Chapter 3
A Practice-Based Analysis of Social Interaction in a Massively Multiplayer Online Gaming Environment

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ABSTRACT

This chapter analyzes behaviour in on-line games from a practice-oriented perspective and focuses on how individuals create and sustain social structures. It reports on research based in MMOGs (Massively Multiplayer Online Games) that investigates how what the players do in the gaming environment can give rise to structures that continue to exist outside that environment. The analysis centres on the notion of how practice is framed within the game; the methodology is one based on virtual ethnography. It describes the activities of a group of gamers in both MMOGs and other on-line settings. It will show how such players develop an identity as members of a 'community of games players' and how their gaming practices are not based around a single game but are spread across several different platforms.

INTRODUCTION

In this chapter, we analyze behaviour in on-line games from a practice-oriented perspective. The analysis uses concepts drawn from Communities of Practice (Wenger, 1998), Activity Theory (Engeström, Miettinen, & Punamäki, 1999) and the notion of Social Capital (Nahapiet & Ghoshal, 1998). Interest in on-line gaming behaviour goes back to studies of multiplayer on-line games such as MUDS (Multiple User DungeonS) and MOOs (MUDS Object Oriented) in 1990s. These early

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studies were primarily concerned with how individuals created an on-line identity. More recent studies have focused how groups of individuals create symbolic meanings through interactions within a community of games players (Chen, Duh, Phuah, & Lam, 2006), and it is this line of enquiry that our work will follow.

We report upon recent research using MMOGs (Massively Multiplayer Online Games) that focuses on how 'virtual' community structures emerge through engagement in such games and the practices that underlie them. MMOGs are particularly suited to this type of work as their inherent social connectivity allows them to act as both interfaces to virtual spaces and community support systems. They are effectively videogames played online that allow players to interact, not only with the gaming software, but also with large numbers of other players. Such games create a world where players can interact for a limited period, which can last from a few hours to several months. Typically, the players of such games seek entertainment, online socialization and the acquisition of a reputation within a community of online gamers (Jakobsson & Taylor, 2003).

In a previous paper (Milolidakis, Kimble, & Akoumianakis, 2009) we argued that practices are not necessarily framed solely as social interaction, but may be embedded into the artefacts, tools and processes involved in game play. Building on this, our current work aims to provide insight into what practices make up the gaming experience. The goal of this research is to understand what players do in the gaming environment and how this gives rise to structures that can be maintained outside that environment.

Using virtual ethnography, we examine two interrelated issues: the tools, processes and artefacts that allow players to set, negotiate and achieve shared goals, and the emergent structures that result from game play. The analysis centres on how the notion of practice is framed within the game; the ways in which practice can be encapsulated in the artefacts that enable the players to interact, co-operate and compete; and the degree to which this results in sustainable social ties between the members; either within or outside the gaming environment.

The structure of the remainder of the article is as follows. The section below outlines the theoretical background for the work and briefly outlines the notion of practice as found in Communities of Practice (CoPs) in general and virtual CoPs in particular; Activity Theory as it relates to virtual settings; and the notion of Social Capital. The second section describes the research setting and methodology. The bulk of the remaining sections describe the findings. These are organized under the following headings: textually mediated social interaction; artefacts in gaming practices; crossing tool boundaries; and community practices and Social Capital. The chapter concludes with some comments on how we conceptualize on-line gaming and how we should view the boundaries of the platforms that support it.

BACKGROUND AND THEORETICAL CONTEXT

The early 1990s saw a sudden surge of interest in virtual communities, stimulated by books such as Howard Rheingold's "The Virtual Community" (Rheingold, 1993) and by the sudden and rapid expansion of what would now be termed social networks such as the WELL (Whole Earth 'Lectronic Link). In tandem, there was a growing interest in on-line games such as MUDS and MOOs. Most of the work in this area was concerned with issues of identity (Bruckman, 1993), although later work also looked at interaction and highlighted the role played by social relationships (Conkar, Noyes, & Kimble, 1999). The concepts presented below provide the theoretical context for our practice based analysis of social interaction inside and outside MMOGs.

Practice and Virtual Communities of Practice

There are several definitions of what CoPs are, all of which vary slightly in shades of emphasis and meaning. Cox (2005) provides a useful summary of the range of meanings that can be associated with the term CoP based on his review of four seminal works. The concept of a Community of Practice originated with Lave and Wenger (1991) and was quickly adopted by other authors such as Brown and Duguid (1991). The original view was of CoPs as essentially co-located groups sharing a common, recurring activity; later Wenger (1998) reinterpreted this notion of CoPs to encompass the possibility of constellations of interconnected but geographically separate CoPs within a single organization. Finally, Brown and Duguid (2000) introduced the concept of Networks of Practice (NoPs) to describe groups of people geographically separate who share similar interests or activities. NoPs share many of the features of CoPs but are organized at a more individual level and are based on personal rather than communal social networks.

To understand practice-based analysis, we need to understand what 'practice' is. In the early work on CoPs, the notion of practice was undefined, beyond noting that it was socially constructed and intimately connected to learning. Vann and Bowker (2001) describe this early view as "*an epistemology of practice that entails a set of claims about how people learn and how knowledge is shared among social actors*". In his later works (Wenger, 1998), Wenger developed the connection between practice and meaning arguing, "*Practice is about meaning as an experience of everyday life*". He also links practice to knowledge, arguing (1998) practice is "*a form of knowledge*", and to knowing stating that "*knowing is participating in that practice*". The ambiguities around the term are not resolved in the broader literature.

