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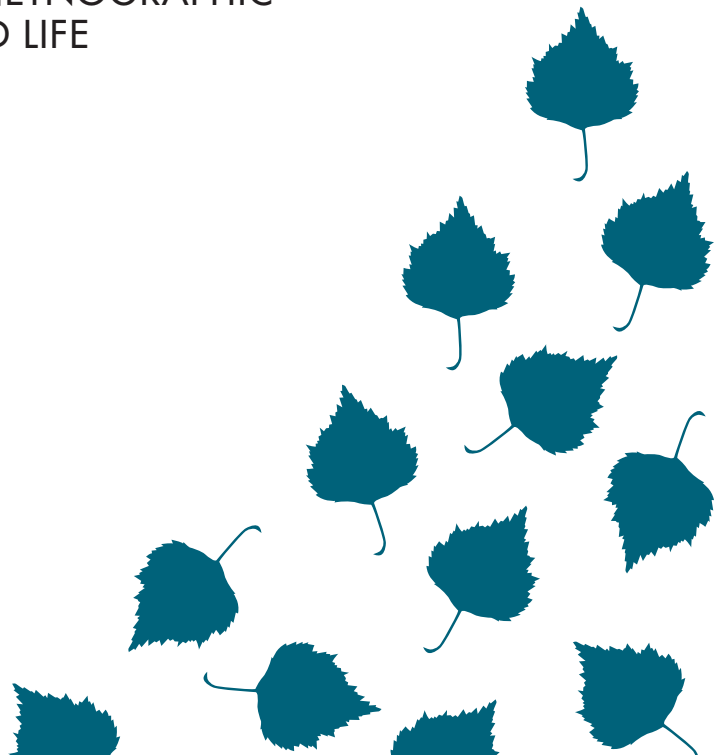


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HOW DIGITAL WORLDS BECOME MATERIAL

AN ETHNOGRAPHIC AND NETNOGRAPHIC
INVESTIGATION IN SECOND LIFE

RICHARD KEDZIOR



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An Ethnographic and Netnographic Investigation in Second Life

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How Digital Worlds Become Material: An Ethnographic and Netnographic Investigation in Second Life

Key words: digital materiality, digital consumption, digital virtual consumption, consumer culture theory, ethnography, netnography

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1 INTRODUCTION

Early one morning in 2007, I was engrossed in my daily routine: having coffee and reading the news online. As I was still waking up, my attention was suddenly hijacked by an interesting headline. The *New York Times* was informing me that “Even in a Virtual World, ‘Stuff’ Matters” (Boss 2007). Intrigued by this statement, I wondered: What is a virtual world? What kind of “stuff” matters? And why is it all worthy of a bold headline? I clicked on the article. I discovered that the online virtual world was called Second Life, and was built online by hundreds of thousands of individuals, known in the software context as users, who moved around in a simulated world as graphic representations, called avatars. After all, it was not virtual but simply digital.

From the article, I gathered that the avatars of Second Life seemed to live in a consumer society where they worked, shopped, socialized, and displayed the markers of in-world (constituted within the online digital world) success and prestige. “Oh, I know... it’s a form of role play,” I thought to myself. I was disabused of this conclusion when I found out, in the course of this study, that some Second Life residents maintained that their virtual existence was at least as real as their embodied offline lives. But at the time, some lingering questions remained: Why would “stuff” matter in an online digital world? Why would people spend real money on virtual possessions? These questions prompted me to begin exploring the domain of digital consumption studies.

Upon further scrutiny and reflection, I realized that I had fallen prey to the newspaper article’s provocative and sensationalist title. I realized I should re-examine the article’s assumptions, assumptions so taken for granted that they went directly over my head. Is the “virtual” unreal? Are virtual possessions necessarily immaterial? Finally, was the Internet redefining consumers’ notions of reality? These questions ignited my curiosity, and unpacking them became the topic of this dissertation.

This chapter gives an overview of the ways in which the advent of the Internet has impacted the marketing domain in general, and consumer behavior in particular. I then present the research gap and the purpose of this study, its research questions, and its limitations. The chapter ends with a discussion of relevant paradigmatic, methodological, and empirical considerations.

1.1 Overview of the Internet’s Influence on Marketing

Within the last two decades, perhaps nothing has changed the discipline of marketing as much as the proliferation of Internet technologies. Since its advent, the Internet has transformed the lives of marketers and consumers alike in ways that would have been difficult to predict. For example, new forms of communication – websites, online forums, chat rooms, and emails – have populated cyberspace and revolutionized the way businesses think about serving their customers.

Indeed, the Internet has had a profound impact on every area of the marketing mix. Although it is considered by some to be simply an alternate medium of communication, it has been clear from its inception that the Internet also touches product (what gets sold); distribution (what is available and how); is an important consideration in the dynamic nature of pricing; and is heavily implicated in revolutionizing both promotional media and messages (through targeted communications).

