Privacy in the Metaverse
Regulating a complex social construct
in a Virtual World

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Abstract. Second Life by many is considered to be more than just a game. It is a social microcosmos in which fairly normal people behave normally and where (complex) social behaviour develops. As such it is an interesting environment to study social and legal phenomena. In this chapter we will look at the privacy and how privacy is regulated within Second Life. The analysis will point out shortcomings of the current mode of governance within Second Life and point at near future changes therein.

1   From Snow Crash to EPIC yearbook

In 1992, some years before the Internet entered the sphere of ordinary people, Neil Stephenson published the sci-fi novel Snow Crash. In this book, Stephenson sketches a bleak future where the US government is almost completely replaced by private organizations and entrepreneurs who run sovereign suburban enclaves, 'Burbclaves'. Other notable features of Stephenson's projection are the perfection of pizza delivery, finally, by 'pizza deliverators' – pizza delivery guy meets Terminator – and that people, besides taking drugs (the title's Snow Crash), have found distraction in the Metaverse. The Metaverse is a computer generated 3D environment where the players move around as Avatars. Central to the Metaverse is 'the Street' which is '… subject to development. Developers can build their own small streets feeding off the main one. They can build buildings, parks, signs, as well as things that do not exist in Reality, such as vast hovering overhead light shows, special neighbourhoods where the rules of three dimensional spacetime are ignored, and free combat zones where people can go to hunt and kill each other.' [1, p.23].

 Snow Crash is an interesting novel, not only because it inspired Linden Lab to model what is now known as Second Life (SL) on the Metaverse[1], but also because of the model of governance it offers. The novel depicts a world void of the governance structures common to the Western world. Instead, it shows a libertarian society where traditional government responsibilities are subsumed by corporations and private interest, both offline and online (the Metaverse). Interestingly, Second Life is slowly moving to such a model of governance, where the corporation Linden Lab governs the

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[1] http://www.usatoday.com/printedition/money/20070205/secondlife_cover.art.htm

whole virtual world and a multitude of private entities will govern 'estates'. What Stephenson introduced as a though experiment[2] in the book is in a sense the operating mode of Second Life.

Since 2003, Second Life has evolved into one of the popular massively multiplayer online role-playing games (MMORPGs), with at present some 11 million Residents.[3] Contrary to many other MMORPGs, SL lacks a content-driven plot, enabling it to be used for a multitude of different purposes, such as a platform for social interaction, design, manufacture and delivery of objects and services, or just for exploring a 3D environment.

Perhaps because SL lacks a plot and allows the Residents to define what SL is, the idea has been coined that SL could be perceived as a social microcosmos in which the players exhibit real(istic) social behaviour, which would potentially make it a unique research platform for the social sciences and clinical therapy [2]. This would offer interesting opportunities, not only for the study of people's behaviour, but also for the study of social phenomena and for the experimentation with legal constructs and instruments, including governance.

Whether studying SL behaviour makes sense, and whether drawing conclusions from the virtual world for the real world are valid, or even credible, depends on the extent to which social behavior and norms in SL are comparable to those in the physical world [2]. I will argue that this is the case to some extent. I will do so by exploring some of the information available on the demographics of SL Residents and their behaviour. This includes data about more complex (automatic) social behaviour, such as maintaining interpersonal distance and gaze. The tentative conclusion that can be drawn on the basis of this material is promising: there is congruency of social norms in Second Life and the real world.

Given these results we can then move on to explore one of the more complex social needs, privacy, and explore how this is handled in a relatively novel environment. Because SL is relatively new, relatively anarchistic and highly malleable, it could provide an ideal environment to study whether and how privacy evolves over time. Will privacy be regarded as an outdated social need, or will a genuine need for privacy in this brave new world arise? How do different forms of governance affect privacy in the virtual world? Because the rules of the online environment are flexible, SL could be an ideal test bed to explore a social value such as privacy [3]. EPIC and Privacy International have even gone as far as include Second Life as a jurisdiction in their annual privacy and human rights report 2006 [4].

Privacy may seem an odd social construct to explore in an environment that is aimed at offering its user almost unlimited means to expose themselves. There are inworld (privacy) concerns, such as anonymity, reputation and control over who is watching, and when [4]. These are not only 'game' concerns, but because of the fact that value is created within the game, valued in Linden$, and that these L$ can be

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[2] See for instance the interview in Reason, February 2005, with the author, http://www.reason.com/news/show/36481.html

[3] http://secondlife.com/whatis/economy_stats.php states that there are 11.234.792 as of 4 December 2007, in the 7 days preceding this date, 332.904 Residents had logged into the virtual world.

exchanged against US$ at the Linden Exchange (the LindeX), they also become real-world concerns. Furthermore, SL Residents not only have Second Lives but also Real Lives. Inworld activities may have Real World ramifications. The interaction between SL and RL creates specific privacy issues. And to make the situation even more complex, the inworld perception of privacy issues are likely to be inspired by the perceived real-world implications of inworld actions. The inworld/real-world border is highly permeable. Given these issues, there may be a privacy need at least on the level of individuals. Whether the social value of privacy will be acknowledged is a different question.