For example, Barnes states explicitly "*[...] the relevant literature remains unsatisfactory, even in the most elementary respects. It fails to make clear just what social practices are*" (Barnes, 2001, p. 18). Schatzki (1996; 2001) attempts to identify the common ground among theorists such as Bourdieu (1977), Lyotard (1984) and Foucault (Gordon, 1980) arguing that practices are seen as "*the central social phenomenon by reference to which other social entities such as actions, institutions, and structures are to be understood*". These different perspectives may vary in detail but the main line of thinking is the same. Bourdieu (1977) argues that the distinct identities and dispositions of agents are shaped by situated practices and those agents, in turn, produce, reproduce or transform practice, based on their identities and the context of action. In this context, practice is seen more as the accumulated wisdom shared by practitioners and not the repetitive action through which higher skills are learnt.

In this work, we conceptualize practice as 'knowing revealed through action'. Practice is concerned with the construction of a repertoire of resources that is shared by the members of a community. This repertoire consists of both artefacts and the knowledge that is required to interpret these artefacts, and is given concrete expression in action. It is built up through the ongoing engagement of the practitioners in some activity and can be changed and transformed through negotiation between the individuals that are engaged in that activity. Thus, practice in virtual communities is what people do when they create a repertoire in an online setting. In many cases, this may involve interrelated activities that take place in both online and offline contexts. In this chapter, we will use this perspective to analyze the interrelated activities of a gaming community.

Activity Theory and Virtual Worlds

Activity Theory is a branch of Psychology that has a rich history (Engeström et al., 1999). Briefly, Activity Theory argues that tools mediate human activity. When people interact to achieve some

goal, they do so using tools. In Activity Theory, these tools are seen as an externalization of the internal knowledge of the toolmaker. As a result of the focus on tools, Activity Theory has become popular in areas such as Human Computer Interaction where a designer sets out intentionally to 'create' an environment in which to undertake some form of activity (Nardi, 1996). Activity Theory should not be thought of as a simple determinist theory: tools are remade and recast with use and new tools are created to deal with new situations. It does not argue that because knowledge is built into a tool in some way, and because a tool is shareable, then the knowledge that was used to create the tool will also become shareable. The argument is more that tools condition certain patterns of actions and that by their repeated use these patterns become part of the accepted practice of the people who use the tools.

This argument is more easily sustained in the world of CoPs and physical artefacts. When we move to the world of NoPs and 'virtual reality' however, the distinctions between the tool and patterns of action it conditions become harder to define. For example, in place-based social gatherings it is not possible for one person to deploy simultaneous multiple identities, whereas in virtual spaces tools to manage multiple identities are commonplace (Jung, Jin, & McLaughlin, 2007). Thus, the practice of identity management in traditional settings is not simply reproduced in virtual space but is extended by the tools used to create that space. Similarly, civil inattention, the process by which we demonstrate awareness of one another in physical places (Goffman, 1966), has no direct equivalent in virtual space, although awareness can be enhanced in other ways (Dourish & Bly, 1992).

An obvious question to ask is what is actually happening in virtual spaces and how is practice encoded, enacted and transmitted online. The literature tends to focus on elements of practice framed in social interactions. Although this is valid, it fails to explain why certain offline practices are not reconstructed online or how it is that certain online practices do not have offline counterparts. If practice is not simply reproduced online, but extended and enriched through digital media, then insights into this should improve our understanding of online behaviour and offer a more appropriate unit of analysis for framing online practice.

The Creation of Social Capital in On-Line Settings

The concept of social capital has become very popular in sociological theory (Portes, 1998). Bourdieu (1977) defined social capital as "*the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition*". Later, Nahapiet & Ghoshal (1998) conceptualized social capital as the sum of the cultural and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. More recently, the concept has attracted attention in works that relate to virtual worlds, claiming that such worlds either enable the construction of social capital (Hampton & Wellman, 2003; Williams, 2006) or inhibit it (Kraut et al., 1998; Nie & Erbring, 2000).

Social capital is similar to other kinds of capital; an investment can be made in the expectation of gaining a return. Social relations such as recognition, feelings of gratitude, respect and friendship are some of the potential returns from social capital. In order to possess social capital, an individual must be connected to others in some sort of social network. It is not the individual that is the source of the potential benefit, but their connections to other members of the network. Few studies have sought to explain how is social capital established, maintained and enriched in online settings. Instead, researchers tend to concentrate on structural aspects of a network at a point in time and how the nodes of this network

are interrelated; the intention behind such relationships, their strength, 'social' impact and plasticity is seldom assessed.

One approach to improve our understanding is to investigate what people do online to create and / or appropriate social capital, not by simply counting mouse clicks on objects or keystrokes, but by looking at acts that lead to social connectivity. For instance, tagging an element might be done through mouse clicks, but these mouse clicks convey meaning and have social implications that are quite distinct from the task-level actions in a traditional Graphical User Interface (GUI). Consequently, it is the 'interactions between nodes in a network' that are of interest in a virtual setting, rather than the individual users' tasks. This, however, necessitates a shift away from task-level into activity-oriented analysis and identification of the objects capable of decoding the meaning of such activities.