New products and services have emerged, and with them, new questions for researchers. For example: which products are suitable for e-tailing (Peterson et al. 1997)? How do the qualitatively different experiential dimension and the perceptions of risk inherent in an online purchase influence the success of the offering (Alba et al. 1997; Quelch and Klein 1996; Poon and Joseph 2001)? Internet marketing also offers new opportunities to satisfy fragmented consumer markets through customization and personalization. For producers, computer-based information about consumers, accompanied by flexible manufacturing systems, has made it possible to offer mass customized products at lower cost (Kara and Kaynak 1997). Given the ability to customize their own goods, customers display a much more positive attitude toward the website that offered them that opportunity (Nunes and Kambil 2001).

The dynamic nature of the Web has also affected pricing strategies. Easy access to online price search services compels marketers to differentiate based on factors such as product quality, or support services, where offerings are not easily comparable in a single dimension (Dickson 2000). On the other hand, online environments represent a very flexible platform for frequent price adjustments, enabling dynamic pricing (Pitt et al. 2001). In addition, both companies and consumers have had to rethink common notions of price with the advent of online auctions (Becherer and Halstead 2004).

The Internet has also facilitated the emergence of new channels of distribution. E-tailing, online store design, and atmospherics have become dominant topics within the retailing literature (Childers et al. 2001; Kalyanam and McIntyre 2002; Eroglu et al. 2003). In addition, marketers have been forced to reevaluate their definitions of markets, and to acknowledge that geographic boundaries no longer define where their offerings might be available.

Finally, the Internet has changed the way in which companies communicate with consumers. Instead of the traditional communication approaches of “one-to-many,” businesses are now expected to execute a model of “one-to-one” (Grönroos 1990; Morris and Ogan 1996). Researchers quickly dived into testing the effectiveness of online advertising and new formats such as banner ads (Burns and Lutz 2006) and tailored promotions (Philport and Arbittier 1997). However, with growing communication possibilities, Web-based marketing has struggled with attempts to orchestrate brand message across different channels.

After the initial fascination with the Internet as a new medium, marketers and consumer researchers started noticing more profound ways in which the Web impacted consumers. New online consumer phenomena such as flow experiences (Hoffman and Novak 1996) and telepresence (Klein 2003; Koufaris 2002) have been researched, and the flourishing sociality and rich cultural life of online environments acknowledged (Kozinets 1999).

The initial tumult of changes to the marketing mix has since been followed by a related set of phenomena altering how consumers interact with the Internet; accordingly, a new wave of Internet research has paralleled the emergence of the online phenomena known as “Web 2.0” (Constantinides and Fountain 2008). In contrast to conventional websites where consumers were just viewing content created for them, the Web 2.0 phenomenon emphasized participatory sharing of information and user-generated content; collaboration, and the blurring of boundaries between consumers and producers. As new online communities spread out across social networking sites, wikis, blogs, and video sharing sites, online digital worlds (in literature also referred to as online virtual worlds) emerged. These phenomena not only impacted the way other

media were consumed (diminishing the importance of TV and radio), but also created a shift in the way researchers and marketers thought about consumers' presence online. Researchers slowly acknowledged that consumers' online presence and membership in various communities transcends the explanatory power of identity play and, in fact, has the capacity to affect offline reality. Stark examples of this are the incidence of lawsuits to control and protect digital possessions, and the creation of fortunes made by trading digital land (Lastowka and Hunt 2004; Cohen 2012).

Slowly but surely, scholars have acknowledged that the "real" time and money that millions of consumers have invested playing MMORPGs (massively multi-player role playing games) or building their houses in online digital worlds can no longer be dismissed as being mere fantasy (Castronova 2005; Boellstorff 2008). It is now without doubt that the dualisms traditionally ascribed between "work" and "play"; "real" and "virtual"; and "online" and "offline" are no longer relevant, or, at least, have become blurred.

1.2 Research Objective

In "Place, Technology, and Representation," Sherry (2000) argues compellingly that "the demands placed on the cybernetic self to negotiate the multidimensional fields of experience imposed upon it by information technology require our careful psychological, cultural, and philosophical attention." He goes on to add: "in order to capture authentically the lived experience of intersubjectivity that contextualizes consumer behavior... [consumer research] needs to move beyond the forced dichotomy it has erected between – and the differential evaluation it has imposed upon – introspection and exteroception" (p. 278). Sherry's insight is important, because in highlighting the numinous qualities of technology he foregrounds the benefit of expanding consumer research inquiry to encompass the materiality of the technological sphere and, most importantly for consumer researchers, the implications for a ubiquitous field of consumption.

Yet, even though consumer behavior in online and digital contexts has been studied for almost two decades, many researchers still treat the online world as uncharted territory and examine Internet-related phenomena as discrete areas of consumer action. In other words, the Internet is presumed to be a different – or at least special – context. As many researchers have indicated, the problem with this approach is that it ignores the fact that consumers do not abandon their offline lives when they are online, but remain embedded in their existing material realities, choices, and decisions (e.g., Garcia et al. 2009; Jurgenson 2012).

