

The Prospect of Social Norms as a Governing Mechanism of Virtual Worlds

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Abstract

Millions of people are escaping from the real world to virtual worlds, where they interact with each other in respect of entertainment, business, education, and social networking. Under such a trend, there will be concerns over governing mechanisms of virtual worlds which have growing implications for participants' lives. As some evolving elements of social norms have been observed in virtual worlds, it is worthwhile to discuss the prospect of social norms as a governing mechanism in virtual worlds.

In his famous book of 'Order without Law,' Robert Ellickson predicted that effective norms are more likely to be established in a close-knit group, which does provide members with the power to control others and opportunities to exercise the power and also information about norms and violations. When applying Ellickson's norm emergency theory in the context of virtual worlds, however, it could be argued that effective social norms are unlikely to be established in virtual worlds. This is because the unique context of virtual worlds contains two factors, namely, the software environment and the role-playing, which may erode necessary foundational conditions. Participants' in-world interactions depend upon providers' design arrangement in the software platform. In general, virtual world participants only have limited capabilities to administer sanctions in the software environment. In order to exert social control over others, participants can hardly do without the help of virtual world providers in terms of software design and technical support. Moreover, participants do not have enough sanction opportunities in virtual worlds because of role-playing. Participants tend to have different and multiple identities in virtual worlds. This separation between participants' in-world identities and their real-world identities provides potential in-world deviants with a safe cushion. In this way, in-world deviants could get away with deserved sanctions by signing up to the world with another identity and are therefore able to commit deviant behaviours continually.

Given the advantages of social norms employed as a governing mechanism in virtual worlds, there will be a demand for solutions to social imperfections identified above. The most powerful solution is that virtual world providers deliberately design a software environment in which participants can exert effective social control over others to the highest degree. In addition, moderate legal intervention is also necessary to guarantee a suitable environment for the establishment of effective social norms in virtual worlds.

Keywords: Social Norms, Virtual Worlds, Virtual Community, Robert Ellickson

1. Introduction

Virtual worlds, online communities based on computer-simulated environments where participants simultaneously interact with one another, are not a Wild West. In-world rules and relevant enforcement already exist in virtual worlds. In general, there are two governing mechanisms of virtual worlds: code and contract. Providers write or modify the software platform that shapes the physics and ontology of the virtual world and set parameters about what participants can do there. Also, providers can regulate virtual worlds through contracts. Prior to first entering the virtual world, virtual world participants typically sign 'End-User License Agreements' (EULAs) or 'Terms of Service' (ToSs) with virtual world providers to gain access to the world. It should be noted that these two governing mechanisms are in the hands of providers. In other words, because of the monopoly in designing code and the employment of non-negotiable clickwrap agreements,

virtual world providers dominate in the governance of virtual worlds. The problem is that code and contract are mainly concerned with relationships between providers and participants. However, rich interactions between participants are the important feature of virtual worlds nowadays. In-world affairs such as cooperative hunting and fighting between allies in World of Warcraft, virtual goods trade and organising exhibitions or concerts in Second Life are the main attractive force for many participants. Because of few regulations focusing on relationships between participants, the current paternalistic governance pattern could be increasingly insufficient, given the trend of virtual worlds towards multi-functional platforms where tens of thousands of participants interact. From this point, there should be room for some forms of interpersonal regulation in the governance of virtual worlds.

For achieving this aim, social norms [2] could be an alternative governing mechanism of virtual worlds. Some evolving elements of virtual world norms have been observed. In the first place, close relationships between participants are forged in this new frontier of cyberspace. Through coding, cooperation between participants is explicitly forced by providers in many virtual worlds such as EverQuest and World of Warcraft. For example, it is extremely difficult for a single participant to kill powerful monsters in most game-like virtual worlds. Participants therefore have strong incentives to cooperate for survival in these worlds. Secondly, participants are granted autonomy to manage their internal affairs to some extent. In game-like virtual worlds, grouping mechanisms provide guild leaders with the ability to exercise command and control over the group. Participants have more autonomy in social virtual worlds. A typical case is LambdaMOO where a virtual legal system emerged. [3] Thirdly, some virtual world norms have been formed to fill the gap left by code and contract. For example, without the official rules, a norm emerges in game-like virtual worlds: healing characters should do nothing but heal when teamed up with other characters; otherwise, they would be subject to stigma and outright verbal abuse. [4]

Taking into account that judges or legislators tend to be unfamiliar with in-world affairs and norms could act as a source of law, it is worth discussing the prospect of social norms as a governing mechanism of virtual worlds. This paper attempts to explore this issue. Firstly, it starts with Robert Ellickson's social norm theory, which provides several conditions necessary for the establishment of effective social norms in people's communal lives. Secondly, it will argue that virtual worlds are more likely to breed communities, which lays the foundation for the discussion of social norms as a possible governing mechanism in virtual worlds. Thirdly, it will examine the degree of satisfaction of conditions cited by Ellickson in the context of virtual worlds, concluding that effective social norms would not be established in virtual worlds. Fourthly, it attempts to provide possible solutions for correcting social imperfections which impede the emergence of effective social norms in virtual worlds. Finally, a conclusion is drawn.