RESEARCH SETTING AND METHODOLOGY

The broad methodological approach taken in this work is one of virtual ethnography (Hine, 2000) and is based on the analysis of the activities of a group of gamers and their activities in MMOGs and other on-line settings. We describe the extended on-line social life of this group and show how the structures that sustain their activities reach beyond the confines of a single game or technological platform and involve a number of social practices that are subsidiary to any one game. We describe how such players are able to develop an identity as members of a community of games players and how gaming practice need be not based a single game but is something that can exist, in part, outside the gaming environment.

Our virtual ethnography was conducted through one of the authors being fully immersed in these games over a period of 11 months and observing how third-party game characters dealt with their duties in different settings (i.e. different game worlds, different alliances, different games). A large file was compiled containing data about conversations in private and public chat rooms and forums as well as in small discussion boards and chats.

The Gaming Environment

In our study, we will look at interactions in three MMOG platforms Travian, Imperion and FarmVille and comment on the use of other platforms such as Facebook and MySpace (social networking sites), Google Docs (an online document editors with support for real-time collaboration), Doodle (an online service for online coordination of meetings), VOIP systems, external forums and blogs.

Travian is a massive multiplayer online strategic war game that supports a 2D graphical environment and a messaging system through which gamers can attain individual and collective objectives. A new player becomes a mayor of a small village that tries to attract a (virtual) population by constructing and upgrading buildings. New villages can be added by joining alliances of other players. The winner of the game becomes the first alliance that creates a village containing a special building called "The World Wonder", which requires contributions and support from a number of players.

The second game Imperion, is similar to Travian but with a different theme. Imperion allows players to colonize planets in the same way Travian allows the foundation of new villages. The creation of alliances is also similar to Travian.

Finally, FarmVille is a game available on Facebook. FarmVille is a real-time farm simulation. Each player manages his virtual farm by planting seeds and harvesting crops and trees. This game does not have the notion of alliances of players. However, it does rely on socialization and allows players to add their Facebook friends as neighbours in their farms.

A Practice-Based Analysis

Typically, studies of the online behaviour of gamers analyze social interactions as they take place during game play (Chen et al., 2006). Such studies provide information about the type of communities observed, how they are established, sustained and maintained as well as their qualitative attributes such friendship, community structure, roles (i.e., moderators versus members) and access rights. These are useful for understanding online community and community management, but they offer very little insight to what members actually do or how their social practices are revealed in virtual settings.

As our interest is to understand communities through what their members actually do, we follow a more practice-based analysis. In our study, practice is understood as 'knowing revealed through action'. Following activity theorists, we consider practice as subsuming activity (Engeström et al., 1999). Activity becomes meaningful for a designated practice through objects whose symbolic manifestation and relational properties are clearly defined and labelled. Thus, activities are built on the knowledge, skills or competences of those performing them. It is therefore important to relate practice to knowledge as expressed in communication acts or embodied into routines, procedures or patterns of use.

Our practice lens entails analysis of the properties of the virtual 'tells' of a gaming a community. We will consider an analytical framework that concentrates on the cultural artefacts through which a community is revealed. For cultural artefacts, we define a broad range of virtual 'tells' that reveal the existence of a community. For instance, cultural artefacts include the tools offered by the Travian game (such as the built-in messaging system, etc) as well as external artefacts, such as documents compiled using Google Docs and schedules facilitated by Doodle.

Finally, we should note the difference between the terms 'virtual tells of a community' and 'virtual remains of a community' used in cyber-archaeology (Jones, 1997). The latter seeks to reconstruct a past culture through the study of its remains; our practice lens is designed to analyze what is actually taking place in a community rather than reconstructing it.

FINDINGS AND DISCUSSION

Social Interaction and Textually Mediated Practices

Social interaction in an online multiplayer game is one of the most time consuming activities of a gamer. The time devoted to social interaction in the context of an online game is difficult to measure. In the Travian game community, social interaction plays a central role as the game is designed so that it is not possible for a single player to win without making or joining alliances. Specifically, winning in Travian requires a large number of players to combine forces and offer resources (e.g. military and economic support) against an opposing alliance. For this reason, the game environment supports the construction and the maintenance of alliances of players. Allies maintain contact through the game's built-in messaging system as well as through postings in alliance-specific community message boards and chat rooms. For Travian communities, social interaction is manifested primarily during game play as text messaging, posting or replying. Members use tools to join/leave alliances, express opinions, request support and negotiate options and strategies. For example, in order to join an alliance, messages must be sent from/to the leaders of the alliance. When the game world is in its early stages, the only criterion for finding good players to join in an alliance is the game statistics boards. The dialogue below gives an example of such interaction.

DeathWing says: Good morning, would u like to join my alliance? We are impressed by your evolution.

DESTRO says: thanks for your invitation but I don't have embassy yet. I let you know [Embassy: a building required to join an alliance]

DeathWing says: ok then, I'm waiting msg from you when you are ready

This type of online interaction is informative, not only of the roles of the parties, but also of the reason for an invitation. In other words, an invitation is an implicit acknowledgement of achievement. A good invitation, grounded on knowledge of the game is more likely to receive positive responses, than an invitation that is anecdotal or lacking evidence. Most studies of gaming communities recognize such interactions as prompts for actions. Nevertheless, they do not explain why in the majority of cases, they take place outside the game board (i.e., the interactive manifestation of the game's virtual world) and frequently, without using the built-in communication mechanisms. In fact, high standard and demanding alliances make use of external tools, such as VOIP systems and external forums to communicate.

