the player who controlled that character.

However, the case of Mr. Bungle is not the only account of sexual assaults in online virtual worlds (although it should be noted that in Dibbell's account, some players indicated that they had previously been victims of other online sexual assaults). In 2007 Belgian police commenced an investigation into an alleged rape in the online world Second Life [19,20]. While publicly available details regarding that specific case are rare, to the extent that several online commentators queried as to whether the report was a hoax, it has provoked widespread discussion of online rape, including the case mentioned at the start of this paper. The victim of that case expressed frustration at the inability to report the victimization, as the attacker had used an unusually long name for their character, which she had not had time to note before the attacking avatar disappeared, and also because there was insufficient space in the complaints form of the online community to describe the details of the event. She found her thoughts returning to the incident, even though she tried to forget it and remind herself that she had not been physically harmed. Other online reports about the incident also demonstrate mixed views about online rape. While it is generally considered to be a negative event, it is difficult to determine the seriousness of the attack. No writer suggests that it is as serious as offline sexual assault, and some suggest that the victims should just try to forget about it, and move on, but others see worrying trends. Some authors note that it is illegal to engage sexually with a minor online, and therefore wonder if adult rape should be treated similarly [19]. There are therefore queries as to which crimes in virtual worlds should be considered offline crimes, and which

should not. Undeniably, crimes in virtual worlds appear to have a more severe impact on some victims than others.

3. Presence in online virtual worlds

As the purpose of this paper is to attempt to determine if presence may have an impact on victims' experiences following crime in online virtual worlds, a brief overview of the literature regarding the existence of presence in online virtual worlds will now be considered. In particular, aspects of presence which may influence the potential reaction of the victim of a crime in online virtual worlds will be noted.

Jung [21] found that both telepresence and social presence can impact on member's intention to participate in Second Life, and also emphasized the importance of vividness in construction of both telepresence and social presence. The relation between vividness of the virtual environment and potential future risks for victims of crime in online virtual worlds are also noted in a study by Bente et al [22] who noted that social presence is increased when text is enhanced with other modalities, such as audio or video, or the presence of an avatar. The presence of the avatar also led to increased perceived intimateness, emotionally-based trust and visual attention, particularly in the early phase of interaction, when compared to interactions via text or audio only. It therefore seems that when using avatars, we put ourselves at a greater emotional vulnerability than we would in a text based online world, and so it is possible that we are more likely to both put ourselves in risky situations and experience stronger after-effects in graphical virtual worlds than in text-based ones.

Similarly, De Kort et al [23] argue that digital games are a social presence technology, as they have "the potential to enhance and enrich social interaction" (p. 6), but they also note that they are "not sufficiently recognized, understood or appreciated in the current scientific literature" (p. 8). It is therefore clear that the full effects of social presence in online virtual worlds are not yet completely known, and these may have a significant impact on the victims of crime in these environments. This finding is further reinforced by Yee et al [24] who note that users of online virtual environments abide by social norms in relation to gender, eye gaze and interpersonal distance.

Pearce also notes that users of online virtual worlds demonstrate some significant dimensions of presence [25]. Among these, she notes that some avatars' identities are partially constructed through a system of social feedback within the community, and so the online representation of the self is partially formed by how other avatars interact with it. It is conceivable therefore that a negative experience, such as an online victimization, may influence the development of the user's online identity. Pearce also notes that after a period of time in an online community, users feel that they are entitled to citizenship, and to have their rights protected, especially if they play a part in creating the virtual world, as residents of Second Life are encouraged to do. This has very obvious repercussions for virtual victimization – the cybercitizen has come to expect that they will be protected and cared for, because of their investment of time and energy into the online community. This theme shall be returned to later in the paper.

4. After-effects of offline victimization

Before considering if victims of crime in online virtual worlds have similar experiences to offline victims of crime, it is necessary to first determine what are the most common after-effects of offline victimization. There are a number of reactions that are evident in victims of crime. These vary according to the type of crime experienced and the coping strategy and personality of the individual victim, but can include Acute Stress Disorder (ASD) or Post-Traumatic Stress Disorder (PTSD), self-blaming for victimization, victim blaming (where others put all or partial blame for the victimization on the victim themselves), and a need for retribution.

