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## Living a Virtual Life: Social Dynamics of Online Gaming

by Castulus Kolo and Timo Baur

### Introduction

Interactive online games for more than two players or multiplayer online games have become a popular object of investigation ever since social and cultural sciences began studying the Internet. Whilst initial studies on online games mainly focused on text-based virtual realities (e.g. Bartle, 1990; Bartle, 1996; Bruckman, 1992; Curtis, 1996), over the course of the last few years there has been an increasing number of publications dedicated to games with a graphical user interface and several thousands of users playing simultaneously. This development has been accompanied by a series of related conferences and the establishment of specific publication platforms as well as research associations (for example, Aarseth, 2001). In the US, game research, or game studies, has even become a topic covered by the general interest news media (for example, Erard, 2004). However, in Germany apart from being covered as a business issue, this new field is only addressed by sporadic research, of which hardly any is based on rich empirical data (Goetzenbrucker, 2001 being one of the few exceptions).

The specific genre of computer games called “massive multiplayer online games,” “persistent state worlds” or “massively multiplayer online roleplaying games” (MMORPG for short), which we address in this paper, can be understood as a subset of all online games for more than two players (including the purely text-based games). MMORPGs provide a graphic environment that resembles the real world in functionality (in the sense of possible actions) and appearance. The players control their online personae, which we will call characters, via a variety of modes of the human-computer-interface, confined by technical restrictions and more, or less, formalized and sanctioned rules. This thereby creates a parallel space of social interactions among the characters in the gameworld.

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From a research perspective such games are particularly interesting for at least two reasons. First of all, most of them are fully commercial games that do not require advanced computing skills like the older text-based games (for example, complicated computer commands to trigger actions). Therefore, in terms of socio-demographics they can be played by a much broader segment of Internet users, which is indeed the case. With about four percent of the German population frequently playing online computer games (regardless of genre) (ACTA, 2003) any effect of gaming on the offline life of the players is no longer confined to a minority of specialists. Hence the emphasis of some authors (for example, Castronova, 2003) on the influence of economic activity inside the gameworld on real-world economies as a policy issue may not be exaggerated.<sup>1</sup> Apart from the increasing scope of MMORPGs in terms of numbers of users, we can also expect qualitative differences compared to text-based games, as the graphical user interface and the variety of possible actions brings these games much closer to what we are familiar with from our offline experience.

In this paper we present selected results from a study of such a game, called *Ultima Online (1998)* (*Ultima Online* for short). *Ultima Online* provides a medieval playing environment, in the virtual landscape "Britannia," where the characters are among others miners, craftsmen, warriors, magicians, healers or bards. We chose *Ultima Online* in particular because it was already well established and it could therefore be assumed that the observed phenomena did not merely reflect the conditions just after the launch of the game but an established social space. Additionally, *Ultima Online* was at that time one of the largest games with respect to the number of possible simultaneous players. By June 1999 there were already approximately 130,000 active subscribers worldwide. About a year later, when we started our project, the number had doubled according to the game publisher<sup>2</sup>. Currently, there are at least a dozen MMORPGs (for example *Everquest*, *The Sims Online*, *Dark Age of Camelot*, *Asheron's Call*), some of which have a "history" of several years and some were launched even by corporate powerhouses such as Microsoft, Vivendi and Sony, a fact which underlines their increasing commercial relevance.

His research focuses on the diverse aspects of innovation and communication processes.

At the time of our study, as Wellman and Giulia observed (Wellman and Giulia, 1998), there was a need for detailed observation and evidence in online research in order to replace anecdote. Accordingly, we launched our study on *Ultima Online* as an ethnographic fact-finding mission in an unknown region (Baur and Kolo, 2001). First of all, we wanted to understand why people spend so many hours playing on the Internet. To learn more about this, we structured our analysis around several questions concerning the social dynamics of online games: Who are the players? When, how and why do they play? And

e- finally, what are the social effects of the game in offline life?

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After giving a brief introduction into the world of *Ultima Online*, some methodological considerations and an outline of the study design, we will examine the questions above. We will conclude our paper with an outlook on the role that social studies of online games could play in future research.

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New players first have to accomplish some preparatory steps before entering the world of *Ultima Online*<sup>3</sup>. Together with an Internet access and an up-to-date personal computer, the purchase of the game software and the payment of a monthly fee are necessary. After registration and installation of the software, the player finally gains access to the game environment which is constantly synchronized with a central server. The software is regularly extended and updated by the game publisher via the Internet.

The first step in the game is the selection of a game character, their hometown and their physical appearance. Furthermore, either the label “male” or “female” has to be attributed to the character. In this case it may be misleading to speak of gender, for the labels do not necessarily have the same meaning or convey constructed gender attributes as in today’s society at large.<sup>4</sup> Likewise, it does not make sense to speak of the sex of a character; in general, biological processes such as ageing, child bearing and so on are not implemented and as a result players’ characters only die if they are killed.

In addition to player characters, there are characters that are simulated by the server software (non-player characters or NPCs) which do not differ in their graphic representation from the characters chosen by the players. The world is populated with simulated animals serving as natural resources – for example, for leather – or when tamed as companions in battle or simply as pets.

Each game character is equipped with a set of abilities or “skills” that can be improved by training or by mastering certain situations. Finally, different items which refer to the specific character type, and an amount of 100 GP (“gold pieces”), the currency of *Ultima Online*, are included in the basic equipment. This amount is not much if we take into account that 100 GP is equivalent to one desk and four chairs or to a bronze shield. In order to fully participate, it is therefore necessary to increase this monetary wealth by exploiting natural resources, trade,

production or services. Stealing or looting are possible but may be the object of sanctions by fellow players, such as exclusion from a guild. Most possible actions such as moving around on horseback, trekking through the woods, the trading of goods or engagement in battle are understandable and known at least to some extent from offline experience. Other options are more exotic: the casting of magic spells and the bridging of long “distances” in Britannia by the use of so-called “moongates.” Verbal communication between the characters takes place via an exchange of text-based messages (see Figure 1).



