

Is ‘Second Life’ Taking Over ‘Real Life’? Sociability and Social Interaction within the ‘Second Life’ Environment: an Electronic Ethnographic Study

Christina Koutra
Business School
Bournemouth University, UK
ckoutra@bournemouth.ac.uk

Stelios Papalakis
Business School
City University, UK
spapalakis@gmail.com

Estrella Diaz Sanchez
University of Castilla
La Mancha, Spain
estrella.diaz@uclm.es

Abstract: Is it too early to make deductions about the impacts of Second Life (SL) (a virtual online environment) in Real Life (RL)? Should there, or should there not, be any concern about SL taking over RL? In order to address these questions sociability is examined within the SL virtual environment in order to determine the circumstances within which, and the lengths to which, social interaction is encouraged within this virtual world; where sociability should lie within SL; and how the virtual residents facilitate the social interaction. Virtual Ethnography was employed over a period of 1.5 years in order to investigate the social interaction of SL users. The findings indicate that people’s opinion differs since some perceive SL as an instrument that promotes sociability and others as a deterrent to social life. *In SL I have made such great friends, fell in love but have also been very badly hurt People you love suddenly disappear* said one of the respondents, meaning that perceptions and experiences within the SL environment might resemble those of RL and so might its implications.

Keywords: Second Life, Sociability, Virtual Environment, Virtual Reality, Real Life, IT, Gaming

Introduction

The most vital characteristic of all societies is people’s interaction since it is crucial for both a person’s self-actualization and the establishment of authentic interpersonal relations (Neviarouskaya *et al.*, 2008). In this day and age, however, the advancement of information technology (IT) has made ‘online social interaction equally as possible as face to face interaction’ thus demolishing geographical, cultural and/or political barriers.

The development and acceleration of IT has also changed the way video games are perceived. The new ‘gaming’ generation does not only passively interact with video games (Rist *et al.*, 2003) but it engages actively with them assisted by advanced features and graphics. Game playing has become more 3D interactive, meaning that players can actually choose the users they want to play with when entering virtual worlds. These virtual worlds enable players to go back

in time and manage virtual civilisations; to collaborate with other large online groups of users in order to achieve common game goals (Bartle, 2003); and/or to socialise with the use of textual or voice representation. Van der Sluis *et al.*, (2012, p.1071) note that this type of communication ‘... closely mimics human communication’. Reingold (1995) argues virtual communities could be perceived as computer mediated social groups which are formed by like-minded people, who desire to share at a distance issues of common interest in cyberspace, which otherwise would not be possible due to limitations of traditional geographic, political and cultural boundaries (Skinner, 2000). Introna & Whitley (2000) note that, in contrast to face to face communicators, since there is no background or context in computer communication, there is no high level of expectation or obligation. As Beniger (1987) advocates, the environment in virtual communities or ‘pseudo communities’ is less prescribed and/or obligatory.

However, Hu *et al.* (2004) argue that often online interaction can actually develop into a meaningful relationship and can encourage people to meet in person. This unique nature of interaction is described by Chayko (2002) as ‘socio-mental’ where social communication ceases to be virtual and becomes mental. Perisetal (2002) suggests that relationships established online are as genuine and healthy as RL relationships. In these virtual places, online communities, quite apart from coming together to play and socialise, can also strike and negotiate business deals thus creating whole new potentials for online virtual worlds. ‘Second Life’ (SL) has been established quickly within the virtual world as one of the most promising business models since it not only assists the creation of online business, but also facilitates the process of substituting real money for digital alternatives (White, 2008); thus increasing its real market value. Such an online 3D virtual world promotes the so called sociability, which refers to the way that online users interact with one another via the supporting technology (Preece, 2000). Sociability is closely related to usability. However, sociability tends to focus on ‘user to user’ interaction and is considered

opinion driven, meaning that it is based on people's views (Bruno *et al.*, 2010); whilst usability is focused on the 'user to computer' interface and is behaviour driven, meaning that it is based on observation of people's actions (Bruno, 2010). Nowadays, one of the major successes of video games is their reliance on sociability; the old stereotypically isolated online players have given way to new interactive users, who are socializing and playing together.

Problem Statement

3D online virtual worlds have emerged with great success in the last four years. Subscribers form groups and organize their social networking by sending cards or making friends' lists or groups' lists, where they can ask for information or support, and voice their own ideas (SecondLife, 2007). However, the issue arising is where sociability lies within the virtual worlds and how the residents facilitate the social interaction. At present, the virtual world of SL amounts to almost 7.0 million residents (SecondLife, 2007), and there is vast information available. People's opinions differ with regard to social interaction; some perceive SL as an instrument that promotes sociability and others as a deterrent to social life.

Therefore, sociability is examined within SL, in order to comprehend the mentality of users and the extent to which sociability increases or decreases in SL, aiming thus to inform knowledge around the virtual world of SL. In doing so, Preece's (2000) key areas that support sociability are explored, as follows: the reasons people are interested in SL; the rationale behind their repetitive visits and the way they interact with one another within the virtual world; the individual needs of users; their privacy, security and trustworthiness within the SL world; the medium of communication in SL, for example text, audio; availability and easy access of information; and finally identification of any policies, protocols, and rules within the virtual community that guide the users' interactions.

Exploring On-line Virtual Reality Worlds (VRW)

An online digital world may be seen as a transformation of every aspect of the RL into the VRW (Mansfield, 2008). Such worlds are 3 dimensional spaces which are endlessly navigable through objects. Objects used to represent part of the real world in the WRW could be trees, windows, houses, cars and so on. Their choice is based on appearance and functionality (Ondrejka, 2005).

VRW are also geometrically finite and abide by a set of rules established by the creator of the world. These rules could be about users' communication, and interaction, and/or way of living within the digital world (White, 2008). Ondrejka (2004) of Linden Lab points out that VRWs are not directly controlled by the human user but they are software which run on their own and are either controlled by another program or are developed by some form of artificial intelligence. Users can design and choose a selection of virtual personas called 'Avatars' (see Figure 1). The 'Avatar' as a term was introduced for the first time more than ten years ago within the virtual game 'Habitat' which allowed players to visualise themselves in a game persona (Morningstar, 1990) which in turn was graphically represented and linked to a screen name. Jensen (1999) notes that an 'Avatar' has several functions; it could be used ideally to electronically symbolise the user for other members of the virtual community, or to allow the user to interact, live, learn and have a presence within the VRW. Vasalou *et al.* (2008) argue that 'Avatars' can assume any presence and attire. They can be dressed in RL clothes as much as in any fantasy attire, for example science fiction clothing. Moreover, an 'Avatar', apart from having a certain shape, assumes certain animated manners, such as facial expressions, gestures, and various moods, which resemble a RL person and are controlled by the user.

The 'Avatar's' roles mainly depend on the social occasion. For example, for an imminent romantic date, users make their 'Avatars' look very attractive and choose a romantic destination as their background. Equally, they can assume any socially conventional or unconventional role, which might contradict the owners' perceptions and values (Vasalou *et al.*, 2008). Sanchez-Vives and Slater (2005) argue also that participants might behave in the same way in both their SL and RL worlds. Lee (2004) suggests that presence can be perceived as a psychological state where people experience similarly virtual and actual objects in either a cognitive or a sensory manner. Stanney (2003 in Sylaiou *et al.*, 2010) states that acquisition of subjective presence assessments are perceived as one of the most important usability criteria of virtual environment systems. However, Taylor (2002) argues that the influence of an 'Avatar' on its RL owner may be such that it affects a person's behaviour and might even make them reconsider their life (Vasalou *et al.*, 2008).