For many negative life events, but particularly for sexual assault cases, the victim can engage in self-blaming activity [26]. In these cases, the victim can blame themselves for voluntarily engaging in any behavior preceding the offence. This behavior may be only tangentially related to the offence taking place, such as walking home alone instead of accepting a lift from a friend, or smiling socially at the rapist prior to the assault. Similar self-blaming can occur for other offences, such as blaming the self for not watching personal belongings more carefully prior to a theft, or for allowing the self to trust another who later betrays them.

Related to self-blame is victim blaming. Mendelsohn (1974, as cited in Walklate, 2006 [27]), suggested that there is a spectrum of shared responsibility between the victim and the offender. In some cases, the victim can be seen as playing no role in the facilitation of the offence (for example, innocent bystanders in many terrorist attacks). Sometimes the 'victim' is actually the offender, and should take full responsibility for the crime (such as in insurance fraud). However, in most cases, victims fall between these two criteria, and are seen in some way to facilitate the offence (for example, by not fitting an alarm to their home or car, leaving a door unlocked, or provoking a fight in which they subsequently become injured). In these cases, the victim can frequently be fully or partially blamed for their victimization by others, including family, friends, insurance companies and law enforcement officials, who may indicate that the incident was the victim's own fault due to their negligence or actions. There is a considerable amount of controversy regarding this model of shared responsibility and victim blaming, especially with regard to sexual assault cases.

After victimization, some individuals can experience either ASD or PTSD [2,3]. These disorders involve the

victim having experienced an event involving fear, horror or helplessness, along with additional symptoms such as emotional numbing, heightened autonomic arousal (such as startle responses or sleep disturbances), flashbacks or intrusive memories [28]. ASD and PTSD differ in onset and duration, and individuals with an initial diagnosis of ASD can receive a diagnosis of PTSD if their symptoms last longer than about four weeks. While commonly associated with severe, potentially life-threatening events, such as violent or sexual assaults, both ASD and PTSD can occur following relatively minor events. Likelihood of developing these disorders depends on both the nature of the event itself, and the coping mechanisms of the victim.

Following victimization, many individuals experience a need for retribution. They feel that the person or group who has targeted them should be punished for their actions in some way. This has especially been noted in the families of homicide victims [29, p. 188], but can also occur in the victims of other crimes. It has also been found that if the court does not provide retribution when the offender is known, the victim can experience this as a type of secondary victimization, where they feel that they have not been adequately protected by society and their rights have not been suitably maintained [Orth, 2000 as cited by Montada, 2003 [30]). This need for retribution is clearly seen in some victims of crime in online virtual worlds.

5. After-effects of victimization in online virtual worlds

Victimization in online virtual worlds should not be considered as severe as if a similar offence occurred offline. There can be no doubt that a victim of an offline sexual assault experiences post-victimization symptoms that are far more severe than those of an online victim. However, it would be an error to believe that an online victimization has no effect on the victim at all.

Victim blaming appears to be particularly common for crime in online virtual worlds. It has been argued that victims of crime in online virtual worlds could easily escape. In Second Life, it is possible to engage in rape fantasies, where another player has control over the "victim's" avatar, but this is usually given with consent. There are suggestions that some individuals have been tricked into giving their consent, but even bearing this in mind, there has been widespread criticism by Second Life commentators of anyone who allows an attack to take place, as it is alleged that it is always possible to 'teleport' away from any situation. Even if teleportation fails, it is always possible for the victim to exit the game, disconnect from the network connection or turn off their computer and thus end the offence. It is clear that victims of crime in online virtual worlds do seem to experience some extent of victim blaming by others – they are in ways being blamed for not escaping their attacker. Those victims who experience the greatest degree of

presence – those who are most immersed in the game - are probably those who are least likely to think of closing the application to escape. It should also be considered that a victim may experience discomfort at being victimized, even if they do escape relatively quickly. As in offline crime, the initial stages of the attack may be confusing or upsetting enough to cause significant distress, even if the victim manages to escape quickly.

There is also some evidence of self-blaming by various victims of crime in online virtual worlds. Some victims refer to their relative naivety in the online world prior to victimization [1], and indicate that if they had been more experienced they may have realized what was happening sooner. There are also suggestions that a victim who is inexperienced with the virtual world's user interface may inadvertently give control of their avatar to another user. However, considerably more evidence needs to be completed on this topic before a definitive conclusion can be reached.