2. Robert Ellickson's hypothesis and supporting examples

When it comes to discussing norms as a means of social control, it is necessary to look back at Robert Ellickson's theory. In his famous book of 'Order without Law,' [5] Ellickson demonstrates that disputes in communities are often resolved without recourse to law and in ways different than they would have been resolved in court. Based on his fieldwork in Shasta County, California, he provides a hypothesis to predict situations where people are more likely to accept informal rules: 'members of a close-knit group develop and maintain norms whose content serves to maximise the aggregate welfare that members obtain in their workaday affairs with one another.' [6]

Ellickson further clarifies three important terms in turn, namely, 'welfare maximisation,' 'workaday affairs,' and 'close-knit group,' in this hypothesis. The hypothesis starts with an assumption that people, by nature want more satisfaction. Since it is difficult to measure people's 'utilities' subjectively in practice, norm-makers do the best to maximise 'welfare' which is the objective value of satisfactions of group members to achieve this goal. [7] In a social environment which enables people to enter into exchanges, norm-makers can obtain rough objective evidence of values by observing the terms of voluntary exchanges between group members. In valuing the aggregate welfare associated with various foreseeable outcomes, members of a group will choose norms that minimise the group's deadweight losses and transaction costs incurred when interacting with one another. [8] The hypothesis only applies to the norms that govern workaday matters. It does exclude two sorts of foundational rules. The first is the ground rule that enables group members to engage in voluntary exchanges because these kind of rules such as those against murder, maiming, and enslavement are normally created by law. [9] The second is purely distributive norms such as norms of charity because

the transfer process involved consumes resources and creates none and, therefore, might appear to counter the hypothesis. [10] The hypothesis only predicts that welfare-maximising norms would emerge in close-knit groups. Effective norms are more likely to be established in a close-knit group, which does provide members with the power to control others and opportunities to exercise the power and also information about norms and violations.

There are two examples that provide intuitive support for Ellickson's hypothesis. Norms developed in Shasta County are an immediate case. Because of the high transaction costs associated with resorting to the legal system for rule enforcement, Shasta County developed norms to deal with frequent cattle-trespass disputes. A norm was that owners of livestock assume strict responsibility for both intentional and accidental harm that his trespassing stock inflicts on neighbouring lands. [11] Thus, a rancher whose cattle enter into a neighbouring ranch causing damage to the neighbour's property would provide fair compensation for the damaged property according to the norm, even though the rancher may not be required to do so under state law when the two adjoining lands are in an 'open range.' [12] The establishment of the norm aimed to minimise the sum of members' transaction costs and deadweight losses arising from the risk of accidents. The reason why this norm was effective in regulating the community members' behaviours in Shasta County is that there were several self-help sanctions such as negative gossip to enforce the norm. [13] Since ranching families have lived in Shasta County for several generations, these people particularly care about maintaining their reputation as good neighbours. [14] Under these circumstances, negative gossiping, which could impair members' reputations, is an effective means of social control.

The practices of early whalers in the pre-steamship era also illustrate how close-knit groups develop welfare-maximising norms. Since whales were a valuable source of oil, bone, and other products, early whalers had strong incentives to develop rules for peaceably resolving competing claims to the ownership of a whale. [15] In doing so, they developed different norms, each of which was adapted to its particular context. Prior to 1800, the British whalers operating in the Greenland fishery established the norm that a claimant owned a whale as long as the whale was fast physically connected by line or other device to the claimant's boat or ship. [16] This norm was well suited to this fishery because the hunt target was the right whale, which is a slow swimmer and feeble antagonist. [17] Because of its characteristics, a right whale on a line was not likely to overturn the harpooning boat, break the line, or sound to such a depth that the whalers had to relinquish the line. [18] Therefore, this norm was more likely to reward the first harpooner in practice, who had accomplished the most difficult part of the hunt.

A different social norm emerged among whalers who primarily hunted the sperm whale. Unlike the right whale, the sperm whale is an aggressive, quick-moving, and social animal that can be difficult and even dangerous to catch. Based on these traits, the sperm whale was a more suitable target for drogue fishing. Accordingly, whalers adopted another norm that 'conferred an exclusive right to capture a whaler who had first affixed a harpoon, lance, or other whaling weapon to the body of the whale.' [19] This norm differed from the norm applied to the right whale in that the weapon did not have to be connected by line or other means to the claimant. In this way, this norm provided better-tailored incentives in situations where the sperm whale was the main hunt target.

These whaling norms were successfully established because they allocated the ownership of the whale in such a way as to maximise the community's wealth. [20] Again, it should be noted that the establishment of these whaling norms need the 'close-knit' social condition. During the whaling industry's peak in the nineteenth century, whaling ships from ports in several nations travelled in remote seas of every ocean. The international whaling community was close-knit, in part because whaling ships usually encountered one another at sea, but also because whalers' home and layover ports were few, intimate, and socially interlinked. [21] Once the whaling community became less close-knit, litigation concerned with the ownership of whales increased. [22]

3. Communities are highly likely to exist in virtual worlds

Since social norms are normally developed in people's communal lives, the existence of communities is a precondition for the emergence of social norms. In order to discuss the prospect of social norms in virtual worlds, this section will firstly discuss whether the precondition of the existence of a community in virtual worlds is required.