Figure 1: 'Avatars'
Source: author's personal collection

Figure 3 depicts 3 'Avatars' who impersonate 3 trendy, young women who can be friends going out to entertain themselves. 'Avatars' are able to build their own property and own land in the digital world. This land could be used for leisure or to make business transactions. The idea of digital property and the ownership model came from existing popular games such as Monopoly and Poker (Ondrejka, 2005). Currently, virtual worlds are also used for commercial purposes since increasingly many people own and run virtual, profitable, businesses (Mansfield, 2008).

Sociability in 'On-line Communities'

The sociologist George Simmel (1949, p. 255) was one of the first researchers to examine sociability.

He defined it as *"a distinct social form that distills out of the realities of social life like the pure essence of association, of the associative process of a value and a satisfaction Sociability extracts the serious*

substance of life leaving only 'togetherness', the sheer pleasure of the company of others".

Sociability focuses on social interaction and how users of an on-line community interact with one another via the supporting technology (Ducheneaut *et al.*, 2004). For many years, 'Human Computer Interaction' (HCI) was focused on improving the usability on any software and hardware in order to enable users to learn and interact easily with such products. Therefore, usability focused on HCI whereas sociability focuses on HCI within the on-line world (Preece, 2001). The widespread popularity of the internet with millions of users for socializing raises new concerns regarding the way technology can support social interaction and design for sociability, since usability alone seems inadequate when designing a system. Sociability and usability are closely related and both are essential for developing new products. The following diagram provides more clarity and shows significant differences between usability and sociability (see Figure 2).

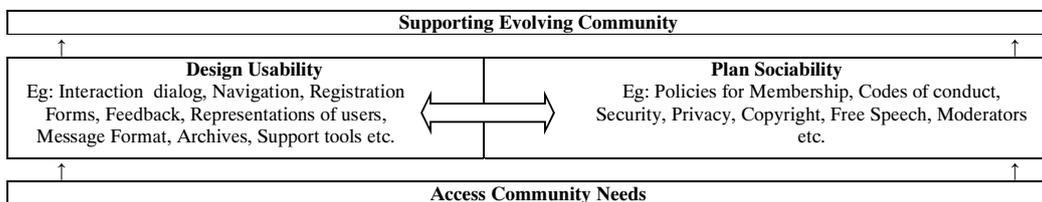


Figure 2: Supporting evolving community¹
Source: Preece (2000:27) Online Communities: Designing Usability, Supporting Sociability.

¹ The way the evolving community within the second life environment is supported. Accordingly there is an interaction between usability and sociability. The functioning of sociability depends of the thorough design of usability; "thorough" in the sense that it is clear to the users how to interact, navigate, register, get and give feedback, archive use any support tools among others. Whilst the effective communication among users 'usability' depends on abiding by certain policies with regards to membership, codes of contact, security, privacy, copy right, free speech, and moderators among others.

According to Preece (2000), 'good' sociability is linked with three key areas: purpose, people and policy. With regard to purpose, certain users use the internet for various reasons: information gathering, leisure, and/or socialization. An on-line community appears to 'provide reason and goal' for every individual user who wants to belong to this community. In general, communities with a religious, political or cultural content engage in heated debates, while dating communities engage in relaxed and emotional discussions. Each community usually has a meaningful, easy to remember, and concise name, as well as a clear statement denoting its purpose and functionality. With regard to people: people are necessary to form a community. The 'size of a community' might act either as an attraction or a deterrent. A small community might not be interesting whereas a large community might be too intimidating. Users assume various roles within the on-line communities, that of the leader who guides the discussion, the moderator, or just that of the general participant who only contributes to discussions. As a rule, communities should be open to everyone, whether or not the interested parties are anonymous, and should not prevent users who are from a different gender or cultural background from accessing them.

A community should also ensure that empathy, trust and cooperation are available to all participants. Policies, language and protocols are also essential because they determine the requirements for joining a community, the style and the codes of behaviour, and the rules for moderation, copyright, privacy and trust. Policy statements can either take the form of formal structured documents or can be less formal sets of rules. Such statements usually influence the character of each community. In the last few years, due to the considerable increase in internet usage, many policies have been formulated in order to protect people against copyright infringement, racism, free speech infringement, and anti-democracy, amongst other things. Such policies provide 'community governance' and inform users of what they can or cannot do; the same as in any physical community (Preece, 2000).

In conjunction with the three above areas that ensure 'good' sociability, Preece provides 'Eight Heuristic Tools' (Table 1) that give depth to the meaning of the sociability in on-line communities. These heuristic tools, which are presented in the form of eight user questions and eight sociability questions, formulate the basis for the data collection methods used in this research.

User Questions	Sociability Concerns
1. Why should I join this community?	What title and content will communicate the community's purpose effectively and attract people?
2. How do I join or leave?	Should this be an open or closed community? How sensitive are the issues and participants? Do we want to control who joins?
3. What are the rules?	What policies are needed? Should a moderator guide and enforce rules? Do we need disclaimers or other statements of intent?
4. How do I read and send messages?	Is support needed for newcomers? Should the system facilitate sending private and group messages?
5. Can I do what I want easily?	What is the best way to ensure that the community is a congenial place, one where people can do what they want to do? What are the communication needs of the community?
6. Is the community safe?	Will the community need a moderator to ensure appropriate behaviour? What level of confidentiality and security is needed?
7. Can I express myself as I wish?	What kind of communication capabilities does a community with this purpose require, and how should they be supported?
8. Why should I come back?	What will entice people to return on a regular basis?

Table 1: Eight Heuristics
Source: Preece 2000 (p.291-292)

Second Life, On-line Virtual World

Since its launch in 2003, SL has become increasingly popular and today more than 7 million people have subscribed to it (SecondLife, 2007). The success of the SL in comparison to other similar 3D on-line virtual worlds could be attributed to its multi-faceted nature. SL could be used as much for playing on-line games as it could for entertainment, such as dancing

and listening to music with other residents; socializing, by talking to other people; becoming educated, by visiting renowned recreational sites; being creative, by building and designing; and being entrepreneurial by dealing in business, among other things. This is depicted in Figure 3 in which an office is built in order to serve as a basis for users to sell, in the virtual world of second life, goods or provide services.



Figure 3: PA Consulting SL Virtual Office
Source: authors own collection

According to Ondrejka (SecondLife, 2007), who is one of the modelling founders of Linden Lab, SL is a 'digital world unlike any other'. Any on-line user could register for free with SL and become a resident. It is an internet based virtual world that is entirely built and owned by its residents. In SL the sun rises and sets as in RL and trees and grass blow in the wind (White, 2008).

SL runs on a grid of computers, each one of which simulates approximately 16 acres of land and its airspace. Each computer is connected to up to four computers resulting this way in a perceptually continuous space (Mansfield, 2008). According to the

SL official website, this 3D on-line virtual earth is massive and growing at a rate of 600 acres per month. On-line SL residents are allowed, for example, to build houses, play sports, design and do crafts (Figure 4). One can actually pay a minimum monthly fee of ten US dollars to own one's own land or one can spend hundreds of dollars to buy an island. A set of powerful tools are available to the user to build and design objects, and the use of scripting language provide users with the flexibility to develop and build advanced features that could allow objects to assume manners and moods. In this digital world, one can create a new reality far away from RL.



Figure 4: Second Life House
Source: authors own collection

Figure 4 depicts a house which was built and customised to serve the needs and tastes of its users. SL supports two main features (Mansfield, 2008): forums and events. In the last few years forums have been very popular and an essential part within the SL. Such forums could be discussion boards, known also as blogs today, where residents can raise topics and questions for further discussion. Such topics could range from technical issues concerning the scripting rules, to promoting and/or asking for feedback for new products and services. Anyone on SL can plan and host a promotional sales' event (Van der Sluis, 2012; Echner *et al.*, 2007) cost free and can invite people to their digital premises to make them aware of their products. Within the social aspects of the SL, many of the events act as meeting points for group discussions and sharing ideas and thoughts on certain topics. In addition, there are dating services on offer which promise romance and sexual experiences with other virtual residents. The location of an event, the venue and the category are some of the specifications required to set up an event. The reason for an event could be to bring SL residents together since the virtual world is so massive, in order to socialize and make friends, to discuss, to develop social networks for global brand names (Nokia, Toyota, Reuters, BBC etc.), to establish a business presence and opportunities for individuals, or to promote and sell their products (SecondLife, 2007) among others.

