THE CO-EVOLUTION OF THE "SOCIAL" AND THE "TECHNOLOGY": A NETNOGRAPHIC STUDY OF SOCIAL MOVEMENTS IN VIRTUAL WORLDS

Research-in-Progress

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Abstract

Virtual worlds provide new forms of social interaction. They offer alternative spaces where social functions can be carried out in online three-dimensional virtual environments. One social phenomenon which has moved into the virtual world is the social movement, which are an important means of bringing out social, cultural and political changes through collective action. These social movements exist in an immersive technological ecosystem which is constantly evolving as designers release patches which change the way users "live" within these environments. Using a biography of artifacts approach, we explore not just the evolution of the technological artifact itself (the virtual world), but also its co-evolution with the social phenomena (a social movement). Using Netnography, a modified version of ethnography, and actor-network theory, we explore a social movement in World of Warcraft, and observe how it evolves over time as changes to the virtual world are implemented.

Keywords: Virtual Worlds, Co-Evolution, Netnography, Actor-Network Theory, Social Movements

Introduction

Virtual worlds have the potential to change the way in which organizations and social groups organize (Castronova 2005; Castronova 2006). Virtual worlds enable millions of people to interact with one another through avatars in online three-dimensional worlds. These online worlds contain mountains, trees, oceans, and wild creatures, and are made to look something like the real world (Castronova 2007). Schultze and Orlikowski (2010) suggest that virtual worlds enable globally distributed work, project management, online learning, and real-time simulations.

One important social phenomenon which has moved into the virtual world is the social movement. Social movements are an important means of bringing out social, cultural and political changes through collective action (Staggenborg 2011). Historically, humans have employed many tactics to raise awareness for their cause (Goodwin and Jasper 2003) or to lobby for social change. People have banded together in social movements with the aim of pursuing common goals and achieving social or political change. In the virtual world, there have been virtual protests in Second Life (Blodgett and Tapia 2010; Robinson 2008), in World of Warcraft (Abalieno 2005; McKenna et al. 2011b), and various other virtual worlds (Blodgett 2009; Blodgett and Tapia 2011; Castronova 2003), and most recently in Habbo Hotel. These examples substantiate the need to study how social movements are using virtual worlds.

Virtual worlds have some important characteristics which make them quite different to the real world (Kozinets and Kedzior 2009). A virtual world may constantly evolve as designers make modifications, often in the form of a patch, expansion pack, or terms of service (Roquilly 2011). These changes may have impacts on the users of these virtual worlds. This suggests that further understanding of how virtual world technologies, avatars, and the unique nature of virtual worlds impact social phenomena (and vice versa) is needed.

Virtual worlds have changed the way in which organizations communicate and conduct business (Schultze and Orlikowski 2010; Schultze and Rennecker 2007). However this study is focused on the social phenomena which occur within virtual worlds. Previous studies of social movements have examined how movements connect "through" the Internet; however, virtual worlds also allow movements to connect "within" the Internet. This enables a more engaging experience when compared with two dimensional environments (Nah et al. 2011). Users of virtual worlds create an avatar which offer the affordances of 'real' bodies (Schultze 2010), and enter a highly immersive world where they can interact visually, verbally and textually with other avatars. Virtual world users find the avatar experience far more appealing than using Facebook and Twitter, where you can only read what others are doing (Wasko et al. 2011). The virtual world itself becomes like an ecosystem, with social activities happening in this highly immersive world. This ecosystem is often altered by the designers which means that users (or avatars) "living" within this ecosystem must adapt to the new technological configurations imposed on them by those designers. Therefore, the research question addressed in this study explores how the technological artifact (the virtual world) and the social world (the social movement) impact each other and co-evolve.

Williams and Pollock (2012) advocate what they call the 'biography of artifacts' approach, or how a system (in their particular case, ERP software) evolves over time and space. We extend this idea of 'biography of artifacts' to examine not just the evolution of the technological artifact itself (the virtual world), but also its co-evolution with the social phenomena (a social movement).

One of the authors conducted netnographic research - a form of ethnography for the Internet - (Kozinets 2010; Myers 2009), with a social movement in a virtual world called World of Warcraft (WoW). He conducted netnographic 'fieldwork' and became immersed in the movement's regular activities. On several occasions, the movement was forced to reorganize its structure due to changes implemented by the designers of WoW, or by other social factors inside the game. It also became clear that the game is being used in ways which the designers did not originally intend. We use new social movement theory and actor-network theory to help explain our findings.

Virtual Worlds

A virtual world can be defined as "a synchronous, persistent network of people, represented by avatars,

facilitated by networked computers" (Bell 2008 p. 2). Virtual worlds include social virtual worlds such as Second Life, and gaming virtual worlds, such as WoW. Virtual worlds have the potential to be used by political and social scientists to observe individual and collective patterns of online behaviour in order to test social theories or develop new ones (Papargyris and Poulymenakou 2008).