3.1. Literature review on 'virtual community'

Some traditional notions have been given new understandings in the era of the Internet. 'Community' is such a one. Although there seems to be no unified definition in sociology, a community traditionally refers to a group of people who are organised around common values and is combined with social cohesion within a shared geographical location. [23] According to German sociologist Ferdinand Tönnies's categories, '*Gemeinschaft*' is a typical community. It is perceived to be a tight and cohesive social entity within a certain geographic territory, where individuals who have a common history and shared religion and language, are regulated by a 'unity of will' about appropriate behaviours and responsibilities of members of the association. [24]

The emergence of the Internet has exerted great impact on people's communal relationships. Loosening geographic and cost constraints, people could strongly forge commercial, political, educational, and academic relationships with others all over the world via the Internet medium. The increasing use of Internet-enabled communication for social interaction thus made some changes to people's traditional idea of 'community'. Howard Rheingold was the first scholar to connect complex computer-mediated relationships as a form of communities. In his seminal book of 'Virtual Community', he argued that 'virtual communities' emerge from the Internet where people with sufficient human feeling undertake interactions deep enough to form webs of relationships. [25] Unlike Rheingold's Internet-as-community argument, Manuel Castells emphasised that computer-mediated networks were developing into an avenue for the revitalisation of community. In his book 'The Rise of the Network Society,' Castells pointed that as opposed to the linear or serial set of relationships during the Industrial Revolution, new information technologies are facilitating more complex interactions that are organised by networks. In his description, information technologies such as television, computers, and the Internet have decreased the space between different parts of the world to such an extent that people now have the capability to process information in real time. For example, people can now keep in touch with friends, date and divorce over the Internet in a convenient way. In this instance, unlike traditionally local communities, new types and formations of communities in which different people from different geographic locations converge are established in the online networks. [26]

However, Rheingold's virtual community claim was not immune to criticism. Several scholars questioned the use of the term 'traditional community' in the case of online social formations. As stated above, traditionally, the concept of community contains these elements: a common history, common value system, and a shared religion and language. It appears difficult to apply the term in the context of the Internet. First, the Internet is perceived to be a virtual place, rather than an actual physical place. Secondly, it is questionable whether online social groups can develop a shared history, value system, religion or language, taking into account the fact that online social groups are fluid and consist of different races. [27] Therefore, Joseph Lockard was reluctant to apply the traditional term of community to online social formations because online social groups are at most voluntary associations of like-minded people mediated through communication tools and they cannot replace community's functions. [28] Andreas Wittel challenged the term of virtual community itself. In his view, the new idea of virtual community itself is an indication that online social formations are not communities in the traditional sense. [29]

The quality of Manuel Castells's version of 'new community' was also questioned by several scholars. Because of the lack of complex social stimuli, virtual relationships within online communities are devoid of full panoply of social relationships and cohesive or organic expectations of traditional *Gemeinschaft* community relationships. [30] The Internet merely provides people with a powerful network formation tool. Although networked people's emotional or informational needs could be satisfied in the medium of the Internet, these experiences are restricted and cannot represent a holistic community experience. [31] In this sense, virtual communities are at most a kind of *Gesellschaft* under Ferdinand Tönnies's categories, which describes associations in which individuals lack shared morals and just act in their own self interest. [32]

Andreas Wittel further argued that online social formations are actually a form of networked sociality rather than community because online relations are informational relations which are mainly based on an exchange of data, unlike close-knit and long-lasting relations within a community. [33] Richard Sennett even commented that the result of using the Internet is destructive *Gemeinschaft* because individuals are no longer accustomed to doing things together or performing public roles and therefore unable to establish a community, which involves long-term, sustained, deep relationships. [34]

Controversies regarding virtual communities stated above indicate that the status of online social formations is far from clear at the moment, in part because the term 'community' in itself lacks explicit meaning in theory,

but also because it is difficult to determine online social relationships due to their malleable and changeable context in practice. However, as the fieldwork of Daniel Miller and Don Slater in Trinidad empirically revealed, [35] the trend that the Internet is increasingly shaping, and being shaped by, people's lives in terms of personal relations, commerce, sex, religion, and so on cannot be denied. In this sense, the Internet, not just a form of communication technology, is an actual set of social practices. Besides mere informational exchanges, online social formations actually have social meanings. As the application of the Internet increase both in depth and width, the voice of 'online social formations-as-network sociality' could gradually fade. Virtual worlds discussed below are such a case in this respect.

3.2. Virtual worlds are more likely to accommodate communities

Most of the above studies were focused upon text-based online environments. As band-width improves and computer graphics become more powerful, participants have more chances to immerse themselves in graphically rich online environments such as World of Warcraft and Second Life, which in turn increase the possibility of forming communities within these new frontiers of cyberspaces.

3.2.1. Enhanced sense of 'physical place' in virtual worlds

In text-based online environments such as MUDs, which used text to depict action, description and communication, participants had to rely upon their imagination to feel the sense of physical places being described to them. Graphical virtual worlds, however, take advantage of enhanced computer graphics and decreased band-width limits, which allow much more information to be transmitted in a shorter periods of time. In this way, information on action, description and communication can be portrayed in an exciting audio visual presentation. Most virtual worlds provide participants with a three-dimensional interface. Via this interface, participants are embodied as avatars, which are graphical representations of their terrestrial selves. Participants can customise their avatars' appearances according to their preferences so that they can determine the way that avatars are displayed. The description of selves thus no longer exists in participants' mind and is graphically realised in their own and other's eyes. Also via the three-dimensional interface, participants' avatars can physically interact with the environment.

Avatars are positioned within a three-dimensional graphical universe and they can locate each other and navigate around the universe. Communication between one participant and another who is actually in a remote location can be presented as a talk between two avatars within 'one step' distance in virtual worlds. What is more, laws of physics are designed to be partly applied in virtual worlds. This means that avatars interact with the virtual environment in a similar way as participants interact with the real world. For example, avatars cannot directly pass through a wall and have to bypass it in virtual worlds, and they do not fall upward when they slip. Therefore, with the development of technology, participants can physically relate to one another and the environment in virtual worlds. A sense of 'physical place' is enabled via three-dimensional representation of self and surroundings, creating the geographic condition for establishing community.