In this chapter we will look at SL as a social microcosmos, privacy issues and privacy regulation in SL, how Residents and game creators (Linden Labs) handle (or mishandle) privacy and how the virtual world permeates the real world. Finally we will look at the state of governance in the game and the outlooks for near future governance and what this may mean for privacy as a social value.

2   Microcosmos or just a game?

Hiro Protagonist, Stephenson's hero in Snow Crash spends considerable time in the Metaverse. His business card reads "Last of the freelance hackers and the Greatest swordfighter in the world". Not your average person, and certainly when one considers that his swordfighting is practiced in the Metaverse as well as in the real world. What about Second Life's Residents? Who are they and what do they online?

A rich data source on MMORPGs is Nick Yee's Daedalus project, which aims at collecting empirical data about "the psychology of MMORPGs".[4] The data reported on in this project, as well as in similar studies, have to be taken with a grain of salt because they are prone to self-reporting and selection biases. Nevertheless, they are indicative for the demographics of MMORPG-gamers. For MMORPGs in general the current statistics show the average age of players to be around 26, about a quarter of them being teenagers. About half of the players have a full-time job, slightly over a third is married and about a quarter have children. MMORPG players, on average, spend about half a working week (22 hours) playing their games, a number not related to their age. This would suggest MMORPG gamers take their games very seriously. Most players (80%) play with someone they know in Real Life (RL) (a romantic partner, family member, or friend).

A large proportion of gamers consider themselves to behave the same in the game as in RL – 72% of the female gamers versus 68.8% of the males, or even better than in RL – 25.8% for the female and 31.8% for the males. This means that only a small percentage says to misbehave and lie online, which is contrary to popular opinion.[5] Other interesting findings of Yee's studies are that many gamers are very social and befriend people they meet online. This is especially the case for the female gamers, of which some 75% report to have a few or a bunch online friends, while only about

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[4] http://www.nickyee.com/daedalus/gateway_demographics.html
[5] http://www.nickyee.com/daedalus/archives/000193.php

19% has no online friends. Male gamers are more solitary; 33.8% report to have no online friends or just one (7.2%). The distribution of a few and a bunch of friends among male gamers resembles that of female gamers, albeit that the overall joint percentage is lower at 60%. More telling than the number of online friends is whether gamers consider their online friendships real in the sense that information that very few other people know is shared with friends. The female gamers, unsurprisingly, turn out to be more social than the male gamers. 52.9% of the female gamers says to have real deep friendships online. The males score much lower. Only 38.6% of them consider their online friendship deep.

Dutch studies conducted by EPN focus on SL players in the Netherlands. EPN conducted a survey in 2006 [5], when there were some 17.000 Dutch SL Residents, and in 2007 [25].[6] The Dutch data corroborates the intensity of game play found in Nick Yee's studies. More than half of the gamers spend 18-30 hours a week (24%), or even more than 30 hours per week (33%) in Second Life. The 2007 study shows a slight decrease in time spent on the game. Follow up in-depth interviews in 2006 revealed that playing was real playing, and not just 'chair camping' – being online and parking the avatar somewhere, while doing something else, such as watching tv, in the meantime. People play in breaks, evenings, and weekends, basically every free minute. With respect to age distribution among the respondents, the 25-40 group is most strongly represented (50%), while the 16-25 and over 40 groups are about equal in size.

One of the frequent heard claims is that there are many gender experiments within SL. In the 2006 EPN study, this turns out not to be the case for the female players. Female players claim to have female avatars, while only 1 (out of 246) claims to have a male avatar and 2 change their gender occasionally. Among the male players the situation is slightly different. The large majority of male gamers has a male avatar (112), while 15 have a female avatar and 6 change their online gender occasionally. The conclusion here is therefore twofold. Firstly, the gender distribution in the sample is about equal, and secondly, only 10% of the respondents conducts gender experiments, men more than women.

The educational level in 2006 was high, about half of the female respondents has a university degree or even a PhD. For the male players the level is slightly lower. The 2007 study shows a more normalised picture, the overrepresentation of academics has dropped from 48% to 38%. A remarkable finding is that the average income of the players is positively correlated to the amount of time gamers spend online. In other words, heavy players have a higher average income. Here we find a large proportion of IT professionals and creative individuals. Students and public servants generally spend less than 17 hours a week in Second Life.