The players characterize the alliance message board and built-in chat room as being poor tools. This shortcoming is dealt with by using external tools for communication, and many alliances create their own website, usually in the form of a forum. By giving access to their members, they create a separate virtual space from the virtual environment supported by the game. Other alliances create groups in social networking sites such as Facebook or MySpace and ask their members to participate. It seems that players move their social interaction outside of the gaming environment in an effort to interact with each other by means that better meet their needs. Of course, their motivations are not solely derived by the inefficiency of the communication systems supported by the game environment but a great deal is made of the fact that people are familiar with existing ways of conducting discussions in online settings. A representative example is described below.

Firewall says: The leader of XXX [an alliance] asked us if we want to become part of our alliance

Diamiano says: are they any good?

Firewall says: They have a few good players

Witch says: we should create a topic on the FO[foreign office] board to discuss that

A topic on a forum is used as an artefact that appropriates discussions in online settings and the position of the topic (i.e. on the foreign office board of the forum) gives it the appropriate context, meaning and importance. As online discussion in the form of forums and message boards, have been around for some time and most players are familiar with their use. Therefore, with the appropriate use of a forum, the players are able to be involved in meaningful social dialogue concerning their game.

Social interaction is strongly intertwined with game play. Specifically, making sense of online discussions inevitably requires knowledge of a game's status. For instance, consider the following narrative that presents a group message sent to all the members of an alliance.

Butterfly: Send 100 defend troops to the village (107 | -43) by midnight. Also send your hourly production to overcome the damages of the last attack [hourly production: the production of all villages of a player in an hour]

The message was sent using the built-in messaging system requiring every player to send troops and resources to a specified village that was probably under attack. Players not familiar with the game may not immediately understand what is at stake. Consequently, narrative-based social in-

teraction pre-supposes common understanding of terms such as 'defend troops', 'hourly production', etc., which are tightly linked with the online game practice and its evolution. Obtaining such common ground is possible only through the game's environment and the exploration of visual, spatial and textural representations. Eventually, such an intertwining between online game practices and the textually mediated social interaction leads to making sense of and engaging in the game's virtual space. Nevertheless, each type of practice is shaped and served by different artefacts.

Artefacts and Gaming Practices

Travian is a game where the players are mostly involved in acts of warfare to either defend their villages or attack hostile villages. The gaming environment supports this by offering troops, demolition weapons, defensive walls, etc; tools for training troops or creating armoury; and the appropriate processes for the maintenance of an army or deployment for an attack. It is clear that the elements that support acts of warfare are based on existing war practices. These are materialized within the gaming environment but as Travian is not a realistic simulation of real war many of these acts of warfare have been altered or reformed by designers. For example, in Travian there is no way for the player to have an estimate of the size of the attacking army.

Travian uses visual artefacts to allow players to make sense of the virtual world and to convey social awareness. Specifically, a village, which occupies a square tile in the game map (Figure 1-a), provides the conceptual object for understanding the virtual world and inviting micro-negotiations between the players. As the notion of the village needs to be compatible with its physical counterpart, its virtual embodiment is depicted as a place-based territory inhabited by villagers. Specific functions of the village are manifested through visual artefacts. Resource fields (Figure 1-b) and buildings (Figure 1-c) define the economy and give extra capabilities to a village.

