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- Department of Political Science

Gaming Together

- When an imaginary world affects
generalized trust

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Abstract

This thesis, by employing a four month self-selected panel-study of players from the Massively Multiplayer Online Role-Playing Game (MMORPG) World of Warcraft as well as a control-group of non-players, find that generalized trust is negatively affected by participation in an online gaming environment. By creating an analytical framework of what constitutes a voluntary association this thesis also find that the Guilds in World of Warcraft constitutes such an association and that some of the negative effect by playing World of Warcraft can be explained by playing in ethnically homogenous guilds and off-set by playing in ethnically heterogeneous guilds. In other words, by playing MMORPG:s we are no longer only playing games, we are gaming together and that affect how we evaluate society.

Keywords: Generalized trust, MMORPG, Experience-based trust, voluntary associations, World of Warcraft

1. Introduction

The term *generalized trust* has been around in social sciences for many years now and has been ascribed a role as one of the most important factors to what makes our civic communities and democracies work (Putnam 1993; 2000, Chapter 8; Uslaner 2002). Generalized trust differs from other kinds of trust in that it includes people in general rather than specific actors. This in turn makes it usable for overcoming collective action-problems in situations where the other actor is a stranger (Uslaner 2002, Chapter 1). Uslaner describes the importance of trust with these words:

“Trust is the chicken soup of social life. It brings us all sorts of good things, from a willingness to get involved in our communities to higher rates of economic growth and, ultimately, to satisfaction with government performance, (...) to making daily life more pleasant.” (Uslaner 2002, 1)

Although most of the current literature agrees of the importance of generalized trust for society, there is far less agreement on what mechanisms actually generates such trust (Nannestad 2008, 431-432; Rothstein & Stolle 2007, 9). This disagreement is mainly constituted by two different strands of theories with one side arguing that generalized trust is affected and frequently updated through social interactions¹ between citizens that happens during their lives, the *experienced based trust approach* (Putnam 1993; Rothstein & Stolle 2007; Stolle & Rochon 1998; Stolle 2001; Putnam 2007) and the other side arguing that generalized trust remains relatively stable throughout an individual's lifetime and is mostly generated through learning processes during the formative years of childhood, the *cultural-based trust approach* (Uslaner 2002; 2008; Delhey & Newton 2005, Bjørnskov 2006, Dinesen 2010, Bergh & Bjørnskov 2009). Thus, even though many mechanisms of what creates

¹In this thesis social interaction will be defined as any interaction that happens between two or more different actors.

generalized trust have been proposed by the different theories, the empirical evidence still has not been able to fully conclude which mechanisms matter the most for the creation generalized trust (Nannestad 2008, 431-432).

This thesis aims to test some of these mechanisms on a new, by political science fairly unexplored setting, namely the digital arena and more specifically on the types of games called *Massively Multiplayer Online Role-Playing Games* (MMORPG:s)². Even though some research have tried to explore the relationship between generalized trust and the use of Internet (Uslaner 2000; Ducheneaut, Yee, Nickell & Moore 2006; Lee & Lee 2010; Ratan, Chung, Shen, Williams & Poole 2010) research that examines the relationship between online gaming and its possible influence on generalized trust is virtually non-existent. Ever since the technologies for high-speed Internet connections started to developed and provide more opportunities for citizens to use the Internet for a multitude of purposes, people have started to more and more socially interact with each other through *Computer mediated communication* (CMC), which also have risen the need for research on this new usage of technology (Williams 2006; Williams, Yee and Caplan 2008; Lee & Lee 2010).

I will therefore direct my focus to one of those spheres of social interaction over the Internet, namely MMORPG:s. In order to progress in these kinds of games the players are encouraged to cooperate and form large teams in order to overcome the obstacles and objectives that are placed by the game, which is similar to what Putnam argues is the reason to why voluntary associations are able to create generalized trust (Nardi & Harris 2006; Ducheneaut et al 2006; Ratan et al 2010 Putnam 1993, 89-90). This thesis will therefore put specific emphasis on testing experience-based trust theories with the social capital-theories³ as the prominent theory to guide our analysis. Even though most of the theories about social interaction's and especially voluntary associations' impact on trust, popularized by the work of Robert D. Putnam, have been widely criticised for failing to address the "endogeneity-problem" by not controlling for self-selection effects of high-trusting people being more prone to join associations (Stolle & Rochon 1998; 2003) and that people spend too small amounts of time in those types of associations for them "to shape, or reshape, an adult's values." (Uslaner 2002, 40) I still would argue that it is too early to completely dismiss the role social interactions in both voluntary associations and in more informal settings might have on generalized trust. In a new setting where social interaction with people is encouraged and cooperation without face-to-face interaction is a prerequisite for success, can we find effects on generalized trust fostered or destroyed by that interaction?

² For a more thorough walk-through on what an MMORPG can be see the Appendix-section "Appendix B.

³ The social capital theories will in this thesis mainly refer to the theories put forward by Robert D. Putnam about how social interaction between members of voluntary associations as well as in informal meetings affect generalized trust.

Previous literature have argued that Internet-users tend to become more socially isolated with less and less face-to-face contact which is eroding their social capital (Kraut et al 1998; Nie & Erbring 2002; Putnam 2000), but what these studies fail to address is what people nowadays actually do on the Internet. Media and Internet usage have developed, from just watching TV, searching for information and chatting with friends, into massive arenas where not only social interaction with strangers happens but also cooperation with those strangers is encouraged (Williams 2006b; Williams et al 2006).

This thesis will contribute to political science by putting experience-based trust theories to a test on previously unexplored social experiences made by the citizen's in MMORPG:s to see whether or not these experiences can affect generalized trust. Since some social capital-theories argue that voluntary associations is one of the most important instances where generalized trust can be created (Putnam 1993; 2000) and since the explicit focus of this thesis is to test these theories, I start my analysis by creating an analytical framework for what constitutes a voluntary association that will be used to analyse whether or not a voluntary associational aspect actually can be present within a MMORPG-environment.

Since previous debate within the social capital-theories have discussed the necessity of Face-to-Face interaction for the generation of generalized trust (Putnam 2000; Wollebaek & Selle 2002, 35-36) I, by analysing MMORPG:s that for all thoughts and purposes lacks this, also can contribute to the social capital theory with more knowledge on this question. To conduct my study on the possible effects of online gaming I have collected a unique data set consisting of panel-data of 658 players from the MMORPG World of Warcraft (WoW) and panel-data from 613 non-gaming Swedish citizen's. By using a panel-study, this thesis will be able capture the effects of the game over time and doing so addresses some of the endogeneity-problems⁴ that have plagued previous experience-based trust research (Putnam 2000; Stolle & Rochon 1998; Stolle 2001).

In this thesis, I find that indeed a voluntary associational-aspect can be found within the WoW and that generalized trust is affected negatively by the experiences made in the game. This overall negative effect of playing WoW can however be somewhat off-set by participating in a more diverse voluntary associational aspect of the game and thus my research lend support for the experience-based trust theories assumptions that experiences as well as voluntary associations actually can affect generalized trust.

⁴ By Endogeneity-problem I mean the problem of determining the causal inference of a relationship between two variables. (Nannestad 2008, 416)

1.1 Research Question

More specifically the research questions that this thesis will examine are:

- *To what extent can generalized trust be affected by the experiences made in a Massively Multiplayer Online Role-Playing Game?*

In order to answer this question and to test the social capital-theories we also need to analyse the following aspects:

- *Can Massively Multiplayer Online Role-Playing Games be seen as having a voluntary associational aspect?*

And if this is the case:

- *To what extent can generalized trust be affected by the participation in a voluntary associational-like environment in a Massively Multiplayer Online Role-Playing Game?*

In the next chapter of this thesis, the theories used to examine these research questions will be presented which will lead up to the creation of an analytical framework, which will be used to analyse if MMORPG:s can be seen as having a voluntary associational-aspect to them. This will be followed by a presentation of the proposed research design and the operationalization's of the different mechanisms proposed to affect generalized trust. Lastly I will present the empirical analysis of how playing an MMORPG affects generalized trust as well as concluding remarks on what this research have discovered and what future research need to further explore.

2. Experience versus Culture

As argued in the introduction generalized trust and the mechanisms of generating that trust have had its theories gathered from many different schools of thought. These schools can however be divided into two different lines of reasoning; the *experience-* and *cultural-based* trust. (Uslaner 2008, 725)

2.1 Experience based trust

Generally there are three strands of theories to discuss when arguing what experiences affect generalized trust: *Social capital-*, *institutional-* and *social identity-theories*. I first deal with the theories of experiences I believe to exist in the online gaming environment, namely the social capital-theories, with emphasis on the effects created by voluntary associations.

2.1.1 Social capital-theories

Putnam (1993) argued that participation in the civic life seems to create and foster a sort of social capital for the citizens which they could use to overcome cooperative and collective action problems (Putnam 1993, 164-166). This social capital is generally argued to be composed of three different aspects: social networks, norms of reciprocity and trust and who all stand in a reciprocal relationship towards each other (Putnam 1993, 167; Stolle 1998, 497; Wollebaek & Selle 2002, 32). In this thesis I will however delimit my analysis to focus only on the generalized trust aspect of social capital since trust have been argued to be the most important aspects of social capital and essentially what I hypothesise to find in MMORPG:s (Putnam 2000, 135-137; Stolle 2001, 210; Uslaner 2002; Stolle 1998; Rothstein & Stolle 2007) Thus from here on I will only refer to the generalized trust-aspect when discussing the Social capital-theories.

The idea that Putnam thus put forward, borrowing from Alexis de Toqueville, was that “Internally associations instill in their members habits of cooperation, solidarity and public-spiritedness (...) Participation in civic organizations inculcates skills of cooperation as well as a sense of shared responsibility for collective endeavours.” (Putnam 1993, 89-90) The social interaction citizens makes when meeting with people in informal meetings (informal ties) as well as in more formal voluntary associations (formal ties) is thus believed to teach or force individual’s to learn and update their trust towards each other. That specific or *particularized trust* is in turn argued to be *bridged* to a more generalized trust with the logic that experiences from meeting people should make evaluations of strangers, or the “generalized others”, to become more tolerant and trusting (Putnam 2000, 136-137). Conversely, bad experiences, such as dysfunctional groups or being subjected to violence or crime, should force individual’s to become less trusting towards people in general (Putnam 2000, 138). However, since voluntary associations should to a greater extent provide citizens with regular social interactions with a multitude of people they should be more likely to be able to foster generalized trust than just regular informal ties between friends and family (Putnam 2000, 113). Stolle (2003) also argues that for the social capital-theories “the most important mechanism for the generation of reciprocity and trust is identified as regular social interaction” (Stolle 2003, 22) Regular social interaction between people is therefore, seen as a prerequisite for a *working democracy* since it is both generating generalized trust and form a virtuous circle into more engagement in the civic life (Putnam 1993, 170).

The social capital-theories thus provide us with two different aspects of social interaction that both are believed to affect generalized trust and those are *formal associations* and *informal associations*⁵.

⁵ Both these types are generally defines by Putnam as *Civic engagement* (Putnam 1995, 665) But due to that other authors (Wollebaek & Selle 2002) have used the term civic engagement as only engagement in the political life I choose in this thesis to divide the term civic engagement into its core parts, formal and informal associations.

Formal associations and Informal associations

By formal associations Putnam (2000) generally refers to organisations with formalized, often political agendas such as unions and political parties (Putnam 2000, 27). By informal associations Putnam instead refers to the social interactions citizens' participate in when meeting friends, playing card-games, sending greeting cards, having dinner with the family, participate in bowling leagues and other hobby or sports associations (Putnam 2000, 93-94).

However, in line with Putnam's argument both formal informal association can be of a voluntary associational type and the general idea here is that social interaction with friends, family or spontaneous leisure activities with strangers can sustain social capital and generalized trust but not the same extent as social interactions in voluntary associations (Putnam 2000, 93-94). Putnam writes that "(...) league bowling, by requiring regular participation with diverse set of acquaintances, did represent a form of sustained social capital that is not matched by an occasional pickup game." (Putnam 2000, 113) Putnam does not however provide us with a strict definition of what really constitutes a formal or informal voluntary association but instead generalize all voluntary associations that are aimed at community or political goals to be formal, and sports and game associations to be informal. But since other studies have shown that both formal and informal voluntary associations can contribute to generalized trust this thesis will not analyse whether or not MMORPG:s can be seen as a formal or informal associations (Wollebaek & Selle 2002). What stands as important is instead to distinguish whether or not social interaction in MMORPG:s can be seen as having a voluntary associational aspect or merely an informal more unorganised social interaction such as spontaneous socialising with friends and family or playing an occasional pick-up game. This because informal types of interaction is argued to not provide that many opportunities for regular social interaction or meetings with a diverse set of people and thus should not impact generalized trust to the same extent as voluntary associations (Stolle 1998, 501).

This thesis will therefore direct more of its focus on finding if there is a voluntary associational-like environment present in Online Role-Playing Games and if those affect generalized trust. In order to do this I will later present an analytical framework for what constitutes a voluntary association.

The impact of Voluntary associations

An important distinction that the social capital-theories make between different voluntary associations is in respect to how they impact generalized trust⁶.

⁶In the social capital-literature bonding and bridging associations are generally named after if they produce bridging or bonding social capital. Both bridging and bonding social capital can have important and positive effects on things such as voter turnout or political participation, but bonding social capital is generally seen as affecting generalized trust negatively (Putnam 2000; Rothstein & Stolle 2007, 5). Therefore, since we focus merely on the generalized trust aspect of social capital, we will through this thesis only focus on the impact bridging and bonding associations have on generalized trust.

These are called *bridging* or *bonding*-associations. According to Stolle and Putnam bridging groups are the ones that stand for the creation of generalized trust. Bridging groups have been described as “associations that foster a cooperative spirit, norms of reciprocity, and collective thinking beyond the boundaries of the group itself.” (Stolle & Rochon 1998, 49) The particularized trust created within bridging associations is thus *bridged* towards the rest of society. How this particularized trust within the group is transformed into generalized trust has, according to Stolle, not yet been fully explored but it is however *assumed* by social capital-theory that the in-group trust and cooperation within the group somehow become bridged to the individual’s out-group or generalized trust (Stolle 2001, 205). Examples of typical bridging groups are those associations that generally make individuals’ get into contact with people “dissimilar to themselves” (Rothstein & Stolle 2007). As an example Putnam mentions bowling teams or charitable organisations (Putnam 2000, 113; 136-147). *Bonding* associations on the other hand fosters particularized trust between the members that instead works in a detrimental way towards generalized trust. Bonding groups are believed to show very high rate of cooperation and norms of reciprocity within the group but that cooperation instead of creating generalized trust it destroys it (Stolle & Rochon 1998). As example for a typical bonding group Stolle & Rochon (1998) mentions the mafia. A mafia generates high trust and cooperation towards the others within the group but does also become more excluding and hostile towards other people in general.

Although some voluntary associations are more likely to end up in one category, there does not exist a strict definition of what a bonding or bridging association actually consists of, rather it is the outcome on generalized trust by the group-involvement that decides whether the association is bonding or bridging their in-group trust. (Putnam 2000, 23) When discussing voluntary associations it is therefore important to note that not all associations are believed to create generalized trust but only those that can create opportunities for the norms of reciprocity, in-group trust and cooperative spirit to be bridged towards the general (Stolle & Rochon 1998, 48).

One of the traits that can affect the possibilities for a group to be of a bridging kind is according to Stolle (1998) heterogeneity. Social interactions where citizens are able to meet people from diverse backgrounds with different norms, cultural and belief-systems should be better at generating generalized trust since they subject people more dissimilar to one another, which in turn teaches the citizen’s to become more tolerant and trusting. (Stolle & Rochon 1998; Stolle 1998) However Stolle concludes that, “The view that associations might be good schools of democracy because they bring together people from various social backgrounds has generally been contested. If diversity matters for the socialization of cooperative values, then voluntary associations might not be the place to look, as such groups have been found to be relatively homogenous in character.” (Stolle 2003, 26).

Another critique aimed at voluntary associations' ability to affect generalized trust is the time spent in those groups. Most people spend only a few hours a week in a voluntary association and "(...) even the most committed activists rarely devote more than a few hours a week to group life – hardly enough time to shape, or reshape, an adult's values." (Uslaner 2002, 40) Stolle test this idea empirically by comparing new members in associations with veteran members (Stolle 2001). She finds that indeed voluntary associations seemed to foster particularized trust and the longer time one spent in the group the stronger the in-group trust and commitment-level one developed to the group (Stolle 2001, 233-234). Stolle did not however find a correlation between that particularized trust and generalized trust and neither a relationship between how long one has been in a group and generalized trust. Thus people inside voluntary associations seem to be more trusting in general only because of self-selection (Stolle 2001, 233-234). By this conclusion Stolle taps one of the most important critiques against previous voluntary association-research, namely that voluntary associations only score higher in generalized trust due to that high-trusting individuals are more prone to join voluntary associations than low-trusting individuals (Stolle 2001, 229).

