Exploring Virtual Worlds

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Virtual Worlds and artificially-simulated environments have been around for some time, making improvements to learning and knowledge development, as well as opening up new opportunities in divergent markets like product marketing and medical technology. However critical issues have arisen from the implementation of virtual worlds that need serious attention. These include intellectual property rights, privacy, harmful cyber-psychological effects, and other ethical considerations like exploitation and harassment. This paper examines the use of virtual worlds through the theoretical lenses of the *activity theory*, *systems thinking*, and *group dynamics* in order to better understand the pros and cons of the new technology.

Purpose

The goal of this paper is to synthesize current research and scholarly papers on the rise of the emerging industry of virtual worlds. The paper will also go into a thorough examination of the technical, social and organizational impact of virtual worlds on various industries. In applying *activity theory*, I hope to suggest policies and make useful recommendations to regulate and better facilitate the beneficial use of virtual environments. Virtual world simulations are at the cutting edge of new technology, and its impact on learning and development of further knowledge will determine to a large extent the future of humanity. Therefore, it is important that we carefully analyze the effects of its long term use, as well as suggest solutions to the problems or issues that have arisen as a result of its implementation in various settings.

Overview of the Technology and the Industry

Virtual worlds, commonly abbreviated as MUVEs (Multi-User Virtual Environments) or artificially-simulated environments which are graphically-rich and immersive, have been around for some time. Virtual worlds have been defined as "sophisticated pieces of software that enable their users to project their identity into a generated three-dimensional reality through the use of advanced computer graphics" (Mayer-Schonberger & Crowley, 2006, p. 1775). Through avatars, users are able to interact and wander through the computer-generated reality.

Virtual worlds probably had its beginnings in the first multi-user dungeon (MUD) made in 1978 by Richard Bartle and Roy Trubshaw; both undergraduates of the University of Essex. The predecessor of modern virtual worlds created by them, called MUD1, was basic with barebones features and a mainly text-based layout, and did not allow users to craft their own items or shape the structure of the society they were building (Mayer-Schonberger & Crowley, 2006, p. 1783). Today's virtual worlds are vastly improved and much more sophisticated. In simple language, they are emotionally compelling and visually stunning. They include online MMORPGs (Massively Multi-player Online Role-Playing Games) like World of Warcraft, Ultima Online, EverQuest and Lineage, as well as more collaboration-oriented, social environments like There, Kaneva, Whyville, Active Worlds, and the most popular of all, Second Life.

The success of virtual worlds over their primitive predecessors has been largely attributed to their level of proficiency at solving the four fundamental problems of 1) Persistence 2) Teleology 3) Malleability and 4) Verisimilitude.

Persistence refers to the capability of the computer-generated world to continue to evolve in the absence of the user. This particular property of today's virtual worlds was prominently missing in early versions. *Teleology* is the purposefulness of the world in which users find themselves; without some clear goals and objectives, things would be mundane and boring. Human beings are generally creatures that need a goal or a purpose that they can look forward to; otherwise their lives would be dull and meaningless. *Malleability* is the degree to which the virtual world allows users to modify both the landscape and social structure in which they

live. This feature can come in the form of the freedom to build homes and own property or the power to create items and objects which can be sold to other users. Finally, *verisimilitude* refers to how close the world mimics reality or whether the world holds sufficient 'truth' value, and thus determines to a large extent its quality and significance.

The first attempt at meeting all four criteria was made in 1983, when Chip Morningstar and F. Randall Farmer started projects that aimed to make virtual worlds commercially viable as well as using advanced computer technologies to move virtual worlds beyond the text-based versions into graphical simulations. Their prototype was called *Habitat*, and it was released in 1985. However *Habitat* met with meager commercial success. By 1996, two other virtual worlds were released which completely changed the face of the playing field with their advanced graphics generation and new pricing models which aligned better with consumer demands. They were *Meridian 59* and *Ultima Online*. In 1998, the phenomenal success of a Korean company's virtual world, known as Lineage was launched. It had managed to enroll one million users just 17 months after the official launch.

When Linden Lab introduced Second Life into the public sphere in 2003, it had not only managed to competently address the issues of *verisimilitude* and *persistence* but also moved beyond mere provision of the world to put the tools of creation into the hands of users themselves, allowing them to augment their experiences anyway they see fit.