Hence, as SL is becoming increasingly attractive for business transactions, by using the SL Grid (Wagner, 2007), universities have established virtual classes which are considered to be more effective than classroom-based classes. Open day events are often organized which invite students to discuss university courses, give career advice, and offer tours around the university campus and services. IBM, Nokia, Toyota and Dell are amongst the retail brands which use the medium for customer services, sales and marketing, and promotional events. The telecommunication company Cisco aggressively uses SL to communicate with customers, for training and receiving feedback on products, for employee meetings, client presentations, and/or holding events for new products. Residents are also able to view the products in a 3D environment, discuss with other customers and purchase products under special offer (Kenny *et al.*, 2007). SL is also used successfully by small entrepreneurs to run businesses that were not successful in RL. These entrepreneurs range from jewellery makers and game developers, to musicians, and publishers (White, 2008).

Methodology and research design

A qualitative virtual ethnographic approach to research was undertaken in order to explore the SL residents' interaction in virtual social settings and

activities. The tools of the research entailed user observation within the virtual world, audio-based and recorded conversations, and in depth interviewing.

The aim of the research was to assess whether SL promotes sociability. This was achieved by identifying and justifying relative values and positive/negative aspects related to whether or not social interaction takes place within the virtual world. Certain usability issues, such as the extent to which the information is easily read and comprehended, as well as the extent and ease of user navigation are also central to this investigation.

The objectives were mainly based on Preece's (2000) three key sociability areas: 1) to study the SL and provide an understanding of this virtual world. The reasons people are interested in SL; the rationale behind their repetitive visits; and the way they interact with one another within the virtual world; 2) to assess the SL's online users so as to identify their needs. Their opinion about SL; their privacy, security and trustworthiness within the SL world; the medium of communication in SL, i.e. text, audio and so on and so forth; availability and easy access of information; and 3) to assess the policies, protocols, and rules of the virtual community that guides the users' interactions.

Ethnography as a methodology entails observing human interactions and is rooted in sociology and anthropology (Burke, 2001). However, the acceleration of technology has resulted in the development of new forms of human communication, which has made ethnographers and social scientists start to adopt existing methodologies to investigate the cyber frontier (Alvin *et al.*, 2001). Therefore, virtual ethnography, or online ethnography, is a new expansion in the field of ethnography. In short it is ethnography of the online communities where the RL face-to-face interaction is replaced by the communication medium of the internet (Hine, 1998). A qualitative virtual ethnographic study is mainly implemented through direct observation of users' actions, such as group conversation involving a number of participants at various levels of formality; detailed analysis of users' actions and content analysis aiming to evaluate and interpret content in order to derive certain conclusions (Crichton, 2003).

According to Mason (1999, p. 63) *a virtual ethnography is one that fully immerses the ethnographer into the consensual reality experienced by groups of people who use computer mediated communication as their primary, and often only, means of communication. As such the online or virtual person - the participants - are the only focus on the person at the keyboard; a virtual ethnography reverses this and works instead with the persona that has been projected into cyberspace by the typist.*

Ethnography traditionally entails immersing oneself in the 'real' life of communities, seeking Malinowski's native point of view; observing directly or as a participant and interviewing local people. Thus virtual ethnography has been criticised on the grounds of legitimising virtual communities. Nevertheless, Clifford (1997) argues that one should perceive fieldwork in a more broad sense as a 'travel encounter' and not in the narrow anthropological interpretation. Further, in any ethnographic study the experiential and cognitive is more significant than any physical aspect. Evergreen (ntd) argues similarly that there are various types of ethnographies for undertaking research of 'real' communities, there are also various types for undertaking a study of 'virtual' communities. Slater (1998) states these are comprised of 'Real Chatrooms' where subscribers work with authentic or inauthentic 'Avatars', bulletin boards, and newsgroups. However, when undertaking cyber-ethnography a researcher can avoid issues concerning the classic distinction between the self and the others since all participants in the same space becomes the 'other' (Hakken, 1999) as the cyber-space is nobody's land.

Community, I would suggest, is apparent in cyberspace: meetings may be temporary and dialogues fleeting and readers' silent (larkers) but this is also the case offline. People group together at the electronic interface (Evergreen ntd), interact as a group and think of themselves as members of a group. These groups, newsgroups or chat areas are 'places' where people meet face to face but with different understandings of the words 'meet' and 'face to face' (Jones, 1995). They make a convincing community, one worthy of investigating as an ethnographic object.

Participants in cyber-communities interact with one another and perceive themselves as part of the same group. However the way they perceive these places may vary according to their interests and personal and/or professional background. The information exchanged, the frequent occurrence of ongoing events, and in this sense, fieldwork could be an ongoing event, since new happenings can occur any time. Electronic ethnography is still in its infancy, hence there is still much to be studied in the context of its application in the cyber everyday life (Barker, 2005) especially with regard to decoding text based communication. Therefore Hine (2000 p. 50) argues the challenge of the electronic ethnographer "... *is to develop an understanding of the meanings which underlie and are enacted through these textual practices.*"

Personal online journey

In order to comprehend the actions of those participating in SL, fieldwork was undertaken over two different time periods. The first lasted for four

successive weeks and the second was more sporadic and lasted for more than one year. The results of the first study were used as a pilot and they helped me to become familiar with the SL environment and to test the interview questions. User/Group observation and Interviews were chosen as research methods of the virtual ethnography in order to obtain a detailed understanding of the social interactions that took place in SL. Observation was undertaken both in an indirect and direct/participant manner. Indirectly in the sense that the researcher only observed the other users without becoming engaged; and as a participant where I engaged in conversations with other users and recorded those conversations after consent was obtained. Preece (2001) argues that observation is always advantageous since it allows the observer to watch other users' activities.

Interviews were also conducted since I wanted to receive direct information from users regarding their activities and their interests in the online SL community. Given that sociability is very broad as a term and to avoid any confusion with regard to the outcome of the research, the interview questions were based mainly on Preece's (2000) 'Eight Heuristics' already discussed above, since they form a guide to sociability, and two additional ones referring to the importance of the SL in RL and vice-versa. Altogether, 30 people were interviewed.

The interviews were conducted with active users, registered as SL citizens, either as newcomer trainees or with long time expertise. Even though the sample was conveniently selected the researcher assured comparable samples of both categories in order to compare and contrast their views. The participants were recruited after responding to messages I posted in discussion forums and blogs on the World Wide Web. Therefore, after I briefed users of my research and the reason of my existence in SL, they were asked whether they wished to assist by being interviewed. The easiest way to achieve this was for me to forward the interview questions for them to answer using a word processor. This saved time for both parties. Given that the research was online and in order to avoid any ethical difficulties, I informed the respondents that participation was on a voluntary basis, they could withdraw at any stage, and that the data would be used in a confidential and anonymous manner.