Face-to-Face interaction

As for face-to-face interaction Stolle writes that, "In particular, membership in voluntary associations should increase face-to-face interactions between people and create a setting for the development of trust." (Stolle 2001, 205) Hence, increasing face-to-face interaction by both voluntary associations and informal associations should be able to influence generalized trust (Stolle 2001; Putnam 2000: 177). In addition, Putnam argues that without face-to-face interaction the social experiences made by an individual will most likely not matter, so when an organisation like *Greenpeace* triples their passive membership-base those members will not become more or less trusting since that membership requires neither activity nor face-to-face interaction (Putnam 1995, 665; Putnam 2000). By the same line of reasoning he dismisses the thought that the Internet and computer-mediated communication could foster generalized trust. He writes: "The poverty of social cues in computer-mediated communications inhibits interpersonal collaboration and trust, especially when the interaction is anonymous and not nested in a wider social context." (Putnam 2000, 176) Also Internet has the problem that "(...) entry and exit are too easy," and thus "commitment, trustworthiness, and reciprocity will not develop." (Putnam 2000, 177) He later concluded that it is was too early to tell what possible outcomes the Internet will have for the social capital and generalized trust in the society, but as long as face-to-face interaction is not happening the likelihood that Internet will be this generation's redemption to higher trust seemed rather slim (Putnam 2000, 177-180).

The face-to-face interaction argument has however been contested by other studies as for example Wollebaek & Selle's 2002. By investigating participants that merely pay a membership fee they find that even inactive membership without face-to-face interaction can have positive outcomes for

generalized trust and social capital thus leading them to conclude that face-to-face interaction is not vital for generation of generalized trust (Wollebaek & Selle 2002, 55). The importance of face-to-face interaction, when discussing the possible effects on generalized trust by voluntary associations, is thus not yet fully researched. Hence, if one can find effects on generalized trust by Online Role-Playing Games it would assess that indeed generalized trust is developed by the inner workings of social interaction and not specifically by face-to-face interaction.

Endogeneity-problem

The conclusion made by Putnam and other proponents of civic society's influence on generalized trust have however been widely criticized for its methodological designs (Nannestad 2008, 423). One of the core critiques is that they fails to address the "endogeneity"-problem. Do voluntary associations generate trust or does generalized trust make some people more prone to participate in groups? (Nannestad 2008, 423) Wollebaek, Selle and Putnam all have research designs that essentially fail to address this issue and when other studies uses empirical tests, that to a further extent address endogeneity-problems, the relationship between voluntary association and generalized trust seems to disappear (Uslaner & Brown 2003; Delhey & Newton 2005; Stolle 2001). Both Stolle (1998) and Nannestad (2008) have therefore called out for research that addresses this issue. I therefore find it essential to have a research design that addresses both endogeneity-problems as well as including important control-variables. For further details about the method employed in this thesis, see the Research Design-section of this thesis.

So, do we give up?

Much of the critique aimed at the social capital-theories is not aimed at the theories themselves but rather to the poorly chosen methodologies and lack of addressing self-selection effects. The critique is therefore not aimed at the "inner-workings" of the voluntary associations but rather to that the members of the associations already are high-trusting and that social capital theory fail to address this. Therefore the impact of voluntary associations might still exist only that it hasn't been tested on a sample of low-trusting individuals.

If we can find a type of voluntary association that actually consumes a lot of time for its members (Uslaner 2002), that do not have a membership-base consisting of high-trusting individuals (Stolle 2001) combined with a methodology that address the endogeneity-problem, then this might provide a case strong enough to actually measure whether or not the "inner workings" of a voluntary associations can affect generalized trust. Within MMORPG:s that due too small geographical restrictions, relatively easy access to social encounters and vast amounts of time invested by the players in the games, we could hypothesise that such a case exist (Lee & Lee 2010, 712; Nardi & Harris 2006; Ducheneaut et al 2006). In Appendix-A a brief analysis of what Online gamers would

have done had MMORPG:s not existed is performed and shows indications that without the game, players would not have been more engaged in voluntary associations and neither are they high-trusting which further speaks in favour of that MMORPG:s actually seems to be interesting cases to test social capital-theories on (see Appendix A).

Before moving over to the analysis of whether or not MMORPG:s also can be seen has having a voluntary associational-aspect to them we need to briefly go over the vast literature on what other factors are believed to create generalized trust. I will start by discussing the institutional theory on trust followed by a brief overview of the social identity-literature as well as the cultural-based theories on trust.

2.1.2 Institutional theory

The institutional theories on generalized trust have argued that generalized trust can be fostered when two actors both know that any bad behaviour conducted by the other part will be sanctioned and reprimanded by a government institution (Nannestad 2008, 424). Other scholars have emphasised the importance of the experiences when meeting government institutions or street-level bureaucrats with the line of reasoning that experiences of corrupt institutions and bureaucrats fosters a norm of dishonesty which the citizens' then interprets to exist throughout all of society (Rothstein & Stolle 2002; Rothstein & Stolle 2007). Rothstein and Stolle also argues that if institutions, especially the order institutions such as the police and the legal institutions, are believed to act in a fair and even-handedness manner it will create and fosters the generalized trust amongst the citizens' since they "reveal messages about the principles and norms of the prevailing political culture that mold and shape people's beliefs and values" (Rothstein & Stolle 2007, 10-11). Uslaner contest this idea with the line of reasoning that trust in institutions simply is based "upon your experiences" and in accordance to your political preferences. Thus trust towards the favoured political party or particular street-level bureaucrat will only affect particularized trust and not generalized trust (Uslaner 2002, 44). Rothstein and Stolle agrees with this critique and argue that indeed trust in politically controlled institutions are coloured by party preferences but that trust in order (police- and legal institutions) and control-institutions (media and newspapers) indeed seems to foster generalized trust (Rothstein & Stolle 2007, 10-12).

However, as with the social capital theories also the institutional trust-theories suffers from an endogeneity-problem by not being able to infer which way the causality goes (Nannestad 2008, 424-425). Bergh and Bjørnskov for instance argue that the main causal link between welfare state design and generalized trust runs from historical levels of generalized trust and not the other way around, although they also claim that positive feedback from welfare state universalism cannot fully be excluded (Bergh and Bjørnskov2009). Bjørnskov, by analysing 21 different determinants of

generalized trust, find that only Monarchy out of the six institutional variables seemed to affect generalized trust (Bjørnskov 2007). In other words the empirical results on if and how institutions can affect generalized trust remains inconclusive but institutional variables are however important control-variables to take into account when discussing the impacts of civil society.

2.1.3 Social Identity

During the last decade a lot of research has been spurred on the topic Social identity (Putnam 2007; Dinesen 2010; Delhey and Newton 2005). The line of reasoning in this theory is that we are less likely to trust people that seem to be different from us than those that seem to share our identity (Dinesen 2010, 97; Putnam 2007). Putnam argues that ethnic heterogeneity might be such a social identity but that there essentially are two ways in which that ethnic heterogeneity might affect us. First “As we have more contact with people who are unlike us, we overcome our initial hesitation and ignorance and come to trust them more.” (Putnam 2007, 141) If this aspect is present then diversity and ethnic heterogeneity serves as a creator of generalized trust. However in most of the social identity-studies the relationship measured seem to be the reverse, at least at the aggregate level, something Putnam refers to as “conflict theory” which argues that ethnic diversity seems to turn groups away from each other, increase the social cleavages and instead of strengthening their weak ties (bridging social capital) the different groups will strengthen their thick ties (bonding social capital) at the cost of their generalized trust (Putnam 2007, 142). But as with all the other theories on generalized trust the empirical evidence remains somewhat inconclusive. Putnam and Delhey and Newton both find strong negative relationships between ethnic heterogeneity and generalized trust while Bjørnskov and Dinesen fail to find any significant effects of Social identity (Putnam 2007; Delhey and Newton 2005; Bjørnskov 2007; Dinesen 2010). In addition Uslaner (2010) makes the argument that it is not ethnic heterogeneity that affects generalized trust but rather that it is segregation in a country that works in a detrimental manner.

2.2 Cultural based trust

The cultural-based theory on trust, or socialization-based theory, move closer to the starting point of the funnel of causality than the other trust-theories and argues that social trust is formed during the early childhood years and is generally inherited from our parents (Uslaner 2002; 2008; Dinesen 2010). Uslaner (2002) argue that generalized trust is not created by experiences but rather is a product of an optimistic outlook of life that our parents teach us. Parents who instil in their children a sense of optimism, tolerance and self-respect are more likely to go through life as high-trusting individuals. In other words, “We learn (or fail to learn) generalized trust from our parents.” (Uslaner 2002, 21) When we are meeting and interacting with people in voluntary associations or institutions we are, according to Uslaner, merely learning particularized trust to people that have interests which are similar to our own and that particular trust cannot be interpreted into generalized trust to strangers you have never

met before. According to Uslaner generalized trust therefore stays pretty static during an individual's life-time (Uslaner 2002). In other words it is proposed that individuals who come out of childhood high-trusting die high-trusting (Uslaner 2002, 93-94). Rather than updating and changing generalized trust, the optimistic high-trusting individual when being subjected to an act of dishonesty, discrimination or betrayal simply "shakes them off" as freak incidents that are not representative for the rest of the populations' intention towards it (Uslaner 2002, 25). Uslaner and Rothstein also find that generalized trust seem to be affected by the egalitarian distribution of income in the society with the line of reasoning that it creates a sense in the community that one have less to loose from cooperation and thus benefit more from trusting since that helps one get away from collective action problems (Rothstein & Uslaner 2005). Uslaner (2008) also find that trust indeed seems to follow individuals from the same family throughout the generations. By studying American immigrants from all parts of the world, he finds that people from high-trusting countries stay high-trusting when migrating and so do their grand-children. This would indicate that trust is not something that we base on our experiences but rather we base it on the culture by which we have been raised and hence it stay pretty much static at the micro-level of the population. However in his research Uslaner also find a link between experiences, "which groups you live among", and generalized trust but he still concludes that the "impact of ethnic heritage seems stronger". (Uslaner 2008, 725 and 738-739). The main factors that actually can profoundly change generalized trust of individuals are thus big changes to the income distribution or important events in society (Uslaner 2002). An event like 9/11 could thus have an impact of the evaluation of the trustworthiness of people in general on the aggregate level (Uslaner 2002,4, 25, 254).

Continuing from Uslaner's theories, Dinesen proposes that the rate of restrictive upbringing might affect an individual's trust. He argues that "(...) pessimistic parents try to insulate their children from the world outside their control by giving them an upbringing that restricts interaction with others." (Dinesen 2010, 94) He argues, in line with Uslaner (2002; 2008) that individuals raised in an un-tolerant and restrictive way are taught that other individuals are not to be trusted (Dinesen 2010, 95). To test this idea, he analyses panel data from groups of immigrants conducted 1988 and 1999. He finds that indeed restrictive upbringing have an effect on trust and those immigrants that had a more restrictive upbringing show lower levels of generalized trust than the unrestrictive raised immigrants. Thus Dinesen's concludes that experiences in life does not seem to impact generalized trust but rather it is the experiences during childhood and especially the way parents raise their children that affects the level of generalized trust. However a counter-argument to these conclusions are that Dinesen does not have a measurement of generalized trust in the first step of the survey and thus do not know the initial trust of the respondents and hence he, as most of the generalized trust-literature cannot fully address the endogeneity-problem.

By employing a measure of egalitarian income-distribution, optimism and restrictive upbringing in my analysis I should therefore control for most of the cultural-based theories' impact on generalized trust. However, if the cultural and socialization-based theories are correct in their assumption that generalized trust is not based on experiences then playing MMORPG:s should not affect their generalized trust.

2.3 Criteria of a voluntary association

Since the social capital theories argue that generalized trust is most likely to be fostered within a voluntary association we need to firstly analyse if such an aspect can be found in MMORPG:s. However as Rothstein and Stolle (2007) argue, there does not exist any real micro-level theory on what mechanisms in a voluntary associations that are proposed to create generalized trust, and neither any common definition of what a voluntary associations actually is (Rothstein & Stolle 2007, 5). Stolle does however present three different aspects that Social capital-theories claim voluntary associations need in order to create generalized trust, namely *horizontality*, *face-to-face interaction* and the group's ability to *break social cleavages* (Stolle 2003, 26; but see also Putnam 1993, 171-180; Wollebaek & Selle 2002, 39). However I would argue, in line with Stolle, that these three variables are not enough to distinguish private groups from voluntary associations (Stolle 2003, 26). This constitutes another serious critique against the already much criticized social capital-literature and especially the conclusions made by Putnam, since he in *Bowling alone* measures the decline of participation in voluntary associations without ever thoroughly defining what a voluntary association actually is (Putnam 2000). I thus develop a micro-level theory, based on previous Social capital-literature, of what mechanisms are believed to foster generalized trust within a voluntary association and what a voluntary association actually is.

2.3.1 Traits

From the Social capital-theories outlined above we know that "regular social interaction" is one of the main mechanisms to create generalized trust. This regular social interaction is believed to be one of the essential components that voluntary associations provide its members and thus the first criterion for a group to be seen as a voluntary association is *regular social interaction*.

Besides providing its members with a meeting ground for social interaction, voluntary associations are believed to create generalized trust because they "inculcate skills of cooperation as well as a sense of shared responsibility for collective endeavours." (Putnam 1993, 88-89) thus in order to be counted as a voluntary associations the group should have a common problem to be solved or goal to strive for that requires cooperation between its members. Putnam writes that the "manifest purpose of the association" does not need to be political (Putnam 1993, 90) but it is clear however that the association needs a purpose because without such a purpose there is no need for the individuals within the group

to even bother to cooperate with each other and thus the creation of trust will not take place. Hence a *common goal that requires cooperation* will be the second criterion.

For that common goal or purpose to be fulfilled and provide its members with regular social interaction the voluntary association would also need a formalized or scheduled meeting or events for which the members can participate in. Otherwise the regular social interaction might only be happening on a more ad-hoc basis and the group will most likely end up with just interactions between persons that already know each other. By formalized and scheduled meetings members therefore can, in a cooperative manner, strive towards the common goal of the voluntary association and hence I include *organized scheduled meetings or events* as one of the important aspects of voluntary associations (Putnam 2000, 94).

From the social capital-literature we also know that trust and commitment to the group is not believed to be created if “entry and exit are too easy” (Putnam 2000, 177). Other authors have also argued that trust cannot be created if the persistence of identity does not exist, since without identity, one cannot sanction or banish the ones who do not cooperate or follow the group’s norms (Ratan et al 2010; 95). The emphasis on being able to exclude individuals from the group that does not cooperate or follow the group’s norms is thus seen as essential for creating trust. Thus to be seen as a voluntary association one can argue that the group needs to have a threshold for entering as well as making exit somewhat punishing for its members, but without making the barriers of the group too strong so that it becomes involuntary to either join or leave the group. Entry and exit thresholds are particularly important when analysing voluntary associations within an Online Role-Playing Game since Putnam somewhat dismisses the importance of the Internet with the argument that entries and especially exits are too easy in computer-mediated-communications on the count that identities are not as strong online as in real-life (Putnam 2000, 177). Therefore I include “*entry-threshold*” and “*exit-threshold*” as variables to distinguish a group from a voluntary association.

In the social capital-literature voluntary associations are also hypothesised to be creating generalized trust since they “should increase face-to-face interactions between people and create a setting for the development of trust” (Stolle 1998, 500) The importance of face-to-face interaction have however somewhat been contested by Wollebaek & Selle (2002) arguing that passive membership still seems to give the members higher generalized trust. This conclusion has however been criticized by more recent work on computer-mediated-communication arguing that Face-to-Face interaction still is essential for the quality of the community and creation of trust (Lee & Lee 2010), hence “*face-to-face interaction*” is our fourth criterion for what constitutes a voluntary association.

2.3.2 Interaction effects

From the theories outlined above we also find some interaction effects that are not real “traits” of a voluntary association but still are believed to heighten the effects voluntary associations might have on generalized trust.⁷ For instance Stolle and Uslander both argues that voluntary associations should not produce generalized trust since those in most cases are quite homogenous in character (Stolle 2003, 26; Uslander 2002). According to Stolle an association can affect generalized trust by “the formative experience of interactions with other members.” and that “if those interactions bring one into contact with a broad sampling of members of society then the formative experience is likely to be much more pronounced than if the association is itself a narrowly constituted segment of society.” (Stolle and Rochon 1998, 49) In other words a voluntary association or a group that is diverse and inclusive should be able to better *cut across social barriers or cleavages* (Putnam 1993, 175). Moreover, a heterogeneous association is, according to Stolle, also less likely to be of a bonding nature and thus it will be important to include “heterogeneity” as one of the indicators to what kind of voluntary association the group might belong to.

It has also been hypothesised that voluntary associations that have a vertical character should be less pronounced in its effects on generalized trust. Putnam (1995) argued that the hierarchical Catholic Church in southern Italy did not provide its members with “mutuality or equality of participation” and thus could not generate the same amount of social capital or generalized trust as other, more horizontal associations (Putnam 1995; Stolle 2003, 26). Important to note is however that having a leader is not the same as being vertical and thus Putnam writes that “even Bowling teams have captains” (Putnam 1993, 174). But an organisation or group that is completely hierarchical or vertical should not to the same extent, according to Putnam, provide its members with norms of reciprocity and cooperation that is needed for the creation of generalized trust (Putnam 1993, 173-174). Hence I include “horizontality” in the classification of what constitute an effective voluntary association in terms of creation of generalized trust.