It is believed that virtual worlds, in particular Second Life target demographic groups within the mean age of 30+, and tends to fulfill the fantasies and desires of much of the population within this target age-group. The majority of Second Life members come from the U.S, Canada, and the UK (United Kingdom) and they span the age range of 18-44 (Hobson, 2006, p.3). Even though some articles try to summarize what Second Life is about and impose their views on what it stands for, the Second Life world is very much a diversified and complicated place whose users hail from different backgrounds and come with different sets of past experiences. For this reason, Second Life is said to be "uniquely different to many people" (Hobson, 2006, p. 3).

Second Life also has a strong presence of artists, and the large number of art galleries that can be found within the grid highlights this important trend. Re-enactments of past seminal masterpieces like Joseph Beuys's "7000 Oaks", Valie Export's "Tapp und Tast-kino", Vito Acconci's "Seedbed" and Chris Burden's "Shoot" had also taken place within the grid.

Benefits (Actual & Potential) of Virtual Worlds for Organization and Industry

In general, people enjoy the activity of buying low, selling high and frequently indulge in the joy obtained from such games and hobbies. When Sony began to put up pre-created EverQuest items and virtual weapons for sale in Ebay and Yahoo in 2001, spillover socio-economic effects from the virtual realm into real life began. This means you can literally earn a living through virtual world activities. The willingness of users to pay real cash for "digits on a server" has been described as a fascinating

social phenomenon (MacInnes, 2006, p. 40).

It is said that Second Life's main asset is its economy. The services it offers to subscribers include the ability to own things, as well as create unique items and actually own their copyright. Second Life offers users the exchange rate of approximately 270 Linden dollars to US $1. In 2006, BusinessWeek reported that the first millionaire of Second Life was Anshe Chung, and she made her million (in real U.S dollars) by selling virtual property to large-scale real world corporations (Hof, 2006).

Perhaps the most prominent benefit that virtual worlds offer to giant, real-world corporations is the marketing opportunities that it provides. It has been found that Second Life residents frequently try out new products and may even become highly-emotionally attached to various products. Part of the reason why virtual world users are so willing to try out new products and services may be attributed to documented cyber-psychological effects such as *disinhibition* and *anonymity*. Therefore, companies seeking to establish brand presence early on in order to gain greater market share and win customer loyalty or even to just "test drive" the market appeal can do so through rolling out new products first in the virtual worlds. This way, the companies can obtain direct feedback on how its products are performing by Second Life residents who use them, which is really a fantastic source of data collection because of its cheap costs as well as the reliability of information obtained.

Two examples of companies which have made use of Second Life to establish brand presence are Toyota and Pontiac. Both have set up dealerships within the grid to allow users to test drive and buy cars. The main appeal for car buyers in virtual worlds is the ability to customize or drastically change the look and appearance of their cars without the high costs that are usually associated with customization done in the real world.

Tony O'Driscoll described the seven sensibilities of virtual worlds. They are: 1) Sense of Self 2) Death of Distance 3) Power of Presence 4) Sense of Space 5) Capability to Co-create 6) Pervasiveness of Practice and 7) Enrichment of Experience ("Virtual Worlds and the Future of Learning", 2007).

Because of user identification with avatars the more time they spend with it and developing it, virtual worlds are said to produce a *sense of self*.

Virtual worlds also somewhat herald the *death of distance*, because of the lack of geographic boundaries or barriers and users can transport themselves to different areas of the world pretty much anytime they want.

Thirdly, the *power of presence* is produced when many users come together to share in the experience of an exciting event, such as a U2 concert.

Virtual worlds also allow users to look at objects from a different perspective than they usually would, creating a *sense of space* that is unique and exciting. An example of this aspect is users' ability to interact with different chemical molecules and understand its nature from multiple perspectives.

The *capability to co-create* is demonstrated by the collaboration of users on different architectural or engineering projects such as building a new home or

designing a spacecraft.

It is said that a culture of learning is bred into the essence of human nature, and participants in virtual worlds are constantly engaged in activities which are educational and relevant to our time. Therefore *pervasiveness of practice* has been widely demonstrated.