Virtual worlds differ from more traditional social networking technologies because they provide a richer, and more immersive experience, and can be deeply engaging (Wasko et al. 2011). However, creators of virtual worlds have been seen by some as "gods", and users of these worlds must follow whatever decisions they make. In a study of 20 different virtual worlds, Roquilly (2011) examined five key factors (creativity, community, codes, copyright, and contract) that creators use in the development and control of virtual worlds. These factors control what users of these virtual worlds can and cannot do within these worlds.

Millions of people have invested their time and energy into using these virtual worlds, creating characters, meeting new people, and engaging in new forms of social interaction. Schultze and Rennecker (2007), Assmann et al. (2010), and Schultze and Orlikowski (2010) argue that virtual worlds represent a legitimate arena for IS research. Virtual worlds are of interest to IS researchers for both their business and social aspects (Messinger et al. 2009). Games also provide an interesting research stream. For example, WoW offers an alternative world where social functions, learning, and the development of social skills occur in a virtual environment (Davidson and Goldberg 2009). Virtual worlds have the potential to become laboratories where experiments in social science can test new norms, values, and institutions (Bainbridge 2010). Virtual worlds also have the potential to be proving grounds for real world social innovations, cultures, and social movements (Bainbridge 2009) as well as substituting for social institutions in the real world (Williams 2006).

Social Movements

In recent history many people have banded together with others to pursue common goals and achieve social or political change (Goodwin and Jasper 2003). This collection of people is called a social movement. Social movements often protest against the current social order to bring about cultural and political changes through collective action (Staggenborg 2011). Some movements have looked for opportunities to claim new rights, while others have responded to threats or violence. Some movements seek political and economic liberation, while others fight for lifestyle changes. Some social movements create formal organizations, others use informal networks, while some others use more spontaneous actions such as riots (Goodwin and Jasper 2003).

Recently, social movement research has begun to investigate how social movements are using the Internet. The Internet has played an important role in initiating and steering activism (Postmes and Brunsting 2002) as movements take advantage of the Internet's capabilities (Leizerov 2000). Brunsting and Postmes (2002) argue that the Internet affects the nature of collective action. Postmes and Brunsting (2002) suggest that the Internet has assumed a significant role in transforming collective action which ranges from confrontational to persuasive, and from individual activities to collective ones. The Internet enables mass communication which allows many people who may have previously been less politically active to become politically active.

Blodgett and Tapia (2010) discuss a number of differences between real world and virtual world protests. First, a virtual world allows more distant participants to become involved in a protest. Second, the establishment of a hierarchy changes as hierarchies are now encoded into access and control rights. Third, using a virtual world enables the organizers to contact a broader audience. Last, building solidarity through technology allows the size of personal networks to grow and allows distant strangers to find commonalities. Using the concept of digital protestainment, Blodgett and Tapia (2011) discuss virtual protests as a blend of work and play, and work and entertainment, with each of these opposing forces impacting the way in which protest actions in a virtual world shape the eventual outcome.

As social movements proliferate through virtual worlds, the virtual world itself becomes more than just a game to these groups of people. McKenna et al. (2011b) discuss a social movement in WoW which holds annual parades and dance parties. This use of WoW is in sharp contrast to the original intention of WoW where the whole point is to ostensibly fight against others. However, this movement is actively promoting

itself as a safe and inclusive place for members. McKenna et al. (2011b) also presented an on-going conflict between the designers of the game, and the organization of the movement. As the movement grew in size, the designers released new patches which limited the size of the movement. This had consequences for the movement as they were then forced to re-organize to overcome the changes to the virtual world enforced by the designers. Due to continuous changes to the virtual world artifact, the social movement was forced to reorganize or change its form to meet the new technological requirements of the virtual world.

As more social movements move into the virtual arena, we believe that a greater understanding of the relationships between social movements and virtual worlds is needed. McKenna et al. (2011a) presented a multi-dimensional research framework designed to address the major issues relating to the study of virtual world social movements. The purpose of this framework is to address the major differences in studying social movements in the virtual world versus the real world.

Research Design

This research looks at a social movement in WoW and uses a qualitative research method called netnography, which is a form of ethnography for studying online communities (Kozinets 2010; Myers 2009). The collection of data in netnographic studies involves participant observation and interaction with community members (Myers 2009). Netnographic researchers must be active in some part of the community and not be invisible to the people under investigation, but nor should they lead the community (Kozinets 2010).

Netnography follows a similar process to traditional ethnography. The first stage is to define the research questions and social sites and topics to investigate. Stage two involves selecting and identifying an online community. During the third stage, the researcher will engage and immerse themselves in the online community using participant-observation and various data collection methods. This is followed by stage four where the data is analyzed and the findings are interpreted. The final stage of a netnographic study is to write, present, and report on the research findings and theoretical or practical implications (Kozinets 2010).