There is also some evidence of limited symptoms of ASD in victims of crime in online virtual worlds, such as some anecdotal accounts of intrusive memories, emotional numbing and upset from victims of virtual sexual assault [19,20]. However, while it is impossible to make an accurate judgment without a full psychological evaluation, it seems very unlikely that these victims would receive a clinical diagnosis of either ASD or PTSD. This is because there is no mention of either flashbacks or heightened autonomic arousal (possibly due to the lack of real danger to the victim's life), nor does it appear that the symptoms lasted for very long (in most cases the symptoms appear to reduce or dissipate within a few hours or days). There are also several accounts of individuals who have experienced online victimization, but who do not see it as a serious assault and do not appear to experience any severe negative reaction. Those most at risk appear to be those who have previously experienced victimization of offline sexual assault, where the online attack has served to remind the victim of the previous attack. As such, while not a major risk, the possibility of developing ASD or PTSD is a factor that should be monitored in future victims of serious online assaults, especially those who have been previously victimized offline.

Finally, there is substantial anecdotal evidence of a need for retribution in victims of crime in online virtual worlds. The victims of Mr. Bungle called for his toading, the Belgian victim of the rape in Second Life reported the incident to the police, and Mr. Chengwei stabbed the alleged thief when he failed to achieve a satisfactory response from the police after the sale of the virtual sabre. This is possibly the strongest evidence that victims of crimes in virtual worlds experience similar psychological reactions to victims of offline offences, although again, empirical evidence is lacking to date. This also raises the issue of determining suitable punishments for perpetrators of crime in online virtual worlds, which will be considered in more detail later in the paper.

5.1 Presence as a factor

As it has been noted that users can experience presence in online virtual worlds, the possible impact of this on victimization will now be considered.

It has previously been demonstrated that presence in virtual environments can induce specific emotional reactions in the user [31], a phenomenon which is utilized by clinical psychology when virtual environments are used during therapy for phobias, post-traumatic stress disorder, and other psychological difficulties [32,33]. Virtual environments have also been demonstrated to elicit behaviors indicative of fear of crime [34] and to heighten the realism of sexually threatening role plays designed to help college women resist sexual attacks [35].

Certain emotional states and personality traits can increase the sense of presence in an immersive virtual world. One emotional state which can result in increased presence in immersive virtual environments is anxiety [36]. If the same applies to online virtual worlds, it could raise a query as to if the effects of an online crime, particularly a sexual or violent one, may be self-perpetuating. For example, as the victim feels anxious, they may begin to feel more immersed in the environment, which may increase their anxiety further. Riva et al [31] also found a complex relationship between anxiety, emotion and presence in virtual environments.

It is likely that the more time that has been spent in the online community, the more likely it is that the victim will have a severe emotional reaction to the crime. If a person has invested heavily in their avatar, truly seeing it as an extension of themselves, instead of just a computer-generated image, then their reaction could be understandably severe. This may be particularly so if others have witnessed the offence, as happened in the case of Mr. Bungle – it may add a sense of shame and embarrassment, and a fear that their avatar will be permanently associated with the victimization.

On the other hand, it is likely that those who are merely experimenting in the online community, who feel less immersed in the virtual world, and who do have not built up an online life in that world, would emerge from an online victimization relatively unscathed, though perhaps a little more cautious in the future. Much of the shame, self-blame and secondary victimization could easily be removed by simply deleting the victimized avatar, and replacing it with a new one. However, this course of action is not always ideal – the user would be unlikely to feel a sense of retribution, as they may not feel that their 'attacker' had been adequately punished. It should also be remembered that this reaction would likely be considerably more difficult and less desirable for the dedicated user of the virtual world, who would have to start over with new online acquaintances and social groups in order to have a truly fresh start.

It would be of great interest to determine if there is a correlation between the victim's experience, and the similarity of their avatar to their own physical appearance. Would a victim experience more severe after-effects if their avatar closely resembled their offline physical self? It is possible this realistic avatar would increase the sense of presence, and hence possibly the victim would feel the effects more acutely than if they had chosen an avatar which did not resemble them physically.

