

Intimate Experiences in Virtual Worlds: The Interplay among Hyperpersonal Communication, Avatar-Based Systems, and Experiential Drives

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Abstract

This paper investigates the intersection of traditional social science understandings of intimacy, established Computer-Mediated Communication (CMC) theories developed in the days of text-based Internet communications, and studies of Information and Communication Technology (ICT)-mediated intimacy. Using mixed methods, this paper offers an empirical analysis of how users (re)define, interpret, experience, and evaluate “intimacy” in a hyperpersonal sociotechnical system—*Second Life (SL)*. Findings show that *SL* intimacy closely related to emotional fulfillment, the need to be touched, and interpersonal communication, but that *SL* intimacy also emphasized new forms of physical proximity. Especially, a subjectively meaningful intimate experience usually emerged in the interplay among self-selection, experiential drives, and technological affordance. This paper contributes to the study of social impacts of ICTs by shedding light on potential changes in how people define and experience interpersonal relationships in hyperpersonal sociotechnical environments.

Keywords: intimacy; intimate experiences; hyperpersonal communication; Second Life; virtual worlds

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1 Introduction

With the increasing interests in Intimate (Ubiquitous) Computing (Bell et al., 2003), it is important for information scientists to explore how Information and Communication Technologies (ICTs) can “address and account for people’s embodied, lived experiences,” and to study “the ways in which computing technology could and should be more intimate” (Bell et al., 2003, p. 3). In today’s “convergence of technology and our social world” (Rooney, 2014, p.882), intimate experiences and relationships have developed and mediated by virtual worlds: These avatar-based systems “have evolved into places for people to meet up, find romantic partners and maintain relationships” (Huynh, Lim, & Skoric, 2013, p. 251).

Yet intimate experiences emerging in virtual worlds seem to differ from the traditional understanding of intimacy that emphasizes physical proximity and Face-To-Face (FTF) interaction. We understand personal communications afforded by virtual worlds as fitting into Walther’s (1996) hyperpersonal communication model. This model includes the optimized (selective) self-presentation of the sender, the idealized perception of the receivers, the interplay between these two in computer-mediated communication (CMC), and the technological affordance of the communication channel. Walther also suggested that hyperpersonal communication would be more socially desirable than FTF interaction in some situations, allowing for higher level of closeness. Considering the increasingly important role of virtual worlds in shaping people’s everyday lives, several questions emerge. How does hyperpersonal CMC in a virtual world generate experiences of intimacy, which traditionally only emerge in physical proximity and FTF interaction? What makes these intimate experiences felt meaningful to online users? And how, if at all, does hyperpersonal intimacy substantially alter our understanding of “intimacy”?

This paper chose *Second Life (SL)* as a case to study intimacy emerging in hyperpersonal sociotechnical systems. Using *SL* users’ own accounts of intimate experiences, it offers an empirical analysis of how users (re)define, interpret, and experience “intimacy” in the virtual world, and what makes intimacy feel subjectively significant to them. This study has three contributions. It is methodologically innovative. Previous studies of virtual world intimacy are often based on a single method (e.g., only text analysis or only interpretative qualitative analysis). Yet this research integrates three analytical methods. They collectively provide a simultaneously systematic and nuanced account of intimate experiences and relationships as they are developed in or mediated by hyperpersonal sociotechnical systems. Specifically, a text analysis shed light on the implicit language cues embedded in online users’ own descriptions; a

word cluster analysis identified and visualized essential concepts that were semantically related to *SL* intimacy; and an in-depth qualitative analysis revealed how online users made sense of their intimate experiences in different ways. Empirically, this study contributes to current research endeavors to qualify ICT-mediate intimacy. It suggests that similar to FTF intimacy, *SL* intimacy closely relates to emotional fulfillment, the need to be touched, and interpersonal communication. Nevertheless, *SL* intimacy mediates new forms of physical proximity and FTF interaction (i.e., multimodal communication channels and avatar-mediated behaviors), generates positive user experience in the virtual world, and facilitates interpersonal relationships even without FTF interaction or physical proximity. At last, theoretically, this study contributes to understanding and conceptualizing the next generation of ICTs, which acknowledges the sensory, affective, poetic and corporeal qualities of the moment of lived experience (Koefoed Hansen & Kozel, 2007).