The field site selected for this study is WoW, which is the most popular virtual world game with over 12 million players globally (Blizzard 2010). Players create a character (an avatar) and can interact with thousands of other players in the same world to adventure together or fight against others. WoW was selected as a field site for several reasons. First, WoW has a large user base and it is easy to identify active participants. Second, few IS researchers have studied virtual world games, although Schultze and Rennecker (2007) and Assmann et al. (2010) suggest that more IS researchers should study virtual world games. Third, we believe that this field sites demonstrates an interesting combination of gaming and social movement activities, which takes the game beyond that of which the designers initially intended.

The social movement used for this study is a Lesbian, Gay, Bisexual, and Transgender movement, hereafter referred to as the LGBT movement, which aims to create awareness for LGBT issues, both in game and out. LGBT has over 6,200 members (players) in WoW and has over 15,000 characters (it is possible for one player to add multiple characters). LGBT consists of one main group and several smaller groups. The movement has been profiled in a number of gay and lesbian magazines and in a prominent WoW blog website. LGBT is a global social movement with members from many countries. LGBT also maintains a website with discussion forums. LGBT holds many regular activities inside WoW such as an annual pride parade with floats, model competitions, dance parties, group photographs, and events for Valentine's Day. These events are generally organised by the leaders of LGBT, often with input from members via the discussion forum. They also organise members meetings in the real world, and have had meetings in Australia, Canada, and the United States. LGBT also has a sister group on the same server.

During the annual pride parade, both LGBT and its sister group participate. The sister group is from the opposing in-game faction to LGBT, and hence within the game are supposed to be enemies. However, for the purposes of the parade, the two groups come together and march side by side. They are asked not to participate in fighting. Similar requests are made during the dance party. At a certain point during the parade, players are asked not to perform spells or any other lighting effects due to a larger than normal amount of players in a specific location at one time. The excessive use of these spells can cause the game

to lag, or even crash the server. Often non-members of LGBT come to watch the parade. During the dance party, an online radio station streams music through to participants. To dance in WoW, a player needs to type the command "/dance". A player has no control over actual dance movements, as these are encoded into the game. The dance party lasted for about 6 hours.

One of the authors joined LGBT and participated in movement activities and began participant observation of these activities. Field notes were taken during involvement with the movement: this involves screen captures (WoW provides the ability to record the game in movie files), and note taking. Data was obtained from discussion forums from the social movement's website. Email interviews will be undertaken with movement leaders after the analysis of the discussion forum posts is complete. The purpose of these interviews is to obtain clarifications or extra information to back up the findings discovered from the discussion forum analysis. Other primary and secondary sources of data will be obtained, and are described in table 1.

To examine the co-evolution of the virtual world artifact and the social movement, it is necessary to examine the evolution of each at various points in time. To examine the evolution of the virtual world, patch notes will be used. WoW regularly releases patches which change the way in which the game operates, which in turn changes the way the movement is instantiated within the virtual world. Often these changes are minor, but sometimes a major change occurs which may affect the social groups within the virtual world. Changes made to the virtual world will be compared with changes in the social movement by examining the history of the social movement (using the discussion forums and participant observations), especially around the time in which patches were released.

Table 1: Data sources for the study.			
Source of Data	**Nature of Data Collected**	**Expected Quantity**	**Sample Data**
Participant Observations	Field notes; movie screen cams from movement activities.	Several hours of movie files collected. At least 50 screenshots.	See figure 1.
Discussion Forum Posts	Discussion posts from movement website.	128,773 posts dating back to 2006.	[Leader]: "all guilds are now capped at 1020 characters, […] we are making some changes designed to eventually bring LGBT down below the cap"
Chat Logs	Chat logs from movement in-game chat channels.	Approximately 1.5 years worth of chat logs.	[Leader]: "Officers did work pretty closely with Blizzard on concerns with the guild cap."
LGBT website	Textual information relating to background information about the movement and rules of membership.	Approximately 20 pages of information.	"we are primarily a social guild who welcome gay, lesbian, bisexual, transgender, hets, queers, geeks, misfits, studs, siblings, friends, lovers, and others to join us for fun, in-game and out."
Email Interviews	Conversations with guild leaders relating to issues/challenges of guild maintenance in virtual worlds.	5-10 interviews	To be completed after data analysis of discussion forum posts.
WoW Patch Notes	List of changes made to WoW through patches released. Available from WoW website.	Patches dating back to 2006. Approximately 114 patches.	Patch 4.0.1: New Guild UI and cap of 1000 members have been implemented.