Based on this limited survey of demographic data we may conclude that the gamers take their games seriously and devote much energy to it. MMORPGs appear to be highly social environments where new relationships are forged and existing relationships are reinforced. Although the game populations, both of MMORPGs in

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[6] The 2006 survey was conducted in August/September 2006 and involved 273 gamers, of which 246 completed the questionnaire. The 2007 study was conducted in the summer of 2007 and comprised over 500 respondents.

general and SL in specific, are not representative, there also is not a clear bias towards a particular gender, age, or educational group, apart from SLers by definition being over 18 years of age. Second Life Residents appear to be fairly normal people.

2.1   Inworld social behaviour

Second Life has no plot line, and therefore the Residents themselves define what SL is used for. One way of decomposing SL usage is by distinguishing between SL as a game environment and SL as a functional platform. Yee [6], building on Bartle, provides a comprehensive decomposition of the game aspects of SL (see figure 1).

Table 1. Motivations for gameplay as distinguished by Yee [6].

achievement	social	immersion
advancement progress, power, accumuluation, status	**socializing** casual chat, helping others, making friends	**discovery** exploration, lore, finding hidden things
mechanics numbers, optimization, templating, analysis	**relationship** personal, self-disclosure, find and give support	**role-playing** story line, character history, roles, fantasy
competition challenging others, provocation, domination	**teamwork** collaboration, groups, group achievements	**customization** appearance, accessories, style, color schemes
		escapism relax, escape from RL, avoid RL problems

Yee's study focuses on all MMORPGs and some motives, most notably the motives related to role playing and adventure, will be lacking in SL. According to the EPN studies [5, 25], having 'fun', which is undefined in the studies, followed by 'doing things I can't do in real life' and social motives, such as meeting friends and learning are the primary reasons to adopt a Second Life within the Dutch sample. Mapped onto Yee's ontology, most (Dutch) players have social (socializing, relationship) and/or immersion (discovery, customization, escapism, and a specific kind of role-playing) motives. An interesting observation is that 16 out of 246 respondents indicated that they have a disability in the real world and that this is a motive for them to be in Second Life [5].

Next to game playing, SL can also be used as a functional platform. In this case the environment's rich audio-visual capabilities, as well as the possibility to have group meetings and group interactions are the main drivers. Uses that belong in this category are inworld lectures, courses, and meetings. SL overcomes some of the disadvantages of other computer mediated forms of online learning and online meetings because of the richer visuals cues provided by the avatars as we will see below. SL is also used as a training environment for social interactions. For instance,

the Dutch Tax authorities have used SL as a training ground for company search and seizure operations.[7]

Social interaction in both major types of uses is important. But how realistic is the social behaviour exhibited in SL? One interesting anecdote regarding emerging social norms within the game relates to 'virtual laptops', animated laptops to be used within the game. Residents started taking these functional devices with them to inworld bars, restaurants and disco's and using them while within these (social) environments.[8] This behaviour was seen as anti-social and a social norm, netiquette, emerged disproving it. As with all social norms, people have to learn the rules and they may be pointed out to newcomers in blunt or subtle ways.

But also on a deeper level inworld behaviour appears to be guided by real world social norms. Yee et al. [2] studied social norms of gender, interpersonal distance (IPD), and eye gaze transfer in Second Life. They found that even though the modality of movement is entirely different (i.e., via keyboard and mouse as opposed to eyes and legs), that IPD and eye gaze in virtual environments is similar to that in the real-world. Inworld, like in the real world male-male dyads stand further apart than female-female dyads. Furthermore, male-male dyads maintain less eye contact than female-female dyads, and finally, when the interpersonal distance between two avatars decreases this is compensated by averted gaze, which is predicted by the Argyle's Equilibrium Theory. The results on gaze as an indicator for turn-taking is interesting because this visual cue can help improve ICT mediated meetings, which are often plagued by inertia, multiple participants talking at the same time and difficulties assessing who is talking to whom [7].

Another interesting experiment relating to social behaviour in Second Life is the replication of the famous Milgram experiments by Slater et al. [8]. In the original Milgram experiments, people were instructed to inflict (apparently) lethal electric shocks to a stranger on the command of an authoritive figure. A staggering number of people appeared to obey to these commands. The Slater replication [8] features the test subjects to administer a series of word association memory tests to a female virtual human (the learner). When the learner gives a false answer the subject is instructed to administer an 'electric shock' with increasing magnitude. The learner responds with increasing discomfort and protests. Even though the test subjects knew that neither the learner nor the shocks were real, those who saw and heard the learner (23 out of 34) tended to respond to the situation at the subjective, behavioural and physiological levels as if it were real. Their own discomfort with sounds and images of a (virtual) person in distress caused them to behave differently than people who lacked these signals.

The experiments and research reported here do not provide a definite answer to the question whether SL is to be taken as a real social microcosmos, but they do illustrate that people can immerse in virtual environments in a way that resembles their real world behaviour. This, according to Yee et al. 'has significant implications for using virtual worlds to study human social interaction. If people behave according

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[7] Private communication during a lecture the author gave on SL on June 21, 2007.

