Violence in Virtual Societies

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Peter Judmaier and Jörg Piringer are members of backbone interactive . This group was set up in 1990ies to implement the computer game "The Name of the Brother", a 3D-adventure game against racism and fascism. The group aims to use innovative technology in the field of entertainment and communication to convey content, which furthers democracy and to do so in a way which is both comprehensible and appealing, yet does not distort through over-simplification. Not satisfied with the simulations of societies in computer games "Myzel" is an attempt to model a virtual society as close as possible to real life.

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Abstract

The article shows the development of virtual society in an online game and the influence of violence thereon. It is based on the proof of concept prototype of the game Myzel.

Myzel is a concept for modeling an environment for the creation of a modern society. It creates a very flexible and dynamic environment in which the complex interconnections of economy, politics and society are simulated. Players can develop a virtual society in a self-organized way. The rules of the game should make modeling possible and not only simulation of different society systems. Special emphasis is put on the role how information flows and on media in society. This results into a mixture of simulation game and virtual community software.

The players can set up almost all of the rules of the game themselves and are also responsible for their observance. To model a real society there has to be some form of violence. It is an instrument to prevent the members of society as a last resort from breaking rules. Violence can also force the members to keep the rules. To prevent players from killing just for fun the concept of Myzel tries to make violence as unattractive as possible.

Similar to violence the distribution of power is a very important fact in society systems. In the real world power is an abstract element that consists of a variety of components. An important aspect of power is, that someone can speak for a group because the group will do the things he or she said. In games there are actions that are executed by the computer for a player. For this Myzel has implemented a concept for simulating power.

Another emphasis was laid on the creation of groups of interests like they exist in

contemporary societies. The players should be able to experience the interaction between politics, society and economy and try out different ways of resolving conflicts between the opposing groups.

The proof of concept prototype was tested through four months at the beginning of 2001. During this testing phase the concept of Myzel has been validated and conclusions have been made about emergence and reasons of violence in virtual societies.

Keywords

online game, community game, virtual societies, violence in computer games, simulation game

Introduction

When people are confronted with problems, there are often conflicts of interests among groups in society. However in their daily conflicts most people never get in contact with organized groups of interest. So they must speculate about motives and goals of such organizations. Virtual societies give them the opportunity to get in direct contact with these groups and to see and understand the foundations of society and the evening out of different interests.

The main goal of Myzel is to allow players to easily experience the complex inner workings of society in a playground for democracy. So they can experiment with the various functions and even see the results of antidemocratic developments. To give the players a realistic experience, we choose to create a highly developed society as background for Myzel.

Another aspect of the development and testing of Myzel was violence in virtual societies. On one hand violence is necessary to model real life as close as possible on the other hand a way of implementing has to be found that can prevent violence as an end in itself.

Starting July 2000 backbone interactive developed and tested a *Proof of Concept* (PoC) prototype for Myzel. The PoC was supported by the Ministerium für Bildung, Wissenschaft und Kultur in Österreich (Ministry for Education, Science and Culture in Austria).

The following consists of three parts. In the first part a short overview over the theoretical background of online games, rulemaking and the phenomenon of Player Killing will be given. In the second part the concept of the online game Myzel, which is designed for supporting the rise of virtual societies will be present. In the last part of this article the results of the Proof of Concept of Myzel and some enhancements for this concept especially in the area of violence will be shown.

Online Games and Virtual Societies

Computers had been used very early for gaming. In the beginning a human played against the computer. Later two people could play against each other but these two players had to be at the same place.

The first virtual world was in 1979 a game world called Multi User Dungeons (MUD). It was based on the fantastic-mythical fairy tale world of the role playing game Dungeons and Dragons. In this game a so called Dungeons Master creates a world in which players can

experience complex adventures with their generated characters or roles.

A lot of different kind of worlds followed most of them named after the first. MUDs typically have a text based interface for the internet. Players have to create a game character with textual descriptions of the psychic and physical properties.

Multiple players can be online at the same time in the same virtual room and chat in real time. The game world can be changed by experienced users through a simple programming language. Therefore a MUD is a virtual place with possibility of a direct synchronous communication which is an important base for a community [Kim 2000 p.27ff]. The game world which generates a virtual reality with a specific set of rules is the connecting idea in MUDs.

The first MUDs had no graphical user interface, were not very user friendly and played via internet. Later on they appeared on the Bulletin Board Systems (BBSs), which had no graphics because of the slow data rate of the modems of that time.