A two week pilot study was initially undertaken during which I familiarized myself with the application features and decided on the areas to observe. During this time I logged in twice a day and spent sufficient time to progressively become a member of the SL world. Since I was more interested in the social interaction that takes place in the SL communities than the design and the features, I decided to spend more time in public places since they

provided more chances to socialize. However, because SL operates in US local time, when I logged in in the evenings, on UK local time, there were no users around. Therefore, I had to search for and spend most time in places which had been voted for by SL residents as the most popular. Such places are mainly clubs and money islands where one could easily earn money for free by standing at certain meeting points for a specific time. Therefore, I started meeting other users and discussed using text or audio based representation. Due to the fact that SL is an immense world, most of the places seemed abandoned from their residents or access was prohibited to anyone who did not have the appropriate authorisation. Places such as clubs and money islands were the only crowded places. However, users did not show any interest in socialising or engaging in conversation. The only discussions were limited to functionality, for example, dressing one's 'Avatar', or dancing, but there was no interest in any further interaction. This initial observation made me realize that these places are usually frequented by newcomers, like me, since their short experience and hence lack of knowledge limits their ability to discover new functions and areas of interest. This two week pilot study helped me also to realise that in order to proceed into a more in depth and lengthy observation of SL citizens in their social setting, to make friends and gain the trust of other 'Avatars' I had to attend events, which were either commercial and marketing oriented, where residents invite one to visit their business premises, or social where one is invited to attend and discuss certain areas of common interest. Therefore, during the main research I started to attend these events at least twice monthly. Most of the events were related to social and educational topics and I hosted events that focused on the objectives of my research and invited users to attend and engage in discussions. During these meetings I also took notes based on the social interaction of online users and contextual discussions.

There are several types of events that SL provides. However, being an SL resident and having spent sufficient time as a member of the community, I would classify the events into four main areas: a) **Commercial** - where anyone, individual or large corporation, having businesses within the SL can invite people in order to promote their services; b) **Entertainment** - related to clubs, venues, parties with famous DJs, art exhibitions; c) **Gaming** - where residents can meet and play several types of game; d) **Social** - these are events, where discussion topics are mainly related to SL feature, such as how to design or build your own house. It was from these events that the research sample was recruited.

Analysis

Grounded theory was employed in order to analyse the ethnographic data since it enables the development

of patterns and relationships which in turn facilitate the generation of categories and prepositions and ultimately the formation of a theoretical framework. The whole process involved three phases of coding: open, axial and selective.

First stage of analysis – Open coding

The data which were coded were collected through online interviewing, notes taken during participant observation while present on SL and finally when I organised the online events. I followed Glaser's (1991) approach to coding and therefore not every single word was coded. The codes identified derived from direct relevance to the research's aim and objectives; unlike Glaser & Strauss (1967) paradigm which suggests coding of every single word. The coding ceased when saturation was achieved. The codes, which take the form of a sentence or a word, are presented below in italics (see Figure 5).

People forget there is a person with feelings behind the 'Avatar' ... [Code: People forget there is a person with feelings behind the 'Avatar'; Concept: SL Discrimination; Category: Reasons that hinder sociability].

Figure 5: Open Coding: Codes

As seen in Figure 5, the phrase in italics has been singled out as a code since it is relevant to the aim of the research. In order to narrow down the number of codes, a comparison and contrast among the codes followed, which enabled their grouping under certain conceptual labels. A further comparison and contrast among the conceptual labels led to the following formation of categories which is also the second stage of analysis the Axial coding (see Table 2 below). In a sense Axial coding involves the process of seeking relationships between the categories and its concepts by rearranging and rebuilding the data into various patterns.

Categories	Reasons that promote sociability	Reasons that hinder sociability
Concepts	Social Purpose	Accessibility
Concepts	Means of communication	Information sharing
Concepts	Empathy and support for newcomers	Anarchy
Concepts	Rules and Polices	SL Discrimination
Concepts	Anonymity	Impact in RL
Concepts	Participation space	Emotional illusion
Concepts	Open Community	Privacy
Concepts	Free community	Mostly populated by US citizens
Concepts	What brings them back	Sexual orientation

Table 2: Open Coding: Concepts; Axial Coding: Categories

Table 2 presents the concepts and categories. Accordingly, 2 categories were formulated: a) reasons

that promote sociability; and b) reasons that hinder sociability. The logic behind the specific categorization is that the concepts arising were thought to fit contextually nicely under these categories. Then the categories were extended into prepositions. The wording of the prepositions was decided considering the content of the categorized concepts. The prepositions developed are presented below (see Table 3).

Categories	Reasons that promote sociability	Reasons that hinder sociability
Prepositions		SL provides a broad range of functions to newcomers, however easy usability is not achieved instantly, which in a sense limits sociability
	SL is a virtual open, anonymous community that brings people together from various backgrounds and geographical spaces to socialize, realize fantasies from the real world and deal in business, which in turn enhances sociability	Insufficient rules and policies can be detrimental to sociability within SL

Table 3: Axial Coding: Categories/Prepositions

As seen in Table 3, one preposition was formulated discussing the concepts that were grouped under the category ‘reasons that promote sociability’ a) *SL is a virtual open, anonymous community that brings people together from various backgrounds and geographical spaces to socialise, realise fantasies from the real world and deal in business, which in turn enhances sociability.* Two prepositions were formulated under the category: reasons that hinder sociability: a) *SL provides a broad range of functions to newcomers; however easy usability is not achieved instantly, which in a sense, limits sociability;* b) *Insufficient rules and policies can be detrimental to sociability within SL.*

Third stage of analysis – Selective Coding

Lastly, selective coding was applied after having detected the core variable/main category (deterrents/stimulators of sociability) and then linked the categories and prepositions around it, with the goal of amalgamating the research and developing a grounded theory. Thus, during this stage a storyline was built that linked all the relationships and described the key phenomena that were evident in the research.

Therefore, the story revealed is as follows: *SL is a virtual open, anonymous community that brings people together from various backgrounds and geographical spaces to socialize, realize fantasies from the real world and deal in business, which in turn enhances sociability. However, despite the fact that SL provides a broad range of functions to newcomers, easy usability is not achieved instantly, and that in turn deters sociability, whilst the insufficient rules and policies existent within SL can contribute towards enhancement of anti-social behaviour, which again can act as a deterrent to social interaction within SL.*

Analysis and Discussions

Given that not many studies have been undertaken in the area of SL, the analysis, which is discussed in three different sections/prepositions, takes the form of a descriptive narrative in order to depict a more elaborate view of the participants’ perceptions of sociability within SL.

SL provides a broad range of functions to newcomers; however, easy usability is not achieved instantly, which in a sense limits sociability

SL provides newcomers with a fast and easy registration process. One can register, but then the degree to which one joins in with the community varies. The basic SL membership is free of charge and provides access to all essential functions and features on offer; however to acquire a full status advanced membership is required. Due to the free membership, a significant number of people decide to explore this virtual world. However, one cannot instantly withdraw one’s membership. One has to send a message to the SL concierges who manage the accounts, and/or lands in order to delete it. The functions and tools available to SL’s users are vast and there is preparatory assistance available, on the so called ‘Orientation Island’, which provides newcomers with an induction course about the basic rules that govern their interaction within the SL environment. However, it is not user friendly since it might take a newcomer a long time to familiarize oneself with it. Moreover, as in RL, residents usually familiarize themselves with their environment either by asking other users for assistance or by trial and error. As a result, it invariably takes a long time to discover information and that creates frustration among users.

Some interviewees said: *You don’t find things easily here, it always takes some time to find your way, to meet and make friends.... I found it very difficult to find places where I can meet interesting people You will have to be patient SL is a massive world like RL. You need to spend time to find out things as you do in RL [Nevertheless] SL is a fast paced*

technology, open world and since last year there have been improvements in the layout, in functionality, in membership terms and accessibility. It grew in terms of the number of residents and there is a vast number of places you could visit.