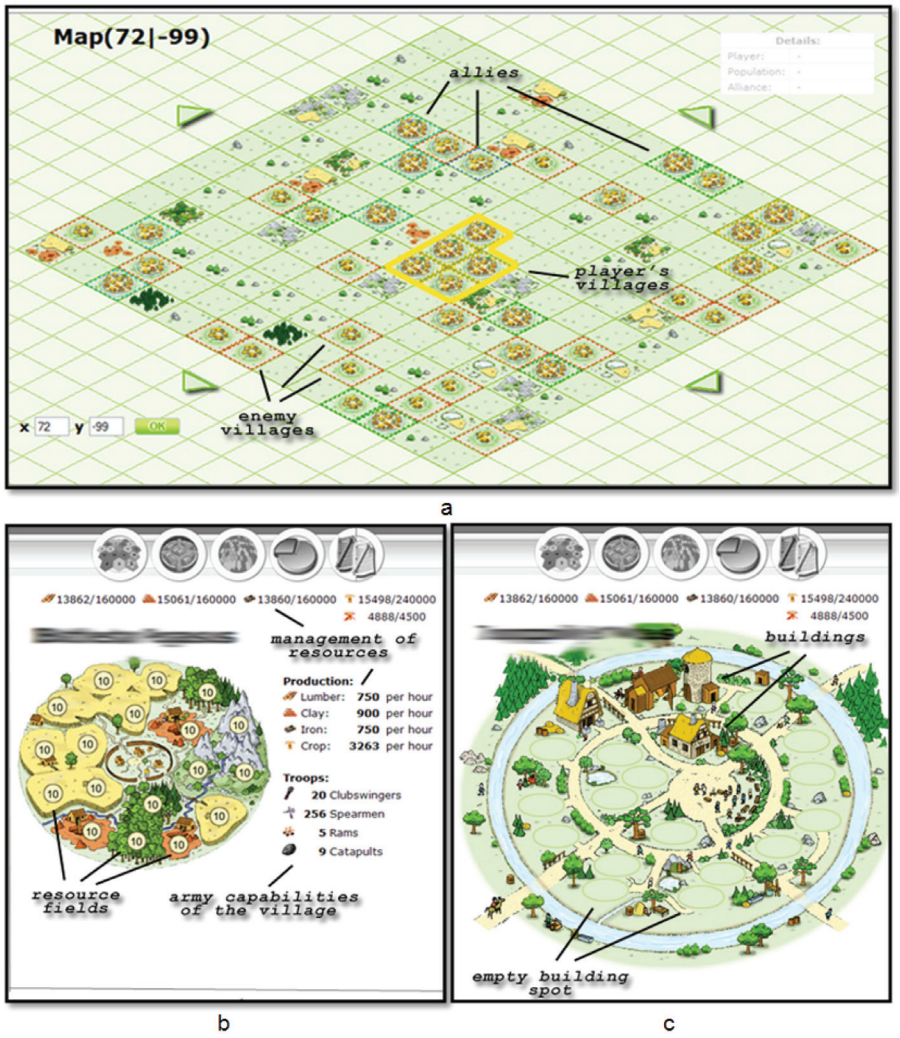
The player, through the process of upgrading the structural components of a village, increases the population of his/ her village and is able to use extra features of the game (e.g. training new types of troops). It is important to note that the choice of visual forms and their associated properties determine the range of activities of the user and give meaning to otherwise banal actions such as mouse clicks, keystrokes and interaction sequences. For example, a number of activities are required to create a new building. The player selects an empty building spot (round tiles in the centre of Figure 1-c), then a type of building (from a range given in an on screen list). Buildings take some time to complete but when they are ready, the player can upgrade them.

Another use of the visual artefacts offered by the game is to support social awareness. The game's map is used to represent who and what is around one player's village. In turn, this is used to determine tactics and drive social interactions, to inform decisions about allies, enemies, possible threats and opportunities.

Crossing Tool Boundaries: From Collaborative Scheduling to Social Networking

The processes of constructing alliances and the establishing agreements between alliances are of great importance to the gaming community. Indeed, we observed that a successful alliance has not only the experienced players but also the ability to maintain strategic agreements with other alliances. An experienced player is someone that knows how to play the game (can maintain and use army, knows how to best develop the economy, etc). However, there is a significant difference between players that are not only able to play the game but can actively affect the agreements and the pacts between alliances and therefore the progress of the whole game world. To facilitate the

Figure 1. a) Virtual world map b) Village overview, c) Village inner view



construction of alliances further, the game environment supports the establishment of commanding hierarchies within an alliance where some of the players are given titles such as captain, general of defence, recruiter, diplomat, etc and undertake the duties that attach to each title. The members of the alliance, in order to decide who will take the responsibility of each commanding role use external tools to create polls. Figure 2 depicts a Google Docs document that was used by the players to decide the next alliance leader. This spreadsheet is linked to a web form where gamers write the names of the co-gamers they support for the position. The text fields on the form are linked to the columns in the spreadsheet and every vote is recorded to the document. A player then has the responsibility of interpreting the document and providing the outcome.

A player who undertakes the duties of a diplomat needs to be able to negotiate on issues concerning the alliance or to solve disputes or controversies among players from other alliances; while a captain needs to be able to organize the alliance officers in an effective way. What is re-

markable here is that members of the gaming community mobilize individual expertise that they probably gained outside the game environment and adopt practices such as negotiation or organizational practices that they may also use in their real life occupations during their involvement in the virtual game. Online tools such as Google Docs and Doodle, although not part of the Travian game world are used during the game. For example, organization of on line meetings is often done using Doodle scheduler (see Figure 3). These tools must, therefore, be considered as a part of the community's practice and analyzed as part of the virtual community.

Taking another point of view on war practices; consider squads of troopers in a war. Such a squad has a mission to accomplish that is made up of one or more objectives (e.g. capturing a target). Although in the game community of our case study there is not an exact equal match; we observed that a team of players can work together to accomplish a mission such as capturing a hostile village using the army that every player maintains. In such a case, a team of players works in the same way as a squad of troopers. Such a team/squad is given a specific mission to accomplish and in order to achieve success works in a problem solving mode where first the current situation is evaluated, then decisions are made and finally there is a response to the requirements of the mission. What is worth noticing here, is that elements of problem solving practices are being utilized by the players without being provided by the game environment directly through the existence of specific artefacts, tools or processes. These practices actually derive both from the war practices and from the need of the players to coordinate their efforts while coping with a collective task.

The distinction of the allies in the game map is facilitated using coloured tiles to represent the villages (see Figure 1a). If a player wants to conquer a village then he / she must browse the game map to find out his / her nearby allies and ask for their help. An illustrative example is offered below.