[8] I am not making this up, people access SL on their laptops to play on virtual laptops. Where will this recursion stop?

to the same social rules in both physical and virtual worlds even though the mode of movement and navigation is entirely different (i.e., using keyboard and mouse as opposed to bodies and legs), then this means it is possible to study social interaction in virtual environments and generalize them to social interaction in the real world.' [2].

3   Privacy - past tense?

Social interaction is an important motive for people to assume a Second Life. Social interaction involves sharing information with others. Yet information sharing is not unconditional. People have a need to control who has access to what information and they need to be able to play different roles in different arenas. Audience segregation [8] is an essential part of everyday life. Does this also hold for Second Live?

On first sight, Second Life seems to be based on openness and transparency as some of the default settings in the game illustrate.

The players move their avatars around in a 3-D environment and the scene is observed by the player who can take either a first person perspective (called *mouse look* in SL) and look through the eyes of their avatars, or a third person perspective where the camera is detached from the avatar allowing the player to watch both their own avatar as well as the environment. In third person perspective, which is the default in SL, the camera can move independently of the avatar and can be taken to locations different from the avatar's. This practically allows the player to use the camera as a spying device to unobtrusively observe other avatars and their interactions. The camera can even be attached to another avatar without this avatar's awareness. This act comprises virtual stalking. Especially the third person view allows the player to observe much more of their avatar's environment than is the case in the real world which may also infringe on other's privacy because they may be unaware of the observation.

Another difference with the real world is that moving about anonymously is more difficult. Although players can easily, and radically, adapt the appearance of their avatars to make it difficult or even impossible to recognize them, this does not really help, because the avatar's name is clearly visible; by default it hovers above the avatar.

Not only the Resident's name provides information about them. One can also find out more about a particular Resident by inspecting their profile. This can either be done by right-clicking on the avatar, or from within the search function. In the latter case the Resident in question needs not be in the vicinity, but their name is sufficient to pull up their profile. The profile reveals what the Resident wants to reveal about their identity. It contains sections about the Resident's 2nd Life – including photo, date of birth, partner, group memberships, and a 500 char description of the Resident –, websites of interest, inworld interests, and 1st life, where one can provide information about one's real world identity. Many Residents only provide sparse information, especially about their RL identity, but the amount of information available up for grabs surpasses that in RL easily.

In default mode it is also difficult to keep the location of one's Resident hidden from others. The game features an extensive directory that allows any nameable item to be found. Residents and places can be found by entering partial names or words. The location of the item requested can be shown on the map, and the Resident can be teleported right to it. The search results also show whether a requested Resident is online. Residents can keep a list of their inworld friends. This SL address book will also show whether friends are online.

The basic mode of communication in SL is by means of typed text; voice support has only recently been introduced in the game. Residents can either chat to other Residents, or use instant messages. In chat mode, the communication of every Resident within a radius of about 20 meters is visible to the player. This means that Residents can listen in on the communication between other nearby Residents, much like in the real world. Instant messaging resembles RL phone conversations. These are more private and don't require the recipient to be anywhere near.

3.1   Regaining privacy

The preceding section illustrated that, in default mode, SL Residents can learn much about their fellow Residents and their interaction by using the tools provided by the gaming environment. In practice the players have control over the personal data that gets disclosed to other gamers. Furthermore, privacy provisions are also included in the game's regulatory framework, the Terms of Service (ToS) and the Community Standards (CS), which are enforced by Linden Lab. Linden Lab's Privacy Policy, finally, outlines the way in which Linden handles the user's personal data.

Privacy comes into play as soon as a individual enrolls in the game. During registration, the user has to choose a name for their avatar, comprised of a freely chosen first name and a surname to be selected from a list of predefined surnames. Article 2.1 of the ToS requires the user to provide accurate information about their real name, gender, date of birth, and country of residence during registration. Because the user enters into a contract with Linden Lab during registration, article 2.1 of the ToS is binding. The information entered during registration is only available to Linden Lab, unless the user discloses it to other Residents in conversation or includes it in their profile (under the 1st life tab). If a user wants to own land, then additional data has to be provided during registration. This includes payment data (credit card data or PayPal data). In this case also an age check is performed.

Once a user has created a primary avatar, they can also create Alternate accounts, or Alts. These Alts allow a user to engage in the game under a different identity and therefore allow users to segregate audiences. They can go to one island as their normal avatar and switch to an Alt when visiting another. The different identities are unlinkable for the Residents, but Linden can make the connection between the various identities belonging to a particular user account. Alt accounts are used for various reasons. They offer a kind of anonymity and are therefore popular among users who want to misbehave, for instance because they want to grief other Residents (inworld this means making other Residents' SL miserable by acts such as trolling, flaming, and spamming). Linden Lab reports [10] that the number of abuse reports has not

increased since the option to create Alts was opened for users with basic – unverifiable – accounts. Audience segregation is also a genuine need for normal users. IBM has a significant presence in Second Life. Their employees with a Second Life do not always want to be associated with the company or be recognizable as IBM employees, and therefore many of them have Alts for private purposes. The 2007 EPN study [25] shows that the Dutch respondents on average have 1.6 avatar, although almost three quarters only has one avatar [25].