Although some studies have successfully managed to circumvent this contextual trap, they generate a new set of conceptual problems. For example, many studies concerned with digital consumption (e.g., Schau and Gilly 2003; Gielser 2006; Cotte and Latour 2010) compare and contrast offline and online consumption, comparing "virtual" and "real," "online" and "offline" contexts to draw distinctions between the way people adopt and use the new media and their offline consumption. However, as Leonardi (2010) points out, framing the contexts as binary oppositions obscures the fact that the "offline" is the material backbone of the "online" (e.g., we need a keyboard, a screen, and network access to be online). Both spheres permeate one another, rather than forming independent domains with clear-cut boundaries. The following critique issued by Denegri-Knott and Molesworth (2012, p.2) vividly illustrates this point:

That analysis to us, which is limited to what happens on the screen and surgically removes consumers from their everyday life, is misconstrued and perpetuates, unwittingly, a problematic severance between our digital and offline selves and lives. It fails to acknowledge that the consumer subject arrives, already with a particular moral code or subjectivity, a particular intentionality or way of seeing, which is not solely a product of DVC [digital virtual consumption], but rather their being in a particular socio-historic milieu and embedded in complex webs of relationships on and off the screen. It also downplays the necessity of material stuff and processes in supporting emerging consumption practices.”

As suggested above by Sherry (2000) and echoed by other researchers (e.g., Vannini 2009; Shove 2007) one possible remedy for false reductionist dichotomies is to focus on materiality. The nature of materiality, in fact, is a critical factor in current conceptualizations of consumption (Borgerson 2005, 2013; Miller 2005; Slater 2002b). This is especially true for digital consumption where traditional notions of “material” are challenged by processes such as dematerialization, rematerialization or digitization.

Despite the absence of an explicit treatment of materiality in digital consumption, recently a number of contributions have laid foundations for its robust theoretical articulation (e.g., Denegri-Knott and Molesworth 2010, 2012; Magaudda 2011, 2012; Denegri-Knott, Watkins and Wood, 2012). Among them probably the most influential contribution in regards to materiality in digital consumption comes from Denegri-Knott and Molesworth’s (2010) work. According to the authors, digital consumption occurs in a space where the virtual (e.g., consumer imagination) and the material (e.g., physical world) converge.

Much in line with the conceptualization adopted for the purposes of this work, Denegri-Knott and Molesworth (2010) allude to the presence of three materialities which are consequential for digital consumption: 1) virtual materiality of our imagination; 2) physical materiality of our daily, material existence; and 3) digital materiality which represents new ontology in that it allows entities, otherwise abstract and ephemeral (e.g., fantasies), to gain external presence (e.g., as computer simulations), yet not physical instantiation (e.g., they are not tangible).

As some scholars point out (e.g., Malpas 2009; Leonardi 2010) digital materiality is “non-autonomous” because it needs to be sustained by physical materiality (i.e., computers, screens, cables, hard drives). Consequently, consumers often perceive digital materiality as unstable and ephemeral since digital presence must be always mediated by physical materiality. Digital objects are seen as malleable and fleeting as documented by special efforts needed to preserve and authenticate digital files (Kallinikos et al. 2010).

This tension between digital materiality and physical materiality is also evident in the initial question which inspired this study - why do people buy virtual “stuff” with real money? Interestingly, in the digital world the “stuff” is merely digital, not unreal. In fact, people who spend their money on it, apparently construe it as real and “material.” Therefore, the question can be restated as: how do digital worlds become material? In light of the discussion presented above, this question alludes to the interplay between digital and physical materialities. As previous research shows, there are a number of possible links between digital and physical materialities (Denegri-Knott and Molesworth 2010; Magaudda 2011, 2012; Denegri-Knott, Watkins and Wood 2012).

In their article, Denegri-Knott and Molesworth (2010) indicate that some digital consumption practices are related to physical materiality in that they simulate material consumption. One such practice, referred to as “stimulation of consumer desire,” encompasses browsing through online retailers’ websites in pursuit of stimulation;

similar to window shopping at a mall. Another digital practice which can be linked to physical materiality is “actualization of consumer daydreams” which assumes that consumers who are not able to materially actualize their desires engage in simulations in digital worlds. To illustrate: such practice could occur if a consumer who would like to be a homeowner, but does not have the necessary resources, builds a huge mansion in a digital world. This work offers valuable insight about the influence of physical materiality on digital consumption by showing what fuels digital consumption practices (e.g., desire for material goods). Conceptually, it also opens up a possibility for bidirectional influence as a consumption practice in a digital world could also motivate consumption in physical materiality.