Stolle and Rochon (1998) hypothesise that the engagement or commitment level of a group should affect the rate of generalized trust created by a voluntary association (Stolle and Rochon 1998). A voluntary association that also have some sort of commitment- or activity level threshold in order to be a part of the group should therefore be able to produce more trust since then it’s forcing its members to learn the “skills of cooperation” and “reciprocity” that are deemed essential for creation of generalized trust by the social capital literature (Putnam 1993, 94). This is however not the exact same thing as either entry-threshold nor the demand for horizontality of the group, since by engagement-level Stolle and Rochon means the degree of members involved in the voluntary work of the group. In other

⁷It should though be noted that all these interaction-effects have yet to be supported by empirical evidence but I choose to include them since this thesis aims to actually test these social-capital theories on MMORPG:s.

words, groups that include more of its members than just the leaders in the everyday work and organisation of the group should be hypothesised to have a stronger impact on generalized trust than those who does not have active members (Stolle & Rochon 1998). Hence I also include “engagement-level” in the analytic framework of what should constitute a well-functioning voluntary association.

Lastly it has been argued by critics of the social capital-theory that most members of voluntary associations do not spend enough time in those associations ”to shape, or reshape, an adult’s values.” (Uslaner 2002,40). Although time spent in a group is not necessary for it to be defined as a voluntary association this too is an important interaction effect to study since more time spent in an association should create more opportunities for the generation of generalized trust. This variable is somewhat similar to the engagement-level but instead of focusing on what the members do it focuses on the individual amount of time spent in-group. Hence “large amounts of time spent in-group” is added to the analytic framework:

Figure 1. Analytic Framework for Voluntary associations

Voluntary association		Satisfied?
1.	Regular social interaction	
2.	Common goal	
3.	Organised scheduled meetings or events	
4.	Entry- and exit-threshold	
5.	Face-to-Face interaction	
Interaction effects		
6.	Heterogeneity	
7.	Horizontalty	
8.	Engagement-level	
9.	Large amounts of time spent in-group	

In Figure 1 I summarize the criterions into an analytical framework that will help us to understand what a voluntary association is and how well it is believed to function according to the social capital-literature.

3. Delimitation

During the last decade the participation in MMORPG:s have formally exploded and are according to White (2008) engaging over 47 million players every month in a multitude of games. So where and how do one research the impact MMORPG:s might have on generalized trust? Williams et al (2006) argued that “Researchers of games should play the games they are studying. (...) If they do not, they cannot know what questions to ask, decipher the local language, understand the game mechanics, or

have any sense of the social context of play.” (Williams, et al 2006, 342) Since I have a thorough understanding of the MMORPG World of Warcraft (WoW), from 5 years of play-time⁸ as well as a wide social network in that gaming community I choose to focus the analysis on this case. Additionally WoW constitute a good case for research on MMORPG:s since it is the largest game of its genre and should thus have a greater impact on society if effects can be found, as well as having a rich ethnological research-literature available for providing background information about the game (Nardi & Harris 2006; Williams 2006b; Boyns 2010). Another aspect to why WoW is chosen as a case is that the timing of the study could be conducted parallel to the release of the new expansion, called Cataclysm that Blizzard launched for WoW in December of 2010. With every new expansion there is, from my experience, a large upsurge of people playing the game due to more advertisements of the game as well as old players returning to the game to explore the new content of the game. And, with more people engaging in the community outside the game such as forums, the recruitment of respondents for the survey was also aided (for more information about the survey see the data-section of this article). During this period the players’ tend to invest more time in the game as well as raiding more in order to explore the new content and due to that extra amount of play-time the effects of the experiences made within the game should be more pronounced. Therefore, by choosing WoW as a case I provide the Social capital-theories with a strong interaction where the individuals put an extreme amount of time and effort into the game. Before moving over to the methodology-section and the presentation of the hypotheses to be tested, I will present whether or not MMORPG:s and WoW in particular can be seen as having a voluntary associational aspect to them. This will be explored through a theoretical analysis of what previous studies have found about MMORPG:s.

4. Voluntary associations in MMORPG:s

MMORPG:s as many other games, generally provides the player with a character by which interactions with the game as well as with other players is made. What distinguishes MMORPG:s from other video- and online games are that they emphasise the social interactions between the players since in order to develop your character you are also encouraged to interact and collaborate with other players (Nardi & Harris 2006, 149-150). For a brief introduction of an MMORPG and how it is played see Appendix-B. But let us now start the analysis of the research question: *“To what extent can Massively Multiplayer Online Role-Playing Games be seen as having a voluntary associational aspect?”* by employing the Analytical framework presented in figure 1.

So, where should one start looking for a voluntary associational aspect of MMORPG:s? One possible place could be in the so called *Raids* where large groups of players join forces in order to defeat computer controlled bosses and one could hypothesise that this type of cooperation could be able to

⁸ With an attained play-time of 137 days and 19 hours spread over a multitude of characters and servers.

produce positive benefits in line with Putnam's argument that cooperation is an important part of trust creation (Putnam 2000) (for a more thorough detail about Raids see Appendix-B). However, according to Nardi & Harris (2006) *Guilds* are another important aspect of most MMORPG:s which are "established by players" and which often are created in order to actually deal with the immense teamwork that is needed to defeat difficult encounters such as raids. Guilds are thus argued to "(...) provide members with varying levels of social and strategic support (...)" (Ratan et al 2010, 95) and guilds in general are believed to provide more of the "trust-building features" than just ordinary pick-up groups of players (Ratan et al 2010, 96). Through logged data on players currently online at different hours and if they are in a group, Ducheneaut et al found that over 90% of the highest level characters belong to a guild and that players within guilds generally tend to group more with each other (Ducheneaut et al 2006, 411). It thus seems plausible that if MMORPG:s can be argued to have a voluntary associational aspect it should be in the social structures called Guilds and between players that are at the highest levels. Therefore I aim my analysis towards guilds in order to distinguish between regular informal groups of friends and a voluntary associational-like environment in the games.

1. Regular social interaction

As argued above, regular social interactions are a big part of MMORPG:s since they encourage the players to collaborate in order to progress within the game. But individuals who join a guild also get a bunch of strategical and social perks compared to non-guild members that provides even more opportunities for regular social interactions. One of those perks is that all members in the guild get access to a special guild-chat where all the members can write to everyone that is currently online in the guild. Ducheneaut et al (2006) therefore find evidence that more regular social interaction is happening in the guilds and they find that "Characters belonging to guilds also group more often and this effect becomes more pronounced over the levels." (Ducheneaut et al 2006, 411) Thus by adding an extra means of communication regular social interaction is made easier compared to non-guild members which in turn makes guild-members more prone to interact with each other by both chatting and grouping (Nardi & Harris 2006, 152). Thus I conclude that the game in itself provides regular social interaction but that guilds in particular seem to pronounce this interaction.

2. Common goal

As for the common goal-aspect, Williams et al (2006) found that at least half of the guilds, had "mission statements" that formalized what goal in the game the guild wanted to achieve. When recruiting players to the guilds this "mission statement" was often emphasised and written both in-game and on different web-based forums when advertising the guild. (Williams et al 2006, 348) There are however different types of guilds, where some focus on raiding or Player-versus-Player combat and work towards getting gear or recognition in the game and in those guilds a formalized and written goal was the most common, while some guilds are more oriented towards social goals as having fun or

help each other with the levelling-phase of the game (Williams et al 2006, 346-348). Nardi & Harris writes that “There may be no specific goal for a guild other than for players to have a group to identify with. Or guilds may be highly organized and goal-driven (especially at higher levels).“ (Nardi & Harris 2006, 152) Thus it again seems most likely to find a strong voluntary associational aspect of the game in the guilds at the higher levels that focus on raiding and according to Williams et al about 35% of the guilds fit this category (Williams et al 2006, 345). However, even for the more socially oriented guilds an objective still exist in making the game more fun and social by playing together. Nardi & Harris writes “Though the outcome of such activities is amusement and not a work product, there is a collective object-oriented activity“ (Nardi & Harris 2006, 149) Thus even without formalized goals, the game seems to provide all the different guilds with some sort of goal. In addition, since the new expansion of WoW from 2010, a new guild-level structure has been implemented where the guild as a whole, when playing together, earns experience that unlocks different perks that benefits the people contributing to the guild. (Blizzard entertainment 2011) Therefore, except from providing the members with strategical benefits of an in-game chat-channel, the guilds now also provide structural benefits in terms of spells and more in-game currency to its members. Therefore the guilds, even the ones aiming for just having “fun”, now has another common goal in getting their guild to a higher level and getting stronger perks. I can thus safely conclude that there indeed exists a common and often formalized goal in MMORPG:s and especially for guilds that focus on end-game⁹ goals such as raiding and Player-versus-Player combat.

3. Organised scheduled meetings or events

In order for the guild to have voluntary associational aspect they cannot really be regularly social interactive and strive towards a common goal if there is no common place or time for those interactions to happen. If there are no organised meetings within guilds they cannot be argued to be more than just spontaneous informal interactions between smaller and more private groups. However from the literature I find that almost all guilds seems to have some sort of organisation. Nardi & Harris (2006) writes that “Guilds often organize guild-only raids” (Nardi & Harris 2006, 152) and Williams et al argue that “The primary function of a raiding guild is to organize and schedule 40-member team events that typically last between 2 and 8 hours and require a heavy dose of management and intricate coordination of player roles.” (Williams et al 2006, 346) As argued above it thus again seems as if the raiding guilds focused on defeating difficult encounters are the ones providing the best opportunities for voluntary associational aspects of the game.

⁹The end-game occurs when a character reaches the highest level and cannot earn any more experience thus the players start to focus more on attaining better gear or in-game achievements.

That raiding guilds requires the most organisation and needs formalized events in order to achieve their common goal is not surprising, since raiding requires cooperation of around 10-25 individuals¹⁰ it is harder and more uncommon, even though it sometimes happens, to spontaneously put together a well-function group of random people that can manage the hard end-game content without the organisation of a guild. However, WoW have as discussed above since the new expansion implemented perks that gets attained by the guilds when they are playing together in groups, from which I therefore can hypothesise, should provide even more incentive for the guilds to formalize and schedule group events than before (Blizzard Entertainment 2011). Hence I conclude that the organised scheduled meetings or events aspect of voluntary associations should indeed be fulfilled by the guilds of MMORPG:s and especially in WoW.

4. Entry-threshold and Exit-threshold

Common for many guilds, which speaks in favour of an entry-threshold, is that members that join a guild usually have a “trial”-period during when first joining (Williams et al 2006, 347). During this “trial”, if the member is not active enough or behave in a satisfying social manner he or she will get kicked out. However Williams et al (2006) found that getting kicked out from a guild was not generally that common and that people instead when leaving a guild chose to do so by their own initiative. Ducheneaut et al (2006) also argue that Guilds might not be that long lasting and that some players changes guild frequently, which constitutes a serious critique against the effects on trust a guild can have since Putnam argue that when exits are made too available trust will most likely not be created (Putnam 2000, 177) . However I would argue that when entries are somewhat hard it should make exits somewhat less easy since once you get in you have invested a lot of time and effort into joining that guild and would therefore find it troublesome to leave the guild and do a trial-period in a new guild yet again. Another aspect that also can be resembled to the entry and exit threshold of voluntary associations is the discussion about the importance if identity and trust. Ratan et al argues that the “Persistence of identity is important for trust because it allows group members to be associated with their actions” (Ratan et al 2010, 95). Thus if the game can mask the players identity fully then exits from guilds would not be hard at all because then players would just be able to log off from one character and apply to the guild again with another name. However Ratan et al finds that “Although identity within an MMOG may not be extremely persistent because people can change their characters’ names, players typically use one main character over time.” (Ratan et al 2010, 97) Changing a character name also cost real-life currency which also makes it more difficult for the members to change name of their character and thus investing time in a character’s reputation as well as investing time in a guild should be seen as creating relatively strong exit-thresholds. Ratan et al also

¹⁰In earlier expansions of World of Warcraft it was also common with 40-man raids but nowadays all raids have been converted to 10 or 25-man encounters.

concludes that Guilds are particularly good at creating identity persistence and especially when comparing towards other common Internet activities (Ratan et al 2010, 97)

Additionally, in the new expansion of World of Warcraft a new system called “guild reputation” was introduced. Guild reputation is a system where a new member of the guild is not a full member and do not get the perks and spells that full guild-members gets, until he or she has collaborated with the guild for some time. If a player leaves a guild, the reputation falls down to zero and new guild reputation needs to be acquired to get the perks. Therefore, except from investing time in a guild, there now also exist an exit as well as an entry-threshold implemented by the structures of WoW. Thus, I would argue that MMORPG:s and WoW in particular should be seen as having social and structural entry and exit-thresholds strong enough to be able to maintain trust in the same manner as a voluntary association.

5. Face-to-Face interaction

As argued above, previous research has shown that identity can be sustained in MMORPG:s and that also reputation systems are common even though face-to-face interaction is not available through the game (Ratan et al 2010, 96). However the only visual cues existing in most MMORPG:s are by “emotes” that a character can make and compared to real face-to-face interaction those are rather rigid and bound to a few specific emotes. The games in themselves can thus not be argued to have something remotely close to the face-to-face interaction of a real-life voluntary association since the closest you get within the game is text communication between the members and text-communication have been shown to be a relatively weak media compared to face-to-face interaction when it comes to creating generalized trust (Putnam 2000; Ratan et al 2010, 99).

However, Williams, Caplan and Xiong (2007) as well as Ratan et al (2010) found that many players try to off-set the lack of face-to-face interaction within the game by adding voice-communication between the guild-members. Ratan et al argue that “In general, sounds or visual cues added to a communication medium make the interaction seem less distinct from face-to-face communication, thereby facilitating social presence and trust.” (Ratan et al 2010, 99-100) In their studies they find that around 60% of the guilds analysed used voice-communication when raiding and grouping and that indeed seemed to foster trust between the guild-members (Williams et al 2007, 348). Therefore the negative aspects of not having Face-to-Face interaction can, according to the literature, somewhat be off-set by the use of other social cues such as voice-communication and the use of such cues are more common in guilds (Williams et al 2007). Hence I conclude that the game does not provide face-to-face interaction but guilds should be better to off-set the lack of this than other aspects of the game.

6. Heterogeneity

Stolle (2001) argued that “Diverse associational groups are those that unite people of varying education, age, income, status level, gender, and nationality” (Stolle 1998, 507). She has also argued

that diversity in religious beliefs as well as race is important aspects of diversity within a group (Stolle 2001). We will therefore employ Stolle's definition of diverse voluntary associations on the guilds in order to see if guilds can be seen as heterogeneous. From previous literature we can find that MMORPG:s as a whole are not particularly diverse when it comes to age and gender (Williams 2008, 1002; Yee 2006). Williams et al (2006) finds that for the members "Playing together in a guild made it possible for them to get in touch with a broad range of people from different ethnic, socioeconomic, and cultural backgrounds." (Williams et al 2006, 351-352) Thus guilds seem to provide opportunities to the members to meet with a more diverse set of cultures even though the members share a common interest when starting to play. When it comes to religiosity Williams et al (2008) work found that American MMORPG-players are more heterogeneous compared to the population as a whole but that the players at the same time are less heterogeneous when it comes to both education, income and racial ethnicity (predominately white although still 12,4 percent of the players were from another racial ethnicity) (Williams et al 2008, 1003). However in the European setting guilds should have stronger probability to be at least ethnically diverse when it comes to including members from different nationalities, since the European servers includes a lot more different countries than the North-Americans'.

Although many guilds seem to have mixed nationalities (see Appendix H, Table 11) there still exist some guilds that only allow people to join from the same nationality or talking the same language. According to Ducheneaut, Yee, Nickell and Moore (2007) guilds can also be constituted of either real-life friends with strong pre-existing ties that can make them very homogenous in character as well as other guilds that are mostly consisting of strangers (Ducheneaut et al 2007, 839). From Stolle's (2001) measurement of diversity I argue that guilds can be diverse when it comes to religion, nationality and to a lesser extent age, occupation and education. The guilds are mostly however not as diverse when it comes gender. Important to note is that a majority of the findings presented here are from unrepresentative data, ethnological studies or aimed towards MMORPG:s in general and not towards guilds. But since MMORPG:s in general are quite heterogeneous (Williams et al 2008; Yee 2006) it seems plausible to argue that at least to some extent MMORPG:s can provide the players with heterogeneous guilds (Stolle 2001; Uslaner 2002).

7. Horizontality

When it comes to Horizontality mixed evidence in the current research literature is presented, but as in real life associations, there seems to exist both vertical as well as more horizontal guilds. Williams et al writes that "Guilds can have a relaxed atmosphere with corresponding structure ("the tree house"), or they can be highly structured, hierarchical organizations ("the barracks")." (Williams et al 2006, 354). Thus guilds represent both sides of voluntary associations and Williams et al also find that a majority of the players wanted strong leadership that could enforce the norms and the policies of the

guild but in an “impartial, strong” and “consistent” way (Williams et al 2006, 350). Therefore, even in the hierarchical guilds, the leader had to give the players an equal chance of cooperation and some influence over the policies in the guild since otherwise the leaders had to face mass-exits of members and even some cases of mutiny (Williams et al 2006, 350). Although a majority of guilds have a pretty strong leadership with a *Guild Master* making most decisions with the help from a few elite-members, Williams et al still withholds that “centrality also does not necessarily imply authority.” (Williams et al 2006, 355). Which is in-line with what Putnam argues about most associations, “even bowling teams have captains” (Putnam 1993, 173-174) and therefore, just because leadership seems to be strong and sought after it does not necessarily mean that the groups are vertical.

In other words, the majority of the guilds seem to be run through a strong leadership by a few specific members but the call for responsiveness from the rest of the members is still present. But according to Williams et al there also exists more casual guilds that chooses more ad-hoc approaches to their leadership and can thus be argued to be of a more horizontal kind. However, Williams et al argue that most of these guilds do not in the same manner strive towards high-end goals within the game as the more vertically organized guilds (Williams et al 2006). I therefore argue that guilds do not provide the ultimately most horizontal of voluntary organizations but the reciprocal relationship between the members can still be argued to exist.