With the growing use of the internet and growing bandwidth the descendants of the MUDs got better graphics and interfaces. Their name is now Massive Multiplayer Role Playing Games (MMRPG) and they generate enriched 3D worlds. The fancy graphics enlarges the target group for these games. But many people are still interested in the possibility to build up parallel identities in social structures and not in simulation or the good 3D rendering.

MUDs were the first games that made something like virtual societies possible although the development of those societies were quite limited due to technical reasons and fixed rules. For the build up of virtual societies changeable rules are important.

Rules and Societies

Every society has got rules for living together. Some of these rules are implicit in form of agreements others are explicit in form of written laws. These laws describe the rights and duties of the citizens and are the base of human society. But laws are not immutable. For a working society it is necessary to adapt the rules for their permanent development. For changing rules there also exist rules. These rules of adaptation are also mutable and depend on the process of consents of different interest groups. In this way society is a self-modifying system.

In modern states at least two levels of laws exist. Regular laws contain the paradigmatic rules and those that describe the changing of the law. The last ones are constitutional laws most of the time, which are on the top of a states law system. To change this kind of rules difficult procedures and bigger majorities than changing regular rules are needed. For this reason constitutional rules look like immutable. They are the heart of the legal system and they should be protected from injudicious changes. Constitutional laws do have an affect on regular laws but regular laws are not able to change constitutional laws. [HOFSTADTER 1982]

In real societies there are more than two layers for laws, for sure. But all laws always have a hierarchic order like the two level model shown above. Only a higher priority can change the lower one. The more important the content of a law is to the society, the higher it becomes in the justice system.

Because laws are self-amendment deadlocks are possible. Like in a computer operating system two rules with the highest priority can block each other. But the legal system is not based on immutable rules like in a computer. The easiest way to solve a deadlock in such a self-modifying system is to make a new rule for this special case of deadlock. Another way to handle problems like this is the possibility to interpret language based laws. If a judge

interprets a law wrongly in wording and all involved parties accept the sentence, then no problems will arise in society.

Nomic, developed by Peter Suber, is a game, which only goal is the changing of rules . It should help law students to understand the self-amendment of law. It starts with a small set of rules. Without breaking existing rules players have to make changes or add new rules. Nomic is played round based and the players get points for changes in the rules. [SUBER 1990]

Nomic shows another important aspect regarding the rules in society. If someone does not obey the rules an instance is necessary to punish the rule breaking. In real life this will end in violence against the rule breaker as a last consequence. So virtual societies do not only need free definable rules, they need ways of punishment for rule breaking and mechanism to support the punishing. This mechanism has to include some kind of virtual violence.

Player Killing

The more a role playing game is designed as an open system the more complexity can emerge. In a system with only a limited set of roles without the possibility to create new roles and with rules that can not be modified a development of a dynamic society seems to be impossible.

The openess is the most interesting thing in role playing games but also a potential risk. In the game *Ultima Online* (one of the first commercially available and best known role playing games) the developers tried to model a world that should work as real as possible. New players were born naked when they first logged in and had to get themselves clothes, food and shelter.

The players of *Ultima Online* had various reasons to play the game: They wanted to make social contacts, discuss, get famous or rich or kill everything that moved. The last-mentioned was pursued by so many players that it got a problem for the whole game [Kim 1998]. These so called Player Killers enhanced their battle skills with each battle they won so that they became almost invincible. Player Killers are persons who kill other players in an online game just for the fun of it. They do not care for the real objective of the game and just try to kill as many players as possible.

The problems in some Role Playing Games are the boring starting roles. Players don't wont to play online the same role that they have in real life. So many times it is funnier to play a killer than a taylor [Kim 1998]. Role playing games are sometimes also a training area for new or different identities [Turkle 1996]. This is also a reason for players to look for roles that are extremely different to all that they can reach in their real life.

An interesting thing is how the community dealt with the occurrence of the player killing problem. When the developers of *Ultima Online* realized the problem they introduced rewards for killing the killers. "Good" players with battle skills should kill the "mean" player killers and receive the reward. The result was an increase of violence and soon the "good guys" were no longer distinguishable from the "bad" but player killing further existed.

Beyond moral indignation violence is a cause for players to organize themselves. Groups with shared interest emerge [Kim 1998].

That holds not only for player killing which can ruin a game but also for other actions that can be judged morally. The existence of "bad guys" forces the players to develop a moral codex and think about sanctions for players who break the rules. With such groups and rules first signs of a virtual society emerge.