The user can change user preferences that affect data disclosure and the Resident's privacy. For instance, users can toggle whether their name is visible to other Residents, whether their profile shows up in search, and whether their online status is visible to friends. It is also possible to manipulate the avatar's status, for instance by setting their status to offline while being online, or by setting it to busy, both suggesting unavailability of the avatar.

Linden on their support pages [12] state that users can create their own private islands, also called private estates, where they have control over who can get to the island by teleporting (which is the principal way to get to an island). The private islands therefore are really enclaves where only the 'happy few' can go and which therefore offer a maximum level of privacy. A final option for gaining some privacy is creating a skybox [12]. A skybox is a private home that lives up high in the sky and that can only be reached by avatars equipped with flight assist scripts. This does not seem to be a very relevant or serious way to get some privacy in SL, but nevertheless.

3.2   Privacy infringements

In principle real world privacy breaches have their counterpart in SL due to the fact that Second Life resembles real life. People are curious and nosy in SL as they are in RL. Whenever Residents are interacting, by text or voice chat, there will also be Residents around that can listen in on the conversation and based on what they hear or see conclude that they want to know more. The various tools outlined earlier allow them to do so. The knowledge that can be acquired by listening in on conversations will often be confined to inworld knowledge. Judging from my own experience, many people use SL as a virtual market square where conversations will cross the SL/RL border. Many people are (also) interested in other Resident's real lives. The distinction between SL and RL easily blurs. And hence information about a Resident's 1st life can often also be obtained easily. From here, Google helps to fill in the blanks.

Inworld, people's curiosity can also be satisfied by calling virtual detective agencies to help. Famous inworld detective agencies are those run by Markie MacDonald's respectively Bruno Buckenburger [14]. Like in the real world, these detectives are employed for various covert operations, including surveillance and spying on people. Well known examples of their line of work are 'honey pot' operations to uncover inworld infidelity.

Residents have inworld relations and also the concept of marriage exists in Second Life, which includes a commitment not to be unfaithful. So, there are Residents who want to know whether their partner is unfaithful. Hamlet Linden [14] reports of the case of Laura Skye who hired Markie MacDonald to set up a honey trap, involving a

gorgeous woman or a handsome man hired to approach the target of an infidelity investigation, lay down some seductive pattern on him or her, and see if the suspected philanderer takes the bait. This clearly invades the private sphere of the Resident being investigated. It would be easy to consider this kind of behaviour as part of the game or as confined to the game, but it goes beyond this. As the following section of Hamlet Linden's interview with Laura Skye, who happens to have a relation with the 'suspect' in real life as well as in SL, illustrates:

> "If you had found out he was cheating on you in Second Life," I
> ask her, "how would that effect your real life relationship?"
> "It would be the end of the relationship."
> "You would break up with him in real life?"
> "Oh yes." [14]

An interesting question is whether the activities of the private detectives are legal (within the game). Article 5.1 sub ii of the Terms of Service state:

> "[You shall not] impersonate any person or entity, including, but not limited to, a Linden employee, or falsely state or otherwise misrepresent your affiliation with a person or entity."

The target of covert operations will often be unaware of who the agent is and what their true affiliation is (i.e., I am not here to befriend you, I am here to try and trap you) [15]. This could be considered as a case of impersonation as meant in ToS article 5.1 sub ii meaning that it is illegal and that Linden could suspend the detective.

There are also numerous devices – bugs – to listen in on conversations and chats on sale in SL which can be used to spy on other Residents [16]. These bugs can be placed anywhere within SL, including on Residents. As we shall see later on, these devices are also illegal within the game, but his does not stop people from using them, like in the real world.

3.3   Crossing borders

Another kind of device that poses privacy concerns, are devices that make SL behaviour visible outside the realm of the game. One example is the SLstats watch [17]. This device, a wrist watch available for free in SL, reports the location of the watch wearer, plus any other avatars in the vicinity to a database outside the SL realm, namely one hosted at SLStats.com. This site constructs a list of the watch wearer's friends on the basis of avatar proximity and duration. This in itself is a privacy infringement for these 'friends' because they often will be unaware of the watch's function. But, because the database is hosted on a website outside SL, it is within reach of search engines such as Google. This makes inworld associations available outside the realm of the game.

There are more ways in which (personal) data flows from Second Life into the Real World. For instance, Linden is implementing a new search feature. On their support Blog they state:[9]

"Be aware that the new search results will be available to the public, once it's released, anyone with a web browser can view them from the Second Life website. The search results may also be picked up by other external search engines such as Yahoo and Google, although we are not explicitly asking search engines to crawl them at this time. It's important to remember that this information is not tied to your real life identity and is the same information that anybody could see with a free Second Life account."