Figure 2. Voting for leaders using Google documents

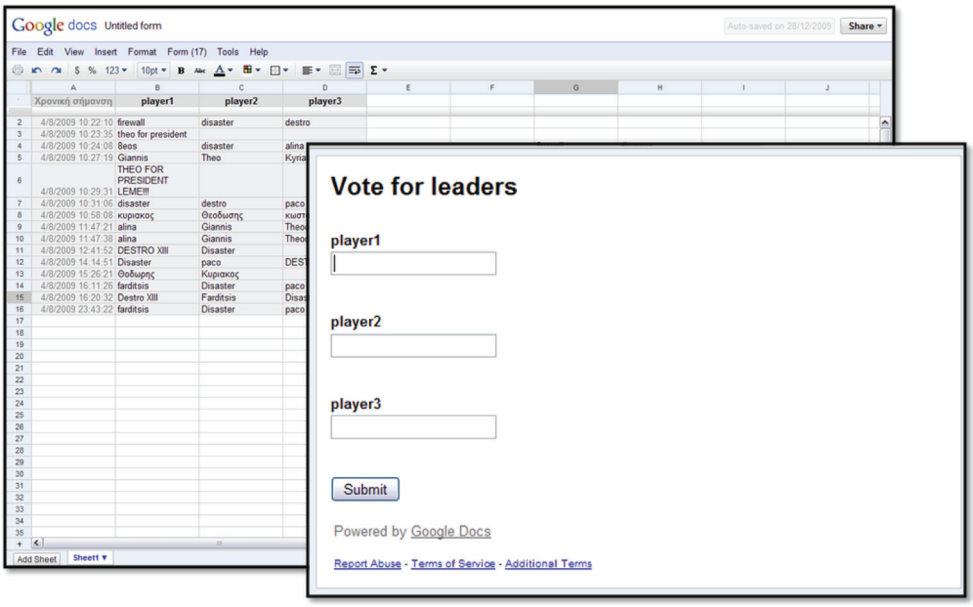
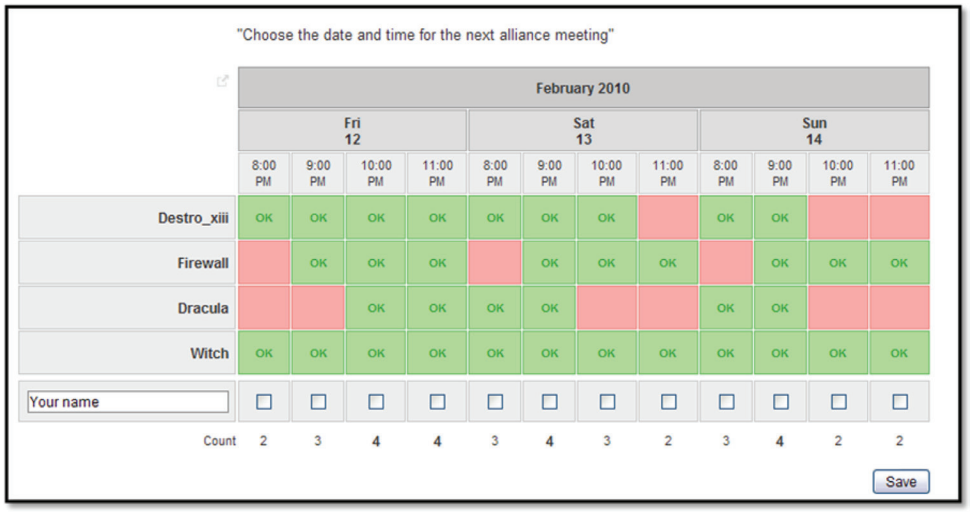


Figure 3. Organizing meeting using Doodle



Galactica says: Hi diamiano. Can u help me conquering the village of player XXX at (71|-87)? [a village is defined by its coordinates on the game map]

Damiano says: Yes why not? Do u want to conquer the village tonight?

Once commitment of a sufficient number of players is obtained, the group is invited to join in a discussion group in order to cooperate and achieve the target. A typical discussion concentrates on resource types, troop size, distance from target, etc., and takes place between participants who know each other well enough and have a history of co-engagement in the alliance.

Galactica says: Hi guys. As you know, I want to conquer the village at (71|-87). How many available chiefs you have? [Chiefs: type of troops needed to conquer a village]

Alinaki says: hi, I have 1 available and the necessary cp. [cp: culture points, needed in order to conquer a village]

Galactica says: ok I also have 3 [chiefs]... we need 2 [chiefs] more

Damiano says: I have 2 chiefs available now and one more later tonight

Galactica says: ok 2 [chiefs] will do the job

Galactica says: please give your exact travel times to the village (71|-87)

In the extract below, the group discusses the tactical approaches for attacking and misleading their opponents. This entails coordinative assessment of a shared object of reference, namely the map, which offers social awareness by presenting the villages (friendly or not) taking part in this campaign.

Galactica says: I'm suggesting fake attacks to nearby villages [fake attack: an attack with one soldier]

Galactica says: that is (77, -65) (77, -62) (71, -64) (76, -66)

Alinaki says: ok

Damiano says: one strike or multiple ones?

Galactica says: multiple waves [multiple waves cause more damage to the enemy]

Damiano says: ok

After negotiating and agreeing on the strategy, every player is aware of their respective duties in a specified period.

Galactica says: I will hit first on 23:59. Alinaki will hit on 00:00 and damiano some time real close after alinaki's hit. Is everyone ok with that?