8. Engagement level

In Ducheneaut et al’s (2006) study they find evidence that players who belongs to guilds seems to play more and group more than other non-guild-members and they interpret this finding as guild-members putting more social pressure on the players to commit to grouping and raiding with the guild (Ducheneaut et al 2006, 411). Therefore guilds seem to have both a commitment and activity-level threshold for their participation. Players belonging to guilds seem also to be a lot more prone to actually participate in the cooperation that is raiding, which is also supported by the self-selected panel data used in this thesis, where 72.2 % of the guild members claim to raid 6 or more hours per week whereas only 18.5% of the none-guild members raid 6 hours or more (see table 13 in Appendix H). Therefore I argue that guilds indeed seems to be a setting where commitment and activity is fostered and sustained and membership in a guild does in no way seem to be similar to the passive membership of organisations such as Greenpeace, which Putnam argued to not create the same amount of generalized trust as active associations (Putnam 1995, 665; Putnam 2000). Hence I conclude that the engagement criterion indeed seems to be satisfied by Guilds in MMORPG:s.

9. Large amounts of time spent in-group

Uslaner argued that people do not spend enough time in voluntary associations in order for them to have an effect on something as primary and essential as the formation of generalized trust. So how do

guilds hold up to that argument? Research on MMORPG:s have shown that people indeed spend “significant amounts of time” in the game with Williams et al arguing that the average of time spent by MMORPG-players is 25.86 hours per week (Williams et al 2008, 1002; Ratan et al 2006). As argued before, most of the players in the game also tend to spend more time in groups when belonging to a guild and guild members also tend to play more than non-guild members (Ducheneaut et al 2006; Yee 2006) and thus guilds can indeed be seen as having fulfilled the interaction variable of “large amounts of time spent in-group” and should thus corresponds to a strong case against the critique aimed by the social capital proponents to why voluntary associations cannot affect generalized trust.

Summary

To summarise we take another glance at the Analytic framework presented earlier.

Figure 2. Analytic Framework for Voluntary associations in World of Warcraft

Voluntary association		Satisfied?
1.	Regular social interaction	Yes
2.	Common goal	Yes
3.	Organised scheduled meetings or events	Yes
4.	Entry- and exit-threshold	Yes
5.	Face-to-Face interaction	No
Interaction effects		
6.	Heterogeneity	Yes/No
7.	Horizontality	Yes/No
8.	Engagement-level	Yes
9.	Large amounts of time spent in-group	Yes

We can in Figure 2 see that five out of the six conditions for what constitutes a voluntary association is fully satisfied. Only one condition is not supported by the guilds in MMORPG:s and that is face-to-face interaction. However with the disagreement in the social capital-literature about the importance of face-to-face interaction in mind (Wollebaek & Selle 2002; Lee & Lee 2010) I still conclude that Guilds in MMORPG:s and especially in World of Warcraft seem to have a strong voluntary associational aspect to them, especially the guilds aimed at achieving high-end goals within the game such as raiding or PvP-ing. The voluntary associational aspect should also be more pronounced in World of Warcraft after the last expansion were team-work in guilds were put more into focus by the structure of the game (Blizzard entertainment 2011) thus making an analysis of World of Warcraft even more interesting. When it comes to the interaction effects I conclude that two of the conditions can be fully satisfied with the other two at least partially satisfied. By controlling for these interaction

effects when doing the analyses of the guilds' impact on generalized trust I can come close to an answer if the mechanism within a voluntary association can create generalized trust.

5. Method

In this section the research design, data, operationalization and hypotheses will be presented which will be employed for the empirical analysis of this thesis.

5.1 Research Design

Previous research on social capital and voluntary associations has been plagued by weak methodologies that do not address the endogeneity-problem. This have resulted in appeals for new research that use methodologies that can measure whether voluntary associations create generalized trust or if trust is merely a prerequisite for joining them (Stolle and Rochon 1998; Stolle 1998; Nannestad 2008). Putnam for instance argued that "Only careful, even experimental, research will be able to sort them apart definitively." (Putnam 2000, 137) and Stolle claims that "Ideally one would track association members over time in order to filter out the separate influence of group membership on trust, controlling for self-selection effects." (Stolle 2003, 25).

My research design will therefore employ a panel-study of World of Warcraft-players as well as a control-group of non-players which will measure the generalized trust level of the respondents at two different points in time, (T_0) and (T_1). Ideally one would choose an experimental approach for measuring effects, but since I will not be able to manipulate all the different social interactions within a game as well as not being able to randomize the different groups into control (non-players) versus treatment-group (players) I choose a panel-study instead (de Vaus 2001, 48-49). I will neither be able to collect a representative randomized sample of players since the cost and technology needed of collecting such a sample are too steep for a master-thesis (see Ducheneaut et al 2006, 408-409; de Vaus 2001, 76-77).

However, for the research design proposed above, there currently is no data-set available that both measures generalized trust over time as well as the different experiences made in the game. Therefore I have recruited a self-selected and unrepresentative panel consisting of people playing World of Warcraft, as well as a control-group of non-players (for more information about the data-sets see the data-section of this thesis). By collecting and recruiting my own data-set I will be in more control of what factors I can measure and can thus include more control-variables as well as internal factors that can affect generalized trust according to the theories outlined in the theory-section of this thesis.

By putting emphasis on the changes in generalized trust between (T_0) and (T_1), instead of the difference in generalized trust-levels between the groups and by "matching" the different groups of players that self-select into my panel, the lack of randomization will not affect my result to the same

extent (de Vaus 2001, 75). The different groups will thus be matched by their gaming attributes and divided into “players who do not raid or belong to a guild”, “players belonging to ethnically homogenous guild but not raiding” “players belonging to ethnically heterogeneous guild but not raiding” “players belonging to ethnically homogenous guild and raiding”, “players belonging to ethnically heterogeneous guild and raiding” as well as a base-line control-group of “non-players” (de Vaus 2001, 44-45). By comparing the changes in generalized trust over time between these groups I should be able to observe if generalized trust can be affected by the different experiences made within the game as well as what mechanisms of a voluntary association that seem to affect generalized trust. Due to measuring generalized trust in two steps I will know the different groups initial trust and this method will thus remove self-selection effects of only high-trusting individuals answering the survey (de Vaus 2001, 79). Another solution to circumvent some of the weaknesses of not being able to randomize the different groups is to collect a larger data-set which have been argued to increase the likelihood of creating a more diverse sample that more easily can be matched into different groups. (de Vaus 2001, 44-45, 118-119). Therefore the aim for the panel was to recruit a large sample of players.

Gerber et al argue that panel-studies generally have a problem of not addressing control-variables that change during the measurement period and thus any change in generalized trust measured between (T_0) and (T_1) might be due to an unknown external factor influencing the measurement in (T_1) (Gerber et al 2010, 722). But, since I also have a control-group of non-players I will be able to compare the changes of the World of Warcraft-players to another group to see if there exists any general trend affecting (T_1). But to further overcome this critique it is important for my study to include as many control-variables as possible that are proposed to affect generalized trust and which might change during the time-frame of the study.

By using panel-data it should provide me with a more nuanced knowledge of how and if MMORPG:s affects generalized trust, thus hypothesising that the different groups should accumulate different rate of changes depending on what group they belong to. Another problem created by the short time-constraint of a master-thesis will be that the time-span of the two surveys will be relatively short, with the time between (T_0) and (T_1) only ranging from 3-4 months. This constitutes a problem because the dependent variable might not be able to be affected by such a short intervention as 3-4 months. However, since the amount of time spent in-game by most of the players in my panel was relatively high (See Table 14 in Appendix H) I can presume that changes actually might be able to happen and if indeed changes are found it might instead prove that the effects by the experiences made in World of Warcraft are even more pronounced than what first was hypothesised.

In order to conduct my analyses I will use an OLS regression analysis using generalized trust in (T_1) as dependent variable and generalized trust in (T_0) as independent variable. By doing this instead of using

a difference variable between (T_1) and (T_0) I will enable the influence of generalized trust (T_0) on generalized (T_1) to vary and at the same time controlling for other factors that might have affected generalized trust (T_1), leaving us able to more accurately ascertain the effects of the different independent variables (Markus 1979, 46-47). The model will thus look like this:

Figure 3. Regression equation

$$(T_1)_{\text{Generalized trust}} = \alpha + \beta_{(T_0)\text{Generalized trust}} + \beta_{\text{Dummy (groups of players)}} + \beta_{\text{External factors}} + \varepsilon$$

Where α is the intercept and ε is the error-term. In this model, if there is no change between (T_1) and (T_0) in generalized trust the β of (T_0) generalized trust will be close to 1 and none of the other dependent variables will show significant effects (Markus 1979, 47-48). If on the other hand there has been a change in generalized trust, generalized trust (T_0) will not be able to describe all of the variance of the regression-line and by controlling for factors that might have affected it I will be able to find if and what other variables creates the change in generalized trust. By merely analysing the differences in means we might also miss the regression effect on the change in trust since a stable mean in (T_0) to (T_1) might hide the fact that some high-trusting individuals' have experienced large negative changes while many medium trusting individuals' have gained smaller positive changes, thus actually a "true" change in generalized trust have happened (Markus 1979, 46-47).

5.2 Data

For my research design I will use two different panel data-sets. The first panel consists of self-selected World of Warcraft-players and the aim for this panel was to create a large sample of players in order to make it more diverse. Therefore I contacted players in a multitude of places online. Both in-game, in forums, by blogs and by newsletters to computer-interested persons (For more information about the recruitment see Appendix D). This panel yielded in 2540 respondents from a multitude of countries in the first wave which generated in 1385 e-mail addresses as well as 280 character-names by which I could contact the players for the second part of the survey. This led to 658 respondents answering both surveys which, when discounting natural-losses of players not being able to be contacted, led to a retention rate of 49.1 %, which is quite low. As de Vaus points out this might become a problem since the people opting out from answering the second survey might do so due to specific factors hence making the dropout systematic (de Vaus 2001, 75-76). Using the individual's that dropout will thus make the analysis systematically unreliable and therefore I choose to do my analyses on only the individual's that answered both steps. But due to the large number of participants in the first wave, a panel of 658 respondents is more than enough to conduct my analysis. Since my research design aimed for two steps of the survey I launched the first step the same day as the new World of Warcraft-

expansion Cataclysm was launched, the 7:th of December 2010 and kept the recruitment of respondents open until the 18:th of January. The second step was launched at the 19:th of April 2011 and closed at May 9:th 2011.

The second panel is also self-selected consisting of Swedish politically interested respondents answering web-based questionnaires about politics, opinion and democracy, created by the Multidisciplinary, Opinion and Research-group (MOD) of Gothenburg University called “M-panelen”. (Dahlberg, Lindholm, Lundmark, Oscarsson and Åsbrink 2011). In this panel I have been able to ask a question to 1000 respondents at two different points in time about Online Role-Playing Gaming phrased like this, “In the last twelve months, how often have you played any of these types of games?” with one alternative being “Online Role-Playing Games” with answers ranging from “Never” to “Daily”. This panel is especially beneficial for my research design since it went out during the same time as I recruited the panel of World of Warcraft-players. The first step of this panel containing my question was conducted between the 15:th December 2010 to the 11:th of January 2011 and the second step was conducted between the 28:th of March and 13:th of April 2011. I use this data-set to create a control-group of non-players by excluding every individual claiming to play any type of online games. In addition this data-set also have a multitude of other attitudinal as well as background variables that will work as control-variables in my analyses. (For an ethical considerations on the collection of the panels’ see Appendix C)

Using this panel constitute however somewhat of a methodological problem because it only consists of respondents from Sweden while my World of Warcraft sample is consisted of people from all parts of the world. Thus any change found in generalized trust in the control-group might be due to events occurring only nationally in Sweden. However, to my recollection no such events occurred during the course of this panel-study that where so profound and local only to Sweden too actually be able to change all individuals generalized trust. And by doing a regression-analysis on the World of Warcraft data-set using country as dummy-variable using Sweden as factor-group and difference in generalized trust as independent variable, only two countries were significantly differently affecting generalized trust, Malaysia and Slovenia, and were thus excluded from the analysis. (For the panel’s country-composition see Appendix D – Table 5)

5.3 Operationalization

In previous generalized trust-literature there has been an on-going debate about how to actually measure generalized trust and if the “standard” trust question (*Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?*) actually is a valid measurement for something so abstract as trust towards strangers (Nannestad 2008, 417; Uslaner 2002, 4; Dinesen 2010). Nannestad writes that, “comparisons of the levels of generalized trust

between individuals, groups, countries, or time periods risk being seriously misleading unless the borders of the moral community to which the respondents implicitly refer when answering the generalized trust question are approximately the same and stable across individuals, groups, countries, and/or points in time.” (Nannestad 2008, 418) This could constitute a problem, especially for my study since I measure generalized trust across many countries as well as different groups of individuals. However, through empirical studies during the last decades researchers have found that indeed the standard trust question seem to have a strong test-retest stability as well as measuring something as abstract as “trust towards people in general” and that the trust-question is also interpreted in the same manner even by the minority groups of society (Dinesen 2010b; Nannestad 2008, 419 and 427). Additionally using the standard trust question allows me to compare the results to previous generalize trust-research and thus it will be used for study as well and I will use a 11-point scale ranging from 0 “You can't be too careful” to 10 “Most people can be trusted” in order to increase the chance of getting a more nuanced and detailed picture of the changes in trust.¹¹

For the particularized trust measures of World of Warcraft-players, I will use a similar measurement as the generalized trust-question by using the same 11-point-scale but with the additions, “*In World of Warcraft*, would you say that most players can be trusted” and “*In your guild*, would you say that most *guildmates* can be trusted”. This in order to move the question away from the general and in to the particular aspects of trust by naming the groups to evaluate but still be able to compare the answers with the generalized trust question by having the same scale.

Since I do not have data on guilds per se I will not be able to measure the diversity of guilds in terms of gender, income or education-level, hence the diversity of guilds will be operationalized only on the account of mixed nationalities within the respondent’s guild with the question “Does your current guild have members from different countries?” hence the variable will be called *heterogeneous* or *homogeneous guilds*.

From the experience-based theories on generalized trust we also know that possible bad experiences might affect generalized trust and that “(...) victims of crime and violence (...) express reduced social trust” (Putnam 2000, 138). Therefore we include a measure of being subjected to “getting your World of Warcraft-account hacked, compromised or stolen” since that might be able affect that individual’s generalized trust as well as in-game trust.

In order to operationalize the “scope of engagement” as well as the rate of active engagement in other voluntary associations my study contains a question about membership in “Church or religious organizations”, “Sport or recreational organization”, “Art, music or educational organization”,

¹¹Many studies do however employ this measure in addition with two other generalized trust measurements but since I needed to keep the survey relatively short to get a higher response-rate and most studies, relies on only this single measure I choose to use only one variable to measure generalized trust (Uslaner 2008)

“Labour union”, “Political party”, “Environmental organization”, “Professional association”, “Humanitarian or Charitable organization” and “Consumer organization” with the answering alternatives “Yes, active member”, “Yes, but inactive member”, “No, not a member”. This question is however not present in the M-panel and can thus only be included when discussing in-game mechanisms.

When it comes to the literature on what affects generalized trust I will measure *Optimism* in the same manner as Uslaner (2002) does, although here only with a single measurement, by using a question about “satisfaction with your life as a whole” with a 11-point scale ranging from 0 “Completely dissatisfied” to 10 “Completely satisfied” by the line of reasoning “that satisfaction with your personal life translates into a general sense of optimism.” (Uslaner 2002, 97). Since I only have one measurement of optimism and thus excluding some of the other important measurements that are usually included I need to take the results about the impact of Optimism with some caution. However, if the optimism-theories are correct no difference in either optimism or generalized trust should be obtained and thus including any more measures of optimism when discussing change in generalized trust is redundant. However, in the M-panel data-set no measurement of Optimisms is available.

In the analysis I will also include a measurement of egalitarian income distribution, the Gini-index from the World Income Inequality Database report ranging from 0 (perfect equality) to 100 (perfect inequality) in order to control for if the income inequality can explain the level of generalized trust as proposed by Uslaner and Rothstein (Teorell et al 2011, 149; Rothstein and Uslaner 2005; United Nations University 2008; Uslaner and Brown 2003).

In order to measure the rate of restrictive upbringing I will use the same measurement as Dinesen use for his study of immigrants in the Danish community but with a question-battery adopted for a more general population (Dinesen 2010, 100-101). Thus the question was formulated as, “At the age of 16, where you allowed by your parents to: “Go to the movies without family members”, “Go to parties at school/ at work”, “Go to discos (or similar event)”, “Sleepover at friends your parents haven't met”, “Have a Girlfriend/Boyfriend”, “Play computer games online” and “Play any kind of sport or be a part of any kind of organization of your choice” with the answering alternatives “yes”, “no”, “do not know”. As Dinesen I have also constructed an index of these different questions that ranges from 0 “least restrictive upbringing” and 1 “most restrictive upbringing” (Dinesen 2010, 100). This measurement is however not present in the M-panel data-set.