Also Magaudda (2011, 2012) offers some valuable insights in regards to the interplay between physical and digital consumption. As he points out, dematerialization (in the context of music digitalization) is a misleading term because it does not lead to less physical materiality in the practices he studied. Instead, it leads to the emergence of new forms of materiality to provide the backbone for digital materiality. This phenomenon is clearly demonstrated by the emergence of e-books. Even though on the surface of the issue it would seem as if physical materiality of paper books simply disappears when the object is digitized; in fact, when looking at the bigger picture (i.e., practice) it is apparent that e-books necessitate new forms of physical materiality, such as e-book readers (e.g., Kindle). Thus, he argues that the more appropriate term for this process is rematerialization and encourages future research to explore materiality as a circuit rather than one way conduit. Importantly, Magaudda (2011, 2012) also points to the consequences of such shift in perspectives on materiality as he demonstrates that changes in materiality are accompanied by shifting social and cultural meanings.

Finally, the work of Denegri-Knott et al. (2012) on ownership of digital goods offers insights about ways in which consumers engage with ephemeral digital objects. They found out that when consumers experienced the unstable nature of digital possessions they engaged in practices aimed at rematerializing (print outs, screen shots) or reproducing (copying to another storage device). This work is a great starting point for understanding how consumers respond to instability of digital materiality vis-à-vis practices such as ownership which assume a level of confidence in the material arrangement. Thus, by pointing out one way in which consumers deal with this instability, Denegri-Knott et al. (2012) raise questions regarding other ways in which consumers can cope with uncertainty related to digital objects.

In sum, extant research begins to address the interplay between digital and physical materialities, but the literature remains fragmented. In the research that follows, I add to the understanding of digital consumption by offering a comprehensive framework which conceptualizes interactions between digital and physical materialities in a digital world. Adopting a materiality perspective allows me to be sensitive to transitions of matter which happen when different materialities are involved within a consumption practice (e.g., when things “move” from physical world to digital world). It also allows me to escape the ontological entanglements and traps of using categories such as “virtual” and “real” in a reductionist way, and also enables a more complete presentation of consumer engagement with digital worlds. With the growing significance of social networking and other Internet-related phenomena, an understanding of digital consumption is crucial for both academics and marketing practitioners.

Given the state of digital consumption research, which is further detailed in Chapter 2, the aim of this study is to answer the research question: How do digital worlds become material? Accordingly, the major contribution of this research is a conceptual framework for understanding how digital worlds become material (for a summary, see Table 4). Drawing on both prior research and an ethnographic and netnographic investigation of the Second Life community, this thesis shows that digital worlds become material through five distinct categories of processes: (1) Physical to Digital Reembodiment; (2) Physical to Digital Rematerialization; (3) Digital to Physical Reembodiment; (4) Digital to Physical Rematerialization; and (5) Digital to Digital Interconnection. Each of these five processes is defined, theorized, and evidenced with data from Second Life consumption. Additionally, each of the five processes is discussed in terms of a unique consumer motivation which accompanies it.

1.3 Key Concepts

One of the key concepts in this study is materiality. The multifaceted nature of this term hinders almost any effort to succinctly define it: hence a whole section of Chapter 2 is devoted to its problematization and nuanced use in various contexts. In basic terms, materiality is an observable quality of the world. It might not always be tangible (e.g., our thoughts) but nonetheless we can always trace it back to some form of material presence. By way of introduction, and for conceptual clarity in this work, it is important to distinguish – though not separate – three different types of materiality: physical materiality, virtual materiality, and digital materiality.

Throughout the study these are referred to as respective materialities or “regimes.” The word “regime” is used here to signal that the different types of materiality (or different materialities, as some authors prefer to call them) denote different assumptions about subject-object relations specific to each of them (Borgerson 2005). It is used here to sensitize readers and encourage them to scrutinize their assumptions about daily consumption: what we treat as material and what is relegated to the sphere of the “immaterial” or unreal.

Physical materiality describes all concrete, tangible, or mutually discernible material objects that can be experienced collectively by people as objectively existing in the world. Human senses are usually the source of knowledge about the existence of physically material entities, but societal understandings and meanings attributed to them are socially constructed. This materiality exists indiscriminately of human consciousness.

Virtual materiality refers to entities such as thoughts, memories, daydreams, fantasies, or memories that, while not tangible, have material presence on a micro level; their presence can be objectively traced with an appropriate apparatus. For instance, thoughts can be considered material when analyzed as a set of biochemical reactions taking place in the brain, because an image of a brain MRI scan can capture the effect of a certain thought occurring in our minds. So far, the content of the thought cannot be captured, but the world of neuroscience has recently been electrified by very promising attempts to reconstruct images seen by people based on their brain responses (Koch 2012). Normally, because we cannot grant someone direct access to our memories and thoughts, our subjectivity resides in virtual materiality; hence its individualistic and subjective character.

Finally, digital materiality refers to materiality present in electronic environments such as online digital worlds. This regime of materiality consists of intangible representations and simulations, which are usually experienced by consumers as materially mediated through their computer screens. Digital images, representations, and simulations can have material presence when we look at them as computer code stored on a hard drive in a file format, because it is possible to point to the exact place where they are stored. Yet, as many scholars argue (e.g., Leonardi 2010) materiality of digital artefacts stems not from these material traces on hard drives, but from their significance for consumers in their physical world (e.g., word processing software is as material of a work tool for writers as a pen). Still, the role of physically material hardware (e.g., computers and servers) in sustaining digital materiality cannot be ignored. Consequently, digital materiality can be thought of as “non-autonomous.” Chapter 2 addresses these issues in greater detail.