3.2.2. Enhanced residential experiences in virtual worlds

Participants can obtain enhanced residential experiences in virtual worlds. Second Life is a good example in this regard. In this three-dimensional environment, there is a built-in capability of 'building'. [36] More specifically, Second Life program provides participants with basic building blocks, which are called 'prims'. Prims begin as a wooden box half meter on one side; once 'rezzed' participants could change their size, transform them into other shapes such as a square or sphere, rotate them, or make them hollow. Prims could be mixed together to create large structures. Participants are allowed to upload graphics files into Second Life to add textures to their rough creations, making them more aesthetical. Even, participants could use scripts to add behaviours and animation to their creations, making them come to life. Based on these rich affordances provided, participants could create diverse buildings such as waterfalls, parks, forests, and plazas, and smaller objects such as vehicles, art works, and clothing. The Second Life thus can be created by participants. Participants are active 'residents' in Second Life, rather than passive consumers. They then have more chances to obtain residential experiences in the world.

Besides self-creation, participants could sell their creations inside Second Life or on Xstreet SL, the official web-based marketplace for Second Life. Since the virtual currency, which is called 'Linden Dollar', has direct

links with real world money, Second Life participants could actually make a real-life living through the trade of virtual world objects. An avatar, Anshe Chung, was reported to be a millionaire through her in-world real-estate business in Second Life. [37] Even in game-like virtual worlds such as World of Warcraft, participants could also make real world money by selling their scarce virtual world objects on auction websites. [38] The link between virtual items with real money enhances participants' residential experiences within virtual worlds. Not only are participants able to create their own worlds, but they could financially 'live' in these online environments without the fear of losing jobs in the real world. [39] Participants' immersion in virtual worlds is reinforced in this way, which increases the likelihood of establishing a community.

3.2.3. Intimate relationships and cohesive social structure

During the early days of the Internet, the portrait of net surfers was normally described as a flock of eccentric people who spent a lot of time typing keyboards in front of computer screens in lonely rooms, without close links with their relatives and friends in the real world. As time went by, however, observers found that cyberspace could not only transform actual-world intimacy but create real forms of online intimacy. [40] Internet users often 'come to feel that their very best and closet friends are members of their electronic group, whom they seldom or never see.' [41] The current generation of cyberspace, virtual worlds are even famous for their intimacy-making culture.

Differing from traditional electronic video games in which players normally interact with game machines, virtual worlds give prominence to interactions between participants. There is no designed ending for every virtual world. Rather, as long as enough participants get together in a virtual world, the world could even last forever. Virtual world participants spend enormous amounts of time and energy finding, making, and maintaining friends. [42] For most Second Life residents whom Tom Boellstorff encountered during his fieldwork, friendships were a primary reason for their participation. [43] Those lucky participants have derived great benefits from the time they have spent in virtual worlds because they have found true love, eventually marrying in real life the partners they learned to love in virtual worlds. [44]

Moreover, to attract as many participants as possible, virtual world providers tend to encourage cooperation between participants. In doing so, different game characters are designed to have different capabilities in most game-like virtual worlds. For example, there are eight playable races with unique racial traits, nine playable classes, and thirteen professions in World of Warcraft. [45] However, every race with its own capabilities cannot have other races' traits and is incompetent to defeat powerful monsters in the world. It means that when one character encounters a powerful monster he or she has to cooperate with other different kinds of characters for survival. The forced cooperation between participants is therefore achieved in World of Warcraft in this way.

In addition, virtual world providers also design some grouping mechanisms to support collectives. For example, in EverQuest, groups such as pickup groups, friend groups, and guilds are formal social organisations in which participants, once joined together, can monitor each other, use a private chat channel, and all gain experience points based on teamwork. [46] Moreover, group members often have extensive forums and Web sites devoted to backstory and conversations. These social groups are officially sanctioned organisations with a hierarchical leadership structure. Guild leaders obtain capabilities to invite and disband members. [47] In these social groups, reputation, trust, and responsibility play important roles in group members' social lives. [48] A group member with a good reputation is able to secure groups over the long term. Based on the trust of guild members, many guilds operate guild banks from which guild members are allowed to borrow equipment. Every group member bears responsibilities for strengthening the group to which he or she belongs. In summary, with the development of technology, virtual worlds are evolving into social places which are more likely to breed communities. In this sense, it is possible to establish an assumption that virtual worlds contain communities, serving as the basis for further discussion on the development of social norms in virtual worlds.

4. Two factors impeding the development of social norms in virtual worlds

Having established the highly possible existence of communities in virtual worlds, the section will discuss whether effective social norms could emerge in the context of virtual worlds. Actually, several social norms

have been observed in virtual worlds. As stated previously, a social norm was established in that game character 'healer' can do nothing but heal. Otherwise, the character would be subject to stigma and outright verbal abuse. [49] In The Sims Online, participants exhibit normative behaviours ranging from hosting, being a visitor, group projects, and public conversation, to avatar action and interaction. [50] In Second Life, there are conventional rules of conduct and participants could sanction offenders who commit unacceptable behaviours with unfavourable gossip by reporting the offender's illicit behaviours on public weblogs and websites. [51] However, communities in virtual worlds are not identical to those in the real world after all. According to Ellickson's theory the unique context of virtual world contains two factors which may erode foundational conditions necessary for the establishment of social norms. Therefore, social norms would fail to be an effective governing mechanism in virtual worlds.