2 Hyperpersonal CMC and Intimacy

Intimacy is an ambiguous, subjective, hard-to-define but crucial concept to human experience. Most traditional social science studies seem to agree that intimacy is an interpersonal relationship emerging in bodily touch and FTF interaction: Making the partner feel validated, understood, cared for, accepted, and nurtured via physical togetherness and verbal or body languages promotes the growth of intimacy and the subsequent development of the “interpersonal” relationship with the partner. This understanding has been well used in previous studies of using technical artifacts to 1) support and facilitate emotional connections for couples in long-distance relationships (e.g., Kaye et al., 2005) or 2) maintain close relationships between family members in their domestic lives (e.g., Vetere et al., 2005). The question, then, is in which ways it carries over into online social spaces.

When studying text-based CMC, Walther (1996) compared interpersonal and hyperpersonal CMC models. For him, interpersonal model assumes “reaching out to ‘touch’ someone” (p. 10). Thus, communicators in CMC are not different from those in FTF situations, since they all are driven to develop social relationships. The key difference between CMC and FTF communication is not the amount but the rate of social information exchange due to the absence of non-verbal cues in text-based CMC.

Walther’s hyperpersonal communication mode has been widely used to study ICT-mediated intimacy and related issues such as disclosure (Jiang, Bazarova, & Hancock, 2013) and deception (Toma & Hancock, 2012). Many existing studies focused on intimacy in low information richness (text-based) CMC environments, such as bulletin boards (Baker, 2002), online dating websites (Toma & Hancock, 2012), or cyberspace in general (Ross, 2005). Some researchers explored intimacy emerging in information rich, multi-modal CMC sociotechnical environments such as virtual worlds. For example, Bardzell and Bardzell (2008) and Bardzell et al. (2014) explored the emergent practices of online intimacy in *Second Life*, and Pace et al. (2010) identified four characteristics that *World of Warcraft* players articulated about their virtual intimate experiences.

However, there remains an opportunity to improve our understanding of the intersection of the classical understanding of intimacy; well-established CMC theories developed based primarily on text-based communications, such as IRC; and the existing studies of virtual world intimacy. How do online users define “intimacy” in their own words? In which ways can virtual world intimacy be subjectively felt meaningful to them? How, if at all, do hyperpersonal sociotechnical systems bridge the gap between FTF and text-based communications, vis-à-vis intimate experiences? Answers to these questions will shed light on how virtual worlds are shaping human experience and social lives, and how digitalization is affording, advancing and embracing the physical (Tilson, Lyytinen, & Sørensen, 2010).

3 Research Approach

3.1 Data source

Second Life was chosen as the study site. Along with its three dimensional environment and multimodal communication channels including text chat, animation and limited voice chat (“speak to people nearby”), *SL* has long been considered distinctive in terms of its culture of intimate interaction (Bardzell & Bardzell, 2008; Bardzell et al., 2014) and its blurred boundaries between the real and the virtual (Kolotkin et al., 2012). These features make *SL* an appropriate stage to explore experiences of intimacy: In a multimodal CMC environment where the self and the others (i.e., strangers) gather together, *SL* users are empowered to create unique intimate experiences by selectively constructing illusions (i.e., avatars) of the self and subjectively interpreting illusions of the others.

SL also has relatively balanced user groups in terms of gender and age. According to KZERO research (2013) (<http://www.kzero.co.uk/blog/age-ranges-and-gender-analysis/>), males in *SL* represent

57.2% and females represent 42.8% of the user base. *SL* users show an average age in the early thirties: 18-24 group account for 26.5%, 25-34 representing 38.2%, 35-44 representing 21.7%, and 45 year older representing 12.2%. Thus, studying *SL* users' intimate experiences can shed light on how different demographic groups characterize their experiences of virtual world intimacy.

3.2 Data Collection

SL users were asked to describe their experience of intimacy in *SL*. No definition of "intimacy" was offered so as to encourage participants to recount and share as much detail as they felt comfortable. An emphasis on the words and descriptions provided by participants is at the foundation of the work presented in this paper. The asked question was as follows:

Please recall and describe a specific incident in which you experienced what you could call an "intimate experience" in the virtual world you chose. This can be as short or as long of an experience as you would care to write about. For our purposes, it is not as important what you say, as that you say it clearly and **in as much detail as possible.** Please try to include as much of what you were aware of in the account as possible.