The latter statement may be true, but there is a difference between Residents and the rest of the world. One has to register to SL in order to become a Resident, which means signing up to the game's terms and conditions. These contain privacy protection provisions to which Residents are contractually bound and non Residents are not. Privacy breaches inworld by people with a free SL account can therefore be addressed inworld while this is much harder on the internet at large.

A final area of privacy concerns pertains to the role of Linden Lab in Second Life. Linden by virtue of the Second Life software and infrastructure in principle has access to everything that happens in SL. The Second Life Terms of Service state:

"6.1 Linden Lab uses your personal information to operate and improve Second Life, and will not give your personal information to third parties except to operate, improve and protect the Service."

This provision seems to guarantee the Residents' privacy, as it states that personal information will only be used for the sake of the virtual world itself. The lines following this provision in the ToS, however, sketch a completely different picture:

"Linden Lab can (and you authorize Linden Lab to) disclose any information about you to private entities, law enforcement agencies or government officials, as Linden Lab, in its sole discretion, believes necessary or appropriate to investigate or resolve possible problems or inquiries, or as otherwise required by law."

This is a very open provision. Not only law enforcement and government may receive personal information, but also private entities. Does the provision as it stands exclude any possible recipient? Furthermore, the request may not only pertain to the usual legitimate law enforcement purposes, but to 'investigate or resolve inquiries'. This may include a request by a private party to have the names of all Residents who live in the Netherlands (for instance for sending them ads).

The extent and amount of data possibly collected by Linden is large. Article 6.2 of the ToS reads:

"6.2 Linden Lab may observe and record your interaction within the Service, and may share aggregated and other general information (not including your personal information) with third parties.

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[9] http://blog.secondlife.com/2007/10/19/new-search-currently-under-development/

You acknowledge and agree that Linden Lab, in its sole discretion, may track, record, observe or follow any and all of your interactions within the Service. Linden Lab may share general, demographic, or aggregated information with third parties about our user base and Service usage, but that information will not include or be linked to any personal information without your consent."

Linden defines personal information in their Privacy Policy [19] as:

"'… any information that may be used to identify an individual, including, but not limited to, a first and last name, home or other physical address, an email address, phone number or other contact information, whether at work or at home."

According to this policy, Linden considers IP addresses not to be personal data. In Europe, the Article 29 Working Party on Data Protection considers IP addresses to be personal data in most cases [18]. This judgment is even more likely in the case of Second Life because most users will use the software at home. But apart from this, article 6.2 of the ToS in itself opens the possibility to collect behavioral patterns and even construct profiles of the Residents. It is easy for Linden to track who goes where and when. Users may be stereotyped on the basis of these data, for instance because there are numerous types of islands in the game. The following names are telling: Camp Darfur, Virtual Dublin, Neufreistadt, Nymphos Paradise. And then there are gay islands, islands with sex clubs, etc. Profiles created on the basis of tracking behaviour may be used by Linden and shared with others.

The data Linden collects of Second Life users includes [19]:

"… a variety of data to monitor system and simulation performance, and to verify your unique identity. This includes specific and general information about your computer hardware and Internet connection, which are stored together but are not personally identifiable. We track usage of customer-service resources in order to ensure high quality interactions. This is in addition to the personal data and billing information collected during the registration process."

This is not very specific. On various SL discussion forums there has been concern about Linden possibly storing every word spoken in Second Life via chat or instant messages [20]. According to Neal Stewart [20], when requesting more information about the Linden data retention policy regarding chats and IM, Robin Linden replied "Logs for chat and IM aren't permanent, although I can't say how long we keep them". That Linden keeps track of conversations would be in line with their statements about handling abuse reports filed by Residents (see below).

Whether or not Linden actually operates as Big Brother in SL is unclear. Their developer level access to the game's infrastructure makes it possible [4] and there is some anecdotal evidence that conversations are being monitored [20].

4   Regulating the Metaverse

We have looked at some of the privacy issues related to Second Life, both within the game as well as outside of the realm of the game. The role of the Terms of Service, Community Standards, and the Linden Lab privacy policy in relation to this have been addressed somewhat in passing. In order to understand how privacy issues are handled in SL we need to look closer at the modalities of regulation regarding Second Life.

Lessig [21] distinguishes four modalities of regulation: social norms, law, market and architecture ("code", ie software). Within Second Life we see all forms of regulation at play, but law and code are the most prominent forms.

Second Life is operated by a US corporate entity with computing facilities in various countries. Linden Lab therefore has to comply with US and foreign law. With respect to privacy and data protection, this creates a number of difficult issues, such as to what extent does the game comply with EU data protection regulation? European citizens active in the game will move from server to server (islands are generally hosted on a dedicated computer) located in different countries.