*Figure 1* The representation of characters and the superposition of text-based communication (screen shots from *Ultima Online* Homepage, 2002).

The evolution of social formations among the game characters is stimulated by the design of the game environment and, indeed, most game characters do not remain loners for long in the world of *Ultima Online*. A meeting calendar shows the players where and when they can participate with their game characters in different competitions or which weddings between “male” and “female” characters take place. Guilds represent institutionalized social units, with members explicitly named on membership lists. To be admitted into a guild, freely negotiated initiation rites must be passed by the members. The guild is led by its so-called “master” who can assign titles and invite other players to apply for a membership. He also represents the guild externally. Sometimes, the members of a guild meet offline and they usually stay in contact via communication channels outside of *Ultima Online* (via email, ICQ, telephone, etc.).

## Observation Perspectives and Study Design

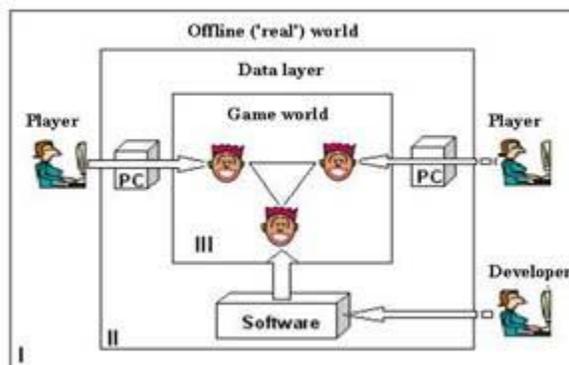
There are several elements of a MMORPG suitable for observation. Before starting our research we tried to specify the possible perspectives on them. These elements belong to three structurally distinctive categories or layers (see Figure 2):

First of all, there is the offline (“real”) world of players as well as of the developers and administrators of the game. We prefer the term “offline world” to “real world” in this respect, because the elements of observation in the other layers can hardly be disqualified as being unreal.

Second, there is the online world of characters with its imagery of the game, its topology and dynamics.

Finally there is the world of data. In this layer, the data representing interface commands and the information for the representation of the gameworld is mediated, transferred and sometimes also distorted, for example, due to software bugs or connection problems.

These layers are technically linked by the hardware and software of the interface (typically a keyboard and a monitor), the personal computer and the network (for example, the Internet connection). Both the players and the observing researcher refer to these different layers in their remarks or field notes. Therefore, a complete picture of a game situation results from the synopsis of the processes in all layers.



*Figure 2* The elements contributing to a MMORPG and their relation to the three layers constituting a gaming situation.

The topology of “layers” to structure the elements constituting a computer game is a recurring theme in publications on the methodology of such games. One of the first to propose such a scheme was Konzack (2002), who outlined the following layers of a computer game: “hardware, program code, functionality, game play, meaning, referentiality, and socio-culture.” For a thorough analysis of any computer game he suggests that all of these layers should be considered. “Thereby ... analysing both technical, aesthetic and sociocultural perspectives” (2002). This threefold view on computer games is also reflected in a scheme proposed by Aarseth (2003) to structure the elements one finds in “games in virtual environments.” He distinguishes the gameplay dimension with the player’s actions, strategies and motives, the game-structure dimension with the rules of the game, including the simulation rules and finally the game-world dimension comprising among others the fictional content and the topology. In such conceptual frameworks the gaming situation appears to be neatly separated from the rest of a player’s offline life. However, we believe that in order to fully grasp and understand a player’s actions this separation of play and non-play (see also Walther, 2003), though understandable from a theoretical point of view, may be misleading in the case of MMORPGs. As we will show, even average players of such games simply play for too long and too frequently to be able to maintain this distinction (to name but one reason for our objection). Accordingly we kept our scheme of layers less confined, though admittedly at the expense of theoretical precision.

When structuring the observable elements in and around the game an additional complexity is introduced because both the players and the characters can be regarded as an object of inquiry in several levels of aggregation. Thereby, the observable entities in the context of *Ultima Online* encompass:

the social micro-level of individual players (for example, the specific motivation to play or the strategy used) on one hand and that of the related characters on the other (for example, the skills or the possessions)

the meso-level of social formations among players (for example, player clubs, offline events) or among characters (for example, guilds)

the social macro-level, spanned by the community of all *Ultima Online* players or all the “citizens” of Britannia.

For the investigation of the phenomena in and around *Ultima Online*, we thought it necessary to combine several methods that reflect the different perspectives and are related to the different levels of

aggregation. In principle there are three main ways of acquiring knowledge about a game like *Ultima Online*: by studying the information given by the developers; by observing others playing; and by playing the game ourselves. Ideally all three methods are combined (see also Aarseth, 2003). Accordingly, in addition to studying the manuals and introductions to *Ultima Online* as given by the publisher, between the end of 1999 and February 2000 we gathered qualitative data by open interviews via the Internet (ICQ, e-mail), by direct participant observation of two players in their domestic environment and by participant observation of the game from the perspective of a fellow player. In all cases the players were informed of the study situation.

In order to also obtain quantitative data with some statistical significance, we developed a questionnaire for a survey among German *Ultima Online* players. We placed our questionnaire on the World Wide Web and the responses were sent back by email. The inquiry on characteristics of the player and his or her characters as well as on social aspects (see appendix for a summary of the questions covered) was advertised on websites that were well-known among *Ultima Online* players (experienced players as well as new players). After receiving 104 questionnaires, we closed the inquiry. Additionally, we conducted a network analysis of the members of two guilds. The members were asked about the characters they most often had contact with to derive the structure of the guilds and to be able to examine them formally. The questionnaires were distributed by the master of the guild to the members and sent back via email for analysis.

Due to the self-selection in the web-based survey, the results cannot be generalized unconditionally. However, a comparison with the data acquired by the other research methods confirmed that the aggregated results on user characteristics and playing patterns are not atypical and do not only reflect a set of exceptional players.