A Web form was used to solicit participants' responses. The URL was distributed to 12 different channels, including popular forums, such as *SL*, *SL* Universe, and MMO Champion as well as numerous group lists and game research forums, such as SLED and DiGRA.

In total, 211 *SL* players (109 reported females, 98 males, and 4 transgender) completed it. They provided their ages within ranges, as follows: 17 were aged 18-25, 80 were aged 26-41, and 114 were older than 42. Regarding virtual world experience, 73.9% (N=156) of all participants had used *SL* for at least 1 year, while only 13.3% (N=28) had used *SL* for less than 7 months (and another 27 had no response). Thus, it is concluded that the sample used in this study was composed largely of serious, veteran users of *SL*. Seven participants said they had never experienced "intimacy" in *SL*. Two participants skipped this question. In all valid responses (N = 202) analyzed for this study, the median word length was 85, with a max length of 4078 words.

3.3 Analytical procedures

Mixed methods were used to analyze the collected data, including an automated quantitative text analysis (i.e., LIWC), a structural word cluster analysis (i.e., VOSviewer), and an in-depth qualitative analysis.

First, text analysis has been used to identify linguistic traces of deception in online dating profiles (Toma & Hancock, 2012), as well as to demonstrate gendered identity and self-presentation in online chat rooms (Kapidzic & Herring, 2011). In this study, text analysis was used to explore the linguistic cues in *SL* users' own accounts of intimacy (as they themselves define and understand intimacy), in order to identify users' (re)definitions of "intimacy" in a hyperpersonal communicative environment and to highlight potential gender differences when they describe "intimacy." Specifically, a computer software program *Linguistic Inquiry and Word Count 2007 (LIWC2007)* (Pennebaker et al., 2007) was used to analyze participants' responses. LIWC2007 is a popular text analysis tool in studies in psychology. Based on the default LIWC2007 Dictionary that is composed of 4,500 words and word stems, the output for each analyzed text file includes 32 word categories tapping social processes, affective processes, cognitive processes, and biological processes.

Second, word cluster analysis was used to detect groups of concepts in *SL* users' self-reported intimate experiences. Word clustering is an important technique in Natural Language Processing (NLP). It creates new, reduced-size event spaces by joining similar words that induce similar probability distributions into groups (Baker & McCallum, 1998). Thus, words or terms (concepts) within one cluster suggest that they have higher probability to co-occur in the dataset. In this study, word cluster analysis can identify essential concepts (words or terms) that are semantically related to *SL* intimacy. A popular text network analysis tool, VOSviewer (Van Eck & Waltman, 2007), was used to detect, visualize, and analyze word clusters in the collected textual data. Before loading text files to LIWC and VOSviewer, all textual data were manually processed to improve the quality of computer-generated results. This included checking spelling and removing responses irrelevant to *SL* intimacy (e.g., "*I don't have any intimate experience in Second Life*"). Two chat logs that only described the process of online sex in *SL* were also excluded, since they did not present the two users' actual understandings of *SL* intimacy.

Text analysis and word cluster analysis may risk losing the vivid details of intimacy in the process of generalization, and cannot reveal users' unique, subjective experiences of intimacy in the virtual world. To address this limitation, an in-depth qualitative analysis was used as the third analytical method. Its goal is not to provide "an objective statement" (Smith & Osborn, 2003, p. 53) of *SL* intimacy but explore

how individuals construct their personal perceptions, understandings, and accounts of the felt experiences of intimacy. The qualitative analysis involved four steps: 1) All authors annotated *SL* users' responses to acquire a sense of the overall gist of their intimate experiences and the felt importance of such experiences; 2) All authors identified themes and subthemes in *SL* users' intimate experiences and the felt impacts on their personal lives; 3) All authors worked together in an iterative process to group cases and examples of themes and subthemes to generate a rich description; 4) All authors worked together in an iterative process to synthesize themes and subthemes to summarize fundamental aspects of *SL* intimacy.

4 Results

4.1 LIWC Analysis

After data preparation, the textual data used for text and word cluster analyses included 11,085 words with 18.28 words per sentence. Results show that 18.75% of all words were "big words" (words > 6 letters). Especially, male users used significantly higher percentages of big words than female players ($p < 0.01$). The significantly long sentence length (> science writing: 14.61¹, $p < 0.01$) and use of complex words (> novel: 16.33¹, $p < 0.05$) suggest that intimacy is a hard-to-define concept for *SL* users.