Alinaki says: ok np

Damiano says: no problem for me too

Generalizing this workflow, we observe that players in their effort to accomplish their target formulate small groups, establish common ground by sharing information, negotiate options, devise plans for action and finally execute the plan. Through this process, gamers make sense of the virtual world, negotiate their tactics and reconstruct their individual and social standings.

Community Practices and Social Capital

The construction of social capital between gamers in a game community is concerned with the establishment of social links with other gamers. As individuals in offline settings invest in relationships in the same way, gamers invest in the establishment of social ties with others in the virtual world. Social relations such as friendships, recognition, respect, etc help them here in the same way they do in real life. Because social capital is considered important to gamers, much time is spent in maintaining it. As we have discussed previously sometimes these links are maintained outside the game environment, using different means for creating social connectivity such as networking websites, forums, etc. Our intention in this section is not to identify whether social connections created within virtual environments increase or reduce social capital in offline settings but to show how social ties are maintained within micro-communities (communities of gamers participating in the same alliance) and how activities in one tool or game can have links to another and vice versa. We will use the example of how members of the Travian community migrate to other games in order to illustrate this.

The first example concerns the game FarmVille. FarmVille is a simulation of a virtual farm and every player takes the role of a farmer when playing the game. What distinguishes this from the other two games of our case study is that in order to play you need to be a member of Facebook (i.e. have an account). In the extract below, three players on a Travian chat room discuss FarmVille.

Witch says: Who plays Farmville???

Firewall says: What is that?

Damiano says: haven't you heard about the new game on Facebook?

Firewall says: on Facebook???

Damiano says: XXXXXX [the player's real name]. Add me as a friend. Then we can be neighbour farmers

Witch says: add me too XXX XXX [the player's real name]. Farmville has a lot of fun

Players exchange their Facebook names in order to be able to become neighbours in FarmVille. In Figure 4, a player has been awarded a ribbon and is asked if he wants to publish a story about his progress in his Facebook profile. If he

decides to publish the story, his connections (i.e. friends) can get a bonus by clicking on that post.

Consequently, players who share their Facebook names maintain closer relationships and can obtain updates on their co-players through their use of Facebook. The extract below is from a Travian chat room and gives an example of how what someone posts on Facebook may affect his/her alliance

DESTRO says: Who knows XXX [the player's user name in Travian]?

DESTRO says: He became red today? Should I kick him out of the alliance [players have an indicator that shows when it was the last time someone was connected; this indicator becomes red when a player hasn't been logged in for more than 3 days]

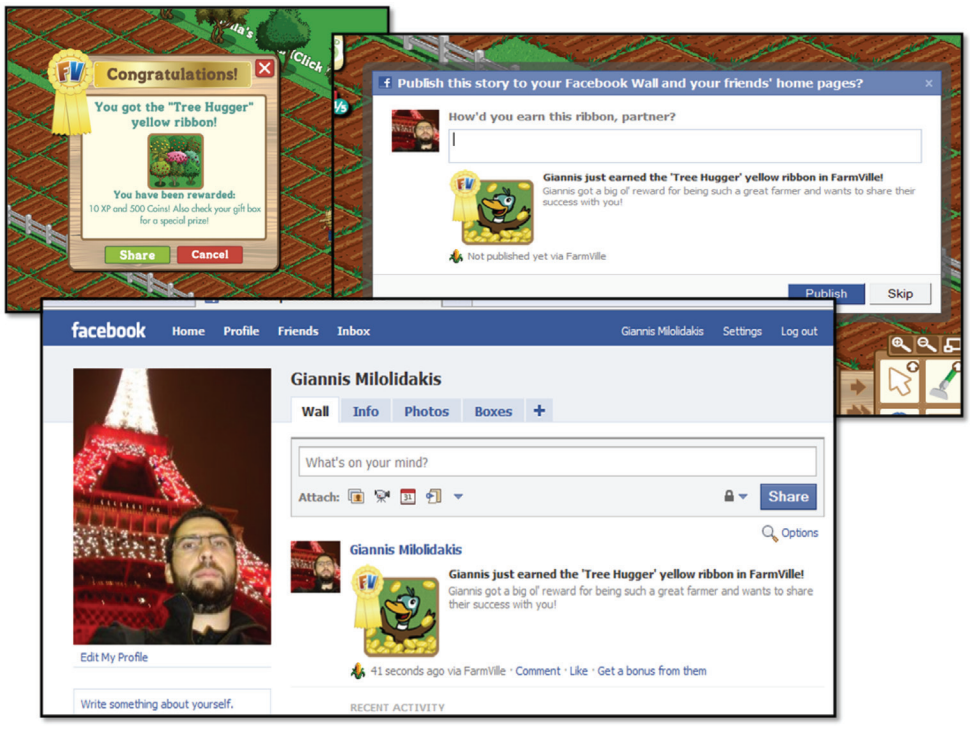
Witch says: Don't kick him. He posted a msg on his wall [on Facebook] yesterday saying that he will be out for a business trip. I think he is coming back tomorrow

DESTRO says: OK. Who is his sitter? [sitter: is a player that has the ability to login in your account without using your password and take care of your villages]

Witch says: w8 [wait], let me check:)

In the above extract, two players discuss the status of another player and get the required information from a third party system. This is an implicit effect of being connected on a social networking site. The game supports similar connections through the process of identifying 'sitters'. It seems that trust among the players of a game plays an important role and this becomes evidenced by the way that players choose to

Figure 4. FarmVille



use tools (e.g. Facebook) to create and maintain social ties.