Preliminary Observations which formed the Research Question

To place the following observations in context, it is necessary to first explain some vital characteristics of WoW. When a player starts a new character in the game, they first have to decide what realm to play on. A realm (also called a server), is the game world which exists for several thousand players within it. Every realm in the game is exactly the same; however each realm has its own characters (players) who are tied to that realm. It is possible for avatars to interact directly with other player's avatars on your own realm, but not with players on other realms. Although simple chat between realms is possible.

The world in which WoW is set is named Azeroth, which is divided up into zones. Each zone is suited to characters of a certain level. Once a character is created, they can then be "born" into the world. Each new character starts at level 1. One of the most important activities in WoW is levelling a character. To achieve a higher level, the character must perform quests and kill in-game monsters which reward experience points. Once a character has earned enough experience points, they will "level up". Levelling up increases the strength and power of the character, and allows them to learn new spells and abilities which may only be available once a character has achieved a certain level. Levelling is also important because it allows a character to travel around Azeroth. Each zone has a certain level range, for example 10-20, which means players below level 10 are not yet strong enough and may easily die if they enter, while players over level 20 will not earn many experience points if they remain in that zone. Rettberg (2008) and McKenna et al. (2010) have described quests and levelling in more detail.

WoW provides a system where players group together into guilds. Guilds consist of several players with similar interests within one of the two in-game factions (Alliance or Horde), who provide opportunities for assistance with quests, social interactions, and protection from rival factions (Brignall and VanValey 2007). If any group in WoW wishes to form a long term group, they must form a guild.

In June 2010, one of the authors started a new character in the game and joined LGBT (a guild). Soon after joining, LGBT held a pride parade inside the game. However, the parade took place in a zone which was beyond that of the researcher's current character's capabilities. Therefore, in order to attend the parade, extensive time was needed to level the character to an appropriate level in order to enter the zone without fear of attack from the wild creatures of that zone. A similar problem occurred when the movement held a dance party. This time, the current character in the movement was level 20, however the zone where the dance party was to be held was a level 60 zone. To overcome this problem, a level 60 character which had previously been created on another realm was transferred to the same realm as the movement for a cost of $25 USD. This introduces the first observation: *participation in social activities is tied to the ability of the character and its virtual world location.*

At the time the researcher joined the movement a number of steps were involved to become a member. First an application form must be completed on the movement's website. A successful applicant must then join an in-game chat channel which LGBT created. Once in the channel, the player must wait for an officer who formally invites the player into the guild. In August 2010, a message was sent to all members informing them of a change in invite procedures, due to 'trolls'. A troll is a player who spams discussion forums or chat channels. Many trolls had discovered the invite channel and were constantly spamming the channel, causing problems for the officers. The invite channel was then moved from in-game to the movement's website. This introduces the second observation: *interactions in the movement are impacted by both virtual world technologies, and in-game social aspects.*

LGBT periodically holds in-game social events. For the pride parade, some players temporarily changed the gender of their character, and most players performed spells that created lighting and sparkling effects around their character. In July 2010, the movement held a dance party in the city known as Shattrath. In October 2010, the movement had a guild photograph. See figure 1 for an illustration of these activities. This introduces the third observation: *the game is used in ways which the designers did not originally intend.*

LGBT is a family of several guilds. An important aspect influencing the organization of these guilds is the technological requirements of the virtual world. This was evident in October 2010 when Blizzard announced that it would cap the size of guilds to 1,000 members prior to the release of the next expansion pack, Cataclysm. Blizzard announced that due to new guild systems they were releasing, they needed to have some constraints put on guild sizes. As a result of these actions, by late January 2011 the main LGBT

guild had 3,500 players (down from 5,000). Inactive members were removed and many players volunteered to move their characters from the main guild to one or more of the sub-guilds. Later that same year, however, one of the sub-guilds disbanded from the LGBT movement altogether. Since this time, LGBT has increased its number of guilds to ten in order to overcome the design decisions forced upon the virtual world by Blizzard. Another issue relating to this movement having multiple related guilds is that each guild has its own guild chat channel that allows members of each guild to have discussions in game. Due to the technical requirements of the game, this means that members of another guild (even an affiliated guild) cannot share a guild chat channel. To overcome this, the LGBT movement created an add-on for the game that joins the chat channels for multiple guilds, thus allowing all ten guilds to combine their chat channels as though it were one channel. This introduces the fourth observation: *social groups can overcome issues placed on them by the design of the virtual world. This may involve reorganization or creating game add-ons.*

Figure 1. Parade (left), group photograph (middle), and dance party (right)
Image: ©2004 Blizzard Entertainment, Inc. All rights reserved.