Finally, virtual worlds demonstrate the *enrichment of experience* in many ways. With just a broadband internet connection, soldiers serving in war zones can now breach the geographical gap instantly to dance with their wives in resplendently-decorated Victorian Ballrooms in their free time. Disabled individuals can also overcome their physical inhibitions in the real world to find love and other interesting experiences through using their online avatars.

Information sharing is also one of the biggest benefits that the medium of virtual worlds provides. In order to maximize the efficiency of communications within their organization, many large corporations and commercial companies are also making use of virtual worlds to train employees as well as collaborate on projects with other employees from different parts of the world. IBM has made use of Second Life to train employees on the decision-making processes, corporate culture, and technical skill sets. The company has also frequently held employee meetings within Second Life.

Political activities are also vibrant, and supporters of John Edwards, as well as French voters have set up campaign centers within Second Life to promote their candidates or conduct interviews. NASA has set up a CoLab on the Second Life grid that allows researchers to collaborate on projects that will help reduce the cost of missions to the moon and Mars. Other companies that have set up presence in the Second Life grid include Coca-Cola, Adidas, The Center for Disease and Control, Dell, Mazda, NBC, Sears, Philips, and Starwood, and their business-related activities conducted within Second Life include research and concept testing, simulations, prototyping, brand marketing and various promotional events.

Besides these major corporate activities, philanthropic campaigns, movie premiere events, and classes are also frequently conducted within virtual worlds.

The other major benefit that virtual environments offer to schools and universities is the ability to conduct classes amongst people from different parts of the world. The opportunity to interact with people from different cultural backgrounds as well as the chance to make use of advanced communication and multimedia tools to teach and learn has certainly brought great advantages to the educational community.

In the medical industry, use of virtual worlds or more closely virtual reality, has been integral in the training of nurses and surgeons in scenarios that require specific procedures of dealing with or on how to handle special situations. Mantovani, Castelnuovo, Gaggioli and Riva researched the improvements to learning that virtual reality has afforded medical professionals. According to them, learning through first-person experience plays a vital role in our activity and learning about it. They further elaborated:

> immigrant environments allow constructing knowledge from direct experience by giving the participants the “perceptual illusion of nonmediation”

> between them and the computer. VR technology provides trainers with the possibility to reflect and get a deeper understanding of the process through which a person can reach knowledge of the world (2003, p. 309).

Sense of space, or learning in contexts impossible or difficult to imitate in real life is another factor in which virtual worlds have helped medical professionals learn better, and it has already been discussed.

Problems or Negative Effects (Actual & Potential)

Because of market forces spilling over into the realm of virtual worlds and influencing the activity of the 'real' economies within certain virtual worlds, questions about the general governance structures as well as the validity of EULAs (End-User Licensing Agreements) have been raised. Since the 'value' of items won in virtual gaming worlds have been realized, there have been incidents where disputes have arisen that have not been resolved to a satisfactory degree.

In June of 2005, a Chinese court handled the case of a young male who murdered another because of an apparent claim of stolen virtual property. Qui Chengwei claimed that Zhu Caoyuan had sold a "Dragon Sabre" (from online game Legend of Mir II) on an online auction site without his permission, but due to lack of laws recognizing his virtual good as a type of property, the courts were unable to help him, and this resulted in Qui subsequently murdering Zhu (Chein, 2006, p. 1059).

In another case concerning the issue of virtual property rights, a Chinese software company, Arctic Ice lost a lawsuit against a game player who lost virtual property in the game. Arctic Ice was found to be at fault for not sufficiently protecting its system from hacking. Arctic Ice may perhaps have relied on the disclaimers of EULAs to protect them against any liability, but this latest case just illustrated that when courts find that users have a reasonable expectation that items earned in virtual world holds value, the EULAs may not be sufficient to protect the developer (MacInnes, 2006, p. 41).

The activity of exploring virtual worlds, normally associated with spending large amounts of time playing online games has also been linked to addictive, extreme self-destructive behavior, which can turn into a serious social problem if left unchecked. The Sydney Morning Herald reported in 2003 that a young computer game enthusiast was found slumped over, dead after playing Diablo II for five hours in a cybercafé (Kerbs, 2005, p. 541).