I will leave this issues aside here and instead focus on inworld regulation and on what is coined "Linden Law": the Terms of Service, Community Standards and Privacy Policy. These codify the social norms (as Linden sees them fit) into written rules and provide for effective enforcement of these rules [22]. The participants in Second Life enter into a contract with Linden Lab when they register for the game. By entering into an agreement the participants agree to be bound to the provisions in the various documents outlined. Linden Law therefore provides Linden Lab with an instrument to regulate the behaviour of the players in Second Life.

Apart from the rules set out in Linden Law, there is also regulation at the code level. Irrespective of the question whether monitoring of conversations by bugs is permissible according to Linden Law, Linden can make the act of creating bugs or attaching them to objects possible or impossible. By changing the software Linden can control all sorts of behaviour. Teleporting, creating skyboxes, attaching camera's to other Residents, the possibility of storing conversation, are all controlled by the (implicit) rules embedded in the software.

Enforcement of the rules in Second Life is handled in two ways, both ultimately involving code. When rules are (implicitly) embedded in code, such as in a hypothetical ban on bugs, the enforcement will be automatic. In this case the software will simply make the impermissible behaviour impossible. In the case where rules in ToS or CS are at play, punishment involves code. The three most important forms of punishment in Second Life are warnings, suspension (temporary or permanently) and banishment to "the Corn Field". The Corn Field is a moonlit environment that only contains rows of corn, two television sets, an aging tractor and a one-way teleport terminal allowing no escape.[10] Suspension is implemented by the impossibility to log into the game by means of one's username and password for the period of the ban. In

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[10]http://www.secretlair.com/index.php?/clickableculture/entry/hidden_virtual_world_prison_revealed/

the case of banishment to the corn field, the software prevents the Resident from escaping from it for the duration of the punishment.

4.1   Regulating privacy

Inworld, the primary privacy framework consists of the Community Standards (CS) and the Terms of Service. The CS sets out six behaviours, the Big Six, that may result in suspension, or even expulsion from the game. Rule 4 of the Community Standards addresses privacy in the form of a data protection clause:

"4. Disclosure
 Residents are entitled to a reasonable level of privacy with regard to their Second Lives. Sharing personal information about a fellow Resident including gender, religion, age, marital status, race, sexual preference, and real world location beyond what is provided by the Resident in the First Life page of their Resident profile is a violation of that Resident's privacy. Remotely monitoring conversations, posting conversation logs, or sharing conversation logs without consent are all prohibited in Second Life and on the Second Life Forums."

Residents can file abuse reports using a comprehensive form available within the Second Life application. Each abuse report will be investigated by the Community Affairs Committee, which is the Linden team. According to [12], the Abuse Team investigates each abuse report on the basis of screenshots, chat logs (remember Linden storing conversations) and other tools to make sure that the claim is valid. On the basis of this evidence it will determine whether an offense is committed and if so, action will be taken against the wrongdoer. The reporter will be notified and the suspension will be reported publicly (without providing details with respect to reporter and wrongdoer) on the Police Blotter website.[11]

For serious misbehaviour, defined as warranting a two-week suspension, a *Review for Ban* procedure will automatically be triggered [13]. The Linden staff reviews the offender's entire disciplinary history to determine whether a permanent expulsion is in order. In this process the advice of the Resident Review Panel on the specific case is taken into account. The Resident Review Panel consists of 25 active Residents, chosen anonymously and at random. The panel reviews the, anonymised, case history and voices their opinion.

The Community Standards are subsumed under the Terms of Service, which provides a more abstract privacy provision. Article 4.1 sets the stage by providing a blanket clause for (im)proper conduct within SL. It reads:

"4.1 You agree to abide by certain rules of conduct, including the Community Standards and other rules prohibiting illegal and other practices that Linden Lab deems harmful."

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[11] http://secondlife.com/community/blotter.php

The scope of 'other rules' is not specified and could include much more than what is defined in the sub-articles of Article 4.1 ToS, most notably sub-article iv, which states:

"you agree that you shall not: … (iv) take any action or upload, post, e-mail or otherwise transmit Content as determined by Linden Lab at its sole discretion that is harmful, threatening, abusive, harassing, causes tort, defamatory, vulgar, obscene, libelous, invasive of another's privacy, hateful, or racially, ethnically or otherwise objectionable;"

This provision is interesting because, unlike CS rule 4 which defines a complaints based offense, it defines behaviour that can be addressed by Linden at any time, even without prior complaint by a Resident. Furthermore, Linden, by virtue of 'as determined by Linden Lab at its sole discretion', provides itself with unlimited powers to define behaviour as offensive. Residents can be 'prosecuted' for privacy offenses on the basis of ToS article 4.1 and the CS (Rule 4). Punishment can take place on the basis of article 2.1 ToS, which states that:

"Linden Lab may suspend or terminate your account at any time, without refund or obligation to you. Linden Lab has the right at any time for any reason or no reason to suspend or terminate your Account, terminate this Agreement, and/or refuse any and all current or future use of the Service without notice or liability to you."