The Travian virtual world has a particularity as there is an 'end game' period. At the end of this period, the game server is restarted and reset to initial settings and the progress of the players is deleted. Every player then decides if he/she will continue playing in a different game server or if he/she will wait until the game server is restarted. This is different to other massive multiplayer online games where the virtual world is endless. This particularity of the game allows us to observe the mechanism of the micro-communities created in the game that in many cases move to new game settings as a team. The extract below is a discussion between members of an alliance immediately after the game server has ended.

Firewall says: Are we going to s1 [server 1] or we wait the restart of s2 [server 2]

Galactica says: do u know if X alliance will go to s1 too? [X was the winner of the server and an enemy]

Firewall says: no

Diamiano says: They are going to s1

Firewall says: then we should go to s1. this time we will make a bigger homeland [a place on the game map where the players of one alliance establish all of their villages in order to get benefited by the proximity in the game environment]

Players who move as a team are able to apply a better strategy based on their experience. In such cases, many of the members of the community already have experience of the new game and that gives the alliance an advantage. Equally important is the fact that players are familiar with each other; they have already established links either for communication with each other or with other players from different alliances which contributes to the efficiency of the alliance.

In our study, we observed alliances that were created on one game server continued on another. We found powerful alliances in which micro-communities of players had met in other game servers, developed a sense of community and organized their efforts in the game as a team. In such cases, their practices regarding social interaction are likely to remain the same, as people will tend to use already established means of communication (e.g. in-game messaging system, IM, forums, social networking websites). In our study, we observed such a transition that took place while the members of the Travian alliance waited for a server to restart. This provides our second example of how in-game social capital can be built and developed outside the game.

While waiting for a game server to restart, a group of gamers from an alliance in Travian created accounts in a new game called Imperion. We tracked this transition by creating an account and participating in everyday activities of the gamers. Initially, the players were excited by the new game world and motivated to bring in more members of the alliance to participate. Discussions about the game became increasingly popular in the forum and chat rooms of the alliance and every player was seeking information on the new game. Around half of the core members (i.e. 30 to 40 members) created accounts in the new game, and before our study ended, the gamers were participating in two different forums and two different main chat rooms, one for Travian and one for Imperion.

The forum and the chat room for Imperion developed as the involvement of players reached the level of involvement of Travian; a new community dedicated to the new game emerged. Members of the alliance that joined the new game met with new players and decided that they needed a new space for interaction that was different from the one dedicated to Travian as they felt that they were participating in a different community. Consequently, the new message board was cre-

ated exclusively for the new game allowing only players of Imperion to have access.

As has been noted elsewhere (Barab et al., 1999), self-organizing communities emerge in response to local conditions and the needs of their users. This is what we found in our case study. Individuals who met in a virtual game server and continued their co-engagement after moving to another game server are similar to a group of friends who play tennis every week on the same court and deciding to move to a new court. The individuals above, who met in one virtual games world and continued their co-engagement in a different gaming environment, are more like a group of friends who play tennis but then decide to move to a different game such as squash. In the first case, elements of the gaming practices remain the same, in the second they differ. However, in both cases the social interaction practices they use, such as the way they communicate, are likely to remain the same.

SUMMARY AND CONCLUSION

In this chapter, we used a practice-based analysis to understand the practices that constitute the gaming experience in the virtual games in our study. Our theoretical foundations were Communities of Practice, Activity Theory and Social Capital, and these allowed us to identify and understand what constitutes practice, how practice is manifested in virtual settings and how social ties among players relate to gaming activities. During our study, we saw that players who met in a game often extended their activities into different media, mostly to utilize tools or carry out tasks that were not well supported in the game environment. As these players became familiar with specific tools for communication and collaboration, they tended to keep using them, even after moving to different games. Players that have played together for a long time and moved as a team to different games, appropriating social capital derived from previous co-engagement by using their experience and their social connections sustained through non-gaming systems tended to stay together.

Our practice-based analysis leads to several conclusions. Online gaming practices include activities such as negotiation, orchestration that are related to other non-gaming social interaction practices. The gaming experience is not only gained during the conduct of the game, but it seems to be sustained through other activities hosted in third-party systems. It seems that players develop an identity as participants in a community of games players and that gaming practice is not limited to a single game, can exists outside a specific virtual gaming environment. Gaming practice involves individuals that become proficient in the use of communication technology and are able to build collaboration on line in non-gaming systems. Systems such (e.g. Facebook, doodle, Google docs) were not designed to take into account the existence of these games, yet despite this, the systems seem to be able to be used in this way. Consequently, the use of these systems must be considered as a part of the gaming community's practice and need to be analyzed when trying to understand how a virtual gaming community operates.

Finally, it is worth noticing that in contrast to the past (where gamers were initially co-located, then formed virtual groups), the emergence of new social media catalyzes and augments gaming practice which is no longer confined to specific artefacts or virtual worlds. Rather, by capitalizing upon popular social media, gaming practice crosses traditional boundaries and toolkits, becoming revealed as an institution of interrelated activities. Phrased differently, it is argued that understanding what actually takes place during a game, entails study of the group's collaborative traces across social media.

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