While some events interviewees added:

From Linden Labs you get the 'Orientation Island', which is the first place you arrive on your first day into the SL world. It is an island that describes all the basic functionality of the SL. But you need to spend enormous time in the beginning in order to familiarize with the functionality, especially if you wish to build your own house ... then you are practically on your own or you have to take classes again but everyone finds it very boring Asking around is the only way to learn There are lots of resources for a newbie, but for non-technical people it can be confusing to figure it all out. But once a newbie finds in-world classes, it should be fine SL is still young.

Additionally, it is only accessible to those who have the right computer specification. SL has specific technical requirements, the most important of all being certain graphics cards, which essential for someone are wishing to log into the virtual world. For example, when I initially started the research, I could not access the virtual world because the computer (laptop) I was using was an old model (IPP), and it did not have sufficiently high resolution graphics cards to support the action. At a later stage of the research, and even though I had bought a brand new computer (laptop), I still could not access SL because the graphics card was not compatible. Eventually I bought a new desktop/monitor, which was compatible with all the system requirements described on the SL website. As soon as I received the new desktop and tried to access the SL, I realized that 'Windows Vista' was not yet compatible with SL and had to install SL's recommended operating system. By the same token, some other users complained that SL could be slow at times, it frequently crashes, they cannot easily log back into the system, and they keep losing their inventory items. At a business level these disadvantages translate into loss of time, which is something that businesses cannot afford to waste in a constantly competitive environment. Accordingly, SL loses business oriented users and that, in the long term, translates into fewer subscriptions.

Three primary means of communication technology are available in SL: 1) instant messaging, which is a private one-to-one conversation; 2) chat, which enables communication within a group of individuals; and 3) audio, which enables conversations among individuals through the use of a microphone.

An event's participant said: *There seem to be enough channels for one-to-one, group and public communication. Text chat couldn't be a real*

conversation but it is ok ... voice has technical issues ... and it can be pretty frustrating trying to keep up with chat, and the things going on around.

Unlike with other social software, one can 'see' the people who interact through the 3D representation of an 'Avatar', which makes communication more interactive. For example 'Avatars' can be graphically presented as young or old, handsome, attractive, ugly or even naked. Furthermore, SL offers a variety of communication options by adding animation to one's 'Avatar'. Some of the basic default animations that are available allow an 'Avatar' to walk, run, fly, and type. SL gestures are accessible through one's personal inventory and they are represented in the form of scripts that combine animation and audio. So if one types for example the phrase 'you made me laugh', then an audible component runs behind it and it sounds as if the 'Avatar' is laughing. Facial expressions can also be depicted by typing and using animation on the 'Avatar'. In such virtual environments where 'Avatars' represent human beings, users have the illusion of being physically close to other people, which enables meaningful conversations and spontaneous responses that one can usually experience on a face to face basis.

Some event participants said: *SL is very different to what the other social interaction games can provide The longer you play the better you express yourself; you can use programs to animate your 'Avatar' When you start in the beginning it's all quite basic, you will have to buy clothes, and find some scripts to express yourself Using simple and clear words and being genuine to what you are saying is the essence to communication.*

SL is a virtual open, anonymous community that brings people together from various backgrounds and geographical spaces to socialize, realize fantasies from the real world, and deal in business, which in turn enhances sociability

Given that SL was founded in the USA its virtual time is set according to the USA time zone. Most of its members are Americans whose accounts are estimated to be in the hundreds of thousands. The business customers are also predominantly Americans. However SL is used by users residing in other parts of the world and because of the time difference they often experience an 'empty digital world'. Even though there are activities organized throughout the day, such as club parties, and commercial activities, if one visits places and tries to join online communities, they appear to be empty, indicating that SL tends to be active when the majority of USA users are back home from work. At these times, in most parts of the world because of the time difference, users tend not to be active within SL.

In SL, users can explore their creativity and create their own ideal virtual world by designing and/or building houses; establishing businesses; joining online communities, who share similar interests; make friends; forming groups and organizing their social networks by sending cards from friends or group lists where one can ask for information or support, and voice one's own ideas; socialize and have fun.

Some interviewees said: *You can do anything you want and you can try anything you wish for. ... is good to explore new stuff and a good way to meet people from all over the world ... you can do a lot in SL and not have to worry as in RL ... so you create your ideal life Users purchase virtual clothes for their 'Avatar', buy land to build their house, and pay for adding expressions to their 'Avatars'. People can transform themselves into something they wish to be such as having a nice body, long hair, look young, even being an animal. They could transport to another place within seconds, or they can modify the place where they live easily with no huge amount of money.*

SL is a virtual world that encourages users to participate. It is a shared experience, which brings together individuals with common interests, skills, motivations and reputations. The most significant characteristic of SL is that users rely upon their interaction with others to retain their existence. The SL virtual world enables one to forget social restrictions and daily problems. SL can be seen as an online world where users tend to leave behind their RL stress, anxiety and responsibilities. One is able to create one's own social environment where people respect one another's opinion. It is an 'open source environment' available to all and not only to computer experts. It is an environment that encourages residents from all kinds of backgrounds to use their creativity in order to build and design the graphical environment they wish to 'live' in.

Events participants said: *SL is very different to what the other social interaction games can provide User interaction takes place through the visual representation of 'Avatars' You can design your own world to suit your needs It is fun and can bring people together from all over the world ... because it gives you the opportunity to interact with people from a variety of RL cultural and social backgrounds in an alternative environment without the added prejudices of the RL world.*

However, interviewees agree that even though the SL gives you the advantage of: *... not judging people based on looks or other stereotypes because you have no idea what their religious, economic or ethnic identity actually is*, the main limitation here is the fact that there is no face to face interaction to guarantee a person's identity.

SL welcomes individuals who come from different communities to join the virtual world and find their own interest groups. Since SL has been extensively expanded by users, a great many online communities have been established, for example, religious, professional and/or school communities, and social and sexual preference groups.

Some interviewees said: *You can be whoever or whatever you wish to be, for example the opposite sex, a dragon, a cute little puppy I have found it as a great creative outlet and a vehicle for self-exploration. SL is our secret mind [Y]ou could have sex and go on dates without all the drama Find what you want and not be judged by it You can do a lot here and not have to worry about it.*

Further, when the Islamic community bought 'land' in order to represent the holy city of Mecca within a 3D graphical environment, hundreds of 'Avatars' joined in to visit the island within a short time.

SL is a useful tool for those people who have limited social lives because of a disability, like for example Bob, an SL consultant, whom I met in SL during one of the events I organized as part of the participant observation process. Bob has cerebral palsy and this affects his speech, but within the virtual world he can express himself, meet and communicate with people, drive a car, have fun and dance. Bob has been a resident of SL for five and a half years and his role is to assist new users in ways to explore the new virtual world. For him, SL is more than a game; the pixels on the screen have a real identity. He perceives SL as a small real world where, amongst other things, people are keen to help, cooperate, show you around, and teach you how to build. However, SL is not for everyone he says: *... but it does serve a very useful purpose for the older gamer that seeks a place to play and feel safe.*

SL is very similar to RL, in the sense that one can feel, be vulnerable, and be hurt even though only two senses, memory and hearing, are used.

Some interviewees said: *People forget there is a person with feelings behind the 'Avatar' In RL some people would never say some of the things they say in SL [However] generally, I think people behind their 'Avatars' reveal their true personality. People who are jerks in RL will also act like jerks here and conversely. Given the opportunity, people are willing to reveal the inconsistencies between their RL and SL lives.*

SL residents establish also casual and meaningful relationships with other 'Avatars' within the virtual world. They meet people, they make great virtual friends, get emotionally attracted or attached to other residents; they develop relationships that support

empathy and trust amongst them even if they do not intend to continue the relationship outside the SL. They even fall in love or experience heartache when they develop intense infatuations with other residents and these residents suddenly disappear from SL. Other people are very often really disappointed when they realize that another 'Avatar' was not truthful or respectful. However, many residents treat SL in the same way that they treat RL.