### **The Players**

According to our survey, the typical player of *Ultima Online* is 24 years old; younger than the average German Internet user and, of course, the population average (see Figure 3). However, the percentage of professionals (employed or working fulltime on a freelance basis) among the players of *Ultima Online* amounts to 52 percent. The other players are mostly in different stages of academic or non-academic education. The percentage of professionals appears remarkably high, given the fact that playing *Ultima Online* is such a time-consuming

activity, though comparable numbers of roughly half of the players working are reported for the MMORPG *Everquest* (Yee, 2001).

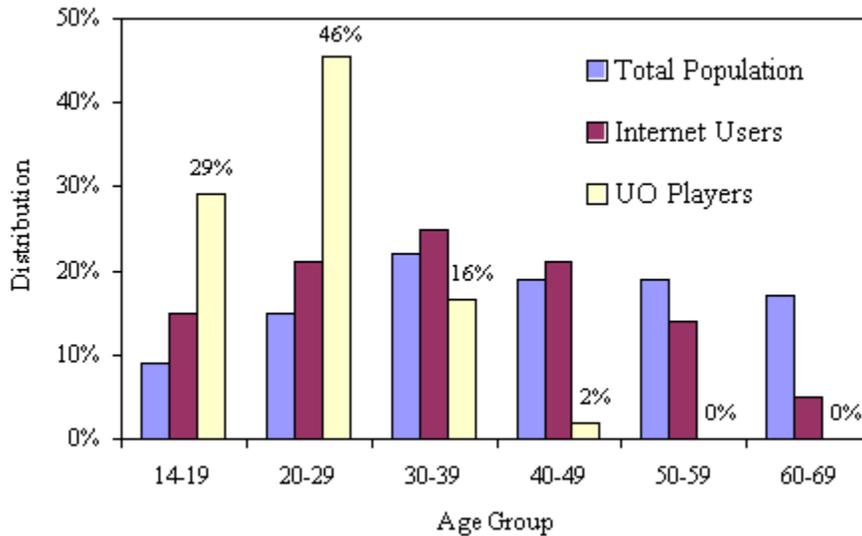


Figure 3 Age distribution of *Ultima Online* players<sup>5</sup> (n=104).

There were relatively few newcomers among the players responding to our questionnaire. One explanation for this could be a certain bias in the self-selection process. However, we think this is due to the fact that market saturation for *Ultima Online* has been almost reached in Germany. The average playing experience was 14 months and only 14 percent of players had an experience of less than three months.

Usually, players had experience with computer games before they came to *Ultima Online*. More than three-quarters of the participants of our survey had previously played computer role playing games (85 percent) or computer adventure games (67 percent) and more than one-third (39 percent) had played other MMORPGs. Though many players had previous experience with MMORPGs, the number of users playing more than one game at the same time was negligible. Users rarely indulged at the same time in more than one MMORPG. This is understandable given the necessary investment in terms of time. Before the spread of the Internet, the most obvious spatial extension of games beyond the face-to-face situation to widely distributed participants were letter-based or email-based games. However, with shares of 4 percent and 11 percent respectively this type of gaming does not play an important role in the gaming experience of *Ultima*

*Online* players. On the other hand, for the majority of players, there is a strong link with tabletop fantasy games (64 percent) like *Advanced Dungeon & Dragons* or the *Black Eye* and to a lesser extent (25 percent) with fantasy live action roleplaying games.

The social relationships between the players of *Ultima Online* are almost all relationships between young men. Compared to the average of all Internet users the share of female players who responded to our questionnaire was extremely low (3 percent). This value is far below results of studies on other MMORPGs like *Everquest* where a share of 16 percent of female players has been observed (Yee, 2001). In general terms, the more multiplayer online games provide a sense of community and social structure (Laber, 2001), the more women are reported to feel the more strongly attached to these games, something particularly common in roleplaying games like *Ultima Online*. These discrepancies may be attributable to the fact that MMORPGs were still a lot less widespread in Germany than for example in the United States at the time of our study. Additionally, the self-selection process through which we gathered the data may have affected our results.

A recurrent theme in research on computer mediated communication is the fact that women and men do not always introduce themselves as such to their communication partners on the Internet, the so-called “gender swapping.” In an investigation of 199 players from 35 text-based multiplayer online games an average value of approximately 20 percent of players swapping gender was obtained (McKenna and Lee, 1996). In comparison to such purely text-based games, gender swapping seldom occurs in *Ultima Online* (only 14 percent of male players). None of the few women who participated in the survey played a character labelled “male.” Also, unlike most text-based multiplayer online games, *Ultima Online* does not provide characters with labels other than ‘male’ or ‘female’.

### Patterns of Playing and Playing Intensity

Playing *Ultima Online* is typically an evening and night time activity (see Table 1) with a peak between 6 pm and midnight.

*Table 1* Playing intensity in the course of the day in percent of users playing *Ultima Online* (n=104).

Time of the day	06:01-12:00	12:01-18:00	18:01-24:00	C
Share of users	14 %	30 %	91 %	4

According to the survey, the time spent on gaming is immense. The average duration of a gaming session amounts to about four hours. However, sessions lasting up to 12 hours were also mentioned (see Table 2). The typical player is online almost daily with an average of 5.7 sessions per week (see Table 3).

*Table 2* Playing intensity in terms of average duration of sessions (n=104).