Cyber-stalking is another phenomenon that has occurred in virtual worlds, and relationships which do not work out has often resulted in one party engaging in retaliatory activities such as posting of lewd photographs or constant harassment of the other individual. Such acts and behaviors which cause great emotional suffering have not been uncommon in the real world, so similar patterns are likely to be observed in the virtual world. In the extreme cases, real world failed relationships has even boiled over into the virtual world, but thankfully these cases have been few and far between (Kerbs, 2005, p. 542).

Lost of one's identity, fear of being exploited, and loss of one's privacy are other concerns which plague the use of virtual worlds.

There have also been documented negative cyber-psychological effects that arise from the use of virtual worlds or communicating with online tools. They include *dissociation*, *disinhibition*, *invisibility*, *solipsistic introjection*, *asynchronicity*, and *minimizing of authority*.

Dissociation effects occur when users do not to identity with what they do online, instead they completely disown whatever it is they say or do online because they consider their real life to be entirely separate from the virtual worlds. As a result, communications facilitated through virtual worlds may produce distorted messages which hold no real value at all because participants do not really mean what they say.

The *disinhibition* effect is a close kin to dissociation effect, but apart from being distant or detached from words and actions done in virtual worlds, *disinhibition* also refer to the 'release' in behavior where users are more prepared to say things they normally would be too shy or afraid to say or do in real-world interactions. And this is made possible by the lack of socially-inhibiting signs or behaviors in virtual worlds. Although some psychologists have made the argument that virtual worlds might help introverted individuals express themselves more clearly and gain acceptance, the *disinhibition* effect may also bring out the worst in other people, for example sexual predators and violent criminals.

The *invisibility* effect is the feeling of being under a cloak or anonymity that users have while interacting online with others; this effect frequently draws out the darker side of human nature. It is an affordance that virtual world necessarily provides due to the lack of monitoring or rules restricting 'undesirable' behaviors.

Solipsistic Introjection is a term used by John Suler, a psychologist to describe the illusive psychological phenomenon whereby the user arbitrarily assigns visual images as well as voices to the person he or she is talking to, resulting in a false feeling of familiarity and this leads to the user becoming more relaxed because he or she thinks the person they are talking to is using his or her own voice ("The Online Disinhibition Effect", 2004, ¶ 15). This naturally leads to the user becoming more vulnerable to deception or exploitation.

Asynchronicity is a term used to describe the property of online communications whereby a user may post a message online directed to other users who are not present in the time of posting. This asynchronic affordance of online communications is said to have improved convenience because users can interact with each other without the need to all be present at the same time. However, the use of asynchronic forms of communication is also characterized by the lack of immediate feedback, and this tends to lessen the burden on the message sender to use more discretion or be careful with choice of words. As a result, hurtful messages and emotional hit-and-runs may become a common occurrence.

Finally, *minimizing of authority* refers to lack of laws or governance normally found within society. As a result, the fear of punishment or repercussion disappears and users may be more inclined to sink down into a darkened, 'natural' state of political instability and anarchy much like what the 17th century philosopher, Thomas Hobbes had described in the *Leviathan*.

All of the above discussed cyber-psychological effects may perhaps give rise to

the impression that virtual worlds are tainted by anarchy and the online environment is a chaotic and unpleasant place to be in. However, other models such as *Activity Theory* emphasize that such effects can be minimized or avoided through establishing social norms and adhering to the concept of 'grounding', so that users have a better idea of the main purpose of the usage of certain online tools, and would not be misled or tempted into abusing it.

Current Research and Practice Regarding Virtual Worlds

Current research and scholarly papers center around the legal and regulatory challenges that face virtual worlds, as well as the ethical issues that arise from its use.

Some of these articles have concentrated on artistic aspects and tried to illustrate how virtual worlds open up new perspectives into the meaning of life. Holly Willis, director of academic programs at the University of Southern California's Institute for Media Literacy examined the artistic aspects of virtual worlds, in particular Second Life. According to Hollis, re-enactments of past masterpieces particularly serve to highlight the "disparities between the physical and virtual worlds" (Willis, 2007, p. 14). Instead of dealing criticism to how virtual worlds' privation of physicality render such works irrelevant and dull, Willis pointed out that Second Life has revealed to the general public that "many of our most cherished physical experiences are deeply discursive, ideological, and psychic. They are virtual" (2007, p. 14). Because of such powerful revelations and humanistic discoveries, many artists and researchers have tried to propose the view that online chat rooms, digital worlds and forums like Second Life are not 'virtual' worlds but are "precisely 'life to the second power'" (Hollis, 2007, p. 14).