Patches are implemented as code designed to alter the game in some manner, and often come wrapped around myths and storylines. Krzywinska (2006) claims that to better understand a virtual world, it is essential to understand the underlying stories and myths, which helps a player achieve a sense of belonging. Figure 2 illustrates how a patch was implemented which had a direct influence on LGBT. In this figure, the image on the left shows a flat plain land where the pride parade used to march through prior to patch 4.0.3a. Upon implementation of this patch (nicknamed 'The Shattering'); the land was destroyed by a large powerful dragon called Deathwing, which caused earthquakes, volcanic eruptions, and floods which reshaped the entire virtual world. The image on the right side of figure 2 shows the land after the patch was implemented. This meant that LGBT could no longer hold the parade in this area, due to the large canyon which opened up in the ground. For the parade which took place after this patch, an entirely new parade route had to be created. This introduces the fifth observation: *in-game social activities are influenced by patches, and after implementation may cause these activities to be modified.*

Figure 2. Parade location before patch (left), parade location after patch (right)
Image: ©2004 Blizzard Entertainment, Inc. All rights reserved.

Based on the participant observations made of the LGBT movement, it becomes clear that there is an interplay between the virtual world (technological artifact controlled by designers), and the social (groups of people within and reacting to the virtual world). As more social activities take place in virtual worlds, it is important to understand exactly how they might be impacted by the technology in which they are acting within. It is also clear from the observations presented above, that the reverse (social groups affecting technology) is also true. For example, Blizzard changed the design of the virtual world when the groups within it became too large. Each time a new patch is released, certain aspects of the social group need to change, for example, chat add-ons may no longer work and need to be re-programmed.

Theoretical Basis

This study will apply two theoretical lenses: new social movement (NSM) theory, and actor-network theory (ANT), alongside a biography of an artifact approach.

NSM can be categorised as a theory for analysing (Gregor 2006) and will be used to theoretically describe the social movement used in this study. Using concepts from NSM, we will be able to analyse LGBT to determine what makes it a social movement, and to understand the differences (or similarities) between real world and virtual world social movements. Some of the key concepts from NSM which will be analysed against LGBT will be discussed briefly next.

NSMs break from earlier industrial era movements that focused on the redistribution of wealth, and now focus on concerns for forms of alternative lifestyles (Habermas 2008; Pichardo 1997). They promote direct democracy, self-help groups, and collaborative styles of social organization (Pichardo 1997). NSM tactics tend to remain outside of normal political channels and use disruptive tactics to influence public opinion. They also employ pre-planned and highly dramatic forms of demonstration, often with costumes and other symbolic representations (Tarrow 1994). LGBT has annual pride parades, and attendees often use alternative methods of representation such as lighting and sparkling affects (spells).

NSMs emphasize action in the cultural sphere or civil society as the arena for collective action (Cohen 1985; Melucci 1989), while stressing the important of strategies which promote self-determination and autonomy (Rucht 1988). Rather than conflicts over material resources, NSMs tend to emphasize post-materialist values of collective action (Inglehart 1990), while their grievances and ideologies are social constructed, rather than constructed from a groups structural location (Johnston et al. 1994; Klandermans 1992). NSMs also present temporary, latent, and submerged networks which underlay collective action, rather than assuming that collective action emerges from centralized organizations (Melucci 1989). Scott (1990) discusses the organizational form of new social movements, they: (1) are locally based, or centred around small groups; (2) organize around specific or local issues; (3) are characterized by cycles of movement activity and mobilization, i.e. periods of high or low activity; (4) have fluid hierarchies and loose systems of authority; and (5) have shifting membership and fluctuating members.

For LGBT, their aim is not to fight for material resources, but to promote awareness for LGBT issues, and to create a safe haven for LGBT gamers. For members of LGBT, many of them identify as being part of the community, but there are also heterosexual members of LGBT who either have friends in the community, or believe in the cause that LGBT stands for. Members of LGBT come from various real world locations, and thus, grievances in the real world become collectively aggregated in the virtual world. This creates a hybrid of local, global, and virtual world specific issues. Due to technological requirements of the virtual world, hierarchies are now encoded into the game, and are less fluid than real world social movements. High and low periods of activity still exist for LGBT, for example the parade is an annual event, however a main point of difference is that virtual worlds allow for new methods of expressiveness. LGBT also has a higher amount of membership fluctuation when compared with real world movements, and members can join multiple avatars to LGBT. For a fuller description of this application of NSM to LGBT see McKenna (2011b).

NSM is a theory which helps us to understand the dynamics and structure of social movements, but does not explain how they can be enacted through technology. A socio-technical approach is required to understand both the social aspects enacted, and the technology which mediates those social actions. To understand the technical evolution, it is necessary to study the biography of WoW. Williams and Pollock

(2012) advocate understanding the biography of an information system and follow it through time and space. Their approach attempts to study an information system over multiple frames of analysis, through extended longitudinal studies (i.e. ethnography). These biographies compare systems at different moments in the lifetime of the system, and capture linkages between different actors in time and space. To get an understanding of how WoW has evolved over time, we will analyse patch data.