Myzel - A Game Concept for a Virtual Society

Myzel tries to show the most important aspects of our current society using a computer game system. It creates a very flexible dynamic environment in which the complex interconnections of economy, politics and society are simulated. So the players can develop a virtual society in a self organized way [Fuchs 2001]. Special emphasis is put on the role of how information flows and media in a society. This results in a mixture of simulation game and virtual community software. When you join the game, your first priority is to survive. Later you will discover the value of coordinated efforts to create and nurture a society to help the survival of all players.

To reach that goal, the game has the following features:

1. Freely definable rules – their obedience has to be controlled by the players themselves.

2. General source of energy – it can be used for food, building and production.

3. Free flow of information – players have to control the flow of information.

4. Organizational units – players can organize themselves in smaller or larger groups. States are predefined organizations.

In real life laws define the rules of societies. Various mechanisms exist to change existing laws or to create new ones. For the coexistence of people there are no immutable rules. The laws can be adjusted to the varying conditions of the environment. Absolute rules exist only as nature's laws, but they play a rather minor role in societies [Callon & Latour 1981][Hofstaedter 1982].

To emulate this behaviour of societies, Myzel implements no fixed rules: the players themselves have to create, change and execute them. They have to define what is allowed and what is not, and which sanctions are used when they break the rules. Even the process of creating a rule has to be defined by the players. So any form of society can be realized [Starr 1994].

In real societies, people are organized in groups of interest. People choose to or are forced to organize themselves in groups. Depending on size, background and support these groups have more or less power to influence the development of a society. Groups of interest in the real world are e.g. companies, political parties or states [Callon & Latour 1981][Latour 1986].

The initial fields of production are energy supply and media. To get access to a planet's energy, a refinery has to be built and the energy has to be transported to the consumers via pipelines. The media producers have to build a production-machinery, which allows creating and transporting media content to the consumers. Furthermore there is a "book of rules" where the laws of a planet can be stored for all players to read.

So there are four roles for players of Myzel that are initially defined:

1. Producers and suppliers of energy

2. Producers of media

3. People who create content for the media (journalists)

4. People who create and execute the law (politicians and judges)

The players themselves can freely define more roles. This helps them build successful societies.

In the following several terms of the game's world will be defined. These terms are marked with *italics* where they appear for the first time and with capitals later on to make them easier to distinguish from real world items.

The world of Myzel represents a not so distant future. Several clever inventions made space travel easily accessible for everyone. Energy is now much more generally usable: you can convert it into any form needed – food, clothes, furniture and buildings.

Physics

The world of Myzel is a *Universe* consisting of a number of *Planets*. The Planets are connected with Gates, some kind of a beam device for traveling. Each planet has a fixed amount of *Sources* as energy resource. With the help of *Refineries* players can extract energy and transform it in a consumable form called *Force*. Force is the generic form of energy that can be used for the creation of buildings, food and other goods.

The players must eat regularly otherwise they die of hunger. Further more regular social contacts, in form of talking to other players are essential, to avoid dying because of social isolation.

Politics

There are two organizational units in Myzel*: Unions and Clusters*

The central political unit is the *Union*. It can be compared to a state and is bound to a Planet.

With the *Cluster* a basic organizational unit exists. Clusters are groups of interests of certain persons. Clusters help to organize political parties, companies or other large organizations.

Membership

Members of other Unions can be *invited* to immigrate to a Union. When the invited person agrees, she or he becomes a member of the inviting Union. A person can only be member of one Union at a given time.

In difference to this, a person can be a member of multiple Clusters. Members of a Cluster can also be members of different Unions.

Unions can control the *Emigration* and *Immigration* to their planet for single persons or for all members of a certain Union. Gates, which are the connections between Planets, execute these emigration and immigration rules.

The laws of a Union are written in a Rulebook. Each member of a Union can read the Rulebook.

A voting mechanism assists the build up of a democratic virtual society. All members of a Union or a Clusters can vote and look at the results of the votes.

Each Union, each Cluster and each player has an *Asset*. The Union Asset allows controlling the money of a state. Like in real economies, it is possible to create new money on the Union's Asset if the number of Players or the economy is growing. Therefore an inflation mechanism is also implemented.

Economy

Initially Myzel's economy contains two sectors that should be increased by emerging new ones. One sector provides the energy while the other one deals with information

1. Refineries make energy usable and let it distribute via Pipes. These Pipes can transport Force even across planetary boundaries. The Refinery's operator defines the price for the Force.

2. A *Publisher* is a device comparable to a newspaper press. It is used to publish electronic

magazines called *eZines*. An eZine is published in Issues that consist of *Articles*. Every player in Myzel can write Articles and send them to a Publisher. All eZines are sold in the whole Universe. The operator of the Publisher defines the price of the eZines.