4.1. Foundational conditions of Ellickson's social norm emergency theory

According to Ellickson's theory, effective monitoring and sanction of potential deviants in a close-knit group are necessary for the establishment of welfare-maximising norms in the group. To effectively control others, several conditions must be satisfied in a social setting. The first condition is that each group member should have some of the resources of power to administer sanctions. In Ellickson's view, foundational rules such as legal entitlements are such resources because they ensure the protection of a member's bodily integrity and personal property so that members can develop workaday norms based on such protection. [52] The second condition is that group members must have opportunities to exercise the power. [53] The continuing relationship or iterated play between members can guarantee future opportunities to render self-help sanctions. The third condition is that group members must obtain historical and current information about each member's social interactions. [54] With adequate information, group members could identify and appraise the potential benefits of cooperation between each other. Meanwhile, the flow of information could also serve as the basis for the means of social control—negative gossip within a social group. The degree of satisfaction of these three conditions determines how effectively group members monitor and sanction potential deviants in a close-knit group, which in turn determines the successful establishment of social norms in the group. Departures from these conditions of sanction power, sanction opportunities, and adequate information are therefore likely to impair the emergence of welfare-maximising norms in a social setting.

In examining the context of virtual worlds, the degree of the satisfaction of the first two conditions is low due to two inherent factors. One factor is that virtual worlds are based on the software platform in which participants only have limited capabilities to exercise the sanction power. The other one is that participants tend to assume various identities in virtual worlds, decreasing the sanction opportunities necessary for the establishment of social norms. A more detailed discussion about these two factors is outlined below.

4.2. The factor of software environment: participants only have limited capabilities to administer sanctions

While participants could obtain a vivid sense of reality through simulating effects produced by virtual worlds, virtual worlds are not identical to the real world. The real world is based on atoms and people can do whatever they want within the laws of physics permitted in the world. However, virtual worlds are based on the software platform. Every function within virtual worlds is achieved by providers' design. Even though participants could act in virtual worlds as if they were in the real world, all participants' in-world activities are merely consequences of providers' design ideas. If providers do not set one function beforehand in the software platform, in general participants have no chance to engage corresponding activities in virtual worlds. Participants' in-world interactions therefore depend on providers' design arrangements in the software platform.

This software environment factor has implications for the development of social norms in virtual worlds when applying Ellickson's theory in the context of virtual worlds. On the positive side, virtual world participants do have some kind of resources of sanction power. There are some foundational rules governing participants' behaviours in virtual worlds. One resource is code-based rules. Because of the design power, virtual world providers can regulate participants' behaviours through coding. If virtual world providers do not want their participants to engage in virtual violence between each other, they can disable participants from fighting

against each other by cancelling the function to battle in the software platform. While the code-based rules are invisible for participants, they are automated and immediate so that they have strong effective power control.

The other resource is EULA rules. Every participant has to sign the EULA with providers for the participation in virtual worlds. These EULAs tend to contain clauses governing participants' in-world behaviours. For example, Community Standards, which are commonly referred to as the 'Big Six', need to be agreed by participants in order to participate in Second Life. [55] The Big Six prohibit the following conduct: (1) 'Intolerance'; (2) 'Harassment'; (3) 'Assault'; (4) 'Disclosure of another participant's personal information'; (5) 'Indecency'; and (6) 'Disturbing the Peace.' Thus, there are some exogenous ground rules that serve as the basis for non-hierarchical norm development in the context of virtual worlds.

On the negative side, however, while virtual world participants have resources of sanction power, they generally do not have enough capabilities to exercise the power by themselves. This is a unique aspect when discussing virtual world issues. On the basis of resources of power, residents of Shasta County could employ countermeasures at their own will. In most cases, they adopt self-help sanctions on someone who has not taken adequate steps to prevent his animals from trespassing. [56] Normally, mild measures such as negative gossip have enough deterrence because residents tend to know one another and value their reputations in the community. [57] In extreme cases, in response to repeated trespasses, resident victims herd the offending animals to a location extremely inconvenient for their owner, or threaten to kill responsible animals should they ever enter again. [58]

There is a precondition for the implementation of self-help sanctions that residents of Shasta County have full capabilities to implement self-help remedies of gossip and violence. However, it is not necessarily the case in the context of virtual worlds. As introduced above, participants' capabilities in virtual worlds depend upon design arrangements in the software platform. In game-like virtual worlds, participants can only choose pre-defined roles with pre-programmed strengths and weaknesses within the context of an overall storyline. In social virtual worlds, participants have more ability to modify their avatar's appearance and to generate their own contents. Although participants have more capabilities in social virtual worlds than in game-like virtual worlds, these capabilities are not inherent but still given by providers. Because of the dependence upon the software design arrangement, participants cannot fully engage in activities as they desire in the context of virtual worlds. They can use negative gossip as a countermeasure to discipline deviants because they can spread negative gossip via textual or verbal communication tools commonly provided by virtual worlds. However, ordinary participants generally are not given full capabilities to engage in violence to counter deviants in virtual worlds, in part because it is not cost-effective for virtual world providers to design in-world characters as fully able people, but also because providers cannot anticipate all the in-world deviance that would occur when designing the software platform and therefore they cannot enable participants to counter deviance in design all the time. For example, a householder is unable to expel an unwelcome guest who engaged in unforeseeable deviance in virtual worlds if the software code does not enable the expel function for them.

Even though providers willingly enable participants to fully engage in various activities in virtual worlds, the software environment still makes it difficult for participants' self-help. In-world activities are all technology-related. One simple realisation of participant's action actually rests upon a technical process of information exchanges between participants' client computers and providers' servers. In this sense, any social construction requires technical action corresponding in virtual worlds. Since participants lack professional knowledge and relevant resources of control such as the central server of virtual worlds, it is difficult for them to effectively manage technology-related in-world affairs. The virtual world of LambdaMOO is a case in point.