To gain a socio-technical understanding of this phenomenon, we will also utilize ANT, which is an appropriate tool for socio-technical research (Callon 1986), and has been advocated for use in information systems research by Walsham (1997). ANT can be considered a theory for explaining (Gregor 2006). ANT does not distinguish between human and non-human elements, including people, software, hardware, organizations, processes, and treats the social and the technical as inseparable (Walsham 1997). ANT is a useful means for data analysis in this study for its ability to examine the co-evolution of society and technology (Callon 1986), and for understanding a systems biography, or how a system is shaped over multiple time frames and settings (Williams and Pollock 2012).

Using ANT, we can analyse how the social movement actor-network was created, and how it is maintained over the evolution of WoW. When a patch is released, we can follow actors through the network and determine how they are affected by the release of the patch. For LGBT, when patch 4.0.3a was implemented, the annual pride parade had to alter its route as the old virtual world location of the parade had been destroyed when the designers implemented new storylines into the game (figure 2). In this situation the patch affected the following actors in the network: virtual environment; activities (the parade); avatars (players); LGBT leadership; and myth/storyline. In another example, when the guild sizes were capped, this affected the following actors in the network: guilds, add-ons, LGBT leadership, avatars (players), recruitment procedures, and guild chat.

This research will explore the socio-technical aspects relating to the instantiation of social movements within virtual worlds, and examine how the technology and the social are related. In particular, ANT will help us analyze how the biography of WoW impacts the social movement aspects such as mobilization and recruitment of individuals (Edwards and McCarthy 2003; Jenkins 1981; McCarthy and Zald 1977; Staggenborg 2011; Tilly 1978); social movement organization (Pichardo 1997; Scott 1990; Tarrow 1994); strategies and campaigns (Goodwin and Jasper 2003; Staggenborg 2011; Tilly and Wood 2009), and movement outcomes (Buechler 1995; Gamson 2003; Staggenborg 2011). Using ANT, we aim to follow these aspects though the evolution of WoW.

Conclusion

As social movements proliferate through virtual worlds, they become more than just a game. Combining new social movement theory with actor-network theory, the next stage of this research is to examine how the technology of virtual worlds impacts social movement activities such as mobilization and recruitment of individuals for social movements, social movement organization, strategies and campaigns, and movement outcomes.

This study has the potential to contribute to IS research in two ways. Firstly, this study is a contribution to research methods in that it is one of the first to apply the netnographic approach in information systems. Secondly, this study will contribute to an understanding of how the technological artifact itself (the virtual world and the social phenomena (a social movement) co-evolves over time. Our study may have some important implications for business as new forms of organizing are enabled by virtual worlds.

We recognize that there are a number of limitations to this study. Firstly, we acknowledge that this study is based entirely on WoW, and as such some of the results presented are very WoW reliant. A second limitation is that this study presents only one social movement. Future studies could examine social movements in other virtual worlds to further deepen our understanding of the relationships between virtual worlds and social and political change.

References

Abalieno. 2005. "These Screenshots Are Worth a *Ban*!"   Retrieved 7 Feb 2011, from http://www.cesspit.net/drupal/node/491

Assmann, J.J., Drescher, M.A., Gallenkamp, J.V., Picot, A., Welpe, I.M., and Wigand, R.T. 2010. "Mmogs as Emerging Opportunities for Research on Virtual Organizations and Teams," *Americas Conference on Information Systems (AMCIS)*, Lima, Peru.

Bainbridge, W.S. 2009. "Etopia," *Networker* (13:1), pp. 36-35.

Bainbridge, W.S. 2010. "Online Multiplayer Games," in: *Synthesis Lectures on Information Concepts, Retrieval, and Services,* G. Marchionini (ed.), Online: Morgan & Claypool.

Bell, M.W. 2008. "Toward a Definition of "Virtual Worlds"," *Journal of Virtual Worlds Research* (1:1).

Blizzard. 2010. "World of Warcraft® Subscriber Base Reaches 12 Million Worldwide."   Retrieved 15 November 2010, from http://us.blizzard.com/en-us/company/press/pressreleases.html?101007

Blodgett, B.M. 2009. "And the Ringleaders Were Banned: An Examination of Protest in Virtual Worlds," in: *Proceedings of the fourth international conference on Communities and technologies*. University Park, PA, USA: ACM.

Blodgett, B.M., and Tapia, A.H. 2010. "When Protests Go Virtual: How Organizing Social Protest in Virtual Worlds Changes the Nature of Organizing," in: *Proceedings of the Sixteenth Americas Conference on Information Systems (AMCIS)*. Lima, Peru.

Blodgett, B.M., and Tapia, A.H. 2011. "Do Avatars Dream of Electronic Picket Lines?: The Blurring of Work and Play in Virtual Environments," *Information Technology & People* (24:1), pp. 26-45.