Duration	< 1 h	1-2 h	2-3 h	3-5 h	6-7 h
Share of users	0 %	21 %	27 %	37 %	10 %

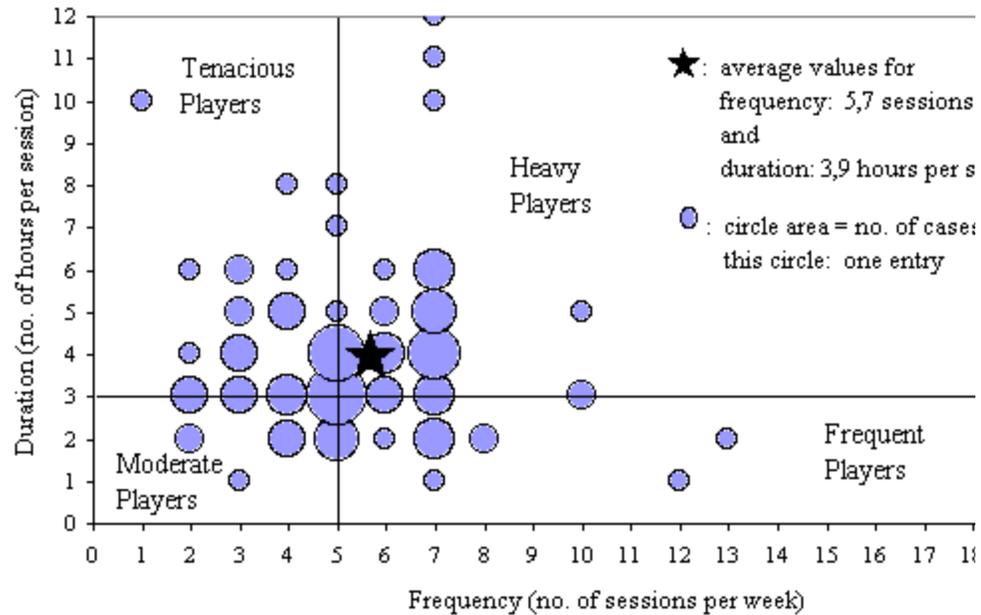
*Table 3* Playing intensity in terms of weekly frequency of sessions (n=104).

Frequency	<1x per week	1-2x per week	3-4 per week	5-6x per week
Share of users	0 %	8 %	22 %	35 %

This means that the average player is immersed in *Ultima Online* for about 23 hours a week. Ninety-two percent of the players played from home, mostly via an ISDN access. Interviews with participants revealed, that monthly phone bills of more than 75 euros (at that time approximately the same amount in US dollars) for online gaming was not a rarity (telephone line with modem, no DSL).

Surprisingly, we did not observe that intensive players would generally do both, play longer and more often. There is in fact no correlation between these two dimensions of the intensity of use: duration of a session and the frequency of sessions (see Figure 4).

*Figure 4* The two dimensions of playing intensity: average session duration and frequency of sessions (n=103).



We assumed, therefore, that the different patterns of usage reflect different playing styles or even strategies and types of users. Hence, we defined four different types of users according to their average session duration and their frequency of sessions. The cut-off parameters are set to the closest integer values below the averages along these two dimensions (only integer values were allowed in the questionnaire):

Moderate Players: frequency less than or equal to five sessions per week, duration less or equal three hours per session.

Tenacious Players: frequency less than or equal to five sessions per week, duration more than three hours per session.

Frequent Players: frequency more than five sessions per week, duration less than or equal to three hours per session.

Heavy Players: frequency more than five sessions per week, duration more than three hours per session.

Figure 4 underlines the lack of a correlation. Furthermore, the distribution does not exhibit a clustering in the two dimensions of intensity. Instead, playing patterns concentrate around the average value.

Table 4 gives an overview of the results of this segmentation into four user types. Most striking is that for all four types there is almost no difference in the playing experience (in months). Professionals are most heavily concentrated among the moderate players; they are also significantly older. The more frequent the gaming sessions, the younger the players and the fewer the percentage of professionals.

We can see from the following that these types of players or playing patterns indeed exhibit different activity patterns in the game as well as a different structure in their online and offline social ties.

*Table 4* Distribution of user types according to playing intensity (n=103).

	Moderate Players	Tenacious Players	Frequent Players	Heavy Players
No. of cases in %	29 %	25 %	19 %	27 %
Absolute Number	30	26	20	28
Playing experience in weeks	62	62	53	57
Average duration of a session in hours	2,6	5,2	2,2	5,3
Average frequency of sessions per week	4,0	3,9	8,4	7,3
Average age	27.3	24.8	20.1	22.1
Professionals among users	71 %	66 %	44 %	52 %

### **Motives and Strategies**

Given the fact that playing *Ultima Online* is very time-consuming and also requires a degree of financial investment, the users must assume they will benefit in some way. A recurrent theme in our interviews with the players, as well as in several items of the questionnaire, was the social experience of gaming. About two-thirds of the players mentioned the potential to interact with several thousand fellow players or

participating via ones' character in a virtual "society" as an essential motive to log onto *Ultima Online*. Compared to this, motives related to the individual such as mastering "quests" or the improvement of skills play a subordinate role. Surprisingly, only a quarter of those surveyed regarded climbing up the hierarchy of players as a very important incentive.

Comparing the results for the different types of players as defined in the previous section reveals almost no differences at all. In all categories they exhibit the same pattern of motives apart from the importance given to climbing up the hierarchy of characters. The latter aspect is significantly more important for the heavy players than for the other types of players (significance at a confidence level of five percent).

On the one hand whilst the motives of the players are all very similar, the players nevertheless select very different characters. Therefore, we presumed that the players, regardless of their motives, set themselves different goals inside the gameworld. These differences should eventually lead to different strategies or patterns of action and of course to a predilection for certain characters. Table 5 clearly shows a broad distribution of characters grouped according to their position in the production processes or "value chains" in *Ultima Online*.

In order to further explore strategies and goals, we have to consider the degrees of freedom players have in their actions. Apart from technical restrictions we observed several categories of rules, more or less governing the interactions among the characters. The rules can be discerned according to their explicitness and in what way they are enforced as well as to which social unit they apply:

Among the general rules applying to all players is a codified anti-harassment policy, enforced by the administration, typically by the so-called game-masters (for example, no discrimination, no sexual harassment, no usage of macros).

Further general rules are formulated as an order by "Lord British," who again stands as a metaphor for the administration. They range from rules for greeting to commandments (familiar in other contexts) like no killing, no stealing or maintaining a distance from other characters. Compliance with these rules is usually not enforced by the administration, though players who do not observe them may be the object of sanctions by other players, such as refusing to engage in interactions with the offending character or the exclusion of the offender from access to specific social units like guilds.