The above typology of materiality is by no means intended to represent the structure of reality. Distinctions between the different regimes of materiality are drawn for analytic purposes only, in order to consider alternative ways of looking at our mundane daily engagement with technology and materials. When speaking of materiality in offline and online spaces, I interchangeably use the terms physical materiality and digital materiality.

In this thesis, I also use the term reembodiment to denote either (1) the reconstitution of aspects of the embodied (physical) self into a digital self or selves; or (2) the incorporation of aspects of the digital self into the embodied (physical) self. In a similar vein, I use rematerialization to denote either (1) the transferal of aspects of physical objects to digital objects; or (2) recreating digital objects or aspects thereof in physical form.

The concept of a digital world broadly covers all kinds of online environments, from the Amazon e-commerce site to Gmail inboxes. Thus, Second Life is a specific kind of a digital world, usually a massively multiplayer online world with a rich computer-simulated environment. I acknowledge that phenomena such as Second Life are often referred to as online virtual worlds (e.g., Boellstorff 2008). However, in line with the integrative nature of this work preferred term here is digital world. The terms “denizens,” “consumers,” “residents,” and “users” are used interchangeably in regards to people who inhabit Second Life. When a user is online, roaming the environments of Second Life via his or her avatar, the user is said to be “in world.” Finally, the avatar owner or avatar controller denotes the flesh-and-blood person creating, guiding, and living vicariously through the avatar.

Ontology calls for an important distinction to be drawn between the notions of the “virtual” and the “digitally virtual” (cf. Denegri-Knott and Molesworth 2010). In recent decades, the “virtual” has generally been triggering immediate associations with “virtual reality” or “cyberspace” (van Doorn, 2011). However, this narrow interpretation obscures that fact that “virtual” has a much longer history and much deeper meaning. Many influential authors and philosophers such as Marcel Proust, Henri Bergson, and Gilles Deleuze saw our memories, thoughts, and affects as “virtual” (Shields 2003, Denegri-Knott and Molesworth 2010). Therefore, the term “virtual” is applicable to many other contexts beyond electronically mediated environments. In the interest of brevity in this work, whenever digitally produced images and experiences in Second Life are discussed, the qualifier “digital” is used. It has to be noted however, that a more appropriate way to reflect the distinction between the virtual and the merely digital would be to use collocation: “digital virtual”, similar to the useful distinction made by

Denegri-Knott and Molesworth (2010) between “virtual consumption” (in consumers’ imagination) and “digital virtual consumption” (in online digital worlds).

1.4 Paradigmatic, Methodological, and Empirical Considerations

It is widely accepted that ontological and epistemological issues in research are intertwined and have to emerge together. This section thus addresses philosophy of science considerations. This study is based on relativist ontology. From this point of view, I accept that reality as I experience it is constructed through the meanings and understandings derived experientially from social interactions (cf. Crotty 1998). In turn, my perspective on subjectivist epistemology assumes that all scientific knowledge is socially constructed by scientists, rather than existing objectively and waiting to be discovered. In general, this particular ontological-epistemological constellation is quite common among researchers who consider themselves interpretivists (Crotty 1998, Silverman 2013). In accordance with these ontological and epistemological assumptions, ethnography was chosen as a method appropriate for studying the culture of an online digital world, and grounded theory was selected as an analytical tool to aid in building a middle-range theory of how digital worlds become material.

These particular ontological and epistemological positions also inform my perspective on how the researcher’s reflexivity engages with the research process. The concept of reflexivity acknowledges that researchers are always shaped by their social, cultural, and historic contexts, which impose values and interests on them (Davies 1999). By accepting this premise, researchers reject the idea that social research can be conducted in some autonomous manner, or influence-free vacuum, insulated from the wider society and the researcher’s personal biography (cf. Zinkham and Hirschheim 1992).

From this perspective, it is also important to recognize that research generates accounts of the social world that are produced through selective observation and theoretical interpretation. Accordingly, subjectivity mediates the framing of the questions asked, the interpretation of what is seen and said in response, and the representation of those responses in the writing of research reports (Antonacopoulou and Tsoukas 2002). Thus, data should not be treated as self-evident, but rather approached as a basis for building interpretations about the phenomena under study. Such interpretations are then evaluated based on their relevance and trustworthiness. Being aware of the fact that all social knowledge is a form of representation, the interpretations created by a researcher need to be made explicit, and advantage should be taken of any opportunity to evaluate their limits and assess alternative explanations.