A measure of confidence in institutions is also not present in the M-panel but is available for the World of Warcraft-players. I will measure it in the manner as Rothstein and Stolle (2007) using a similar question to the World Value Survey-question, “Now I am going to name a number of organizations/institutions. For each one, could you tell me how much confidence you have in them”

but instead of World Value Surveys 4-point scale I use a 5-point scale ranging from 1 “Very much confidence” and 5 “Very little confidence” (World Value Survey 2005). By doing a Principal Component Analysis I find that the same dimensions as Rothstein & Stolle proposes also exist in my data-set and three indexes ranging from 0-1 where 0 means very little confidence and 1 is very much confidence are made, *Political/biased institutions*, *Neutral and Order institutions*, and *Power-checking institutions* are constructed (Rothstein & Stolle 2007, 11) (For more details, see Appendix E).

Social Identity will be operationalized by the cross-sectional measurement of ethnic fractionalization employed by Alesina et al from the Quality of Government Data-set (Teorell et al 2011, 71). This measurement represents how likely it is for two randomly selected persons to be of different ethno-linguistic groups in a country and ranges from 0 to 1 and closer to one means more fractionalized country (Teorell et al 2011). Finally I will also include age and gender as demographic control-variables in the analysis.

5.4 Hypotheses

In this section I will present the different hypotheses that will be used to analyse the extent to which World of Warcraft can affect generalized trust.

5.4.1 Hypotheses of experience and its effect on generalized trust:

If the experience-based trust theories are correct in their assumptions that experiences of social interactions can affect generalized trust, then World of Warcraft, where players invest large amounts of time into the game as well as are encouraged to cooperate with other people, should be able to produce positive changes in generalized trust. Thus: *Hypothesis H1: World of Warcraft-players will have accumulated more generalized trust compared to the control-group.*

Being subjected to a new type of experience should also create stronger changes, thus: *H2: New World of Warcraft-players will have accumulated more generalized trust compared to other players.*

5.4.2 Hypotheses of social capital-theories and their effect on generalized trust:

Since I previously found that guilds in World of Warcraft can be seen as voluntary associations and membership in associations, by the social capital-theories, are ascribed a stronger influence on generalized trust than non-membership, I can hypothesise that: *H3: Players playing with a guild will have accumulated more generalized trust compared to players that are guildless.*

Since heterogeneous voluntary associations also are believed to affect generalized trust more positively than homogenous associations then: *H4: Players in ethnically heterogeneous guilds will have accumulated more generalized trust compared to players in homogeneous guilds.*

Social capital-theories also claim that cooperation between individuals is important for the creation of trust and since raiding requires cooperation between many individuals then: *H5: Raiding players will have accumulated more generalized trust compared to non-raiding players.*

Since some social capital-theories also argue that active participation in voluntary associations should generate more generalized trust than passive membership then: *H6: Players raiding with a guild will have accumulated more generalized trust compared to non-raiding guild players.*

Lastly the social capital theories theorise that particularized trust should somehow be bridged towards generalized trust then: *H7: Change in in-game trust should generate change in generalized trust.*

6. Analysis

In this section I will present the empirical findings from the panel-study of World of Warcraft-players and the control-group.

6.1 Experience and its effect on generalized trust

First off I will analyse whether experiences actually can affect generalized trust and try to come closer to an answer for: *“To what extent can generalized trust be affected by the experiences made in a Massively Multiplayer Online Role-Playing Game?”*.

From Model 1 (see table 1) we can see that indeed generalized trust seem to be affected significantly different amongst the players compared to the control-group.¹² If experiences affect generalized trust I hypothesised (H1) that players should have generated more generalized trust in (T₁) than the non-players. However after four months of play-time an overall decline by -0.568 in generalized trust can be surveyed and thus the experiences made in WoW seem to actually affect generalized trust negatively rather than positive. However if it is indeed the experience of playing WoW that stands for this negative effect then we should, as the hypothesis 2 proclaims, see a stronger effect on generalized trust by new players. And, in Model 3 we see that new players indeed have more than three times as strong negative change (-1.568) than the veteran players (-0.495) when comparing to the control-group. This speaks further for my interpretation that experiences actually can affect generalized trust since new experiences should affect one more. Even though the negative effect of participating in the World of Warcraft-community seems to be diminishing throughout the years the effect still continuously seem to drive down generalized trust and for those playing three years or more the negative change is -0.495 compared to non-players (see model 3).

¹²In the different analyses only those players who still play World of Warcraft in (T₁) will be included, thus excluding all players who claim to no longer play World of Warcraft since they cannot any longer be argued to be affected by the mechanisms in the game and will thus distort our results.

Table 1. Multiple OLS-Regression Analysis of the dependent variable Generalized trust (T1) showing the effects of different independent variables on both World of Warcraft-players as well as a Control-group with standard errors in parenthesis. Data taken from the M-panel and WoW-democracy panel-survey.

	Model 1 Hypothesis 1, Game affects Generalized trust?	Model 2 Hypothesis 1, Game affects Generalized trust? (control- variables)	Model 3 Hypotheses 2, New World of Warcraft- players are affected more?	Model 4 Hypotheses 2, New World of Warcraft-players are affected more? (control- variables)	Model 5 Social capital- theories on different types of players
Generalized trust (T ₁)					
Generalized trust (T ₀)	0.656**** (0.0264)	0.656**** (0.0265)	0.656**** (0.0263)	0.657**** (0.0264)	0.658****(0.0265)
Playing World of Warcraft? (1 = Yes 0 = No) Dummy variable playing World of Warcraft	-0.568**** (0.109)	-0.676**** (0.175)	-	-	-
Control-group	Factor-group	Factor-group	Factor-group	Factor-group	Factor-group
New Players (0-12 months)	-	-	-1.581**** (0.335)	-1.699**** (0.364)	-
Medium Players (1-2 years)	-	-	-0.602*** (0.221)	-0.738*** (0.265)	-
Veteran Players (3 or more years)	-	-	-0.495**** (0.115)	-0.608**** (0.177)	-
Dummy-variable for World of Warcraft-mechanisms					
Playing without a guild and not raiding	-	-	-	-	-1.113*** (0.348)
Playing in a homogeneous guild but not raiding	-	-	-	-	-0.846** (0.361)
Playing in a heterogeneous guild but not raiding	-	-	-	-	-0.694*** (0.228)
Playing in a homogeneous guild and raiding	-	-	-	-	-1.022**** (0.268)
Playing in a heterogeneous guild and raiding	-	-	-	-	-0.538*** (0.198)
Dummy-variable hacked					
Been subjected to hacking of the World of Warcraft- account? (1 = Yes 0 = No)	-	-	-	-	0.0591 (0.157)
Stable control-variables					
Social Identity	-	-0.362 (0.524)	-	-0.425 (0.522)	-0.505 (0.531)
Income equality	-	0.0175 (0.0129)	-	0.0187 (0.0129)	0.0190 (0.0130)
Age	-	-0.0000807 (0.00431)	-	-0.000736 (0.00430)	0.000175 (0.00433)
Gender (1 = Man 0 = Woman)	-	-0.0666 (0.121)	-	-0.0432 (0.120)	-0.0858 (0.121)
-	-	-	-	-	-
Constant	2.769**** (0.225)	2.436**** (0.479)	2.767**** (0.224)	2.405**** (0.477)	2.404**** (0.482)
R ² -adjusted	0.468	0.467	0.473	0.451	0.468
N	927	927	927	927	927

Comment,* p<0.05, ** p<0.01, *** p<0.001 Standard errors in parenthesis. For further details about the variables, see the Operationalization-section of this thesis.

All of these effects also remain significant when controlling for the different control-variables that were measured in both the control- and the player-group (see Model 2 and 4) and none of the control-variables had any significant effect on generalized trust. Hence I can conclude that generalized trust indeed seem to be affected by experiences which affirm the theories presented by the experience-based theories on trust.

But what kinds of experiences in World of Warcraft are affecting the generalized trust? One plausible answer to why the effect is more pronounced in the beginning could be that most players during the first year are in the so-called levelling phase of the game and according to Ducheneaut et al (2006) this phase is mostly exercised on a more individual basis and cooperation with other players are less regular. After this initial phase the players usually have reached the highest level and are starting to raid and participate in the more voluntary associational-like environment of guilds. If the assumptions made by the social capital-theories are correct, that participating in voluntary associations and cooperation between individuals should foster generalized trust, then I should find a less pronounced negative effect of playing WoW for the players that raids or belongs to guilds compared to playing alone. The next logical step for this analysis is therefore to analyse the mechanisms proposed by the social capital-theories on World of Warcraft to see if they can off-set or worsen this detrimental effect on generalized trust.

6.2 Social capital-theories and their effect on generalized trust

By creating a dummy variable that matches the players in mutually exclusive categories depending on how they play World of Warcraft I will analyse to what extent they affect generalized trust. In Model 5 we see that the different groups that are proposed to affect generalized trust all are significantly negatively affecting it (see table 1)¹³. Thus no matter what type of group you belong to in World of Warcraft the net-effect of playing is still negative. However, when returning to the hypotheses of the social capital-theories I hypothesised that players playing in a guild should have generated more generalized trust compared to not being part of a guild (Hypothesis H3). When comparing the effects on generalized trust (T_1) of guildless players to players in a guild I find that the guild-players overall seem to have a less pronounced negative effect (see model 5). In other words, if you do not belong to a guild the average effect on generalized trust (T_1) compared to the control-group is -1.113 while for the guild-players the negative effect ranges from -1.022 to -0.538. These results indicate then that, even though the net-effect of playing WoW is negative compared to the control-group, playing in a guild off-set some of the overall negative effects. In other words, belonging to a voluntary associational-like

¹³By doing a BLUE-test of the regression in Model 5 I find that none of the variables in the model suffer from autocorrelation with a Durbin-Watson d-coefficient of 2.057. The model also does not suffer from multicollinearity with an average VIF-value of 1.77 nor heteroscedasticity (See figure 1 in Appendix F.) thus leading us to conclude that the beta-coefficients as well as the significance-levels are not over- nor underestimated.

environment is better for generalized trust even though the overall bad experience of playing WoW still remains stronger.

As for hypothesis H4: *Players in ethnically heterogeneous guilds will have accumulated more generalized trust compared to players in homogeneous guilds* I derive from model 5 that compared to the control-group, players from heterogeneous non-raiding guilds have a lower negative effect (-0.694) on generalized trust than the players in ethnically homogenous non-raiding guilds (-0.846). This effect becomes even more pronounced when comparing heterogeneous raiding-guilds (-0.538) to homogenous raiding-guilds (-1.022). It therefore seems as diversity is a prerequisite for fostering generalized trust rather than cooperation. Therefore hypothesis H6: *Players raiding with a guild will have accumulated more generalized trust compared to non-raiding guild players* is not supported. Rather diversity seems to be the strongest factor of fostering generalized trust. This is made even clearer by hypothesis H5: *Raiding players will have accumulated more generalized trust compared to non-raiding players*, where I find that players belonging to a homogeneous raiding-guild experience a -1.022 change in generalized trust compared to -1.113 for non-guild members and thus it is only to a small degree better to belong to a raiding guild than to not raid¹⁴. I conclude therefore that raiding and cooperation within WoW is not an aspect that seems to foster generalized trust.

However, when analysing the impact on generalized trust by guilds that are both heterogeneous and raiding I find that the effect is somewhat even less negative (-0.538) compared to the heterogeneous non-raiding guilds (-0.694) (Model 5). In other words, combining diversity with cooperation seems to off-set the negative effects of playing WoW even further and thus active participation in diverse associations seems to be more positive for the fostering of generalized than just inactive participation in heterogeneous associations. Important to note however is that in the analyses above the different groups are not tested between each other but only compared to the control-group and thus I cannot safely argue that the difference between the groups are significant. This will therefore be addressed further down by an analysis comparing the different groups of World of Warcraft-players only.

What I can however conclude this far is that the experiences made in WoW seem to shape generalized trust even after a so short time-period as 4 months and that those experiences affect generalized trust negatively. I have also found indications that the mechanisms presented by the social capital-theories exist and that participating in voluntary associational-like environment does seem to off-set the otherwise strong overall negative experience of playing WoW, at least when those associations are of a heterogenic kind. I therefore find indications for Stolle's (1998) claim that diverse voluntary associations should be better at fostering generalized trust and by participating in guilds that are both diverse as well as requiring active participation reduce the overall negative effect of playing WoW. In

¹⁴ Since not belonging to guild and still raiding winded up in almost the same individual's as belonging to a guild and not raiding I choose to see all the non-guild members as non-raiders.

these regressions I do however not find any support for the Social identity- or Income equality-theories and neither age or gender influence the change in generalized trust (Putnam 2007; Uslaner 2002) I also find that being subjected to the negative experience of having your World of Warcraft-account hacked or compromised is not significant and thus it seems as if the social interactions in-game is what drives down generalized trust.

Since I was not able to measure all the variables proposed to affect generalized trust in the control-group I will not be able to control for the mechanisms proposed by the generalized trust-literature when including those respondents. Therefore I need to analyse only the World of Warcraft-players in order to explore if the changes found in the previous analysis actually is a result of changes in other factors such as institutional trust or Optimism.

6.3 Social capital-theories and their effect without the control-group

By analysing the different mechanisms on only the World of Warcraft-players I find that none of them are significantly different from each other when it comes to their influence on generalized trust (T_1) when using heterogeneous raiding-guilds as factor-group (see table 2 Model 6). However, when including the control-variables a significant difference between homogeneous raiding-guilds and heterogeneous raiding guilds emerges¹⁵ while the other types of World of Warcraft-players remain insignificant (Model 9).¹⁶ Thus, in Model 9, homogenous raiding guilds show a -0.555 more negative effect on generalized trust compared to heterogeneous raiding guilds. Hence I make the conclusion that indeed heterogeneity in combination with active participation are prerequisites for a group to affect generalized trust while the same conclusion cannot be made for the other groups since they lack distinct difference from heterogeneous raiding guilds. Important to note here is however that the overall negative effect of the experiences in WoW still remains and only a part of the change in generalized trust can be explained by the voluntary associations within the game.

When it comes to the control-variables we can from Model 7 see that restrictive upbringing does not present with a significant effect but because of the many missing-values in that variable the information in models including the Restrictive upbringing-variable will be somewhat unsteady. I will therefore choose to exclude it from the rest of the models.

¹⁵The reason for the significant effect to only show when including control-variables might be due to the relationship being suppressed and since Model 9 includes more control-variables I choose to ascribe more importance to that model than model 6.

¹⁶By doing a BLUE-test of the regression in Model 9 we also find that none of the variables in the model suffer from autocorrelation with a Durbin-Watson D-coefficient of 1.973. The model also does not suffer from multicollinearity with an average VIF-value of 1.39 nor heteroscedasticity (See figure 2 in Appendix F.) thus leading us to conclude that the beta-coefficients as well as the significance-levels are not over- nor underestimated.

Table 2. Multiple OLS-Regression Analysis of the Dependent variable Generalized trust (T1) showing the effects of different independent variables on World of Warcraft-players with standard errors in parenthesis. Data taken from the WoW-democracy panel-survey.

	Model 6 World of Warcraft-mechanisms only	Model 7 Only control-variables	Model 8 Only control-variables without restrictive upbringing	Model 9 World of Warcraft-mechanisms and control-variables without restrictive upbringing
Generalized trust (T ₁)				
Generalized trust (T ₀)	0.604*** (0.0429)	0.552*** (0.0547)	0.622*** (0.0415)	0.624*** (0.0416)
In-game trust (T ₁)-(T ₀)	-	-	0.300*** (0.0413)	0.303*** (0.0416)
Guild-trust	-	-	-	-
Dummy-variable for World of Warcraft-mechanisms	-	-	-	-
Playing without a guild and not raiding	-0.533 (0.364)	-	-	-0.119 (0.344)
Playing in a homogeneous guild but not raiding	-0.440 (0.390)	-	-	-0.305 (0.365)
Playing in a heterogeneous guild but not raiding	-0.133 (0.237)	-	-	-0.250 (0.224)
Playing in a homogeneous guild and raiding	-0.451 (0.284)	-	-	-0.555* (0.267)
Playing in a heterogeneous guild and raiding	factor group	-	-	factor-group
Dummy-variable for having your account hacked	-	-	-	-
Never been hacked	-	-	-	factor-group
Been hacked	-	-	-	0.112 (0.188)
Hacked last three months	-	-	-	0.552 (0.343)
Control-variables	-	-	-	-
Optimism	-	0.0872 (0.0580)	0.0332 (0.0470)	0.0494 (0.0477)
Change Confidence in Political institutions (normalise)	-	-0.794* (0.349)	-0.748** (0.270)	-0.707** (0.272)
Change Confidence in Order institutions	-	-0.0941 (0.326)	0.0548 (0.261)	0.0496 (0.264)
Change Confidence in Power-checking institutions	-	-0.282 (0.326)	0.115 (0.240)	0.0689 (0.242)
Stable control-variables	-	-	-	-
Voluntary association member	-	0.125 (0.313)	0.186 (0.244)	0.176 (0.245)
Voluntary association active member	-	0.510* (0.275)	0.514** (0.220)	0.508** (0.223)
Restrictive upbringing	-	-0.201 (0.698)	-	-
Social Identity	-	-0.325 (0.729)	-0.691 (0.559)	-0.844 (0.568)
Income equality	-	0.0142 (0.0180)	0.0236 (0.0139)	0.0263 (0.0140)
Age	-	0.0227 (0.0160)	0.0123 (0.0113)	0.0179 (0.0116)
Gender (1 = Man 0 = Woman)	-	-0.00738 (0.314)	-0.0178 (0.239)	-0.0361 (0.242)
Constant	2.684**** (0.313)	2.057** (0.812)	1.392** (0.619)	1.282** (0.652)
R ² -adjusted	0.338	0.340	0.442	4.445
N	386	274	386	386

Comment,* p<0.05, ** p<0.01, *** p<0.001 Standard errors in parenthesis. For further details about the variables, see the Operationalization-section of this thesis. Voluntary association is excluding church-goers due to membership being mandatory in some countries.