Some implicit, non-codified rules for all players refer less to what

kind of interactions are acceptable than how these are performed. Under this category falls habits and non-consciously reflected patterns of usage, for example, the usage of English as a common language and the importance of keeping messages short. These implicit rules are not enforced by the administration. However, there is considerable social pressure to follow them.

Typically, within guilds there are additional rules and notions of honour and duties governing the interactions among the members and their interactions with outsiders.

If normatively regulated action<sup>6</sup> is understood as behaviour that is oriented to common values of a social unit and thus normative action is directed towards complying with normative expectations of collectively organized individuals (see for example Habermas, 1984), then the above mentioned rules all have characteristics of norms in the game world. Whilst the first two categories of rules are codified and in this respect are imposed by the game's developers, the latter two emerge from the dynamics of interactions. Unfortunately we have no data on these rules over a longer period of time, i.e. over several years. It would be interesting to be able to throw some light on the emergence of new rules, on changes in established sets of rules and on the driving forces behind.

*Table 5* Distribution of characters according to the type of players (n=103).

	Moderate Players	Tenacious Players	Frequent Players	Heavily Player
Average acquired wealth (in 1.000 GP)	70	84	190	250
Type of character:				
Extraction of resources: hunter, logger, miner, etc.	11 %	16 %	10 %	0 %
Production (craftsmen): smith, carpenter, tailor etc.	18 %	16 %	15 %	8 %
Fighting: warrior, sword fighter etc.	25 %	24 %	40 %	23 %
Knowledge intensive services: magician, alchemist, healer	11 %	36 %	20 %	58 %

Other: bards, storytellers, etc.	36 %	8 %	15 %	12 %	18 %
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Despite the above-mentioned rules and the technical restrictions, there remains a considerable freedom of choice, and the players make ample use of it. The characters all have different skills and participate in distinctive ways in the world of *Ultima Online*. From the terminology for the characters' types it becomes obvious what they are supposed to be good at. But what are the goals to be achieved by the selected characters?

The game's publisher does not indicate an explicit goal and there is nothing specific to win or to get to in the sense that we understand it from tabletop and most stand-alone computer games, where we can at least try to top some kind of "high score." Nevertheless it is clear that players need to ensure that their characters survive in the essentially hostile landscape of Britannia. Otherwise they risk losing all the possessions the character carried at the moment of its "death" and getting its skill levels reduced substantially before a restart (in *Ultima Online* a kind of "resurrection" is possible).

In order to be able to compete with experienced players and to overcome one's various difficulties including those imposed by non-player characters it is necessary to complement character's skills, material possessions such as arms or knowledge like magic spells, with those of the characters of fellow players, i.e. by knitting some kind of alliances. This means in turn that a minimum level of social activity is required.

Additionally, a certain wealth in terms of "gold pieces" (GP) is needed to acquire necessary goods and services. A character's wealth can be increased by clever application and systematic improvement of the skills related to each character type. This is apparently possible for every type of character, since for all of them we observed a considerable spread in wealth. However, when asked, players rarely mentioned making their character wealthy as a perceived goal in the game or as a motive to log-in to *Ultima Online*. Even though gold pieces were traded from time to time via eBay and other Internet auctions (see also Castronova 2003) and must therefore be somehow convertible, the acquisition of wealth in *Ultima Online* as an incentive to play is the exception and not the rule. Furthermore, the characters' wealth does not depend on the experience with *Ultima Online*, i.e. the period of time already spent playing *Ultima Online*, as we found in our survey.

Nevertheless, one overall pattern is visible. Wealth correlates significantly (at the one percent level) with the number of sessions per week. Two types of characters are particularly wealthy and these tend to be chosen by frequent players: “knowledge workers” like magicians, healers, etc. and fighters. An analysis of the dependence of the acquired wealth on the intensity of networking inside a guild (Baur and Kolo, 2001) also showed a significant correlation (at the five percent level). Apparently, economic success in the gameworld is coupled with the number of frequent interaction partners inside the network of the guild.

Apart from the importance of sustaining a minimum quantity of wealth and maintaining the physical “well-being” of one’s character, a fact that encourages players to seek networking and frequent interactions, we did not discern other significant relations between the type of the characters, their acquired wealth and the motives for playing *Ultima Online*. Since there is such a variety in playing patterns and no specific goal to be achieved, there is apparently no single best strategy. Rather, just as in real life, players’ actions tend to be very different. We therefore argue that the social dynamics observed among the characters represent a fairly good model of social dynamics among real people and are worth considering from a research point of view. For example, MMORPGs may provide a promising environment for studying the diffusion of innovations, the stability of social units and the preconditions for their evolution. Unlike purely artificial, simulated societies based on standardized actors as found in the experiments of Epstein and Axtel (Epstein and Axtel, 1995), MMORPGs bear closer resemblance to the variety of different patterns of human behaviour. At the same time these aspects of social behaviour are also much easier to observe in a non-intrusive way (at least in principle) than would be possible with regard to real people in offline environments.

### **Social Relations in the Virtual World**

In order to stay in the game only a minimum level of social interaction is necessary, yet most players seek more. There are not merely strategic considerations behind the encounters of characters in *Ultima Online* but rather the search for communication and persistent social relations. Most players (88 percent) not only connect to *Ultima Online* in order to play but also to stay simultaneously in contact with the fellow players by a messaging system (usually ICQ). They engage via their characters in various social interactions from trading or fighting to entertaining other characters as virtual bards. Additionally the large majority of players (84 percent) are members of several social units or institutions like guilds or “households” (characters sharing a commonly

owned property) and even some get married in the game world (6 percent). However, marriage among characters decreases with the age of the corresponding players. Whilst the average age of all players is 24 years, the average age of players seeking a marriage in *Ultima Online* is 18 years, which is significantly lower (significance at the five percent level).