The fact that as researchers we are likely to have an effect on the people we study does not mean that the validity of findings has to be restricted to “objectively” collected data. How people respond to the presence of the researcher may be as informative as how they react in other situations (Arnould and Wallendorf 1994). The social character of ethnographic research cannot be avoided by becoming a passive observer or a “fly on the wall.” It is not possible to eliminate the effects of the researcher’s presence; rather, the researcher should be acknowledged as an active participant in the process. As has long been recognized by ethnographers, the researcher herself is the research instrument par excellence (Hammersley and Atkinson 2007).

Finally, reflexivity also assumes an understanding that the production of knowledge by researchers has political consequences. The publication of research findings can shape academic or societal debate, or influence political or practical decisions. As conducting

research involves participating in the social world and reflecting on the products of that participation, it can play a transformative role by reshaping the contexts and situations under study (Askegaard and Linnet 2011). Understanding that research outcomes are not neutral in relation to what is being studied requires researchers to raise ethical considerations about the consequences of their work. This is further discussed in the methodology chapter.

1.4.1 Grounded Theory in Ethnography

Ethnography is a form of naturalistic inquiry with a specific focus on culture. When immersed in their fieldwork ethnographers aim to see the world from the perspective of the members of the culture under study. Adopting this insider point of view (called emic perspective) results in amassing descriptive data referred to as “thick description” (Geertz 1973). However, in order to theorize, ethnographers have to move from an emic (i.e., individual) to an etic (i.e., conceptual) understanding of cultures.

In this project, ethnography was used as a method guiding the fieldwork. In line with the argumentation presented by Charmaz (2001:161) that “Grounded theory methods consist of flexible strategies for collecting and analyzing data that can help ethnographers to conduct efficient fieldwork and create astute analyses,” a grounded theory approach as proposed by Charmaz and Mitchell (2007) was employed to guide the process of data analysis and theorizing.

This study focuses on generating a starting point for a mid-range theory about the nature of digital materiality as experienced by consumers in digital worlds. The characteristic of good grounded theory is its capacity to incorporate and integrate new perspectives of the same problem (Glaser 1992). To this end, I build on the extant literature in consumer research, cultural studies, anthropology, and human-computer interaction.

1.4.2 Empirical Context

The empirical context of this study is provided by Second Life, a three-dimensional, online digital world where consumers are embodied and represented through avatars. It is a rich social and cultural space where consumer-controlled avatars engage in many consumption activities. Due to its similarity to MMORPGs like War of Warcraft, Second Life has frequently been categorized as a game. However, Second Life differs significantly from the concept of a game, as explained in detail in Chapter 3. This particular digital world was chosen because it was by far the largest and most dynamically growing online digital world when this research project was conceived in 2007. Additionally, the terms and conditions of service laid out by Linden Lab, the owner of Second Life, imposed no restrictions on conducting research in-world. Although the empirical context of this study is an online digital world, in order to encompass the cultural and social complexity of the phenomenon, multiple sites for ethnographic and netnographic work were selected, such as Second Life Community Conventions, online community forums, and individual blogs of Second Life denizens.

1.5 Limitations of the Study

There are a number of limitations regarding this research. First, in this thesis digital materiality is narrowly conceptualized as a phenomenon inherent to one particular online environment: an online digital world and a number of social networking sites connected with it. As a category, online digital worlds are very idiosyncratic in their architecture, which defines how the world operates (e.g., whether it resembles physical materiality), what consumers are able to do, own, achieve, etc. This delimiting move was necessary to provide focus on conceptual development and theory building.

Similarly, in order to gain a detailed understanding of the context under study and achieve the necessary empirical depth, I did not focus on other possible digital materialities (e.g., mobile devices, tablets). Although there are traces of their presence in the data, and whenever possible their significance is acknowledged, they were not studied directly.

Through its multi-sited character, this ethnographic and netnographic project specifically aims to map out the links between digital and physical world. To this end, in addition to observation within Second Life I also decided to meet with the people behind their avatars, and attended four consecutive annual Second Life Community Conventions in major North American cities. It is safe to assume that the people attending the conventions did not reflect the general population of Second Life. They tended to be more involved in issues related to the online digital world, and spent more time and resources on maintaining their active presence in Second Life.

In addition, with few exceptions, there were no minors (children) attending the community conventions. This could potentially impact the variety of material practices that I observed during these intensive fieldwork immersions. As the authors of *Born Digital* (Palfrey and Gasser 2008) or *Grown Up Digital* (Tapscott 2009) would probably argue, the “digital natives” that make up the “net generation” respond differently to the inherent ontological instability of digital materiality than do their parents’ generation, some of whom I had the pleasure of meeting during conventions.

1.6 Structure of the Thesis

This thesis is organized in five chapters. The first chapter, the Introduction, provides a background of the area under study and an overview of the most important issues related to this dissertation. This research should be understood as a study of a phenomenon in the broader context of the Internet and marketing, and more specifically, consumer research.