4.2   Governance?

The combination of Linden Law, code and the procedures Linden has put in place provide a mode of governance within the game. But what kind of governance? The ToS and procedures places much emphasis on Linden acting on their own discretion. They are open to suggestions, but making decisions about the rules and their enforcement are considered to be their call. Linden acts as a 'benevolent dictator', doing what is best for the community, without democratic participation or assurance of transparency [22].

Second Life is not the first virtual environment facing a democratic deficit. LambdaMOO is a famous example of a system that in the early 1990s was run by a small group of system administrators (the Wizards) who decided on issues within the game [reported on in 22]. In 1992 the Wizards decided to institute a form of self-governance by means of ballots in the game. Because proper means of enforcement of decisions made through the ballot system lacked, LambdaMOO turned into a rough place where '[t]he level of inter-player strife and harassment rose and rose, slowly but inexorably' [23]. This is precisely what the Lindens try to prevent.

Here now is an interesting dilemma. On the one hand Linden does not want to interfere in the game and play judge and jury, yet on the other hand it acknowledges that some form of global governance is needed to prevent the game from becoming an anarchy that will deter users.

Philip Linden has stated that "We will not restrict Second Life by adding constraints which might make it more compelling to a specific subset of people but have the effect of reducing the broadest capabilities it offers to everyone for communication and expression." [24]. Instead, Linden is looking for means of local control. Linden is gradually implementing tools that help groups control their members.

"Groups have new features that allow them to fine tune the rights and responsibilities of their members. Individuals are better able to manage their personal experience of Second Life using features like improved mute. Parcel owners have a no-push setting and a larger ban list. Estate owners can assign a Covenant to their land that explains the rules they wish visitors and Residents to abide by, rules that reflect their values and goals." [24]

Linden foresees a role for themselves on the "problems that threaten the stability of our technical, economic and social structures" and they will police on these matters. "But when it comes to deciding what behavior should be allowed in a particular place or social group, those rules and their enforcement will be decided by the people involved—those who understand the context of the situation and have a stake in its outcome. Linden Lab is carefully planning the move to this federated model …" [24].

The first steps towards this federated model were taken early in 2007. It involved introducing an "Estate Level Abuse program, designed to allow estate owners to receive and resolve their own abuse reports in the method in which they best see fit."[12] The Local Governance Study Group[13] endorses Linden's proposals and devotes considerable energy to further develop these ideas. The LGSG has made a proposal outlining procedures for entities to create a new group-like abstraction called "government" (or "state') for a fee (higher than that for instituting a group, which is L$ 1000). Each government should have a name, flag or symbol, national anthem, government type (monarchy, democracy), constitution, details about land and citizens and details about decision making. Furthermore, it proposes that any parcel of land should be allied to one specific government or no government, in which case "anarchy" or "ungoverned" should appear in the "About>Land" box.

Governments are to have jurisdiction over certain parcels of land and within these jurisdictions the governments could experiment with forms of governance, including means for defining and enforcing rules.

The system of local governance allows for different kinds of estates to be created suiting the different needs of the participants. One could imagine:

"a large corporation buying a series of islands as a showcase for its products or services might want a system whereby misbehaviour on its lands can be punished by banishment without it having to do any of the hard work, but where it retains ultimate control; a commercial landlord might want a full-fledged system of civil

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[12] http://blog.secondlife.com/2007/04/20/introducing-estate-level-governance/

[13] http://lgsg.wetpaint.com/page/LGSG+Proposed+Tools+-+2nd+Draft, last consulted on Dec 10, 2007.

law; including contract and covenant enforcement to entice serious businesses and consumers at once; a group of aspiring businesspeople and artisans wishing to start their own community and share resources might want a democratically elected local council; and an individual who wants an island for creating whimsical artistic follies might want no government at all." [27]

5   Conclusion

We have now come full circle. Snow Crash depicted a world run by corporate entities that set and enforce the rules within their own territories. Linden Lab's move towards Estate Level governance and the Local Governance Study Group's proposal for governance tools go a long way into creating these Burbclaves. This seems an apt move in a social microcosmos. Local governance alleviates many of the problems inherent in the Linden's original model [26]. Linden, for instance simply does not have the resources to address conflicts relating to inworld contracts. As outlined in the previous section it also allows for models of governance to fit the needs of groups of users.

The analysis in this chapter aimed to show that privacy is inadequately handled in the current governance model. It will be interesting to see local governance develop. Different governance models are likely to develop within the game and some will certainly address privacy needs of the individual (think of estates aiming at certain vulnerable subgroups). Whether privacy as a social value will be acknowledged and handled within these diverse forms of governance is a different question.

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