Every thing in Myzel (except Planets) is exposed to *Wear*. So all built items must be regularly maintained to keep them working.

Violence and Power

One of the main goals of Myzel is to allow the modelling of a wide variety of societies. The freely definable rules that can be changed by the players provide the base for this. The problematic aspects tend to show when persons don't follow the rules. A real society uses its monopoly on violence as a last consequence [Suber 1990]. People who do not obey the rules are forced to by loss of freedom or sometimes even loss of their lives. There is always some kind of police force to correct disregarding of the laws. For Myzel to become a playground for realistic societies it must implement some sort of violence, which can be used to execute institutional power. The main problem with violence in Multiplayer Online Games is the above-described Player Killing phenomenon. In Myzel we tried to minimize the risk of Player Killing [Kim 1998] by using a special mechanism called *Punching*, which makes the killing of other players a great risk to your own health. When a player *punches* another player the looser of this action is calculated randomly with a 50% chance. The player who looses has her/his health decreased. Shortly before dying all items a player carries in her/his inventory are dropped. This allows a police or robbers to confiscate all things a player carries without killing a player.

Similar to violence the distribution of power is a very important fact in society systems. In the real world power is an abstract element that consists of a variety of components. An important aspect of power is, that someone can speak for a group because the group will do the things he or she said. The ability to act for a large number of people poses a special problem on a system like Myzel. There must be some mechanism that allows flat hierarchies as well as dictatorial regimes to control Myzel's interfaces to functions.

In all computer games there are actions that make the computer for a player. For example in Myzel the Gates itself execute the immigration rules of a planet. For such interfaces an emulation of power is necessary. So we developed an abstract unit called *Powertokens*. They regulate certain actions for changing game parameters. A member, who has at minimum one Powertoken can initiate a so-called *Powervote* for an action. If enough members holding Powertokens confirm, the action will be executed.

The Tokens can be freely distributed among the members of an Union or Cluster. So it is possible that one member has all Powertokens and can execute actions without confirmation. So the mechanism of Powertokens allows organization of democratic society but also dictatorship.

Virtual Society in Myzel

Myzel's concept was tested with a visually simple prototype in three controlled and in one free scenarios. The controlled ones were set up at school and university. The free scenario could be joined through a registration page on our web site. Myzel had approximately 1,000 registrations at this time and the core community was around 50 players.

The test setting game universe had three planets Hallimasch, Parasol and Baernoul and the

Starship Myzel. The Starship was the home of the developers and only for supporting the backstory of the game.

At the beginning of the game with the fully functional prototype economic and social basic structures had to be built. First the Refineries had to be constructed and connected to the Converters to get enough food to survive. Newcomers on the planet Parasol were supplied with an amount of 1000 Credits to begin with. There was also a kind of social care centre on Parasol with a free Converter.

A turning point for the social development was the rise of violence in Myzel. The first murder was committed after ten days only. The victim was the avatar "Anton Strömer", who was named after a dictator from the background story of the game and who acted like his role. There were no witnesses except the "reborn" new avatar "Toni Strömer" himself. The murder was widely covered by the local eZines and in the Chat rooms. The community discussed the creation of police forces and courts.

Shortly after that an attack was launched against the Unionhead (comparable with a president from a real state) of Parasol. She was robbed by using the punching mechanism but the criminal soon gave himself up and returned all stolen objects. He explained that it had been confused and let himself led to a newly built prison building. The length of the imprisonment was decided ad hoc. The prisoner died of hunger because the constructors of the prison had forgotten to supply a Converter. Other players used these facts to extort money. They locked their victims in a Building and released them only after they had fulfilled their demands.

The form of the court on Parasol was "The Tribunal". It controlled the jurisdiction and contained suggestions for fines and punishments.

A basic rulebook was supplied by the developers. There was a vote on Parasol to accept these suggested rules after small changes. The vote was accepted by the citizens as well as a salary for the Unionheads and the creation of "The Tribunal". The introduction of police forces was rejected.

Another alarming crime was committed six weeks later. A businessman who was also Unionhead was killed but he returned with a new avatar. He got back his Powertokens which led to a discussion about reincarnation. Hence it followed that the new avatar had to return all his newly received Powetokens but one.

Subsequently this second murderer developed into a player killer. His only actions were trying to kill other players. Other player killers appeared. However the number of these remained relatively low due to the intentionally unattractive way of killing people. The risk of being killed yourself and a newly introduced change in the server code which disabled hitting for newcomers made it quite boring to be a player killer.