The second chapter introduces the notion of digital worlds and explains why digital worlds matter in the context of contemporary consumer culture. Subsequent sections present the concept of materiality and demonstrate its relevance to digital consumption studies. Finally, prior research on how digital worlds become material to consumers is reviewed and organized into four distinct streams. The chapter concludes with a summary. A note regarding the structure and place of the literature review in this thesis needs to be made here. As Charmaz (2006) points out, in grounded theory a literature review should anchor and deepen the understanding of the emerging theory. However, at the outset of the research project it is impossible to know what the emerging theory will be. Thus, the final version of the review is created after the analysis of the data has

been completed. In line with this argument, the organization and representation of the literature in Chapter 2 was refined after the data analysis process was completed.

The third chapter presents the ethnographic/netnographic methodology that guided the fieldwork and data collection process. It describes the main characteristics of the methodology and the blended approach advocated here. Next, the context of the study is described – the online digital world Second Life and its community, both in the electronic environment and in the physical surroundings of hotels at which community conventions took place. Then follows a presentation of the empirical material gathered, and a general discussion of the process of data analysis. The chapter concludes with a discussion about the issues related to research ethics; specifically, quality and access.

The fourth chapter presents the main findings from the empirical study. It starts by presenting an overview of the findings. Drawing on prior research and an ethnographic and netnographic investigation of the Second Life community, this research shows that digital worlds become material through five distinct categories of processes: (1) Physical to Digital Reembodiment; (2) Physical to Digital Rematerialization; (3) Digital to Physical Reembodiment; (4) Digital to Physical Rematerialization; and (5) Digital to Digital Interconnection.

Each of these five processes illuminates one of the following: (1) the transfer of the body, identity, or self (i.e., reembodiment); or (2) the transfer of one's possessions, props, or other objects (i.e., rematerialization); or (3) both (i.e., interconnection). Each of the processes also has a direction: (1) from the physical to digital world; (2) from the digital to physical world; or (3) from one digital world to another digital world. Finally, each of these five processes is animated by a specific consumer motivation – a unique reason to engage in the given process.

The final and fifth chapter concludes the study by first summarizing the key findings and presenting a conceptual framework. Then the discussion moves on to the theoretical and managerial implications of this research. It ends with an outline of potential directions for future research.

2 LITERATURE REVIEW

This chapter reviews literature related to three questions: (1) What are digital worlds, and why do digital worlds matter? (2) What is materiality, and why does it matter in the digital domain? (3) According to prior research, how do digital worlds become material? The chapter concludes with a summary and discussion of the major points.

2.1 What Are Digital Worlds and Why Do Digital Worlds Matter?

In its broadest sense, the term “digital worlds” encompasses a wide range of computer-mediated electronic environments: everything from search engines (e.g., Google), online retailers (e.g., Amazon.com), online auctions (e.g., eBay), social networking sites (e.g., Facebook, LinkedIn, and MySpace), microblogging services (e.g., Tumblr, Twitter), to MMORPGs (e.g., World of Warcraft).

Digital worlds are attractive venues for both consumers and marketers. Consumers appreciate the convenience of being able to shop, pay bills, do banking, or get any necessary information at the click of a mouse, 24 hours a day, without leaving their homes (Childers et al. 2001). They also seem to love sharing their creativity (e.g., Pinterest), interests, opinions, and social life (e.g., Instagram) with friends and strangers. Much of the entertainment people consume nowadays is accessed via their laptops and other mobile devices (e.g., Netflix). It is not surprising, then, that consumers spend an ever-growing part of their day in the digital world (Delo 2013). Sometimes engagement with these digital worlds can take on pathological forms – media reports feature compulsive online gamblers and gamers alongside stressed-out people unable to “disconnect” (Cotte and Latour 2009; Blascovich and Bailenson 2011).

Marketers are trying to capitalize on this increasing engagement with digital worlds. New forms of digital commerce, which lure consumers with new advertising formats, are constantly appearing. Novel digital spaces promote forms of product integration where commerce and entertainment are inseparable (e.g., advergaming). Omnipresent digital marketplace has enabled more dynamic pricing in online services, and has opened up space for Consumer-to-Consumer exchanges. Marketers have also taken notice of the online communities that proliferate on the Internet (Kozinets 1999; Cova and Pace 2006). Many consumer forums are organized around a beloved product and thus naturally foster grassroots brand promotion (Kozinets et al. 2010). Marketers listen carefully to what is being said about their brands in digital worlds and occasionally harness the perspectives of their consumers through online crowdsourcing efforts (Schau, Muñoz and Arnould 2009).

Even beyond this consumer-marketer dynamic, economists (Walsten 2013) and sociologists of consumption (e.g., Slater 1997; Miller 2005) would argue that our lives in general seem to be more digital than they once were. Much of the contemporary market operates in and through digital worlds. For example, since the rise of the Internet, retail stores have expanded from brick-and-mortar spaces to online e-commerce platforms. Similarly, stock exchanges such as NASDAQ and NYSE are no longer groups of people packed on trading floors but rather virtual traders sitting in front of computer screens. Everything from commercial banking and insurance sales to fashion boutiques and medical advice are slowly but surely becoming online services. Because the use of computers and Internet-enabled mobile devices both for work and

leisure is so widespread, consumers co-exist at any given moment in multiple digital realities.