Some events participants said: *I think you have to be careful with trust It is easy to be lulled into feeling comfortable with someone and giving out RL information No one knows if the person behind the 'Avatar' is playing a game or being genuine I think just about everyone is a sweet, wonderful person inside. SL gives that 'inner being' a chance to come out. When you start bringing RL into it, you start like learning people's faults and ugly side. That is a real fear in SL I have a few very close friends that I have known for a year in SL, and I have no problem exchanging RL information with them. We have each other's phones in case we lose touch in SL for some reason. One of them burnt her eyes in a work accident, for instance and was not able to go online SL can be very risky ... but that's down to you - you decide how much of the 'real' you admit to.*

So SL is considered to be an extension of RL that gives the opportunity to enhance one's social life at a global and instant level. However, during the time I was living within SL, I realized that people, as a rule, do not discuss their RL because allegedly they have a reason to be there and this reason is not something they want to talk about.

Some participants said: *when I first joined SL - I thought of it as MSN on steroids but I've come to think of it as an extension of RL ... now in SL - I have friends - a social circle so to speak. But it is limited to people I encounter in what is generally a limited environment. I don't have the luxury of being able to traverse the globe instantly. In SL - I have friends (and I mean people I can confide in) worldwide, people I would never have otherwise met Everyone I've met in SL - without exception - has a reason to be here - and that reason is NOT something they want to talk about ... in time you will find that many come to SL to get away from their RL, and discuss about anything that blows it for them.*

Relationships have been transformed in many cases into SL partnerships. Proper wedding ceremonies are taking place between 'Avatars'. This VRW can fulfill residents' desires which cannot be fulfilled in RL. On certain occasions when I asked residents to introduce me to well-known land owners I received the following reply: *SL is like RL - not everyone will want to co-operate.*

An interviewee said: *I have an SL partner and we had a ceremony. My real 'Avatar' is male and in RL I am male and divorced. In RL my partner (she) is married - but her marriage lacks something [here] she can fulfill the rest without cheating since it's not real but considered emotional cheating.*

Participants also discussed serious risks that SL could impact on SL people especially when they spend hours on SL discussing their RL problems or unresolved emotional issues, since they do not face the problem in reality. *SL allows for the exploration of individuals' sides that they would not explore in the real world. This applies to me in that it allowed me to branch out and find other interests outside the original community,* said a participant.

SL is an interactive world that simulates 'experiences' where the user always has the illusion of being physically present in a given place which is enabled through the animated image the 'Avatar' creates for them. Therefore each 'Avatar' is operated by real people who have real emotions but who do not, however, know the person with whom they are interacting. Due to the social nature of SL, residents often become emotionally attached and create either romantic or friendly relationships. Even though it could be assumed that such virtual relationships are of less importance and substance than their RL equivalents, many people establish meaningful and 'ideal' relationships. At times people even go as far as to get married in SL with virtual marriages.

During one of the events organized within SL which aimed to discuss 'sociability', one of the participants mentioned: *In SL I have made such great friends, fell in love but been hurt very badly People you love suddenly disappear.* Therefore participating in the virtual SL environment could involve emotional risk for some, although that depends on the circumstances, and sensitivity of the user. Finally, there have been reported cases where a virtual relationship has been taken out of the virtual world and into the real world.

People tend to come back very often because every day is a new day in SL and brings new things to see and to do. Nowadays, most of SL's success relies upon 'fun' social activities, such as clubs, bars, music, and dancing. During the last four years however, an enormous number of people have joined this world, potentially increasing the commercial aspect of SL. Further, SL is great for meetings and can save on commuting costs. It is also an inexpensive way to obtain an education (Nakasone *et al.*, 2011) one could not possibly afford, and is excellent for design and market research. The SL community frequently organizes tutorials, free of charge, on how to use more advanced features such as building, design, and opening a business. Some of these classes can be useful in RL, for example those related to tuition on

specific software applications, alcoholism, women's defence, and religion.

Some participants in the events organized said: *Well there are RL type classes I saw today an advertisement for a class to learn MS Excel I've taken all types of classes: building, textures, clothing, submissive training, and right now I'm in a class series for people that wish to be SL teachers I went to a discussion on women's self-defense which was specific to RL and not SL I've heard of a sailing class, diving class, a seminar on job interviewing, which could be applied to RL and SL.*

Further, in one of the events organized, residents discussed the huge potential of SL as a medium of communication. People can participate in collaborative projects with the purpose of disseminating information on current issues such as climate change, the energy crisis, and carbon emissions, amongst others.

Events participants said: *There are also environmental conferences ... religious meetings and cultural groups which are also RL related.*

People are interested in large scale commercial events organized by big corporations such as IBM, Cisco, and Coca Cola, to name but a few, which promote new products and introduce new technologies, and the smaller scale events organized by small and medium enterprises, which sell services useful to virtual and RL users.

IBM has a lot of online training for free ... since I am in that business it's very useful Not to mention SL-related software classes like Photoshop, Blender, animation software ... Programming classes - Python I think, said a participant.

According to the residents' opinions, SL has been used by businesses as a marketing platform, not as a dealing platform. However, the virtual world could be useful for small businesses, which cannot use the RL global market and therefore may be of use to promote their products. In addition SL could have advantages in obtaining things much more cheaply than in RL. For example if you need a translation you can pay three dollars for four normal page sides and in RL you pay the same amount for one line.

In SL I have a company you can use for marketing. In RL I am a student who doesn't have any money SL is also an entertainment platform where people pay to watch movies at a theatre, or rent a DVD to watch at home or pay to go to a concert. SL also provides hours and hours of entertainment in exchange for a few Euros. Its great value for the little money spent! said a participant.

SL can be seen as a good channel for users to express their creativity. Hence, it is an environment that allows those who have enough imagination to use SL as a creative tool to build and design, even if in RL their profession is completely irrelevant.

Yes, I have been interested in Web 3D design but in RL I am a school bus driver ... and it is an environment that allows those without much technical savvy to build, create clothing etc. It is a wonderful creative tool for the average person, said an interviewee.

Insufficient rules and policies can be detrimental to sociability within SL

The extensive added dimensions and public interest given to SL mean that this particular virtual world has attracted all kinds of users worldwide. As a result many subscribers have reported abusive incidents. Linden labs published a set of community standards and rules in order to maintain order in its environment, a violation of which is punished with disciplinary actions such as suspension or expulsion from the SL community. Additional rules have also been set after SL was launched. The standards are available online (SecondLife, 2007) and represent six behaviours, the so called 'big six' "*intolerance, harassment, assault, disclosure, indecency and disturbing the peace*". Accordingly, residents can 'mute' anyone they would like to avoid, and they are able to report any violation, harassment or abuse using the 'abuse reporter' tool, which can be found under the 'help' menu.

An interviewee said: *you can mute people and objects ... someone that insists on talking to you and that person can't approach you in any way.*

With regard to sexual orientation, participant observation indicated that, nowadays, for many the virtual world of SL is mostly associated with cybersex and other sexual activities. In some cases, Linden labs have had to take immediate action to ban offensive forms of pornography related to some functions, such as operation of children's 'Avatar', because there were reported cases of paedophilia. An interviewee said: *no child 'Avatar' porn type stuff is allowed.*

However, the 'Mature' islands are still in existence and have proven to be the most popular places in SL. On these islands one can find escorts and become involved in sexual acts. These are places where people can fulfil their sexual fantasies and experiment with their sexuality through text/audio based conversations and by adding animated scripts to their 'Avatars'.

However, in many event discussions that I organized, people stated that they found sexual activities to be very boring and they do not think that they support

SL's intended social purpose. Despite these views though, the venture under the name of 'red light district' has been extensively expanded within the VRW since it was first created in 2007. Such a venture brings significant revenue since more and more users join in to live the experience.