LIWC results (Table 1) show that *SL* intimacy has the following linguistic patterns:

1) Self-oriented. Participants used a significantly higher percentage of first person singular pronouns (e.g., *I*, *my*, *me*) than those of first personal plural pronouns (e.g., *we*) and third person singular pronouns (e.g., *she* and *he*) ($p < 0.05$). This is not surprising because the prompt asked them to relate one of their own experiences. However, females used significantly higher percentages of first person plural pronouns (*we*) and third person singular pronouns (*he* or *she*) than males ($p < 0.05$), suggesting that women may focus more on togetherness (*we*) and others (*he*, *she*) than men.

	Total %	Male Ave %	Female Ave%
words>6 letters*	18.75	19.21	18.83
1st pers singular	6.31	6.46	6.13
1st pers plural*	2.06	1.09	2.64
3rd pers singular*	2.13	1.62	2.41
verb	13.99	13.43	14.44
social processes	11.61	10.31	12.42
affective processes	4.9	5.12	4.79
positive emotion	3.57	3.46	3.62
negative emotion	1.2	1.46	1.08
anxiety	0.31	0.3	0.35
anger*	0.26	0.43	0.15
sad	0.24	0.23	0.25
cognitive processes*	19.43	18.62	19.88
biological (sexual) processes	3.33	3.23	3.2
space	6.77	6.58	6.86
time	4.84	4.46	5.06
home	0.42	0.3	0.5
money	0.28	0.2	0.32

Table 1. LIWC results (total and by gender)

*significance of gender difference at $p < 0.05$

2). Action-oriented. Participants used a significantly higher percentage of verbs (13.99%) (e.g., *walk*, *went*, *see*, and *carry*) than those of any other word categories ($p < 0.05$) except cognitive words. One possible reason is the nature of *SL* world: In *SL*, users are empowered to craft their self-presentations

¹ LIWC provides across-genre comparison.

and shape the virtual world in their own ways, such as dressing avatars, changing body shapes, walking around, dancing, wrestling, building houses, creating islands, and having avatar-mediated sex by using “poseballs².”

3) Sociality. Participants used a high percentage of social process words (e.g., *help*, *friend*, *buddy*, *give*, and *talk*), suggesting that SL intimacy emerged from social activities. Involving others was the key to create intimate experience, though SL users tended to focus on their own feelings when evaluating the quality of their experiences of intimacy.

4) Positive attitude. Participants considered SL intimacy positive experiences, as they used a significantly higher percentage of positive emotion words (e.g., *love*, *nice*, *sweet*, and *glory*) than that of negative emotion words (e.g., *hurt*, *ugly*, and *terrible*) ($p < 0.05$). They also used very low percentages of *anxiety*, *anger*, and *sad* words. However, male participants used a significantly higher percentage of *anger* words than female participants ($p < 0.05$).

5) Cognition. SL intimacy seemed to be highly related to cognitive activities such as reflection, judgment, and evaluation. The average percentage of participants' use of cognitive process words (19.43%) was significantly higher ($p < 0.05$) than that in science writing (11.28%), blogs (15.97%), and novels (15.23%). Female participants also used a significantly higher percentage of cognitive words than male participants ($p < 0.05$).

(6) Temporality and spatiality: Percentages of *space* words (e.g., *down*, *in*, *thin*, *high*, and *land*) and *time* words (e.g., *till*, *future*, *hour*, *week*, and *year*) were significantly higher than those of *emotion*, *home*, and *money* words when participants described “intimacy.” Participants' focus on temporality is consistent with Pace et al.'s (2010) finding that time is an important dimension of intimacy. In addition, according to Harrison and Dourish's (1996), spatiality provides constraints that exploit how we interact with each other and with the external world in our everyday lives. Thus, participants' emphasis on spatiality also shows that their intimate behaviors and actions were afforded by specific virtual places embedded in the broader virtual world, for example, a couch, a bedroom, an isolated island or a private castle.