From Model 8 (see table 2) I, when analysing only the control-variables' influence on generalized trust, find significant positive effects from in-game trust and being an active member in a Voluntary association. One step higher in in-game trust therefore seems to create 0.3 steps up in generalized trust which would speak in favour of Hypothesis H7: *Change in in-game trust should generate change in generalized trust*. However without being able control this value towards a control-group I will have a hard time to determine the causal inference whether or not trust in-game is affecting generalized trust or if it is the change in generalized trust that is affecting the in-game trust. With the engagement in voluntary associations I do however know that the membership comes before the change and therefore yet again strong support for the claims made by both Putnam (2000) and Stolle (1998) that generalized trust seems to be fostered by active participation in voluntary associations exist (with positive change of +0.508). Wollebaek & Selle (2002) argued that passive membership also affects generalized trust but that theory does not get supported by this study, only active participation in voluntary associations seems to impact generalized trust positively. I also found a significant negative relationship from change in Confidence towards Political institution but as with in-game trust we should be more careful when interpreting this effect since I cannot exclude the possibility that it is in fact the change in generalized trust that is driving down the Confidence in Political institutions. Additionally no significant effects for change in confidence in order or power institutions can be found. I do not either find any significant effects for social identity, optimism, income inequality, age or gender which is in line with what was expected from these variables and neither a significant effect of being hacked were found.

However there is one aspect that needs to be discussed before moving over to the conclusion of this thesis and that is face-to-face interaction. As shown previously I found that WoW could not be seen as having any means of face-to-face interaction but that social capital-theories claimed that face-to-face interaction was a necessity for creating generalized trust. In this study I have shown that generalized trust can be affected but that it was unexpectedly negatively affected by the experiences made within World of Warcraft. Thus it could be argued that this negative effect is due to the fact that these players generally lacked face-to-face interaction and that they maybe opt-out more from other social interactions in real-life that provided them with the proposed essential face-to-face interaction. In other words, maybe the players become misanthropes because the game makes them more introvert and unsocial in real-life? But, as can be read in Appendix A - I find that Online Role-Playing Gamers would not have been more engaged in other voluntary associations had the game not existed and therefore WoW seems to be merely a complement to the players' voluntary associational engagement. Monika Djerf-Pierre also find in her analysis of Online Role-Playing Gamers that players in general are not more socially isolated than other people in their generation and rather the game seems to be a complement to other social activities (Djerf-Pierre 2010, 429). Since I in my analysis also found that

the negative aspects of World of Warcraft can be somewhat off-set by playing in heterogeneous raiding guilds (Table 2 Model 9) this speaks in favour of that generalized trust can be affected by interactions even without face-to-face interaction. Thus the negative effect experienced when playing World of Warcraft, even though I do not empirically test this, can be argued to be because of the experiences happening within the game rather than social isolation.

7. Reiteration and Conclusion

This thesis tried to find an answer to the question “*To what extent can generalized trust be affected by the experiences made in a Massively Multiplayer Online Role-Playing Game?*” in order to shed some light on the controversy between experience- versus cultural-based theories on generalized trust.

By employing a panel-study that measured generalized trust at two different points in time with four months between the two measurements, I found that participation in the game World of Warcraft (WoW) affected generalized trust negatively when comparing players to non-players. This negative effect were also more pronounced for new players (0-12 months played) while none of the control-variables showed significant influence on generalized trust, thus indicating that it actually was the new experiences made in the game that affected the generalized trust. I therefore argue that indeed generalized trust is not something that remains stable throughout an individual’s life but changes in accordance to the experiences we get subjected too. Thus the cultural-based theories seem to be wrong in their assessment that experiences do not affect generalized trust.

However since this thesis also aimed to test the social capital-theories on a new and possible strong case I asked the question: “*To what extent can generalized trust be affected by the participation in a voluntary associational-like environment in a Massively Multiplayer Online Role-Playing Game?*”

In order to answer this question I first needed analyse whether or not MMORPG:s and World of Warcraft could be argued to have a voluntary associational aspect to them and since no definition of what a voluntary association should be consisted of I constructed an analytical framework for what criterions a group should fulfil in order to be seen as a voluntary association. By using this framework I found that MMORPG:s, and especially WoW, could be argued to have a voluntary associational-aspect to them represented by the so called guilds. Consequently, by comparing different ways of participating in guilds as well as not being member of a guild I found a significant difference between players actively participating in heterogeneous raiding guilds compared to players actively participating in homogeneous raiding guilds, where the homogenous raiding guild-players suffered a stronger negative change than the heterogeneous ones. Thus this study found support for the Social capital-theories’ argument that voluntary associations can affect generalized trust. However that trust, in line with Stolle’s (1998) theory only seems to be fostered in associations that provide its members

with opportunities to meet people dissimilar to one another. Hence in order for voluntary associations to affect generalized trust more positively, they require both active participation as well as diversity of its members. Important to note however is that not all of the negative effect of playing WoW could be off-set through participation in a heterogeneous guild and thus the net-effect of playing WoW remained negative. This also means that some of the negative effect remained unexplained even after employing the Social capital-theories on the game. In addition I could not either find clear support that just playing in a guild would decrease the negative effects of WoW when comparing the different players to each other and hence my hypotheses based on the social capital-theories only managed to explain some parts of the overall negative effects of playing WoW. We therefore need more thorough and detailed research on what experiences players actually get subjected to within the game which should help us to explain why we see such negative effects of gaming.

One potential explanation to why the effects of playing World of Warcraft are negative might be due to the lack of face-to-face interaction that these kinds of games suffer from. Even though previous research have shown that MMORPG-players do not tend to be more socially isolated than other people of their age or that players would not have been more engaged in voluntary association had the games not existed, I cannot in this study exclude the fact that the negative effects of playing World of Warcraft actually might be due to the respondents in my data-set decided to opt out from other social activities during the period surveyed here. Hence their generalized trust might have diminished due to less face-to-face interaction and more social isolation. What I can however conclude is that the negative effects of playing World of Warcraft can to some extent be off-set by participation in heterogeneous raiding guilds and thus empirical evidence that generalized trust actually can be affected somewhat positively even without face-to-face interaction exist, which to some extent contradicts the assumptions made by Putnam about the importance of face-to-face interaction (Putnam 1995, 665; 2000, 176)

As previously argued the timing of this study seemed to be excellent since it was conducted parallel to the release of the new World of Warcraft-expansion Cataclysm, during which many players increase their play-time dramatically and also tend to play more in groups since new content is released. This seemed to provide the Social capital-theories with an excellent case in order to be able to obtain strong effects of playing WoW and I actually found that, for players playing WoW for 3 or more years, the negative change in generalized trust still seem to persist, which might seem somewhat illogical since then continued gaming would continue to decrease trust until it closed in on zero. We therefore need to continue our research about World of Warcraft and add more steps to the panel in order to find out if playing World of Warcraft is continuously driving down generalized trust or if the negative change wanes off when things get back to “normal” some time after the expansion-release. Additionally we also need to analyse whether or not this new generalized trust stabilizes around its new lower value or

returns to the previous level as players start to play more casually again. Since my data builds upon an unrepresentative sample this research cannot generalize the findings to the general population and future research should therefore aim to collect a representative sample in order to further our knowledge if this effect on trust is actually measured for all types of players. What we however can conclude is that generalized trust, at least in the short-term, is affected by the experiences players make by playing World of Warcraft.

In my research I also found that active participation in other voluntary associations in real-life affected generalized trust positively while passive membership and the other control-variables remained insignificant. Thus my research lends even further support for the Social capital-theories and the conclusion that voluntary associations can affect generalized trust.

Therefore by subjecting the social capital-theories to a new and strong case and by employing a strong research methodology I found that the “inner workings” of an association actually seem to affect generalized trust and that the social capital-theories are something that needs to be taken into account when discussing generalized trust. Perhaps a majority of the current generalized trust-literature have been too quick to dismiss the role that social interactions and voluntary associations might have on generalized trust? Maybe previous literature just have been analysing the wrong kind of associations?

In conclusion, Uslaner once wrote that: “If trust is culturally transmitted, suggestions that we can boost it by joining more clubs or watching less television (Putnam 2000) may be, in Samuel Johnson’s characterization of second marriages, ‘the triumph of hope over experience.’ ” (Uslaner 2008, 739) In my research I have found that this “hope” actually seems to be more than just simple hope since we now have at least some evidence that both experiences and voluntary associations can affect generalized trust when being measured on a strong case. Therefore, not only does our usage of the Internet seem to affect us but also what we actually do on the Internet seems to affect important societal factors and thus I would argue that it is essential for political science to move further into the digital arena in order to really understand why citizen’s behave like they do.

The most important knowledge we take from this thesis is therefore that, by participation in a Massively Multiplayer Online Role-Playing Game we are not only participating in an imaginary world, we are also alternating our evaluations of the real one.

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9. Appendix

9.1 Appendix A – What would Online Role-Playing Gamers have done without the game?

Since Internet has previously been shown to have detrimental effects on just social capital and create social isolation (Kraut et al 1998; Nie & Erbring 2002) it is important to find out if Online Role-Playing Games can show the same negative effects on the individual's civic lives as Internet-usage

have been argued to have. Would the players have been more engaged in voluntary associations without the game or is the game merely a complement to people already active? Putting it in metaphorical sense; are the people who are gaming together also bowling alone? This question is particularly interesting to answer since we are dealing with a previously, at least for political science, fairly unexplored case when analysing Online Role-Playing Games. Therefore we do not know who the gamers are in terms of voluntary associational engagement and this is vital to us since we need to know if they have substituted real-life face-to-face interaction in voluntary associations to associations in MMORPG:s without the important face-to-face interaction (Putnam 2000). If we do not analyse this engagement any positive change in trust created by the game might still prove detrimental if they could have gotten more trust from previously being more engaged in real-life voluntary associations. Previous research tells us that Internet can be seen as detrimental to both real-life social relationship and social capital-formation, but fails to address different aspects of the Internet (Nie & Erbring 2002; Uslaner 2000). Dimitri Williams measured the impact of a MMORPG on social capital, defined as real-life personal relationships, family ties and civic engagement and thus come close at finding out what gaming does to real-life voluntary associational engagement. He finds that gaming can have positive effects on club meeting attendance but negative on other social capital measures. (Williams 2006b) But, since he does not measure change in voluntary associational membership and the time-frame of the study was only 1 month this positive effect might be just because it happened to be more meetings for the gamers that particular month. In an attempt to create representative data for who plays online role-playing games, Williams, Yee and Caplan (2008) collected data from 7000 respondents in an MMORPG called Everquest 2 (Williams et al 2008, 999). There they find that the typical American gamer is male, on average 30 years of age, predominately white, more educated and diverse in their religion than the rest of the population. Williams et al (2008) also argue that all the time spent in game have to take time from somewhere else and thus that the “use of new technology may come at expense of personal relationship and community involvement” (Williams et al 2008, 994). But they fail to address the issue if games actually affects that community involvement and it is therefore essential for us to map who the players are and how engaged Online Role-Playing Gamers are in voluntary associations and what they would have done in terms of voluntary associations had the game not existed, in order to know if the games are a supplement to people already engaged, an arena for social interaction that the individual’s otherwise would not have gotten or ultimately a substitute for face-to-face engagement in voluntary associations.

To find out what kind of population in terms of attributes as well as voluntary associational- and trust-level we are dealing with when analysing Online Role-Playing Gamers we will use the data from the Riks-SOM survey 2007 and 1996. The Society Opinion and Media-institute (SOM) annually perform a nation-wide survey with respondents from Sweden using a systematic probability sampling from the

Swedish Population and Address Register. Using systematic probability sampling improves the chance of getting a well-functioning and representative data-material. The national SOM-survey includes a wide variety of questions about both society and media which seems beneficial for including variables that suit my research questions. The survey is conducted by post to 2841 respondents the year 1996 and 3436 respondents the year 2007. The SOM-data from 2007 is especially beneficial to use for my analysis since they include questions about Internet habits and online gaming, as well as a variety of background- and society questions.

In the Riks-SOM survey from Sweden of 2007 the question “How often during the last 12 months have you done the following on the Internet, Played an Online Role-Playing game?” with the answers ranging from “Once the last 12 months” to “Daily”, is asked. This sample gives us a unique opportunity to analyse who the Online Role-Playing Gamers are in terms of attributes and civic engagement as well as comparing those players to the Swedish population. By doing this comparison we can find what attributes that distinguish the players from the non-playing part of the population and use these attributes to theorize who might have been playing Online Role-Playing Games 1996 had the games existed. To find these attributes we use an inductive method where we analyse all the variables in the Riks-SOM 2007, excluding variables that was not measured in the Riks-SOM 1996¹⁷ as well as variables that are mandatory for one to play (for example having or surfing on the Internet). This method is in no way a “perfect” method to compare how people were before they started playing. However I do not have availability to, or for that matter ever heard of a cross-sectional panel-data that asks questions about gaming, voluntary associations and control variables that stretch over a 15 year time-period. The method that will be employed for this analysis thus constitutes the next best thing after having a panel-data of the same individual’s. Another point to be made is that most people who play online role-playing games were too young to answer surveys at 1996, with the average gamer being 24,5 years old, thus this constitutes the only way to compare online role playing gamers before the games existed.

By doing dependent mean-comparison t-tests between Online Role-Playing Gamers and the rest of the population on all the variables¹⁸ in the data-set we find four significant attributes that distinguishes players from non-players and we can therefore argue that those constitutes traits for who the gamers

¹⁷ I chose the year 1996 on the count on that MMORPG:s was not yet popularized and it was the first Riks-SOM survey that included questions on both generalized trust and engagement in voluntary associations, thus representing the best possible data-set for my comparison.

¹⁸ The variables tested and proved insignificant were, Education, Household income, Satisfied with the municipality, government, European Union and Landstinget, Subjective general health, reading Newspapers and Left-Right Ideology. Current occupation dummy-coded for student turned out to be significant, with gamers being more likely to still be Students, but will not included in the model since the age-trait would catch the same individual’s anyways. Also excluded from the analysis are time-dependent variables such as political factual questions such as questions about different parties and party-leaders as well as leisure-activities since those might as well also be interesting to analyse how they are affected by Online Role-Playing.

are (See Appendix G Table 8 and 9).¹⁹ These traits are Age, Gender, Relationship status and Political Interest.²⁰ In other words, a typical player is less politically interested, younger, single and is a more often male than its non-playing counterpart. Thus we use these attributes to determine our sample of “potential” players from the data-set from 1996 by matching each individual of player, from 2007, to the sample from 1996. This will be done by taking the sample of online gamers in Riks-SOM 2007 (53 respondents) and finding individuals’ with the exact same answers on the “traits” and “attributes”-questions in 1996 sample that are found to be significantly different than the rest of the population. This will give us a sample that have the same characteristics as the players from 2007 and can thus be argued to constitute a sample of individuals that represents what the players would be like and what they would have been doing in terms of civic engagement and generalized trust if Online Role-Playing games did not exist. The next step is to determine whether the individual’s with the same attributes as the players would have been engaged in voluntary associations had the game did not exist

Appendix Table 1. Two-sample mean-comparison t-test of membership in voluntary associations between players and non-players. Data taken from Riks-SOM 1996 and 2007

Two-sample t test with unequal variances		Ho, diff = 0		
	N = 108	Mean	T	p
Riks-SOM 1996**	Potential Player	0,7314815		
	Non-player	0,8306403		2,263 0,0255
Riks-SOM 2007**	N = 54			
	Player	0,685852		
	Non-player	0,8217968		2,1135 0,039
Riks-SOM 1996 and1997	N = 162			
	Potential players	0,7314815		
	Players	0,6851852		-0,6024 0,5482

Comment: * p<0.1 ** p<0.05, *** p<0.01 Membership in voluntary associations is based on the question: “Could you tell me whether you are an active member, an inactive member or not a member of that type of organization?” where 1 means member of one or more voluntary associations and 0 means not a member in a voluntary association.

From Appendix table 1 we can see that the potential players derived from the 1996 SOM-data, by doing a mean-comparison two-sample t-test of engagement-level, are significantly less engaged in voluntary associations than the rest of the population. That is also the case for the actual players of 2007 and thus both groups of real and potential players are significantly less engaged in voluntary associations than their non-playing counter-parts (See Appendix Table 1). However, when doing an

¹⁹Why not logistical regression? I choose not to test the attributes by a logistical regression mainly because we are interested in what traits or attributes the players have and not what affects the players to have those traits. In other words, we are not interested to know why players seems to be politically uninterested (due to the fact that they are young and men) mainly that they are politically uninterested men.

²⁰Both age and gender have by previous literature been shown to be a trait of online role-playing gamers (Williams et al 2008). However Williams et al found that players also are more well-educated as well as more rich which in my sample does not seems to be the case.

independent two-sample mean-comparison t-test with unequal variances between the voluntary associational engagement of the players if the game did not exist and the engagement when the game existed I find no significant difference between the two groups and can thus theorize that the game does not create more or less engaged individuals (See Appendix Table 1). In other words, the game does not seem to make individual's more likely to engage in their civic community neither does the game make individual's more socially isolated when it comes to voluntary associations. Merely, online role-playing games seems to be a complement to other activities and not an obstacle for real-life social interaction. Thus Online Role-playing games can be used as a factor for individual's to complement their relatively civically unengaged lives with a voluntary associational-like interaction they otherwise would not have gotten.