Another factor which may impact on the effects felt by victims is the realism of the environment. LambdaMOO was a text-based virtual world, and the victims in that case read descriptions of what Mr. Bungle was doing to their online selves. Second Life, and other graphical online worlds, are considerably more realistic, and as such probably increase the victim's sense of presence. It is possible that by seeing the graphical representation of the self attacked, the effects of victimization may be increased. This raises questions about the future of online virtual worlds – the more realistic they become, the more likely it is that the victim can be negatively affected. Related to that is a consideration of the behavioral mannerisms of the attacking avatar. Research indicates that the more realistic the behaviors of avatars, the greater the sense of presence experienced by the user [37, 38]. Therefore, as technology progresses and virtual worlds and avatars become more realistic, it is important that the reactions of victims of offences in virtual worlds are carefully considered.

It should also be considered that some personality traits such as locus of control and dissociation which have been shown to increase the sense of presence in immersive virtual environments [39] have also been linked with the development of post-traumatic stress disorder after crimes and traumatic events [40,41]. As such, further research into the relationship between these potentially intervening variables could provide further insight into the effects of victimization of crime in virtual worlds.

6. Victim aid

These reactions by the victims of crime in online virtual worlds suggest that it may be useful if some form of victim aid was put in place to assist them with the process of dealing with their difficulties. This aid could take a number of different forms, including help with reporting the offence, emotional, financial and legal assistance, and the possible introduction of restorative justice.

Victims of offline offences normally have relatively straightforward procedures available to them for the reporting of criminal offences. Police helplines, patrols and stations are often the initial ports of call for a recent victim of offline crime. However, in online worlds, the reporting procedure may be less clear, and the user may need to invest time and energy to determine how to report their experience. Although many virtual worlds have procedures for reporting misconduct, these are not always found to be satisfactory by victims if they wish to report more serious offences [1]. Similarly, reporting the occurrence to the administrators of the virtual world alone may not meet the victim's need for

retribution, especially if they feel that they have experienced offline harm because of the crime in the online virtual world. In those cases, the victim may prefer to approach the offline authorities, as in the Belgian rape case and the theft of the dragon-sabre. To aid victims in this regard, many online worlds need to be clearer about their complaints procedures, and the possible outcomes of these. They may also need to be clearer about the possible repercussions of reporting crime in online virtual worlds to offline authorities.

Victims of offline crimes receive varying degrees of emotional, financial and legal aid, depending on the offence which occurred. In some cases, this aid is provided through charitable organizations, such as Victim Support, sometimes through government organizations, and also through informal supports such as family and friends. Financial aid is probably the least applicable to victims of crime in online virtual worlds, as although theft of property can occur, it is unlikely to result in severe poverty for the victim. Also, because items with a designated offline value are starting to be recognized by real-world authorities, there is some possibility of financial recompense. Legal aid, both in terms of the provision of a lawyer and in terms of help in understanding the court system, can also be provided to offline victims. The legal situation is somewhat less clear for victims of crime in online virtual worlds, particularly where the punishment is meted out in the virtual world, as in the Mr. Bungle case. In that event, the victims and other users were required to effectively set up a legal system themselves. But from the cases which have been publicized to date, it appears that the greatest need for assistance that online victims have is for emotional support. In some cases victims have sought this from other members of the online community, but the evidence of victim-blaming for crimes in online virtual worlds which has been apparent to date may result in increased upset for victims, instead of alleviating their distress.

One system which may help to alleviate any emotional anguish for the victim is restorative justice. This refers to processes involving mediation between the offender and the victim [42]. Rather than focusing on the criminal activity itself, it focuses on the harm caused by the crime, and more specifically, the victims of the crime. It often involves a mediated meeting between the victim and the offender, where both are allowed to express sentiments and explanations, and the offender is given the opportunity to apologize. The aims of restorative justice are a satisfied victim, an offender who feels that they have been fairly dealt with, and reintegration of the community, rather than financial compensation or specific punishment. If the mediation does not meet the satisfaction of all involved, alternative punishments can then be considered. It would appear that the restorative justice approach is ideally suited for many crimes in online virtual worlds as it allows the victim to feel that they have been heard, while allowing the community to remain cohesive. However, it should be noted that not all victims of offline crimes have felt satisfied by the process [43], and so it is not suitable for all criminal events.

7. Policing online crime

While it is not the primary focus of this paper to consider how virtual worlds should be policed, it is worth a brief consideration in light of the effects on the potential victim. The Belgian police investigations into the alleged rape in Second Life, and their subsequent 'patrols' of the online world are one possible approach. On the other hand, many individuals would be displeased that taxes and police resources were being spent patrolling and investigating crime in virtual worlds while offline crimes can often go unsolved.