Brignall, T.W., and VanValey, T.L. 2007. "An Online Community as a New Tribalism: The World of Warcraft," in: *Proceedings of the 40th Annual Hawaii International Conference on System Sciences*. IEEE Computer Society.

Brunsting, S., and Postmes, T. 2002. "Social Movement Participation in the Digital Age : Predicting Offline and Online Collective Action," *Small Group Research* (33:5), pp. 525-554.

Buechler, S.M. 1995. "New Social Movement Theories," *The Sociological Quarterly* (36:3), pp. 441-464.

Callon, M. 1986. "The Sociology of an Actor-Network: The Case of the Electric Vehicle," in: *Mapping the Dynamics of Science and Technology,* M. Callon, J. Law and A. Rip (eds.), London: Macmillan Press, pp. 19-34.

Castronova, E. 2003. "The State of Play: Warriors Revolt." 11 November 2010, from http://terranova.blogs.com/terra_nova/2003/11/the_state_of_pl.html

Castronova, E. 2005. *Synthetic Worlds: The Business and Culture of Online Games*. University of Chicago Press.

Castronova, E. 2006. "On the Research Value of Large Games: Natural Experiments in Norrath and Camelot," *Games and Culture* (1:2), pp. 163-186.

Castronova, E. 2007. *Exodus to the Virtual World: How Online Fun Is Changing Reality*. New York, NY: Palgrave Macmillan.

Cohen, J.L. 1985. "Strategy or Identity: New Theoretical Paradigms and Contemporary Social Movements," *Social Research* (52:4), pp. 663-716.

Davidson, C.N., and Goldberg, D.T. 2009. *The Future of Learning Institutions in a Digital Age*. USA: MIT Press.

Edwards, B., and McCarthy, J.D. 2003. "Resources and Social Movement Mobilization," in: *The Blackwell Companion to Social Movements,* D.A. Snow, S.A. Soule and H. Kriesi (eds.), Malden, MA: Blackwell Publishing.

Gamson, W. 2003. "Defining Movement "Success"," in: *The Social Movements Reader: Cases and Concepts,* J. Goodwin and J.M. Jasper (eds.), Malden, MA: Blackwell Publishing, pp. 350-352.

Goodwin, J., and Jasper, J.M. 2003. "The Social Movements Reader: Cases and Concepts," in: *The Social Movements Reader,* J. Goodwin and J.M. Jasper (eds.), Malden, MA: Blackwell Publishing.

Gregor, S. 2006. "The Nature of Theory in Information Systems," *MIS Quarterly* (30:3), pp. 611-642.

Habermas, J. 2008. "New Social Movements," in: *Social Movements: A Reader,* V. Ruggiero and N. Montagna (eds.), New York, NY: Routledge, pp. 201-205.

Inglehart, R. 1990. *Culture Shift in Advanced Industrial Society*. Princeton, NJ: Princeton University Press.

Jenkins, J.C. 1981. "Sociopolitical Movements," in: *The Handbook of Political Behavior,* S.L. Long (ed.), New York, NY: Plenum Press, pp. 81-153.

Johnston, H., Laraña, E., and Gusfield, J.R. 1994. "Identities, Grievances, and New Social Movements," in: *New Social Movements: From Ideology to Identity,* E. Laraña, H. Johnston and J.R. Gusfield (eds.), Philadelphia: Temple University Press, pp. 3-35.

Klandermans, B. 1992. "The Social Construction of Protest and Multiorganization Fields," in: *Frontiers in Social Movement Theory,* A.D. Morris and C.M. Mueller (eds.), New Haven, CT: Yale University Press, pp. 77-103.

Kozinets, R.V. 2010. *Netnography. Doing Ethnographic Research Online.* London: Sage Publications Ltd.

Kozinets, R.V., and Kedzior, R. 2009. "I, Avatar Auto-Netnographic Research in Virtual Worlds," in: *Virtual Social Identity and Consumer Behavior,* N.T. Wood and M.R. Solomon (eds.), New York: Society for Consumer Psychology, pp. 3-17.

Krzywinska, T. 2006. "Blood Scythes, Festivals, Quests, and Backstories: World Creation and Rhetorics of Myth in World of Warcraft," *Games and Culture* (1:4), pp. 383-396.

Leizerov, S. 2000. "Privacy Advocacy Groups Versus Intel : A Case Study of How Social Movements Are Tactically Using the Internet to Fight Corporations," *Social Science Computer Review* (18:4), pp. 461-483.

McCarthy, J.D., and Zald, M.N. 1977. "Resource Mobilization and Social Movements: A Partial Theory," *The American Journal of Sociology* (82:6), pp. 1212-1241.

McKenna, B., Gardner, L.A., and Myers, M.D. 2010. "Chaotic Worlds: An Analysis of World of Warcraft," in: *Americas Conference on Information Systems (AMCIS)*. Lima, Peru.