The most interesting knowledge we take from all this is therefore that, when analysing Online role-playing games and generalized trust we are dealing with a significantly less voluntary associational engaged group of people that are complemented with a new experience that could be argued to be voluntary associational-like. And thus, by studying World of Warcraft and Online Role-playing games, we are analysing voluntary associations' effects on a group that both the civic engagement literature as well as its opponents have previously overlooked, namely a group that is more disengaged in voluntary associations and that thanks to the game might get the benefits from joining a voluntary associational-like environment that they without the game would not, to the same extent have gotten, elsewhere. The next natural step for our analysis is thus to cover whether or not Online role-playing gamers are more or less trusting than other groups in society in order to know if we are dealing with a population that joins a voluntary associational-like environment even though they, according to much of the contemporary literature, are not prone to do so as low-trusting individuals.

Generalized trust-levels of gamers in a representative data-set

In order to deal with Stolle's critique that high-trusting individuals seems to self-select into voluntary associations and this might also be the case for MMORPG:s we need to research whether the gamers are, as other voluntary association-members, high-trusting (Stolle 2000). From Appendix Table 2 we can see that the players from 2007 have significantly lower generalized trust than their non-playing counterparts. It therefore seems as if we actually have a self-selection effect of low-trusting- rather than high-trusting individuals into the game. When analysing the difference in trust between potential players 1996 and players 2007 I find that individual's, when the game exist, are for some reason lower trusting than they would have been without the game. This stands into contrast to what some of the literature argue about Internet users, DiMaggio et al writes, "More recent surveys (online and off) have revealed that Internet users have higher levels of generalized trust and larger social networks than nonusers" (Dimaggio, Hargittai, Neuman and Robinson 2001, 316). Online Role Playing Gamers is

thus different to the rest of the Internet-users in terms of generalized trust as well as different to other people that join voluntary associations.

Appendix Table 2. Generalized trust and Online Role-Playing Gamers. Data taken from Riks-SOM 1996 and 2007

Two-sample mean-comparison t-test with unequal variances

		Ho, diff = 0			
		N	Mean	T	p<0.05
Riks-SOM 1996	Potential Players	1564	7,247525		
	Non-players	101	7,622123	1,6348	0,1049
	Players	1342	6,660954		
Riks-SOM 2007**	Non-players	51	5,941176	2,53	0,0144

Comment: * p<0.1 ** p<0.05, Generalized trust is based on the question, "In general, would you say that most people can be trusted or that you have to be careful in dealing with people" Where the scale ranges from 0 - "Have to be very careful" and 10 - "Most people can be trusted".

From Appendix table 2 we can see that the generalized trust level of all people in general have diminished the last 15 years in Sweden but something have created an even stronger down-slope for the Online Role-Playing Gamers than for the rest of the population, under the assumption that the potential players here indeed constitute a representative sample of players before the games existed. The question whether his difference in trust is due to the participation in an online gaming environment, or if it is mainly other factors that have changed over time, that have affected young single politically interested men more and thus made online gamers less-trusting, is not possible to answer with a cross-sectional data set. Moving our analysis to the panel-data will therefore be our next step. I can however, from the analysis of cross-sectional data, argue that when analysing Online Role-Playing Games we indeed are dealing with a more low-trusting and civically disengaged part of the population, which outlined in the social capital chapter of this thesis constitutes a new and interesting case for political science as well as for the proponents and opponents of the social capital-theory on trust.

9.2 Appendix B - The MMORPG World of Warcraft

As stated above MMORPG stands for Massively Multiplayer Online Role-Playing Games and its main functions are developing a character by fighting a big variation of computer controlled monsters. In this overview I will try to briefly explain the most important game mechanics that distinguishes MMORPG:s from other games as well as paint a picture of some of the different game-play mechanisms these kind of games are built upon.

MMORPG:s are often set in a fantasy world but mimicking of the real world as well as future apocalyptic settings are also common. Today MMORPG:s are according to White (2008) engaging

over 47 million players every month and the multitude of games and gamers are increasing for every year. A majority of the current MMORPG:s have advanced 3D-graphics and games like World of Warcraft alone has 12 million subscribers paying a monthly fee of around 15 US-Dollars. One important difference between MMORPG:s and regular video games are that the worlds in MMORPG:s are *persistent* and thus remains even if the character logs off. In other words, even when you do not play, the in-game world continues to exist and events will continue to occur and players still logged on will be able to participate in those events (Yee 2006). In MMORPG:s there is often different means of communication available for the players, for example different emotes for the character mimicking emotional expressions but most commonly communication happens through in-game chat-channels that are ranging from private to global chat-channels that all the players of the same faction can read. The largest of MMORPG:s in terms of population is World of Warcraft (WoW), which is set into an alternate fantasy world inhabited of for example Humans, Gnomes, Orcs and dwarfs, drawing a lot of inspiration from fantasy-novels such as *Lord of the Rings* (Ducheneaut et al 2006).

When one first starts to play WoW, as with most MMORPG:s, one chooses a character as well as a server²¹ to play on. When choosing a character one first needs to decide what faction as well as what race to play. Secondly the player need to decide between what class to play, for example Priest, Warrior, Mage, Warlock and so on and these different classes have different sets of skills as well as strengths and weaknesses. The different class-abilities are developed to complement each other so that the different classes are benefitted by joining forces with each other, which creates an encouragement for team-play within the game (Nardi & Harris 2006, 150).

Levelling Phase

The first part of the game includes a lot of time investment into a character where you, by killing monsters and completing quests gain experience and develop your character.²² This phase is often referred to as the *Levelling phase*. This part of the game is not specific to MMORPG:s but has for a long time been present in various Single-player games where you develop a character in order to reach the final *Boss*. What makes MMORPG:s special is thus not the fact that you develop a character but rather that you develop your character in a setting where you encounter and cooperate with other individual's in order to develop your character. Ducheneaut et al writes that "What makes a difference for many is apparently the shared experience, the collaborative nature of most activities and, most

²¹Servers generally hold around 20 000 characters and is a way to divide the big population into smaller proportions which releases some of the strain on the server traffic and speeds up traffic for the players (Nardi & Harris 2006) . Players cannot generally interact with characters on different servers and for the most part you are bound to cooperate with characters that belong to the same server.

²² According to Ducheneaut et al (2006) the average time invested by the players on a single character in World of Warcraft is 10.2 hours per week and according to Yee (2006) the average time spent on a MMORPG is 21 hours per week.

importantly, the reward of being socialized into a community of gamers and acquiring a reputation within it.” (Ducheneaut et al 2006, 407) It is thus the social part of the game that, according to the gamers makes MMORPG:s special. The levelling phase described above is however generally seen as completed on a more socially isolated level where only random encounters with other players as well as cooperation with those happen (Ducheneaut et al 2006, 410).

End-game phase and Raiding

Once a character reaches the highest level²³ the so called *end-game phase* begins. Most MMORPG:s have a level cap where you, when reaching it, cannot gain any more experience and thus the game instead focuses on killing and completing the most difficult of encounters in the game. In the end-game phase the individual’s focuses on developing their character in terms of gears, that can be collect after completing a difficult encounters together with other players, for example by killing a strategically difficult monster, often referred to as a *Boss-encounter*. The groups needed to kill a Boss are generally between 5, 10, 25 or 40 players and encounters that require 10 or more are generally referred to as *Raids*. Raiding constitutes the most difficult encounter in terms of cooperation and is one of the most time-consuming aspects of World of Warcraft. In the data-set I have collected the median time spent on raiding was 6-9 hours a week with over 17 % claiming to raid more than 12 hours a week (see Appendix Table 13).

Player-versus-Player combat

Another aspect of the game is the *Player-versus-Player* combat or *PvP*. Since the game divides the players into two competing factions depending on what race you choose for you character you are throughout the game encountering and fighting that other faction. There are however servers that allow players to choose to opt out of fighting each other but most people tend to play on servers where these two factions compete and kill each other throughout the game. Although PvP-combat is also present during the levelling-phase it is all the more common at the end-game phase of the game. Player-versus-Player combat is played in many different settings, ranging from 1 versus 1 duels up to large battleground fights consisting of teams of 40 players or more. PvP-combat is also dependent on cooperation but the individual aspect of it is more pronounced at is far less likely to be organised than raiding. However, since the launch of the current World of Warcraft-expansion Cataclysm, PvP-combat is more encouraged to be grouped with a new system of *Rated battlegrounds* where players battle each other in 10-man teams and are given rewards for defeating another team. In other words, the encouragement of team-play by both raiding and PvP-combat is highly encouraged in the end-game phase.

²³ During the writing of this thesis the highest level was 85 and have been preceded by maximum level being 80 between November 2008 and December 2010, level 70 between January 2007 and November 2008, level 60 between November 2004 and January 2007.

Deaths in MMORPG:s

Lastly, and quite fitting, we will end the discussion with one other important aspect of MMORPG:s and that is how death is dealt with. For most MMORPG:s and in World of Warcraft specifically, death is only temporary. When a character dies in World of Warcraft he or she is moved to a graveyard from where the character needs to move as a ghost to its corpse in order to come to life and be able to participate in world again. Thus characters only suffers a small temporary disadvantage when dying, however this disadvantage is clearly enough to arouse agitation as well as the desire to keep ones character alive and might thus constitute an aspect that creates conflicts within the game (Klastrup 2008, 144).

9.3 Appendix C – Ethical consideration when collecting the panel-data

For the ethical part de Vaus as well as the Swedish Research Council presents four aspects that needs to be fulfilled when conducting research, namely *voluntary participation*, *informed consent*, *no harm to participants* and *anonymity and confidentiality* (de Vaus 2001, 83-88; Vetenskapsrådet 2002). In both data-sets all participants have been informed that the participation is voluntary and that choosing to withdraw from the study always is an option available. For the panel of World of Warcraft-players all participants were informed that the study was about World of Warcraft and how the players perceived Democracy both in-game and in real-life. De Vaus argues that there are two general ways of getting respondents to participate without using “false advertisement” and those are appealing to people’s altruism or self-interest (de Vaus 2001, 84). The M-panel uses the altruism aspect of encouraging people by asking the participants to participate in order to help develop democracy and opinion-research (Dahlberg et al 2011). In my data-set the players were instead asked to participate in a study that will be used and published for master-thesis and in which “For the first time the players of World of Warcraft will be analyzed, not for the purpose of seeing if their violent behavior differ from that of other people or if they neglect their real life to much, but instead the focus will be on how these players experience democracy!” (Lundmark 2011, Home) which instead taps the self-interest of the players. When it comes to harm, some studies have shown that playing online-games might be detrimental to psychological well-being (Shen and Williams 2011) but since the participation of the study is voluntary as well as the study only contains people already playing the game this study has not in any way constituted any harm to the participants. All participants of the panels are also promised complete anonymity and confidentiality and all the data presented here and published are unidentified so that no-one can track who is responsible for any answers. Thus I can conclude that this study does not suffer from any unethical dilemmas and indeed seems to satisfy the criterions put forward by both de Vaus and the Swedish Research Council about information to the respondent about consent, utilizing of data and confidentiality of the survey. (Vetenskapsrådet 2002)

9.4 Appendix D - The does and don'ts of collecting a survey in an MMORPG

This section will describe how I gathered the respondents to the WoW-democracy panel survey of the winter 2010 and spring of 2011 as well as provide some general guide-lines for how to recruit players to answering surveys. The aim for this survey was to collect as large sample as possible in order to increase the diversity and range of different players. In order to do this I mainly contacted players of WoW by five different methods, In-game, forums, blogs, news on World of Warcraft-focused web-sites and newsletters. But let's start with one of the most important aspects into getting players to participate in a web-based panel, namely the problem of be seen as a legitimate and serious third part in the online gaming world.

Legitimacy-problem

In World of Warcraft every player owns a personal account on which all that players characters are gathered. Therefore the password to that account contains the key to the vast amount of time invested as well as all the in-game currency a player have collected during the years of play. Since in-game currency is a highly valued commodity both in-game and in real-life many people as well as organisations resort to the illegal activity of hacking accounts and stealing the player's in-game currency. This hacking is usually done by so called key-loggers or trojans that are included in different files that, when downloaded, registers and send information about account-name and password to the hacker. Another common hacking-method employed by the hackers is to send out false mails mimicking Blizzard official mails or mimicking a Blizzard employee where the respondent is asked to leave their account-name and password in order to compete in different competitions or in order to avoid banning. Therefore contacting World of Warcraft-players asking about participation in a survey that needs them to click on a link is already an uphill-battle. Therefore it is essential for any research on MMORPG:s to be able to work up a legitimacy amongst the World of Warcraft-players and to seem serious when engaging in conversations with the players. I dealt with the legitimizing problem in mainly three ways.

- Firstly, I created a web-site for the project where information about the survey, the project and about me was written and all respondents were sent there if they wanted proof that I indeed was a serious researcher. This homepage generated during the time of the survey in 5583 hits with the busiest day being 11:th of January 2011 with 863 views and the address was www.wowdemocracy.wordpress.com . On the webpage I also included a picture of me in order to show that I indeed was a real person that they could hold accountable if something where to happen to their accounts after answering my survey.
- Secondly I improved my legitimacy by writing a research blog on, at the time best guild in the world, Paragon's official web-site. On that blog I wrote about my research as well as how the

recruitment was going and when engaging players I explained that they could check that blog out if they did not believe me. Being able to write on an already, in the eyes of World of Warcraft-players, legitimate website was essential for my research and by this blog I generated most of my respondents.

- Thirdly when recruiting players in-game the legitimizing-problem can somewhat be diverted by writing the respondents from a higher-level character. Organisations that hack, sell in-game currency and scam players of their accounts generally take contact with players by low-level characters since they do not bother to invest time in levelling a character that soon will be banned anyways. Therefore when taking contact with players my legitimacy seemed to be a lot higher when writing to them from higher-level characters.

But let's move over to the different recruitment-methods I used.

In-game

The most logical way of getting into contact with World of Warcraft-players is within the game itself. In the game there is a function called /who that when written list 49 different random people currently online on that server. By using this method you can find random people and engage in private-chat conversations with them. To engage into a conversation I wrote the following private message to random players: "Hi, my name is Sebastian and I am currently putting together a web-based panel which aims to uncover how World of Warcraft-players understand Democracy both in-game and in the real world. The first part of the panel consists of a survey that only takes around 5 minutes to answer. Would you find it interesting to participate in my panel? Would be awesome if you did! The link to the survey can be found at wowdemocracy.wordpress.com". I tried different versions of this message with for example one that said that "all your answers will be encrypted and anonymous" which quite unexpectedly did not work at all since it seemed to raise most suspicion of me being a hacker. Writing in private-chats to people did however yield in almost none respondents compared to the vast amount of time that needed to be invested to find and write to players.

Besides writing in private-chats there also exist different server-wide chat channels that become available when your character is within a major city's boundaries. By relaying my message to these chat-channels I recruited more players than in private chats. However using these server-wide chat-channels for other than in-game related information is generally frowned upon and every player can by one click report any player that writes in those channels for spamming and if you get to many reports your account get automatically suspended. Here I really got to notice the legitimacy-problem when writing in such channel with a low-level character got my account suspended in less than 4 minutes after the first message was relayed. Therefore, in conclusion, recruitment by contacting players' in-game is both insufficient and costly compared to other ways of recruitment. However, in order to get

into contact with new players in-game chats are almost the only option except for friend-to-friend recruitment. Therefore I focused most of recruitment in-game to low-level characters. However this yielded in only 20 of the 48 new players (0-3 months) recruited in total thus proving that in-game recruitment was least efficient way of recruiting players compared to the time invested.

Forums

Another recruitment-method that proved more efficient was to write about my project in different World of Warcraft-related Internet forums. In those forums I presented my project as well as a link to the project's website, Paragon's website as well as a direct-link to the web survey. However I do not have reliable information available on how many respondents this recruitment method yielded in but examples of which sites I wrote on are <http://eu.battle.net/wow/en/forum/874698/> www.manafirst.com and www.paragon.fi.

Dreamhack newsletter

Besides these recruitment-methods I was also able to advertise about my research in a newsletter sent out to approximately 50 000 e-mail addresses consisted of computer and gaming interested individuals' in Sweden. Dreamhack is an organization that every year organise the world's largest computer-festival with over 10 000 participants www.Dreamhack.se. This newsletter resulted in around 350 participants that all where Swedish.

News posted about my project

The last recruitment-method and also the most efficient of them all were to get already recognized World of Warcraft and Gaming-sites to write about my project. During the recruitment I had two planned news from two different sites posted and I have also found that some players have written about my research on different forums and blogs. However, the two sites where I was able to plan the news were on the Paragon's official website and the news looked like this: <http://www.paragon.fi/news/world-warcraft-and-democracy-research> the other planned news was on one of Sweden's largest gaming-sites called www.fragbite.se and the news that was posted was on: <http://www.fragbite.se/?articleID=405&page=4>. These two news recruited around 1600 respondents from Paragon's website and around 200 respondents from the Fragbite-news during the 4 days they were on the first page of the news. Both of these news were able to be posted thanks to the contacts I have in the Online Gaming world and was essential for my project in order to recruit a large sample of respondents. However these news as well as the Dreamhack newsletter were, on the contrary to my belief, also the best way to get into contact with different kinds of players although veteran-players with 3 or more years playing World of Warcraft was the largest group recruited with around 1500 of the 2540 recruited had played 3 or more years. I believe this to be due to the fact that many players

recruited their in-game friends to participate in my survey after completed it themselves, I do however have no data to support this hypothesis.