Additionally, within the SL community small communities have formed and every single one of them has its own rules and policies. However, they all differ in the way they enforce the rules and the way their moderators apply these rules, for example whether they are strict or lenient.

Some participants said: *There are rules - and there are enforcements - but that tends to depend on where you are - how strict the rules are and how well they are enforced.* There is, however, no policing per se, as one interviewee said: *there is no policing, landowners do their own policing.*

In one of the events organized, regarding the safety issue in SL, an 'Avatar' stated that he had heard of an incident where another 'Avatar's' land was frequently attacked by hackers and the landowner herself received death threats. As a result, she had to sell her land since the numerous occasions on which the space was crashed made it inaccessible. Due to the fact that SL expanded within such a short period of time, there are no laws or sanctions to provide support in extreme cases such as the one described above. The only SL action in such cases is to ban a resident for a few days. Despite such incidents, SL residents are safe since their 'Avatar' cannot be injured or die. All action takes place in the VRW.

An interviewee said: *I have had death threats - last month - My 'Sim' used to be crashed daily by hackers. One day I got a note saying they would slit my throat. I sent messages to SL to report the incident but nobody came back to me. So I had to quit SL. I sold all my land, I muted the enemies, and I told everyone I quit. I don't see any of my old friends anymore. I only know of one who got suspended for abuse and only for a few days Yeah - That's the biggest problem in SL. There is no law and sanctions.*

Anonymity also plays an important role in SL users' interaction. Users believe that SL encourages sociability because people can hide their real identity. It emerged from one of the organized events that even though users interact openly with one another they prefer to keep secret their real identity. The relaxed atmosphere makes them express themselves more honestly and ask questions of other users without reservations. In short, anonymity allows people to be whoever and whatever they wish to be.

An interviewee said: *people who are shy are more themselves in SL than in RL since they are not scared*

to speak out ... they don't have to fear anything here of course Under the anonymity you can feel free to socialize with people and discuss openly your beliefs Magic effect and no age differences are very unique in SL. Only your mind classifies your 'Avatar'.

However, the fact that people feel free to express themselves, because they are hidden behind the anonymity of the 'Avatar', can lead to incidents of racism which cannot be eliminated due to the lack of laws and sanctions in the virtual world. Participants in one of the events organized about discrimination in SL and the extent to which people can be more open minded in the virtual world indicated that discrimination is even more present in the SL environment. Based on their experiences participants would mostly argue that people are prejudiced in both RL and SL. For example homosexual or non-Caucasian 'Avatars' have been abused by other residents on several occasions. Therefore SL is not for everyone and it should always be used in a manner that enhances one's RL experience and not as a means to escape it by abusing others' rights, principles, and liberties.

Equally, in many cases relationships can become emotionally painful since, as also mentioned above, some users tend to cheat or make fun of other residents. The digital world calls these 'Avatars' 'griefers' because they cause trouble for others, through harassment and assault or even killing. This is mostly the case because users can keep their anonymity behind an 'Avatar', and they can assume as many identities as they wish. Since 'Avatars' can enable the creation of many images one can be a robot, animal, and a fairy among other things. In some other instances an elderly person can assume the identity of a younger one. Thus this role play and assumption of different identities becomes a pole of attraction for many users. The majority of respondents are reluctant to discuss private matters freely due to the fact that any textual logs are kept on Linden labs servers and can be accessed by any SL employee or hacker. Furthermore, audio could be captured by using special software. People generally do not trust and feel secure on the net.

Some participants said: *since everything is running on Linden labs servers, I don't think that it is safe to discuss any confidential or private info. There are also users who can hack your personal inventory as I have heard. Sometimes when SL crashes, Linden labs can restore part of the information you lost, which means Linden labs' server holds personal information No there isn't any protection at all I guess, there are little kids playing around and people can take advantage of that (paedophile cases) It mostly depends on what kind of information that might be. I discuss projects with customers freely, for instance; but I don't give away my personal data No - I*

have 1300 employees in Germany, which I do meet in SL – I have already a seminar hall – but it is too dangerous here to talk about any business secrets even if technically it only allows authorised ‘Avatars’ to take part in a meeting.

Even though Linden labs hold textual logs and private residents’ information on their server, which is accessible to Linden employees, in order to restore almost immediately any loss of information in case the system crashes, confidentiality remains an issue of great concern for businesses and individuals alike. Lately, many incidents of system breakdown have been reported by businesses in SL, which have resulted in: the loss of their virtual inventory; the creation of technical problems in the payment system; and loss of transactions, amongst other things. These incidents created concern surrounding data access by hackers and as a result major corporations withdrew their transactions from SL. The fact also that data are accessible by SL’s employees’ makes businesses and private individuals insecure about their communication.

Additionally, during participant observation regarding SL’s residents’ privacy, many users agreed that, on an individual basis, they do not feel comfortable or safe discussing private issues with other ‘Avatars’ because of the insecurity prevailing on the World Wide Web. Others have experienced incidents of anarchy, while others, who had revealed personal details to other ‘Avatars’, realized that the real identities of those ‘Avatars’ were fake. Moreover, users should be wary of other residents who want to steal their money (e.g. buying a virtual car) because Linden labs will not protect them.

Conclusion

This study informs knowledge on sociability within the virtual world of SL. It sheds light on the way SL facilitates or deters users’ sociability; thus, establishing whether a VRW socialization environment can act as a surrogate of a RL socialization one. In doing so an ethnographic approach to research was undertaken in order to comprehend the mentality of users, their motives, their attitudes, their aspirations and the extent the virtual environment of SL hinders or enhances their online social interaction. Given that the area of research in sociability in online communities is still at its infancy Preece’s comprehensive study on sociability was used as a reference point to support arguments regarding comprehension of social interaction online and to set the objectives of this research. The research indicates that SL is a virtual, open, and anonymous community that brings people together from various backgrounds and geographical spaces to socialize, realize RL fantasies and deal in business, which in turn enhances sociability.

However, despite the fact that SL provides a broad range of functions to newcomers, easy usability is not achieved instantly, which as a result deters sociability. Whilst the insufficient rules and policies existent within SL can contribute towards enhancement of anti-social behaviour which again can act as a deterrent to social interaction within SL

Limitations: The research was initially limited by technical issues caused by the fact that the SL’s virtual environment must meet specific technical requirements, the most important of which is the existence of certain graphics’ cards on a user’s computer, essential to login into the virtual world of SL. Consequently, when the research started, I could not access the virtual world because the computer I was using an old model (PIII), did not have built in enough high resolution graphic cards which could support this action. Further it has to be acknowledged that SL is a massive and constantly changing world subjected to changes of the external environment and mainly technology and society. Hence, even though significant amount of time was spend to learn and get familiarized with the virtual environment, develop an ‘Avatar’, and interact with the graphical world, it is believed that more frequent interaction and time would have led to a better understanding of users.

Further research: Given that the current research has mainly focused on comprehending users motives and attitudes in SL and the extent in which sociability is promoted within SL, a further research could possibly focus on a comparative research between RL and SL; comprehending the reasons behind people’s formation of relationships within the real and virtual world; the correlations between the two thus establishing whether behaviour differs dramatically within a real and virtual environments.