Most of the players regularly meet the same characters online and address a relatively fixed group of playing partners in *Ultima Online* (see Table 6). In particular, there is a significant correlation (at the one percent level) between the number of sessions and the persistence of interaction partners. This tends to be the case, as our participant observation showed, because knowing and meeting people in *Ultima Online* triggers frequent playing and not the other way round. This aspect is also confirmed by the fact that there is no correlation between the persistence of interaction partners and the average duration of a session. The social relations set up in guilds are particularly strong and persistent. In the two studied guilds we observed a densely knit network of characters (Baur and Kolo, 2001).

Table 6 Characteristics of social relations inside the game (n=103).

	Moderate Players	Tenacious Players	Frequent Players	Heavy Players
Guild membership	80 %	85 %	80 %	89 %
Shared house	37 %	38 %	65 %	25 %
Married in <i>Ultima Online</i> <sup>7</sup>	0 %	8 %	5 %	11 %
ICQ communication	73 %	92 %	95 %	89 %
Relatively fixed group of playing partners in <i>Ultima Online</i>	73 %	73 %	95 %	89 %

### Online Gaming and Offline Social Relations

We found that players engage in various social interactions and that they do this almost daily for several hours. One should expect that these intense online relations are not without effects on offline relations and vice versa. As Jakobsson and Taylor (2003) comment in their study of the MMORPG *Everquest*, “the offline ties between players

also serve as an important component in the enjoyment of the game” and that “(it) is not at all unusual to find groups of friends move from one game to another. In such situations the game simply becomes a new environment for a pre-existing social network to inhabit.”

The strong interactivity of the players of *Ultima Online* not only via their game characters but also via parallel communication channels, leads to the assumption that the social ties between the players in the online and the offline world are not neatly segregated but rather intermingled in various ways. Or, as Miller and Slater state: “The opposition of real and virtual ... misses the complexity and diversity of relationships that people may pursue through the communicative media that they embed into their ongoing social lives” (2000).

In our survey we asked players to assess themselves with respect to changes in the patterns of social relations in whatever direction and regardless of the concrete nature of change or how this change was experienced. In a correlation analysis, we observed that a perceived change in patterns of social relations is only significantly (at the five percent level) related to the average duration of a session, but not to the frequency of sessions. Very few users responding to our questionnaire consider online relations to be more important than offline relations (see Table 7). These few users are among the exceptionally intense players and there is indeed a correlation with the total number of hours spent per week in *Ultima Online* (significant at the five percent level).

Most players have a persistent circle of playing partners in *Ultima Online* and state that they get to know other players quickly and easily within *Ultima Online*. The strength and the emotional quality of these social ties were not investigated in the inquiry. We only asked the players if they rated their *Ultima Online* relations higher than their offline relations, which resulted in an insignificant value for moderate players. However, almost one-third of the heavy players stated that pure *Ultima Online* relations are somehow more important to them than offline relations.

Many players already knew some fellow players offline. Thirty-four percent knew one-quarter or more of their fellow players offline; although, only 40 percent said they would like to meet at least some of their gaming partners offline. Players of *Ultima Online* who stated that they would also like to meet people offline, mostly already knew several fellow players offline, a fact which is indicated by a significant correlation (at the one percent level) of these two items in the questionnaire. However, there is no correlation between the ratio of offline friends among *Ultima Online* partners and any measure of intensity and no correlation between the persistence of playing

partners in *Ultima Online* and the share of *Ultima Online* partners also known offline. A further interesting result is that the more players were advanced in their offline careers, the more partners of *Ultima Online* they knew online. Although in the survey we did not ask the players about the precise nature of their offline social ties we presume that the latter fact is at least partly due to the extension of relationships from the workplace to relationships as fellow players.

*Table 7* Self-assessment with respect to the interplay of online versus offline social relations. Several aspects were presented as statements in the questionnaire to be agreed upon or not by the respondents (n=103).

	Moderate Players	Tenacious Players	Frequent Players	Heavy Players
It is very easy for me to get to know fellow players inside <i>Ultima Online</i>	38 %	47 %	50 %	43 %
I mostly want to meet my <i>Ultima Online</i> partners also offline	33 %	52 %	44 %	39 %
I know at least one quarter of my <i>Ultima Online</i> partners also offline	40 %	23 %	42 %	33 %
The patterns of my social relations changed at least slightly due to <i>Ultima Online</i>	34 %	58 %	50 %	54 %
Pure <i>Ultima Online</i> relations are somehow more important to me than offline relations	14 %	24 %	17 %	32 %

All in all, we could not see an indication that playing *Ultima Online*, generally leads to a weakening of offline social relations. Over 90 percent of the participants in the survey explained that their social relations did not change at all (51 percent) or only slightly (39 percent) due to playing *Ultima Online*. Only 10 percent perceived considerable or very large changes. In a subsequent open question we asked the players who stated at least a slight change to explain how this change

is perceived.

Among the players stating slight changes, most complained about not having enough time for activities other than playing *Ultima Online*. However, in this group change was not only perceived negatively. Some players had rather positive experiences like making new friends via *Ultima Online* with online as well as offline encounters. They also felt that they had become more sociable and that the barriers to communication with previously unknown people had been reduced. Some even claimed to have developed leadership-skills in their offline life or that they would now be able to develop their offline skills outside the realm of *Ultima Online* more consciously and systematically, allegedly inspired by the skill system of *Ultima Online*.