7) Affection and sexuality. Percentages of *affective* words (4.9%) and *sexual* words (3.33%) were noticeable but not significantly dominant in participants' descriptions. The percentage of *sexual* words was even lower than that of *time* words, suggesting that participants may use a linguistically implicit way to express the sexual aspect of their intimate experiences. Additionally, no significant difference was found between male and female participants' use of these words.

In sum, LIWC results show that participants described SL intimacy as positive, mostly social, and action-oriented experiences emerging in an interplay among cognition, affection, and sexuality within specific time and space. This description is generally consistent across female and male participants, though female participants significantly focused more on togetherness and cognitive process while male participants used significantly more complicated words and *anger* words to describe their experiences of SL intimacy.

4.2 Word Cluster Analysis

The same textual data was used for word cluster analysis through which the algorithm calculated the relevance of words to one another, and grouped words with high probability to co-occur (i.e., relevant) together. VOSviewer identified 992 terms in total. With a threshold of 7 (the minimum number of occurrences of a term), 44 terms were selected. After removing stopwords (e.g., *way*, *day*) from the list, 27 terms were identified as semantically relevant to SL intimacy. Figure 1a shows the four word clusters. Cluster 1 (red) includes *intimacy*, *Second Life*, *feelings*, *guy*, *love*, *name*, *partner*, *real world*, and *relationship*. Cluster 2 (green) includes *game*, *person*, *place*, *real life*, *time*, and *woman*. Cluster 3 (blue) includes *virtual sex*, *virtual world*, *animation*, *experience*, *friend*, *sex*, *text*, and *voice*. And Cluster 4 (yellow) includes *intimate experience*, *avatar*, *conversation*, and *meeting*.

² Poseballs are small balls containing canned animations available in the world; most player-created sexual animations are deployed in-world as poseballs.

intimate “*because we were together.*” These moments constituted important part of their felt experience in SL, and led to their emotional attachment to others online users.

In some other situations, a simple act of sharing evolved to a more complex practice—collaboration that involved interdependency, power and process. #43 (female, 42-40) regarded her collaboration with another avatar as “intimate”:

I met an avatar in second life. He was [an] artist as I am. We started a very long collaboration in second life and in real life spending a lot of time discussing and creating.

At the very beginning, #43 and another user shared common interests, making them become familiar with each other. Gradually, this familiarity led to more complex collaborative practices (“*discussing and creating*”) through which experiences of intimacy emerged over time. In this process, the boundary between online and offline did not affect when and how #43 felt intimate.

In sum, the absence of FTF interaction did not prevent these participants from sharing experiences and conducting collaborative activities. Rather, SL afforded unique ways of sharing and collaboration that may be inappropriate or unfeasible in the real world (e.g., “*playing pranks on other people*”).

4.3.2 Self-Disclosure and Self-Reflection

Both in the offline world and in online communication, self-disclosure is considered a sign of intimacy. SL intimacy is not an exception. Many participants related intimacy to self-disclosure. For example, #86 and #101 described how self-disclosure led to trust, and how trust became a way through which they experienced intimacy:

Intimate experience for me in Second life tends to be a meeting of minds as well as a meeting of Avatars and usually only happens after a long period of getting to know and trust the other person. (#86, male, 50-57)

I have shared things with a few close in-world friends that I have not shared with my real life friends, or even husband. Perhaps it is the element of anonymity that allows one to express some of one’s deepest thoughts and emotions. (#101, female, 50-57)

Both participants pointed to the importance of self-disclosure and trust in SL intimacy. For #86, the willingness to disclose personal information over time was the “only” way that could lead to trust, mutual understandings, and experiences of intimacy. For example, #101 would reveal her “*deepest thoughts and emotions*” to her SL friends rather than to her real life friends. Yet it should be noted that participants’ self-disclosure represented a complex interaction between their digital presentation and emotional needs: technically, the anonymous and user-generated settings of SL well afforded the selection and customization of avatared selves, making it a safe environment for such disclosure; subjectively, players felt emotionally appropriate and comfortable to disclose “*deepest thoughts and emotions*” in a virtual world rather than in the real world.