LambdaMOO began in October 1990, and is an aggregation of more than 350 text-based virtual spaces. [59] All of LambdaMOO consist of nothing but words and signs. In each space, the participant's computer screen will show a textual description of the room and list the room's other inhabitants. Based on the textual description, participants obtain imagery experiences. For example, after entering a virtual space, they could feel that they have arrived in a fantasyland where they walk around the market, explore a garden maze, take a stroll over to the palace, go to the shopping mall, and so on. LambdaMOO has become one of the most popular virtual worlds, with several thousand registered characters and a lengthy waiting list of people who want to participate. [60]

In its early days, LambdaMOO was an oligarchic world without any democratic system for resolving in-world disputes or establishing rules. [61] The providers, its founder Pavel Curtis and several other participants who had participated in LambdaMOO since its inception, were responsible for both technical integrity and social

control on the world. With an increase in the number of participants, providers felt that they would not be competent in managing more and more complex and diverse LambdaMOO communities. [62] Then, they decided to move into the sole role of systems programmers whose job was to keep the software platform of LambdaMOO running well in a purely technical sense, [63] and instituted a petition system through which ordinary participants could enact social institution for themselves. [64] The petition system works in this way: any LambdaMOO participant who meets certain minimal criteria can initiate a petition for making a sociotechnical change in LambdaMOO. [65] If a petition gets at least ten signatures, its initiator can submit it to the providers for 'vetting.' The providers' decision to vet is supposed to be based on several objective criteria rather than personal opinions. [66] Once vetted, a petition could be transformed into an open ballot after receiving a certain number of signatures. If the open ballot passes by a two to one margin, the petition will be implemented under the support of providers.

The petition process was used to establish a system of dispute resolution. There was an arbitration system in LambdaMOO which was staffed by volunteers who had been a member of the community for at least four months. [67] Every member of LambdaMOO including the providers was bound by the arbitration system. Under this system, any participant could initiate a dispute against another participant. Arbitrators heard the case and made the decision. More importantly, arbitrators had a broad array of sanction measures to discipline deviants. [68] This in-world dispute resolution system was implemented for the famous case of virtual rape in which a character named Mr. Bungle forced several participants to engage in violent sex acts. [69]

However, this kind of democratic experiment finally failed. Providers had come to understand that the distinction between technical implementation and social decision making was not tenable: 'Over the course of the past three and a half years, it has become obvious that this was an impossible ideal: The line between 'technical' and 'social' is not a clear one, and never can be... So we now acknowledge and accept that we have unavoidably made some social decisions over the past three years, and inform you that we hold ourselves free to do so henceforth.' [70] On May 16, 1996, providers finally reclaimed certain aspects of social control in LambdaMOO. [71]

The failure of the democratic experiment in LambdaMOO indicates participants' limited capabilities of dealing with in-world affairs, even though they are given management opportunities. On the whole, in order to exert social control over virtual worlds, participants can hardly do without the help of providers in terms of function design and technical support. In this sense, although participants have resources of power to administer sanction, they are unable to completely exercise the power. The foundational condition of Ellickson's theory therefore cannot be fully satisfied in the software environment of virtual worlds.

4.3. The factor of role-playing: participants do not have enough sanction opportunities

Role-playing is the other important factor worthy of discussion. According to the Oxford English Dictionary, a 'role-playing game' refers to 'a game in which players take on the roles of imaginary characters, usually in a setting created by a referee, and thereby vicariously experience the imagined adventures of these characters.' [72] Previously, the term role-playing was used to describe players of tabletop gaming or live action role-playing (LARP). [73] Nowadays, almost all popular game-like virtual worlds labelled as 'MMORPGs', which stand for 'Multiple Massive Online Role-Playing Games', are seen as contemporary successors. World of Warcraft is a representative example. In this virtual world, participants can choose to play one of ten character roles, such as Druid, Hunter, or Mage. Participants play these roles through virtual representations of self, which are generally called avatars. A participant's avatar then takes one of ten races, such as human, dwarf, or orc. Besides various roles and races, the participant's avatar can also choose primary or secondary professions to engage in gathering, production, and service activities in World of Warcraft. [74]

The factor of role-playing is very important for virtual worlds because it contributes to the generation of an immersive effect in virtual worlds. [75] Through role-playing mechanics stated above, participants are more likely to act like their assumed roles. Assume a scenario where a monster suddenly appears before a warrior, a mage and a druid. For survival in this encounter, three characters have to form an alliance to combine their advantages. Then, the warrior is responsible for directly attacking the monster. The mage assists the main attacker in recovering his attack values and the druid heals the warrior's wounds. The monster is finally defeated by the alliance through which each participant's operation is in accord with his or her assumed role.

After repeatedly performing such operations, each participant finally 'becomes' each assumed character in his or her own eyes and in other participants' eyes.

This factor has implications for the satisfaction of the condition of sanction opportunities in the Ellickson's theory in virtual worlds. Residents of Shasta County have many sanction opportunities because they deal with one another on a large number of fronts in rural society. [76] The multiplex relationships or iterated plays between residents in water supply, controlled burns, fence repairs, social events, and so on guarantee that residents can employ sanction on deviants in unavoidable future encounters. However, it should be noted that these sanction opportunities are based on the fact that each resident of Shasta County has only one identical identity when interacting with each other. An owner of trespassing cattle will be the same one in his or her future encounter with victim residents in Shasta County. In this way, the owner has to comply with the norm governing cattle-trespass in that he or she cannot escape from victim residents' countermeasures in future encounters because of the uniqueness of his or her identity in Shasta County.