The killing of a very active player finally led nine weeks after the start of the game to the creation of a police force. This force was not legitimated by any vote and mainly consisted of the chief of police who tried to hire officers. He was able to pay salaries and reward for hints from the citizens. He also edited an eZine about crime and tried to establish an interplanetary police force.

The police failed because of the implementation of violence in Myzel. It not only impeded player killing but also made it almost impossible to establish a monopoly on violence by the state. On the planet Hallimasch the police force was accepted and arbitrary law was made illegal.

Violence as a Conceptual Problem

There is no society that is absolutely free of violence. Therefore violence must be contained in

a game that is supposed to be as-close-as-possible image of reality. Nevertheless it has to be made sure that player-killing is not too attractive. The implementation of violence in Myzel was designed to make killing as unattractive as possible.

The relatively low amount of player-killers showed that this goal had been achieved. Although the implementation of violence in Myzel turned out to be counter productive for the development of society. It was almost impossible to create a working police force since police officers had an equal chance of dying like the criminal.

The only possibility for the police officers to catch criminals was to outnumber them to lower the chance of being killed themselves. However the Myzel community was too small to form a police force of the necessary size.

This police problem influenced the rulebook and the jurisdiction of the planets. Since there were no working mechanisms to take sanctions against players who had broken rules only a few rules were set up.

In the concept of possible sanctions were thought mainly of imprisonment like in real life. Police should be able through superiority in number and threat of violence to lock the criminals into buildings. Whereas in real life people can indeed be forced to go somewhere in Myzel players had the possibility to logout. This was the reason why only people who offered themselves were imprisoned. To construct a complex society a form of violence has to be created that can arrest people and take them away before they can logout.

Possible Enhancements

A possible solution of this conceptual problem could be "accumulating" violence: Every player has a certain amount of potential violence. When it comes to a violent conflict and everybody involved has only his/her own potential violence the outcome is like it was in the old concept. A Punch reduced the Health Point of one of the randomly selected combatants.

The change in the concept is that every player can delegate his/her potential violence to another person.

The delegated potential violence itself cannot be delegated again. So the delegating players can always be sure who they are delegating their violence potential to. The receiver of the delegation gets his/her own potential doubled and so the chance that he gets wounded in a conflict is halved. However the potential of the delegating player is not reduced by delegating. Only the receiver's potential gets increased. The more violence potential is delegated to a player, the less is the chance of hurts in conflicts for her or him appear.The size of growth of the potential violence has to be tested in detail. In a game with a lot of players a linear accumulation can prove to be difficult. Single persons can probably get extremely powerful this way. To prevent the emergence of invincible player killers the potential can be taken back any time by the delegating players. So players can delegate their physical/violent power to other players as long as they act in their interest.

Additionally a new Action *Holding* should be introduced. From a certain delegated violence potential a player could execute *Holding*. A player who is the target of this action is not able to do anything and must go with the executing player. This Action would allow the user to arrest a player that cannot execute *Holding* himself. If both players could possibly execute *Holding* it would work like Punching: on execution the Action reduces one Health Point from a randomly selected combatant. Only players with more than three Health Points could execute *Holding*.

With these enhancements to the original concept of Myzel a working police force should be

possible. And they would also prevent the emergence of a large number of player killers like the old concept did.

Conclusion

The community of the proof of concept prototype was with 50 users quite small. Those parts of the concept of Myzel which had a direct connection to violence like rules and groups of interest were not that important like in a big community. The players liked them nevertheless.

Groups of interest were mainly created around economic ventures. They were founded for example to run refineries or publishers but were not seen as closed groups. There were attempts to found criminal organisations that tried to blackmail people. The implementation of violence in Myzel prevented such attempts quite successfully.

Violence was generally a problem of single players. Most of the times it had no connection to financial goods and theft occurred only rarely in connection with direct violence. The concept of the game and the development of the community ensured a rather peaceful life.

The occurring violence happened mainly because some players wanted to find out how society would react. There were some political or moral concepts behind some of the crimes but most of them sounded more like an ad hoc excuse.

As a reaction to violence new rules were introduced to the rulebook. There were attempts to execute these rules through police forces but were not too successful because of the implementation of violence in Myzel. Nevertheless the important role of violence in the development of virtual society became clear. If there should be sanctions against the breaking of rules without leaving the metaphor of the game there has to be a form of violence.

Because of the smaller number of players in the testing scenario, there was almost no consensus about moral standards of the community. Most issues were sorted out by direct communication between the involved players.

However, the proof of concept prototype of Myzel has shown the possibilities of such a game as tool for learning about und understanding today's modern societies. It can be an environment for gamers to explore a society but can also be a tool for scientists to research about acting in communities.

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