There is no doubt that online crimes with definite offline applications and risks should be under the remit of the appropriate police force. This includes child pornography, online grooming of children, identity theft and appropriate hacking activities. However, in many cases the line is blurred – 'ageplay' (sexual acts between two adults, one or both of which is using a child-like avatar) is considered an offline offence in some jurisdictions. Similarly, if a virtual attack is interpreted as an actual threat against the victim offline (where both the victim perceives it as a threat against their offline self, and the perpetrator intends it as an offline threat), it is also considered illegal in many jurisdictions. However, for both of these cases, if such an event involves several different jurisdictions there may be a lack of agreement as to whether the event was criminal in nature or not. As previously discussed, if an item is stolen in a virtual world, and the item can be judged to have an actual monetary value offline, then it may also be possible to prosecute the thief offline [14]. However, the line between an offline crime, and an event which is purely virtual (and hence not necessarily a 'crime' in the legal sense), is less coherent when the damages caused to the victim are emotional or psychological in nature, without any physical or monetary harm being caused. It is for these cases in particular that legal systems need to consider what the most appropriate course of action should be.

There are many ways in which this problem could be addressed. It is likely that each virtual world would need to be policed by separate law enforcement agencies, if only because different worlds could have differing social norms and definitions of acceptable and unacceptable behaviors. For example, it would not be an acceptable solution if players in an online war game such as Battlefield begin to sue each other for 'avatar-slaughter' when they lose, especially when the avatars respawn after a short time. However, if the same virtual murder occurred in an online world aimed at young children, it would obviously be much less acceptable. With this in mind, should it be obligatory for the creator of each virtual world to put in place a strict set of laws outlining what is and is not acceptable in the world, and ensuring that the virtual world is patrolled sufficiently well to ensure that all wrongdoings are observed and punished appropriately? This

is probably particularly appropriate if the creators of the virtual world are profiting financially from its users, although Linden Labs has shown reluctance to embrace this approach [44]. These actions would also condone a 'big brother' approach to life online, which could be strongly opposed by many cyber-citizens. It may be that the best alternative is to make cybersocieties mirrors of the offline world, where the police rely greatly on the citizens of the relevant society to report misconduct. However, this approach may also be open to abuse as one or more players could make unfounded allegations against another. In extreme cases, there may be a market for 'cyber-lawyers' who defend avatars against allegations by others or mount a case for cyber-prosecutions in virtual worlds.

A final consideration relates to the punishment of crime in online virtual worlds, if the restorative justice approach discussed above is considered inadequate or fails to satisfy those involved. As was seen in the Mr. Bungle case, banishment from an online community is often considered the most severe punishment possible in virtual worlds. However, it is easily overcome by creating a new avatar. It has been argued that virtual punishment is the appropriate recourse for crimes which occur in an online community [45]. In theft cases where the item has a real-world value, then it may be possible in some jurisdictions to enforce an offline punishment also – perhaps a fine or a prison term. But to prosecute cases such as Mr. Bungle offline, it would require that laws are rewritten, perhaps to include malicious infliction of emotional distress using computer mediated communication [46].

Conclusions

Up to this time, cybersocieties have in many cases been forced to make the rules up as they go, trying to deal with individual cases of crime in online virtual worlds as and when they arise, often without the action being criminalized in the community beforehand. In some cases this has been relatively successful, but in others victims of crimes in virtual worlds appear to experience quite serious emotional reactions to their victimization, with limited acceptance of their reaction from others. As online virtual worlds become more realistic, the associated increased sense of presence may also lead to increased victim suffering. It is clear that in the first instance, research needs to be conducted in order to determine how widespread crime in online virtual worlds actually is, and to establish how severely most victims react to it. The factors which lead to more severe reactions should then be identified, and presence is a logical place to start this investigation. If crime in online virtual worlds is determined to be a serious problem, with substantial effects on victims, then a greater focus needs to be placed on how online communities deal with this problem, and if legislation needs to be changed to reflect the psychological and emotional consequences of victimization. At this time, with increasing numbers of both children and adults joining multiple online communities, it is essential that this problem be addressed, so that adequate protection can be provided to the cybercitizen.

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