Among the players who considered their social relations as having changed considerably or to a very large extent, negative connotations prevailed. These players experienced a drift towards entirely new friends (on- and/or offline), all of them playing *Ultima Online* and communication predominantly circling around topics of *Ultima Online*. At the same time encounters with old friends became, at most, sporadic. An interview<sup>8</sup> with one of these players which took place after this participant of the survey had contacted us via email, illustrates just how far-reaching effects heavy playing may have. Though given the results of our survey, such effects of playing *Ultima Online* are exceptional:

“I was enthusiastic from the start.... The first contacts with *Ultima Online* were limited since I was still at a boarding school. However, as I left the boarding school a short while later and moved back home (to my parents), this part-time activity almost became a full-time job or, to say it better, an addiction! Everything else in my life began to fall apart. I neglected my actual work, school, other activities (I should add that I was doing sport 5 times a week at boarding school, and then all of a sudden I just stopped) and worst of all: I neglected my friends. My friends were now in *Ultima Online*.... I spent approximately 10 hours a day, on weekends even more, in my room playing *Ultima Online*. My only way out was to change to a new boarding school where I later graduated....”

## **Discussion and Conclusion**

When we first entered the game the invitation of the game publisher to “live a virtual live” (*Ultima Online* Homepage, 2002) appeared far

exaggerated. Though the degrees of freedom of course fall short of what we know from our offline experience, there is, however, an impressively variety of possible actions in manifold contexts resembling real-world environments and situations. Hence, taking into account that players spend a considerable amount of their leisure time participating in the game and that for heavy players there is not much time left for offline activities, it may be justified to say that at least the most intensive players lived with *Ultima Online* or even “in” *Ultima Online*.

While first of all having a bearing on game studies per se and in particular on studies of other MMORPGs, we think that our investigation of the social dynamics in and around *Ultima Online* may provide some insight into the design of future games. Furthermore, we see such games as pointing in a new direction with regard to the methodology of social science research. In the following we will conclude our paper by pursuing these three aspects of our study with a summary of the key results, some more speculative generalizations and comments on questions warranting further research.

Considering age, gender and usage intensity, the players of *Ultima Online* represent a significantly different subgroup than the average Internet user. They are also younger, predominantly male and more frequently engaged online. Additionally they spend more time online and have used the Internet longer when compared to the average German Internet user (Van Eimeren and Gerhard, 2000). The players also have extensive experience with other computer and/or roleplaying games. Furthermore, many of them are professionals.

*Ultima Online* is a time-consuming leisure activity, typically played at home in the evening until early morning. The fact that the frequency of sessions and the average duration of a session are not correlated underlines that players can be classified according to different levels along these two dimensions of the intensity of use of the game. This also makes sense, because social dynamics vary according to the patterns of playing intensity.

The dominant motive for playing *Ultima Online* is the social experience of the distributed virtual environment. This is shown in the survey by the fact that about two-thirds of the players mentioned that “simultaneously interacting with many fellow players” and the “experience of an emerging society in the gameworld” are an important aspect or very important aspects of playing *Ultima Online*.

The development of enduring social formations beyond a single session is successfully stimulated by the interactions made possible by the game publisher. Although social relations in *Ultima Online* do not

replace offline friendships, the lack of spare time caused by playing the game is experienced as a stress factor by intense players. A qualitative difference between social relations in everyday life and pure *Ultima Online* acquaintances is stated by most of the players since, for the latter, the topic of communication is predominantly the common experience in the world of *Ultima Online*. However, the self-assessment that patterns of social relations changed more than slightly remains the exception.

Furthermore, the strong interactivity of the players of *Ultima Online* not only via their game characters but also via parallel communication channels, as well as the fact that most players already knew fellow players offline before venturing into the game world, leads us to conclude that the social ties of the players in the online and the offline world are heavily enmeshed in various ways. Fromme (2003) arrives at a similar conclusion in his study on computer games as a part of children's culture. He does not find any evidence that would suggest we need to be alarmed about electronic games leading to social isolation: "In most cases (gaming) seems to be fully integrated into existing peer relationships." Accordingly, conceptual frameworks of the gaming situation or "gameplay" neatly separating play from non-play, i.e. from the rest of a player's offline social life, will probably not fully capture a player's actions and intentions, which is essential to understand for example the effects of intensive use. Gaming also in this respect is not like engaging in traditional media activities like going to the movies. In our opinion, the existing theoretical concepts proposed for studying games have not yet sufficiently taken into account the empirical evidence of the embeddedness of gaming in the ongoing social lives of players.

Our findings for *Ultima Online* may also carry some implications for the future design of games. They strongly support the result from another study on the MMORPGs *Everquest* (Jakobsson and Taylor, 2003) that "the production of social networks and the circulation of social capital proves to be one of the most important aspects." An increasing number of female players additionally underlines the importance of providing a sense of community and social structure (Laber, 2001). Though this is not an entirely new fact, it is surprising that as far as MMORPGs go, many developers are still focusing on improving graphical realism, haptic interfaces or speech and elements of artificial intelligence in games (see for example the outlooks of Smith, 2001 or Bartle, 1999 on the future of games) instead of adding new qualities in terms of social experience (admittedly, there are exceptions). In this respect mobile devices and location-based applications may have the potential to open up new dimensions of gaming by blending the virtual game world and the offline worlds of the players (see also Hadenius, 2003).

In addition to having become an interesting and rewarding subject of investigation pursued in the new field of game studies, we also see games like *Ultima Online* as a qualitatively new subject area of social science research with the potential for new insights. Such games can be understood as being situated halfway between the subject of classical social science research and more recent approaches with fully simulated artificial societies (for example, Epstein and Axtell, 1995). Hence, a study of MMORPGs could constitute a third way between the traditional study of social systems (or simply social units) and the “generative social science” as introduced by Axtell and Epstein in their simulation experiments (Axtell and Epstein, 1996), in which they “propose a generative program for the social sciences and see a purely artificial simulated society as its principal scientific instrument.”

Players of MMORPGs interact simultaneously in their distributed offline environments via chosen characters in a computer-mediated virtual landscape. The ensemble of characters form a partly simulated society with observable entities from the micro to the macro level, analogous to the offline world. A significant difference with the offline world resides however in the fact that the agents (or characters as we termed them) do not interact autonomously. Their actions are subject to technical restrictions and they are finally guided by the players’ intentions mediated by the software and hardware infrastructure of the game. In contrast to what happens in real societies, every step and every action can in principle be directly observed; macro phenomena like the distribution of wealth can be derived at the push of a button. The question is, however, whether we can gain a better understanding of social dynamics in offline settings with real people from the ensemble of interacting characters in game environments. We believe this to be so, but this cannot be verified until further studies have been carried out.