Some other participants focused on their own feelings when experiencing intimacy. For them, intimate moments emerged in the process of self-reflection and self-awareness: a completely self-oriented activity could make them feel intimate. For example, #95 (male, 26-33) described,

The only truly intimate experience I can think of is a solitary one (or rather, it was between me and the setting I was in). I was exploring a region called Avaria Sav, which was a very well-crafted wilderness area modeled loosely after the African savanna, while using an avatar that represented a primitive hunter-gatherer native to the place. Night fell and the nighttime ambient sounds included some distant coyotes howling. The experience “clicked” quite strongly. I spent the whole night perched on a rock outcropping under the stars, wishing I had a campfire to keep the predators at bay even though I knew they were really just a background sound loop. That’s when I decided to settle on that particular avatar as my “default” Second Life identity, and why I consider Avaria to be my “home territory.”

#95’s account of an intimate moment did not involve any “others.” Instead, he was completely solitary in a virtual place, exploring, watching, listening, and pondering. For him, “intimacy” was no longer a social dynamic or an interpersonal interaction. Rather, knowing oneself and establishing a feeling of belongingness was the key to have an intimate experience. Eventually, this type of experience became so meaningful for him that it constituted a crucial part of his online identity.

In all the examples, there seemed to be an erratic but harmony hybrid: avatar-based self-representational needs for existence, recognition, perception, and mobility, and non-avatar-based experiential desires for knowing, trust, and care.

4.3.3 Symbolic Togetherness

Consistent with the traditional conceptualization of intimacy, “togetherness” was both an essential element of intimate experience and a necessary condition to foster interpersonal relationships in *SL*, though it was not characterized as “physical” but “symbolic” by participants. For example, #31 described,

Any one on one real time communication (text or vocal) evolving around personal feelings would in my view qualify as intimacy.... I would say the ‘real time’ is the big component. Togetherness... As if the visuals act like a symbolic layer... Voice is clearly the most organic perception you can get of someone in a virtual world. That’s where the most realness lies. (#31, male, 34-41)

It is obvious that #31 used togetherness to judge “realness” in *SL*. His “togetherness” had two layers: It should be a synchronous communication (“*real time*”) to imply co-presence; and it should be vocal to have “*the most organic perception*” of others in a virtual world. For him, voice added a symbolic layer to the idealized perception of the receivers.

Other users also emphasized the importance of voice in constructing intimate interpersonal connections in *SL*:

Using voice, however -- and eventually photos -- heightened the level of trust we were placing in each other and, consequently, the sense of emotional intimacy. (#35, female, 26-33)

Our avatars may be dancing, but we are in voice, generally through skype and have plans to meet next month. (#168, female, 50-57)

Both participants considered voice an indicator of “togetherness,” which would enhance the level of trust and emotional intimacy in online interpersonal interaction. For them, voice, as a necessary supplement to avatar-mediated behaviors in *SL* (e.g., dance), contributed to more expressive self-presentation and more accurate perception of others

In sum, presence is not merely a dynamic for creating self-awareness but also for constructing the sense of “being aware” of other people’s existence; this awareness can also promote an appropriate sense of feeling “good” or “buzz” with others (Vogiazou et al., 2005). Thus, in an avatar-based online environment such as *SL*, presence becomes a symbolic social dynamic that is conveyed via displaying and acquiring meaningful information (e.g., availability, activity, location, team identity; see Vogiazou et al., 2005) about other users’ existence. As the above quotes have shown, multiple participants entered the same online social space simultaneously, were aware of one another’s existence (as the displayed avatars) immediately, communicated with one another to acquire necessary information, and conducted activities together in a number of ways such as speaking/typing and gesturing. For them, avatar-based co-presence became an intimate experience: It embraced an awareness of symbolic co-existing, a feeling of companionship, and the affordance of an online system for self-motivated social behaviors. Though *SL* users presented themselves partially in a physical space and partially in a disembodied, online space, their experiences of intimacy emerged in the intersection of both presences (the physical body itself and the virtual avatar), and were meaningful for both.

5 Discussion

In this paper we have argued that a virtual world like *SL* mediates and supports intimate experiences via hyperpersonal CMC: First, the user-generated content in *SL* allows for optimizing self-presentations (e.g., creating avatars) and idealizing others’ presentations (e.g., avatars). Second, its multimodal communication channels (i.e. text, audio, and animation) offer both verbal and non-verbal (e.g., avatars’ body language) interpersonal interaction, which afford almost all types of avatar-based behaviors. This information richness context, along with individuals’ subjective emotional needs, make intimate experiences in *SL* more complicated than those in text-based CMC environment or in FTF interaction.