McKenna, B., Gardner, L.A., and Myers, M.D. 2011a. "Issues in the Study of Virtual World Social Movements," in: *15th Pacific Asia Conference on Information systems (PACIS)*. Brisbane, Australia.

McKenna, B., Gardner, L.A., and Myers, M.D. 2011b. "Social Movements in World of Warcraft," in: *17th Americas Conference on Information Systems (AMCIS)*. Detroit, USA.

Melucci, A. 1989. *Nomads of the Present: Social Movements and Individual Needs in Contemporary Society*. Philadelphia, PA: Temple University Press.

Messinger, P., Stroulia, E., Lyons, K., Bone, M., Niu, R., Smirnov, K., and Perelgut, S. 2009. "Virtual Worlds - Past, Present, and Future: New Directions in Social Computing," *Decision Support Systems* (47:2009), pp. 204-228.

Myers, M.D. 2009. *Qualitative Research in Business & Management*. Sage Publications London.

Nah, F.F.-H., Eschenbrenner, B., and DeWester, D. 2011. "Enhancing Brand Equity through Flow and Telepresence: A Comparison of 2d and 3d Virtual Worlds," *MIS Quarterly* (35:3), pp. 731-747.

Papargyris, A., and Poulymenakou, A. 2008. "Playing Together in Cyberspace: Collective Action and Shared Meaning Constitution in Virtual Worlds," in: *Exploring Virtuality within and Beyond Organizations,* N. Panteli and M. Chiasson (eds.), New York, NY: Palgrave Macmillan, pp. 213-240.

Pichardo, N.A. 1997. "New Social Movements: A Critical Review," *Annual Review of Sociology* (23), pp. 411-430.

Postmes, T., and Brunsting, S. 2002. "Collective Action in the Age of the Internet: Mass Communication and Online Mobilization," *Social Science Computer Review* (20:3), pp. 290-301.

Rettberg, J.W. 2008. "Quests in World of Warcraft; Deferral and Repetition," in: *Digital Culture, Play, and Identity,* H.G. Corneliussen and J.W. Rettberg (eds.), Cambridge, Massachusetts: The MIT Press, pp. 167-184.

Robinson, B. 2008. "Labour's Second Life: From a Virtual Strike to Union Island," in: *Virtual Social Networks: Mediated Massive and Multiplayer Sites,* N. Panteli (ed.), Houndmills, New Hampshire: Palgrave Macmillan, pp. 134-154.

Roquilly, C. 2011. "Control over Virtual World by Game Companies: Issues and Recommendations," *MIS Quarterly* (35:3), pp. 653-671.

Rucht, D. 1988. "Themes, Logics, and Arenas of Social Movements: A Structural Approach," in: *International Social Movement Research,* B. Klandermans, H. Kriesi and S. Tarrow (eds.), Greenwich, CT: JAI Press, pp. 305-328.

Schultze, U. 2010. "Embodiment and Presence in Virtual Worlds: A Review," *Journal of Information Technology* (25:4), pp. 434-449.

Schultze, U., and Orlikowski, W.J. 2010. "Virtual Worlds: A Performative Perspective on Globally Distributed, Immersive Work," *Information Systems Research* (21:4), pp. 810-821.

Schultze, U., and Rennecker, J. 2007. "Reframing Online Games," *Proceedings of the International Federation of Information Processing Working Groups 8.2 on Information Systems and Organizations and 9.5 on Virtuality and Society*, Portland, Oregon, USA: Springer Boston, pp. 335-

351.

Scott, A. 1990. *Ideology and the New Social Movements*. London, UK: Unwin Hyman Ltd.

Staggenborg, S. 2011. *Social Movements*. New York: Oxford University Press, Inc.

Tarrow, S. 1994. *Power in Movement*. New York, NY: Cambridge University Press.

Tilly, C. 1978. *From Mobilization to Revolution*. Reading, MA: Addison-Wesley.

Tilly, C., and Wood, L.J. 2009. *Social Movements, 1768-2008*. Boulder, Colorado, USA: Paradigm Publishers.

Walsham, G. 1997. "Actor-Network Theory and Is Research: Current Status and Future Prospects," in: *Information Systems and Qualitative Research,* A. Lee, J. Liebenau and J. DeGross (eds.), London: Chapman and Hall, pp. 466-479.

Wasko, M., Teigland, R., Leidner, D., and Jarvenpaa, S. 2011. "Stepping into the Internet: New Ventures in Virtual Worlds," *MIS Quarterly* (35:3), pp. 645-652.

Williams, D. 2006. "Why Game Studies Now? Gamers Don't Bowl Alone," *Games and Culture* (1), pp. 13-16.

Williams, R., and Pollock, N. 2012. "Moving Beyond the Single Site Implementation Study: How (and Why) We Should Study the Biography of Packaged Enterprise Solutions," *Information Systems Research* (23:1), pp. 1-22.