## Appendix – Questionnaire

The following questions were covered by the survey among *Ultima Online* users (translations from the German text):

1. Where do you play? (several options to select, multiple response possible)
2. How long is your experience with *Ultima Online*? (in months)
3. How often do you play per week?

4. How long do you usually play? (in hours)
5. When do you usually play? (4 hour intervals, multiple response possible)
6. What is your previous experience with games? (several options to select, multiple response possible)
7. What attracts you particularly to playing *Ultima Online*? (open question)
8. How important are the following aspects of *Ultima Online* for you? (select from 'aspect of fight', 'solving quests', 'improvement of skills', 'rising in the hierarchy of players', 'my guild', 'simultaneously interacting with many fellow players', 'the experience of an emerging society in the game world'; each aspect could be rated on a 4-item scale according to its importance)
9. Are there other aspects important to you? (open question)
10. Did the patterns of your social relations change due to playing *Ultima Online*? (selection of response from a 4-item scale)
11. If so, how did they change? (open question)
12. What is the name of your main character in *Ultima Online*? (open question)
13. What is its title and the reputation of your main character? (open question)
14. What is the sex of your main character? (selection from 'male' or 'female')
15. What is the occupation (type) of your main character? (open question)
16. Is your main character married in *Ultima Online*? (selection from 'yes' or 'no')
17. If so, do you know the player of the husband/wife of your character also offline? (selection from yes or no)
18. Do you also have an offline relationship with the player of this character? (selection from 'yes' or 'no')
19. What are the most advanced skills of your main character and

- what is their rating? (open question with space for up to three skills)
20. Is your main character a player killer? (selection from 'yes' or 'no')
21. Is your main character member of a guild? (selection from 'yes' or 'no')
22. If so, what is the name and the abbreviation of the guild? (open question)
23. Does your main character own a pet in *Ultima Online*? (selection from 'yes' or 'no')
24. If yes, what kind of pet is it? (open question)
25. Do you have a second character? (selection from 'yes' or 'no')
26. If so, what is the occupation (type) of this second character? (open question)
27. Where does your main character usually dwell in *Ultima Online*? (select from 'city', 'dungeons', 'villages', 'wilderness', 'other')
28. How do you bridge longer distances in Britannia? (several options to select, multiple response possible)
29. How does your main character make money (gold pieces) in *Ultima Online*? (open question)
30. How many gold pieces does your main character own?
31. What are the most valuable possessions of your main character? (open question with room for up to three items)
32. Does your main character own a house? (select from 'yes, with exclusive ownership', 'yes, but together with fellow characters', 'no, but I use the house of my guild', 'no')
33. Do you have friends in *Ultima Online*? (several options to select, see also tables in main text)
34. Do you know fellow players also from offline encounters? (several options to select, see also tables in main text)
35. To what extent do the following statements apply to you? (each statement could be rated on a 4-item scale according to the agreement, see also tables in main text)

## Notes

*Acknowledgements:* We are grateful to all the members of the Institut für Völkerkunde und Afrikanistik at the Ludwig-Maximilians-University in Munich, who supported this project by inspiring discussions and practical help, in particular to Dr. Klaus Schubert and Prof. Dr. Frank Heidemann. A special debt is owed to Gianna Stefanutto and Nick Gool for helping us with the translation into English.

<sup>1</sup> At the time of our study on *Ultima Online* in Germany already seven percent of all Internet users played in 2000 at least once per week (van Eimeren and Gerhard, 2000). With the total number of online users in 2000 at 18.5 million, the gaming community amounted to 1.3 million regular players in Germany alone. When we extrapolate from the players of *Ultima Online* from our study with an average duration of 3.9 hours per session and a frequency of 5.7 sessions per week for the group of least intense players to the total population of people indulging in multiplayer online games of whatever type, we get an overall number of 1.5 billion hours played per year. This is equivalent to an impressive workforce of 850,000 people working 220 days a year and 8 hours a day, which are common numbers for an average worker in Germany. However in economic terms, game world and offline world are not only linked by the trade off between work time and game time. Wealth acquired in gameworlds gets increasingly traded via auctions outside the game world, for example on eBay, and therefore economies of game worlds are also increasingly linked to real economies via the mutual trade of assets (see also Castronova, 2003).

<sup>2</sup> *Ultima Online* was a further development of the PC game series of *Ultima* for one player. The game was introduced in September 1997 by the company Origin Systems International and was by that time one of the first attempts to commercially offer a large and complex virtual world, i.e. a MMORPGs via the Internet.

<sup>3</sup> Further information on *Ultima Online* can be obtained from <http://www.uo.com/>.

<sup>4</sup> Naturally, the labels male and female are not neutral within the choice moment in character creation. However within the choice moment they can only refer to the gender concepts of the offline world. The gameworld on the other hand provides a different embedding for the characters and their associated labels. Most probably the gameworld also constitutes a gendered system, though not necessarily the same as experienced in the offline world. These remarks are equally valid for MMORPGs other than *Ultima Online*, for some of them do not only

provide two labels but several hybrid forms and entirely fictional character entities for which a classification into male or female characters would not make any sense in a gender perspective (though possibly from a biological perspective).

<sup>5</sup> Numbers for Internet users and the total population are cited from van Eimeren and Gerhard (2000).

<sup>6</sup> Habermas distinguishes several different types of action: teleological action, normatively regulated action, dramaturgical action and communicative action (1984). These distinctions are well suited as a theoretical underpinning for a model of interaction forms in multiplayer games (see Manninen, 2003).

<sup>7</sup> Only the percentage given for all players is of statistical relevance. For the specific values according to player types there are not enough cases.

<sup>8</sup> Translation by the authors from the original German transcription of an open email interview with one of the participants of the survey.

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