Although still in the growing stage and not yet mature, many analysts and critics have indicated, in their opinion that even though the future potential of virtual worlds are uncertain and not yet fully realized, one that they are certain of is that there will be an impact.

Recommendations for Policy and Practice

Because of the imminent regulatory challenges facing the developers of virtual worlds, who are actually creating marketplaces, it is important that they understand economic theory in the areas of money supply, inflation and arbitrage to name a few. In accordance with the *activity theory*, which says that the activities that humans are engaged in, be it using an instant messaging tool, wandering in a virtual world, or writing a paper on MS word shapes its participants and is in turn constantly being shaped by the participants themselves in an interdependent, interrelational, nonlinear dynamic relationship.

Therefore, linear ways of looking at the design of software, tools or office equipment will not work under the *systems thinking* conceptual framework, which espouses the view that the whole is greater than the sum of its parts, and that an 'emergent' reality is reached which drastically changes initial conditions under which humans began their collaborative projects or other socially-situated activities. In light of these conceptual lenses, it is important for developers to realize the complexity of

the issues at hand, and not jump to foregone conclusions due to narrowly circumscribed or skewed perspectives.

I would recommend that companies utilizing virtual worlds to conduct meetings or collaborate on projects constantly evaluate participants at every stage of implementation to obtain feedback from them on how the virtual tool is doing, and identify potential issues in the *prodomal* stage before they become major problems in the future. Since regulatory issues and well as the problem of governance have been discussed as well, I would recommend that developers of virtual worlds seek to protect their system integrity first and foremost, so that possible litigation arising from their lapse in professionalism can be avoided.

But virtual communities are a recently discovered phenomenon, and situations may arise that may not find historical context whose reference we frequently rely on to make sound policy and moral decisions. Therefore, I would recommend that organizations that are developing virtual worlds and placing it within the commercial market to monitor the situation closely and to be ready to react when the reality shifts that tell them in no uncertain terms that a problem has arisen and needs to be immediately addressed.

As is common in the real world, deception, fraud, and cheating frequently occurs in the virtual world. But because virtual worlds have recently walked over into state-recognized commercialization and subject to market forces, governance structures will have to be put in place if the nightmare scenario of vigilantism and predation is to be avoided. Since online interactions are completely created by codes and algorithms governing the background system generating the virtual world, in virtual worlds, code is law. And developers will have to change those laws accordingly as situations arise that may demand such a serious move.

Use of virtual worlds for carrying out collaborative projects and classes is marked by the concept of *electronic togetherness*. To make better use of virtual worlds in achieving educational goals and objectives, we have to understand the group dynamics which characterize use of virtual worlds. *Electronic togetherness* is a concept brought up by Nicolopoulou., Kostomaj, and Campos, who investigated the components making the holistic concept of the group interacting within a virtual space. They expressed the five stages of group forming: 1) Forming (establish personal identity) 2) Storming (procrastination in the form of absenteeism) 3) Norming (common sense of identity - move as one) 4) performing (production) 5) adjourning (group appreciates work done and dissolves).

In their conclusion, they found that it is better if the environment is first built before artefacts are put in it. They also indicated that the job of facilitation will be better served if knowledge of group dynamics is taken into consideration. Therefore, if the objective is to get the best out of the new communication medium of virtual worlds, I would recommend that teaching professors and organizational professionals take a better look at the nature of group dynamics and attempt to master it first before jumping into conducting meetings or collaborative projects within virtual worlds.

Virtual worlds certainly have potential to return unprecedented benefits and make vast improvements to the human condition. If the negative traits and phenomena

that arise and evolve from the development of such a new technology can be curbed or at least controlled to some satisfactory degree, then virtual worlds could be the stepping stone that propels humanity into the blissful dream that the age of hyper-modernity promises.

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