References

- Antonacci, D. & Modares, N. (2005) *The educational possibilities of a Massively Multiplayer Virtual World (MMVW)*. Available on: <http://www2.kumc.edu/ilt/SLEDUCAUSES2005/SLPresentationOutline.htm> [Accessed 21 January 2008].
- Bartle, R.A. (2003) *Designing Virtual Worlds*, Indianapolis, US: New Riders.
- Book, B. (2004) Moving beyond the game: social virtual worlds. Paper presented at State of Play 2 Conference, October 2004.
- Burdea, G. & Coiffet, P. (1994) *Virtual Reality Technology*. New York: John Wiley & Sons.
- Burke, J. & Kirk, A. (2001) *Ethnographic Methods*. Available on: <http://www.otal.umd.edu/hci-rm/ethno.html> [Accessed 03 January 2008]
- Chesney, T. (2007) *The Snuff of Legends*. Available on:

- <http://www.nottingham.ac.uk/%7Eliztc/SnufOfLe%20gend.pdf> [Accessed 06 January 2008].
- Crichton, S. & Kinash, S. (2003) Virtual Ethnography: Interactive Interviewing Online as Method. *Canadian Journal of Learning and Technology*, Vol 29, No 2.
- Ducheneaut, N., Moore, R. & Nickell, E. (2004) *Designing for Sociability in Massively Multiplayer Games: an Examination of the "Third Places" of SWG*. Available on: http://blogs.parc.com/playon/documents/OP-Third_places.pdf [Accessed 21 January, 2008].
- Ducheneaut, N., Yee, N., Nickell, E. & Moore, R. (2006) *Alone Together? Exploring the Social Dynamics of Massively Multiplayer Online Games*. Available on: [www.nickyee.com/pubs/Ducheneaut,%20Yee,%20Nickell,%20Moore%20-%20Alone%20Together%20\(2006\).pdf](http://www.nickyee.com/pubs/Ducheneaut,%20Yee,%20Nickell,%20Moore%20-%20Alone%20Together%20(2006).pdf) [Accessed 21 January, 2008].
- Eichner, T., Prendinger, H., Andre, E. & Ishizuka, M. (2007) Attentive presentation agents. In: *Proceedings of 7th International Conference on International Virtual Agents (IVA'07)*, pp. 283-295.
- Fetscherin, M. & Lattemann, C. (2007) *User Acceptance of Virtual Worlds. An Explorative Study about Second Life*. Available on: www.fetscherin.com/UserAcceptanceVirtualWorlds.htm [Accessed 21 January, 2008].
- GameDaily, (2007) *Study: Video Games Can Promote Sociability*. Available on: <http://biz.gamedaily.com/industry/feature/?id=13557> [Accessed 21 January, 2008].
- Hine, C. (1998) *Virtual Ethnography*. International Conference: 25 – 27 March 1998, Bristol, UK. Available on: <http://www.intute.ac.uk/socialsciences/archive/iris/papers/paper16.htm> [Accessed 03 January 2008]
- Hine, C. (2000) *Virtual Ethnography*, Sage: London
- Jensen, F. (1999) 3D Inhabited Virtual Worlds: Interactivity and interaction between avatars, autonomous agents, and users. Paper presented at *WebNet 99 World Conference on the WWW and Internet Proceedings*, Honolulu, Hawaii.
- Kahn, R. & Cannell, C. (1957) *The Dynamics of Interviewing*, New York: John Wiley & Sons.
- Kenny, P., Hartholt, A., Gratch, J., Swartout, W., Traum, D.R., Marsella, S. & Piepol, D. (2007). Building Interactive Virtual Humans for Training Environment. In: *Proceedings of IITSEC*
- Krotoski, A. (2005) Virtual Community. Paper presented at *Digital Identity Forum*, London
- Lamb, G. (2006) *Real Learning in a Virtual World*, Available on: <http://www.csmonitor.com/2006/1005/p13s02-legn.html> [Accessed on: 06 January 2008]
- Lester, J. (2005) *Brigadon: An Innovative Online Community for People Dealing with Asperger's Syndrome and Autism*, Available on: http://braintalk.blogs.com/brigadon/2005/01/about_brigadon.html [Accessed 21 January, 2008]
- Mansfield, R. (2008) *How to do Everything with Second Life*, New York: McGraw-Hill.
- Mason, B. (1999) Issues in Virtual Ethnography. In K. Buckner (ed.): *Ethnographic Studies in Real and Virtual Environments: Inhabited Information Spaces and Connected Communities*, Proceedings of Esprit i3 Workshop, Queen Margaret College, Edinburgh, pp 61-69.
- Moore, R., Ducheneaut, N. & Nickell, E. (2006) Doing Virtually Nothing: Awareness and Accountability in Massively Multiplayer Online Worlds. *Computer Supported Cooperative Work (CSCW)*, Vol 16, No 3, pp 265-305
- Morningstar, C. & Farmer, R. (1991) The Lessons of Lucasfilm's Habitat. Paper presented at the *First International Conference on Cyberspace*, May 1990, University of Texas at Austin.
- NMC (2007) *NMC: Sparking Innovative Learning and Creativity* Available on: <http://www.nmc.org/taxonomy/term/50> [Accessed on 06 January 2008]
- Ondrejka, C. (2004) *A Piece of Place: Modelling the Digital on the Real in Second Life*. Available at: <http://ssrn.com/abstract=555883> [Accessed on 21 January, 2008]
- Ondrejka, C. (2005) *Changing Realities: User Creation, Communication, and Innovation in Digital World*. Available on: <http://www.typepad.com/t/trackback/5074/1694502> [Accessed 21 January, 2008]
- Papargyris, A. & Poulymenakou, A. (2004) *Learning to Fly in Persistent Digital Worlds: The Case of Massively Multiplayer Online Role Playing Games*. Available on: <http://www.chass.utoronto.ca/~tkennedy/Courses/38H3/Papargyris.pdf> [Accessed 21 January, 2008]
- Preece, J. (2000) *Online Communities: Designing Usability, Supporting Sociability*. Chichester, England: John Wiley & Sons.
- Preece, J., Sharp, H. & Rogers, Y. (2002) *Interaction Design: Beyond Human Computer Interaction*, John Wiley & Sons: New Jersey.
- Preece, J. (2001) Sociability and Usability: Twenty years of chatting online. *Behaviour and Information Technology Journal*, Vol 20, No 5, pp 347-356.
- Rist, T., Andre, E., Baldes, S., Gebhard, P., Klesen, M., Kipp, M. & Shmitt, M. (2003) A review on the development of embodied presentation agents and their application fields. In Prentinger, H., Ishizuka, M. (Eds.), *Life like Characters: Tools, Affective Functions and Applications*, Springer: Berlin, pp 377-404.
- Second Life (2008) *Second Life Community Standards*. Linden, US. Available on: www.secondlife.com [Accessed 22 January 2008]
- Second Life Research (2007) *Second Life: Not Just a Collaboration Tool*. Available on:

- <http://secondliferesearch.blogspot.com/> [Accessed 21 January, 2008].
- Vacca, J. (1998) *VRML: Clearly Explained*, London: Academic Press Limited.
- Virtual Word News, (2007) *Education* [online] Available from: <http://www.virtualworldsnews.com/education/index.html> [Accessed 21 January, 2008].
- Van der Sluis, I., Luz, S., Breitfub, Ishizuka, M., & Prendinger, H. (2012) Cross-cultural Assessment of Automatically generated Multimodal Referring Expressions in a Virtual World. *International Journal Human-Computer Studies*, 70, pp 611-629.
- Wagner, M. (2007) 12 Thing to Do in Second Life That Aren't Embarrassing If Your Priest Or Rabbi Finds out. Available at: www.informationweek.com/blog/main/archives/2007/04/10_fun_thing_t.html [Accessed 21 January, 2008].
- White, B. (2008) *Second Life: A Guide to Your Virtual World*, Indianapolis: Que Publishing.
- Wooglar, S., (2002). *Virtual Society? Technology, Cyberbole, Reality*, Oxford: Oxford University Press.
- Zaphiris, P. & Wilson, S. (2006) *INM355 -Human-Computer Interaction Design: Lecture Notes*, City University, London.