Nevertheless, the position is different in the context of virtual worlds. As Richard Bartle states, 'the fundamental, critical, absolutely core point of virtual worlds such as those found in multi-player online games is the development of the player's identity.' [77] For the achievement of role-playing in virtual worlds, participants are provided with several mechanics to develop in-world identities. After firstly entering a virtual world, participants can determine two things about their avatars: appearance and name. Participants can normally choose their favourite avatars from a selection of avatars dressed and equipped, or in some virtual worlds such as Second Life participants are even allowed to modify their avatars' appearance. Participants are also able to create their avatars' names according to their preferences, as long as the newly-created names are not the same as existing names. As a consequence, participants' in-world identities are usually different from their real-world identities. For example, as stated above, World of Warcraft offers ten races and only one of them is human. Therefore, most participants are not playing as humans in the world. Besides choosing different races, participants also choose opposite genders in virtual worlds. For example, according to Nick Yee's research, about 47.9% of male participants have a character of the opposite gender in EverQuest. [78]

Apart from establishing different identities, participants could assume multiple identities in virtual worlds. Many game-like virtual worlds are designed to allow participants to have several avatars in one account. Through this design, participants could easily make a switch between different in-world characters within one registered account. Even each account is designed to contain only one avatar in some virtual worlds, participants can still have multiple identities by registering multiple accounts.

Based on the above fact, the condition of sanction opportunities for the establishment of social norms would not be well satisfied in the context of virtual worlds. Under the mask of role-playing in virtual worlds, participants do not know each other's real identities. This separation between participants' in-world identities and their real-world identities provides potential deviants with a safety cushion, lowering the deterrent effect of some sanctions such as negative gossip in virtual worlds. Virtual world participants could be indifferent to their in-world reputations because negative gossip about their in-world identities could not affect their real-world identities. For example, some Second Life participants were angry at their land neighbour who erected giant and garish billboards on his property because the towering signs ruined their view and potentially threatened the value of their property. [79] They tried to stop this virtual nuisance by engaging in negative gossip and sending endless instant messages complaining about his action. [80] However, these sanctions were ineffective and the offender continued his behaviour. [81] The possibility of having multiple identities could also be used by participants to circumvent in-world sanction measures. In-world deviants could get away with deserved sanctions by singing up to the world with another identity and are therefore able to commit deviant behaviours continually. For example, there was a punishment called 'Cornfield' in Second Life. [82] If a participant was sent to the cornfield, every time they logged on their avatar would be trapped on a tractor and be forced to watch an education film about a boy who turns to a life of crime. [83] This is a code-based sanction that should have enough deterrent effects because ordinary virtual world participants can do no more than what the code allows. However, the 'Cornfield' proved to be an ineffective sanction measure because cornfield prisoners can easily circumvent the sanction by creating a new avatar. [84]

Therefore, the unique factor of role-playing could be used by potential deviants as a shield from deserved sanctions in the context of virtual worlds. While virtual world participants could interact with each other in growing instances, for example, Second Life participants can engage in various activities in terms of commerce, education, professional training, and so on, such activities could be undertaken by different identities under the mask of role-playing in virtual worlds. There is no guarantee that deviant participants will

log on the same avatar to accept deserved sanctions, given the easy identity switch in virtual worlds. In this situation, sanction opportunities necessary for the establishment of social norms would be inadequate in virtual worlds.

5. Possible solutions to correcting social imperfections in virtual worlds

Based on the discussion above, the software environment and the role-playing of virtual worlds could lead to the low levels of sanction enforcement and sanction opportunities which are necessary for the emergence and development of social norms. Although the adequate information condition could be satisfied in the context of virtual worlds given the informational nature of cyberspace, effective social norms would probably not emerge between participants in virtual worlds due to the low satisfaction of 2/3 conditions listed by Ellickson. However, as stated above, since virtual worlds render vivid simulations of the real world and participants could develop intimate relationships in virtual worlds, virtual worlds could breed the foundation for the establishment of communities. As Ellickson observed in Shasta County, social norms act as a main governing mechanism in people's communal lives. By the same logic, social norms could be employed to govern participants' behaviours in virtual worlds, if participants form communities in virtual worlds. Moreover, given relevant flaws associated with code and EULAs, [85] social norms have their particular advantages in dealing with relationships between participants. After all, social norms are created by participants themselves and it is more possible for them to make situation-specific measures to promote their own welfare in virtual worlds, compared to virtual world providers and real-world legislators. For these reasons, it is desirable, at least, that social norms have an alternative governing mechanism in virtual worlds. Therefore, it is worth exploring possible solutions to the two identified social imperfections (namely, participants' low sanction enforcement capacity and inadequate sanction opportunities), which make it less likely that effective social norms emerge in virtual worlds. If two social imperfections present in virtual worlds were corrected to the highest degree, effective social norms would probably emerge and develop in the context of virtual worlds.

The most powerful solution would be that providers, who act as the god of virtual worlds, design a software environment in which participants can exert social control over in-world affairs by themselves to the greatest extent. Not only can providers limit participants' capabilities in virtual worlds, but they can also enhance them. The reputation system in the eBay platform is such an example. eBay is a software-mediated market in which interactions of buyers and sellers are controlled by software. Participants interact with this online market through a software interface, which matches buyers and sellers and assists them in negotiating a price. Since participants in eBay are anonymous and scattered all over the real world, there is weak control about the quality of transaction goods and services in this online market. To correct this information failure, eBay has developed a reputation system. Via such a system, participants can leave feedback about the finished transaction that reflects their experience with the buyer or seller. [86] Transactions are ranked as positive, negative, or neutral, and those votes are turned into numerical ratings. Over time, eBay participants develop a reputation profile based on the comments and ratings left by other participants. Although this reputation system is not perfect, [87] it adds one means of control in eBay and it has been an important reference basis for eBay participants when they are considering transactions. This case indicates that software platform providers can facilitate participants' control over others through design. Recalling the condition of adequate information cited in Ellickson's theory, if virtual world providers learned a lesson from eBay, for example, they could design a similar reputation system containing adequate information about participants' historical and present behaviours, then, the condition would be even better satisfied in virtual worlds than in the real world.