Motivation

In order to provide the players with a motivation to answer my survey I tried to tap their self-interest as gamers by claiming that my research “For the first time the players of World of Warcraft will be analyzed, not for the purpose of seeing if their violent behavior differ from that of other people or if they neglect their real life to much, but instead the focus will be on how these players experience democracy!”. In addition I also made it an option for the players to after participating in the survey announce their guild’s name that I would give credit on the project’s website. Over 658 respondents from 175 guilds chose to accredit their guild in this manner.

Reiteration

After the first step 2540 players had conducted my survey and out of those only 1385 chose to leave their e-mail address and 280 their in-game character names in order for me to contact them for the second part of the survey. 658 of the respondents chose to answer both surveys and out of those 1385 e-mail addresses 34 where incorrect or fakes. Out of the 280 in-game character-names 24 where from US-servers thus rendering it impossible for me to contact them in-game since I only have a European World of Warcraft-account. When also discounting respondents who left their character name but stopped playing the total reiteration of the survey became 49.1 %. Even though the reiteration-level was quite low as well as the project getting a relatively low number of new players as well as players who do not play within a guild I got enough respondents to actually be able to perform my analyses I would consider that this survey-project was as successful as could be with non-existing budget as well as short time-frame of a master-thesis that this project had.

Descriptive statistics for the WoW-democracy panel survey

Appendix Table 3. Frequency-table of gender-distribution. Data taken from the WoW-democracy Panel Survey Step 2 only.

Gender	Frequency	Percent
Male	569	88.08
Female	77	11.92
Total	646	100.00

Appendix Table 4. Frequency-table of Age-groups-distribution. Data taken from the WoW-democracy Panel Survey Step 2 only.

Age	Freq.	Percent	Cum.
10-15	10	1.54	1.54
16-20	190	29.32	30.86
21-25	210	32.41	63.27
26-30	139	21.45	84.72
31-35	46	7.10	91.82
36-40	22	3.40	95.22
41-45	13	2.01	97.22
46-50	13	2.01	99.23
51-55	4	0.62	99.85
55+	1	0.15	100.00
Total	648	100.00	

Appendix Table 5. Frequency-table of Country currently living in. Data taken from the WoW-democracy Panel Survey Step 2 only.

Country	Freq.	Percent	Cum.
Argentina	2	0.31	0.31
Australia	18	2.77	3.08
Austria	4	0.62	3.70
Belgium	8	1.23	4.93
Brazil	3	0.46	5.39
Bulgaria	5	0.77	6.16
Canada	20	3.08	9.24
Chile	1	0.15	9.40
Cyprus	1	0.15	9.55
Czech Republic	5	0.77	10.32
Denmark	26	4.01	14.33
Estonia	6	0.92	15.25
Finland	40	6.16	21.42
France	17	2.62	24.04
Germany	39	6.01	30.05
Greece	8	1.23	31.28
Hungary	3	0.46	31.74
Iceland	2	0.31	32.05
India	1	0.15	32.20
Ireland (Republic)	2	0.31	32.51
Israel	2	0.31	32.82
Italy	3	0.46	33.28
Latvia	2	0.31	33.59
Lithuania	1	0.15	33.74
Macedonia	2	0.31	34.05
Mexico	1	0.15	34.21
Netherlands	21	3.24	37.44
New Zealand	2	0.31	37.75
Norway	16	2.47	40.22
Poland	12	1.85	42.06
Portugal	5	0.77	42.84
Romania	5	0.77	43.61
Russian Federation	3	0.46	44.07
Saudi Arabia	1	0.15	44.22
Serbia	1	0.15	44.38
Singapore	2	0.31	44.68
Slovakia	1	0.15	44.84
Spain	5	0.77	45.61
Sweden	168	25.89	71.49
Switzerland	9	1.39	72.88
Taiwan	1	0.15	73.04
Ukraine	3	0.46	73.50
United Kingdom	41	6.32	79.82
United States	131	20.18	100.00
Total	649	100.00	

Appendix Table 6. Frequency-table of the different groups of Players including the control-group of non-players. Data taken from the WoW-democracy Panel Survey and the M-panel.

Groups of players	Freq.	Percent
Non-players	613	48,6%
Stopped playing	212	16,8%
Playing without a guild and not raiding	27	2,1%
Playing in a homogeneous guild but not raiding	26	2,1%
Playing in a heterogeneous guild but not raiding	89	7,1%
Playing in a homogeneous guild and raiding	54	4,3%
Playing in a heterogeneous guild and raiding	241	19,1%
Total	1262	100,0%

7.5 Appendix E - Operationalization's Appendix PCA

By doing a Principal Component Analysis of the first step of the World of Warcraft-players I cannot find the same strong components as Rothstein & Stolle (2007) but I can however some evidence of the three dimensions they argued to exist (Rothstein & Stolle 2007, 30). By choosing only stronger loadings ($r > 0.35$) and theoretically ascribing confidence in the legal system to the Neutral and Order institutions, even though it loads higher on Political/biased institutions, using the theories from Rothstein & Stolle I construct an index for each of the components (Rothstein & Stolle 2007).

Appendix Table 7 Principal Component Analysis using Varimax with Kaiser Normalization as rotation method on questions about Confidence in different Institutions. Only components over 1 in eigenvalue are presented. Data taken from the WoW-democracy panel survey.

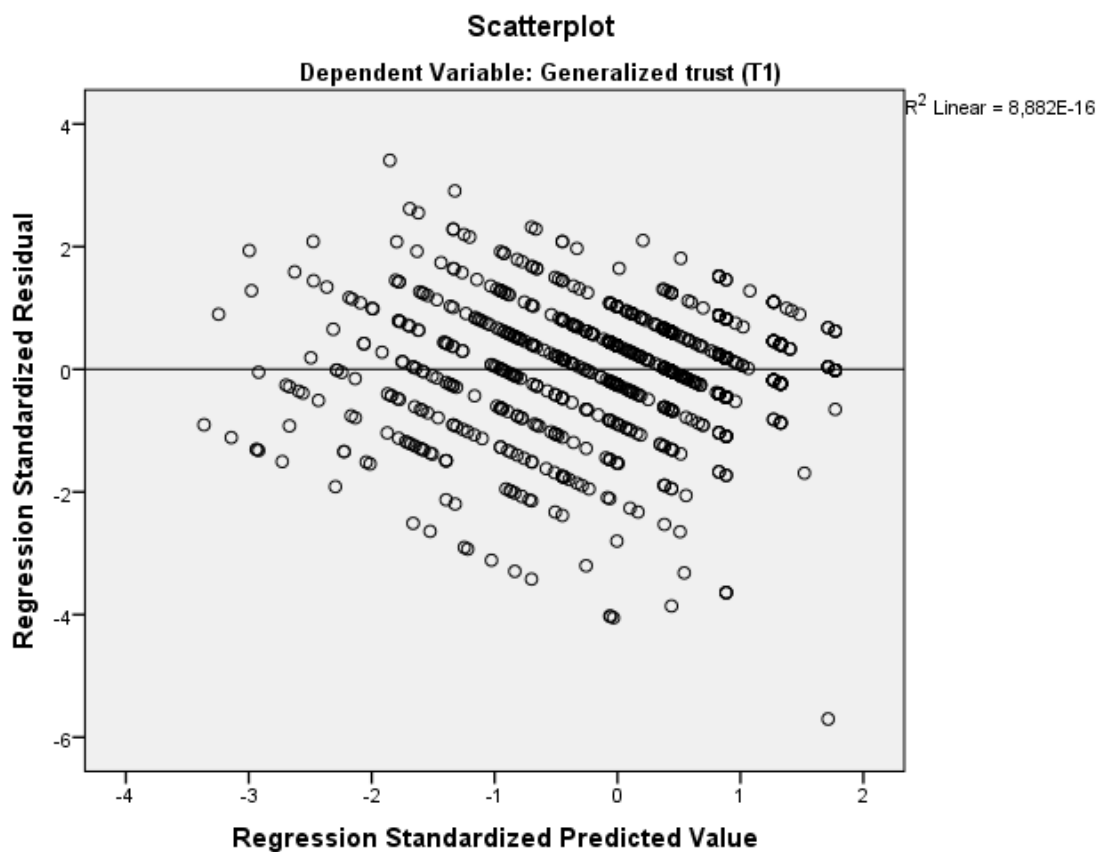
	Political/biased institutions	Power checking institutions	Neutral and Order institutions
The Army	,085	,063	,868
The Legal system	,501	,305	,391
The Press/Newspapers	,148	,886	,152
Television/Media	,189	,846	,167
Labour Unions	,256	,549	-,210
The Police	,335	,128	,670
The Government	,826	,132	,260
Political parties	,863	,179	,038
The Parliament	,857	,186	,126
The Health system	,148	,038	,128
Explained Variance	41.26%	13.01%	10.781%

Extraction Method, Principal Component Analysis. Rotation Method, Varimax with Kaiser Normalization. The question analysed is, "Now I am going to name a number of organizations/institutions. For each one, could you tell me how much confidence you have in them," with a 5 point Likert-scale ranging from "Very little confidence" = 1 to "Very much confidence" 5.

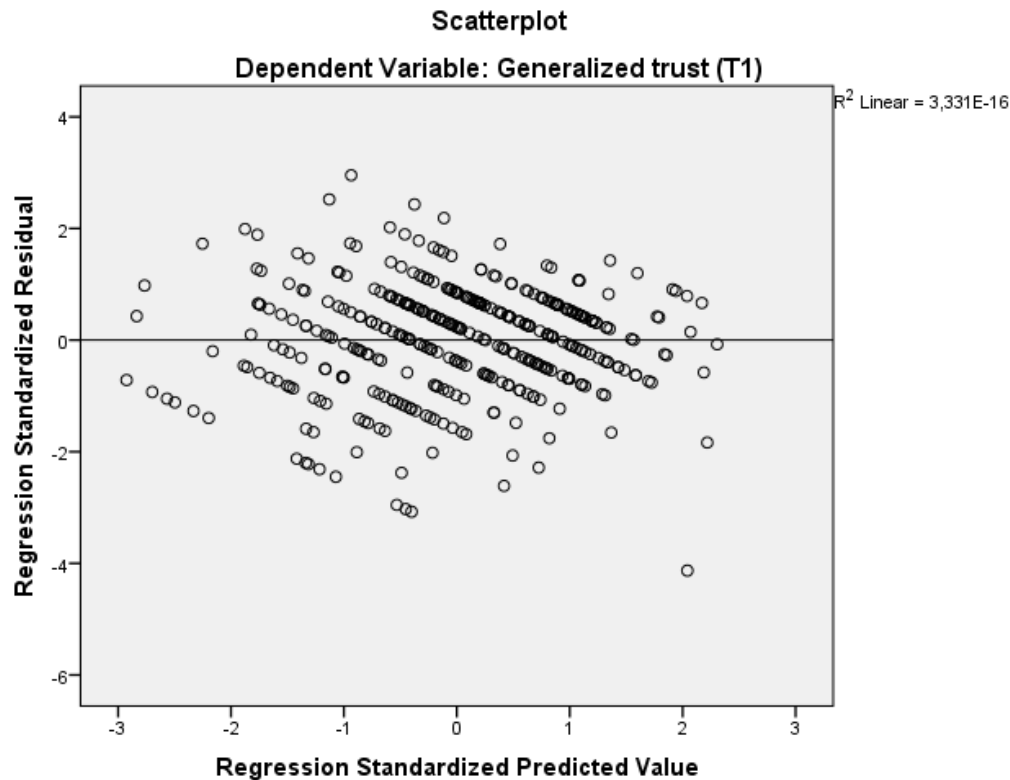
These indexes generate a Cronbach's alpha of 0.868 for the Political/biased institutions and 0.724 for the Power checking institutions but by excluding Labour unions from the index the Cronbach's alpha rises to 0.818 which also fits Rothstein & Stolle's theories better (Rothstein & Stolle 2007) and will thus be excluded. Neutral and Order-institutions generate a Cronbach's alpha of 0,63 which is relatively low and most likely due to that the number of variables only where three but I deem this index useable for this thesis anyways. In addition, on the same index but for change in confidence towards institutions the Cronbach's alpha was 0.729.

9.6 Appendix F – BLUE-test of the Regression-model

Appendix Figure 1. Scatterplot of the Standardized Predicted Values of Regression Table 1 Model 5. Data taken from the WoW-democracy panel survey.



Appendix Figure 2. Scatterplot of the Standardized Predicted Values of Regression Table 2 Model 9. Data taken from the WoW-democracy panel survey.



9.7 Appendix G - Tables for “What would Online Role-Playing Gamers have done without the game?”

Appendix Table 8. Difference in means between individuals playing Online Role-playing games and the rest of the Population from Riks-SOM 2007

Two-sample mean comparison t-test with unequal variances		Mean		Ho: diff = 0	
		Players	Non-players	t	p
N		53	1329		
Political interest****		2,437171	2,811321	-3,5015	0,0009
N		54	1358		
Age***		24,68519	45,49337	13,8113	0

Comment: * p<0.1 ** p<0.05, *** p<0.01, **** p<0.001 Method used: Two-sample mean comparison T-test, unequal variances. Political interest is measured by the question “How interested in politics would you say you are” with a scale ranging from 1 – “Very interested” to 4 “Not at all interested”.

Appendix Table 9. Significance-test between Players and Non-players using the Chi-square-tests. Data taken from Riks-SOM 2007

Dependent variable Dummy for
 Playing Online Role-
 Playing Games or Not playing

	Pearson Chi-Square	Value	df	Asymp. Sig. (2-sided)
Relationship status***		44,039^a	3	,000
Gender***		30,351^a	1	,000

Comment: . * p<0.1 ** p<0.05, *** p<0.01, **** p<0.001 Relationship status is measured by the question "What is your relationship status?" With the answering alternatives being "Single", "Co-habitants", "Married" and "Widow/Widower".

Appendix Table 10. Frequency-table of players engagement in voluntary associations. Data taken from Riks-SOM 1996, 2007

N = 108			
	Potential players	Percent	
Member of a Voluntary Association	79	73,15%	
- Proportion of members Active	39	49,40%	
Not a member of any Voluntary Association	29	26,85%	N = 108
Players 2007 same associations			
Member of a Voluntary Association	34	62,96%	
- Proportion of members Active	22	64,71%	
Not a member of any Voluntary Association	20	37,04%	N = 54
Players 2007 all associations ²⁴			
Member of a Voluntary Association	37	68,52%	
- Proportion of members Active	22	59,45%	
Not a member of any Voluntary Association	17	31,48%	N = 54
Control group 1996			
Member of a Voluntary Association	1388	83,06%	
- Proportion of members Active	702	50,58%	
Not a member of any Voluntary Association	283	16,94%	N = 1671
Control group 2007			
Member of a Voluntary Association	1191	12,30%	
- Proportion of members Active	708	59,45%	
Not a member of any Voluntary Association	167	87,70%	N = 1358

Comment: Table based on the question: "Could you tell me whether you are an active member, an inactive member or not a member of that type of organization?"

²⁴ Excluded from the voluntary associational engagement-level are religious associations on the count that it was not measured in 1996 and in Sweden, up until 1996, all new-born babies with parents in the Swedish church became automatic members which makes the membership in voluntary associations the year 2007 look larger because it is measures religious associations, other scholars have also aimed critique against the possible effects religious associations has on trust and civic engagement (Wollebaek & Selle 2002, 51) and I thus chose to exclude it.

9.8 Appendix H - Tables for the thesis

Appendix Table 11. Frequency-table of diversity of the guilds. Data taken from the WoW-democracy panel survey.

Does your current guild have members from different countries?

	Freq.	Percent
Mixed nationalities	330	80.49
Only from the same country	80	19.51
Total	410	100.00

Appendix Table 12. When you raid, is that mostly with your guild or in random PUG:s (Pick-up groups) Data taken from the WoW-democracy panel survey.

	Freq.	Percent	Cum.
With my Guild	204	89.08	89.08
With PUG:s	23	10.04	99.13
Do not know	2	0.87	100.00
Total	229	100.00	

Appendix Table 13. Frequency-table of the amount of time spent on raiding every week divided by guild-membership. Data taken from the WoW-democracy panel survey.

When you raid, is that mostly with your guild or in random PUG:s (Pick-up groups)	How much do you raid during a typical week?						Total
	never	less than 3 hours	3-6 hours	6-9 hours	9-12 hours	more than 12 hours	
With my Guild	0 0.00	23 7.80	59 20.00	81 27.46	74 25.08	58 19.66	295 100.00
With PUG:s	0 0.00	23 76.67	4 13.33	3 10.00	0 0.00	0 0.00	30 100.00
Not in a guild	13 48.15	8 29.63	1 3.70	2 7.41	1 3.70	2 7.41	27 100.00
Total	13 3,7%	54 15,3%	64 18,2%	86 24,4%	75 21,3%	60 17,0%	352 100,0%

**Appendix Table 14. Frequency-table of Time spent on World of Warcraft per week in general.
Data taken from the WoW-democracy panel survey.**

During a typical week, how much time do you generally spend on World of Warcraft?

	Freq.	Percent
less than an hour	17	3,89
5-10 hours	127	29,06
10-20 hours	139	31,81
20-30 hours	74	16,93
30-40 hours	41	9,38
41 or more hours	26	5,96
more than 60 hours	13	2,97
	437	100