How do these mediated intimate experiences affect the nature of the human experience that we call “intimacy”? As this study has shown, *SL* users used similar criteria to evaluate *SL* intimacy as those used for FTF intimacy: The basic human needs for being loved, cared for, supported, and connected to others were as crucial to *SL* intimacy as to offline intimacy. *SL* users still sought warmth, togetherness, trust, support, and emotional connections in the virtual world. They still emphasized their emotional fulfillment (e.g., love, relationship and friend), needs to be physically connected (e.g., meeting, sex), and

demands for communication (e.g., conversation, voice and text) when describing experiences of *SL* intimacy.

However, *SL* users focused on different dimensions of intimacy. Some of them eventually extended their *SL* intimacy to FTF intimacy. Yet at the discovery stage they all used multimodal communication (e.g., voice) to substitute FTF and avatar-mediated behaviors (e.g., animation) to replace physical contact. For most of them, intimacy was already established in *SL* before being extended to the real world. Thus, FTF interaction was sometimes a result of *SL* intimacy, not a necessary condition to start it. This is why participants described *SL* intimacy as an action-oriented and communicative experience: Avatars can talk, laugh, walk, dance, and show love, though it is the user behind the screen that conducts all the behaviors. Avatars, therefore, become vehicles through which *SL* users express their emotions, feelings, expectations, and desires. Via voice, text or gestures, avatars become their selves – most likely optimized selves – and can overcome the temporal-spatial barriers to achieve symbolic co-existence and physical connectedness. As a result, users' needs for intimacy have blurred the boundaries between their true identities and their self-presentations (i.e., avatars) in *SL*.

Thus, *SL* users emphasize similar experiential values as those of FTF intimacy but use alternative ways to realize these values: The hyperpersonal communication model affords editing and idealizing self-presentations, and the multimodal communicative channels afford both verbal and non-verbal interaction to disclose selves, understand one another, and construct trust. Additionally, *SL* is designed as an anonymous thus safe environment, making users less pressured and easier to express their true inner feelings. All of these help *SL* users avoid the awkwardness and nervousness that usually happen in FTF interactions especially for strangers. Yet this does not mean that *SL* intimacy always leads to meaningful interpersonal relationships. Findings of this study do support Walther's theory that hyperpersonal communication allows for higher level of closeness than that in FTF interaction. However, findings also show that this can only happen in certain situations, which require a large amount of time investment, a self-reflection, a sense of sharing and trust, a sympathy to others' social and emotional needs, and a feeling of symbolic togetherness.

In general, multimodal communication and avatar-mediated behaviors constitute essential components of *SL* intimacy, collectively contributing to the positive user experience in this virtual world.

6 Conclusion

This study represents our research efforts to connect the classical understanding of intimacy and established CMC theories developed in the days of text-based Internet communications with studies of ICT-mediated intimacy. Using mixed methods, we have explored how online users (re)define, interpret, experience, and evaluate "intimacy" in a hyperpersonal communicative sociotechnical system (i.e., *SL*). It is concluded that similar to FTF intimacy, *SL* intimacy closely relates to emotional fulfillment, the need to be touched, and interpersonal communication, but that it also emphasizes new forms of physical proximity -- multimodal communication channels and avatar-mediated behaviors. These new forms afford positive intimate experience in *SL* and facilitate interpersonal relationships without FTF interaction or physical proximity. It is also concluded that a meaningful and subjectively significant intimate experience emerges in the interplay among self-selection (e.g., creative and editable digital presentations, self-defined moral norms, and individual understanding of what "appropriate behaviors" are in a virtual world), experiential drives (e.g., desires for intimacy, togetherness, self-awareness, emotional connection, trust, care, and sexual achievements), and technological affordances (e.g., *SL* as an anonymous, user-generated environment). Thus, *SL* intimacy is highly hybridized: a virtual world stylized performance coupled with real world intentions, emotions, and creative and skilled self-expression. These findings supplement existing studies of social impacts of ICTs by shedding light on potential changes in how people define and experience interpersonal relationships in hyperpersonal communicative sociotechnical environments; they also suggest promising directions for future research – for example, how online social spaces can support "some of the deepest and most meaningful dimensions of human experience" (Bardzell & Bardzell, 2008, p. 11).

7 References

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