Actually, a similar reputational tag system has been employed in the virtual world of The Sims Online. [88] This system involves a graphical display that shows the face of every avatar with whom the avatar has made a transaction. In this system, friends and enemies are indicated, respectively, by green links and red links, and the length of the links indicates the depth of the relationship between two participants, as measured by the number of positive or negative transactions occurring between them. [89] The Sims Online participants therefore can check each other's reputational information for reference in deciding whether to take certain in-world activities.

Therefore, a software environment in which participants have enhanced capabilities is a straightforward solution. More specifically, participants should be granted a certain power of coding because coding is an absolute and effective means to control people's behaviours in a software environment. If participants

obtained the power of coding granted by providers to some extent, they could exercise sanctions more effectively in virtual worlds. There have been several code-based sanctions which have exhibited great deterrent effects in virtual worlds. For example, 'toading' is an effective means of social control. It refers to a process in which the person possessing the power of coding alters the appearance and/or description of the offender's avatar into something shameful (commonly a toad). [90] However, the problem is whether providers would grant participants such a power. The prospect of this empowerment may be positive. With increasing interactions involved in virtual worlds, it would be burdensome for providers to deal with a large amount of in-world affairs between participants. In practice, Linden Lab already has designed code-based, automated monitoring and sanction mechanisms through which participants could create their own social norms to govern a limited set of behaviours in Second Life. [91]

Besides the enhancement of participants' capabilities, providers should also take some countermeasure to curb participants' identity switch for sanction circumvention. Given the importance of role-playing for virtual worlds, it would be ill advised that participants are forced to use their real-world identities to interact with each other in virtual worlds. Therefore, possible solutions would be that providers technically increase the difficulties with participants' identity switch. For example, providers could change their previous design arrangement so that participants are just allowed to have only one avatar within one account. And, providers could also design a new registration system in which participants are forbidden to have multiple accounts in a short period of time within virtual worlds.

Real-world law can also play a role in correcting social imperfections within virtual worlds. External legal intervention can be reflected in two respects. The first respect is that the real-world law could impose responsibilities upon virtual world providers to promote the development of social norms and to assist in the protection of social norms created by participants. The failure of the democratic experiment in LambdaMOO indicates the pivotal position of virtual world providers in governing virtual worlds from the perspective of technology.

Actually, even though several vigilante organisations have been established by participants themselves in virtual worlds, participants are still in need of providers' support for curbing violations of EULAs. [92] While virtual world providers have demonstrated their efforts in some aspects as stated above, they do not have enough incentives to promote and support participant-created social norms. Profit-driven providers will provide just enough service to maintain its population. Given the high switching costs of popular virtual worlds such as World of Warcraft and Second Life, these virtual world providers do not have to target the service level of in-world affairs between participants. In this sense, judges or legislators could legally impose relevant responsibilities upon virtual world providers, causing them to be subject to market mechanisms. The second aspect is that real-world law could require providers to disclose participants' real-world identities when necessary. The separation between virtual world identities and real-world identities could be used by deviants to mitigate deterrent effects of social norms. Given the fact that ordinary participants cannot easily obtain information about others' real-world identities from providers, real-world law could assist them in requiring the disclosure of offenders' real-world identities when necessary. In this way, in-world social norms could not be circumvented because of the mask of role-playing.

6. Conclusion

The lack of governing mechanisms focused on relationships between participants in virtual worlds provides the basis for this paper. Social norms might be an alternative governing mechanism in virtual worlds, given the high possibility of the existence of communities in virtual worlds. However, in examining the context of virtual worlds, it can be argued that effective social norms would not emerge because the software environment and the role-playing would erode the conditions necessary for the establishment of social norms cited by Robert Ellickson. In order to strengthen the governing mechanism of virtual worlds, there will, therefore, be a demand for solutions to identified social imperfections with virtual worlds. The most powerful solution is that virtual world providers deliberately design a software environment in which participants can exert effective social control over others to the highest degree. In addition, moderate legal intervention is also necessary to guarantee a suitable environment for the establishment of effective social norms in virtual worlds.

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[2] It should be noted that norms in this paper mainly refer to non-hierarchical ones, which means informal regulation emerged from ordinary community members. There was a similar paper discussing the prospect of social norms in Second Life: Phillip Stoup, 'The Development and Failure of Social Norms in Second Life,' *Duke Law Journal* 58(2) (2008). In Phillip's paper, 'social norms' include formal rules made by providers such as code-based rules and those EULA clauses governing participants' behaviours.

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[9] Robert Ellickson, at p.174.

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- [62] Jennifer Mnookin, at p.252.
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[83] Paul Carr and Graham Pond, at p.43.

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[85] Code may be a blunt instrument for dealing with workday affairs between participants, given the complexity of people's interactions. And, EULAs just contain inadequate clauses dealing with in-world behaviours between participants and are an ineffective mechanism for governing virtual worlds with a large number of populations.

[86] See 'How Feedback works,' at the eBay website, at <http://pages.ebay.com/help/feedback/howitworks.html> (accessed December 2011).

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