The novelty of the changes and developments brought about by digital worlds has sparked the attention of a number of researchers (e.g., Turkle 1995; Markham 1998; Taylor 2006; Castronova 2005; Baym 2010). As the Internet evolved over the past two decades, so did the kinds of questions researchers attempted to answer regarding digital worlds. Thus their theoretical interest in exploring digital worlds has been greatly influenced by the timing of their projects.

The early, pioneering work in the field (e.g., Turkle 1995; Markham 1998) examines the Internet, which back then was to a large extent a textual environment. Despite what we may nowadays consider impoverished presentation, this new digital world was a great venue for exploring how users experience and frame online communication. The main contribution of this work underscores shifting notions of reality (i.e., online and virtual become real by virtue of the consequences they have for people) as well as the significance of identity work online (i.e., performance of the self and possibility of multiple selves).

Later work (e.g., Taylor 2006; Castronova 2005) benefits from the fact that the Internet had quickly evolved into a more interactive and media-rich environment. Users online could communicate not only via text but also by voice and video, and be immersed in animated, graphic environments. These new capabilities gave origin to new forms of online sociality and ignited researchers' interest in contexts such as online gaming and online digital worlds. What the work of this period illuminates is the blurring of important societal distinctions such as work and play, or consumers and producers. It also demonstrates how economically significant phenomena such as ownership are problematized in a digital world with no scarce resources and ideal reliability of digital possessions.

Recent discussions of the phenomenon (e.g., Baym 2010; Miller 2011) are preoccupied with "big picture" issues. More specifically, they seek a nuanced understanding of the dialectical relationship between society and digital worlds (technology). In doing so, researchers examine the impact digital worlds have on many aspects of social life: construction of identity, relationships, intimacy, sexuality, religion, addiction, and stalking, to name but a few. These inquiries refute the dystopian critique of digital worlds as having a destructive influence on society, and balance the debate by showing how individuals actively exercise their agency and change digital worlds in line with their needs and expectations.

In line with the trend of these recent discussions, in this study I contribute to a "big picture" issue – notions of digital materiality – by theorizing how digital worlds become material to their users. To that end, I focus on a specific kind of a digital world, otherwise also referred to as an "online virtual world" (e.g., Boellstorff 2008; Malaby 2009). It is a three-dimensional, animated space which is usually simulated on the computer screen and accessible to people through a human-computer interface. In online digital worlds, people experience their presence through animated representations, called avatars. Human-controlled avatars engage in a variety of social practices – some dictated by game-like rules, others being purely social explorations. Oftentimes, avatars communicate in a chat-like manner, using voice or text-based instant messengers for private discussions. Aesthetically, online digital worlds can "feel" like an animated computer game.

Because of their immersive nature and entertainment value, online digital worlds are a highly attractive venue for consumers. Gaming is among the most popular online activities, and this is reflected in the dynamic growth of this industry. Consumers spend millions of dollars annually buying access to these digital worlds, and then steadily consume the digital goods necessary for their sustaining their in-world presence (Lehdonvirta 2012). Marketers have also noticed the potential of these new environments. From testing product prototypes (e.g., Varajao and Morgado 2012), to probing consumer perceptions (e.g., Brown and Tuten 2009), to crowdsourcing (e.g., Hemetsberger 2013), marketers are finding ways to tap into the opinions and preferences of consumer crowds online.

2.2 What is Materiality and Why Does It Matter in Digital Consumption Studies?

The term “materiality” generally refers to one of two meanings: (1) the quality or state of being physical, and (2) having significance or relevance (Merriam-Webster 2011). This rather broad range of meaning is a possible reason for the word’s equivocal use across many disciplines. A first instance of use is in the field of archeology, where materiality usually denotes the tangibility of an environment and human-made artifacts (DeMarrais et al. 2004). Thus, a description of the materiality of an ancient culture would entail an examination of the totality of objects circulating in that society. A second understanding of materiality is commonplace in accounting, where the concept refers to “the relative, quantitative importance of some piece of financial information, to a user, in the context of a decision to be made” (Frishkoff 1970, p.116). For example, the amount of a transaction may be described as “immaterial to the valuation of assets” if it is considered too small to have significance. Similarly, in legal domains, when speaking of facts, materiality generally means a fact that is “significant to the issue or matter at hand” (Black’s Law Dictionary 2009).

In some disciplines, however, the use of the term is more problematic, as it may encompass both meanings. To illustrate: the meaning of materiality in architecture refers to the use of various materials or substances in the process of design and construction (Carlson-Reddig 1984). However, since the design process itself is often aided by the presence of representations that emulate materials (e.g., photographs, images, or computer simulations), materiality encompasses both tangible and intangible resources used in a creative way (Senegala 2001).

The area with perhaps the most nuanced view of materiality is the field of material culture studies. For some scholars in this area, materiality simply denotes physical objects, both human-made and natural, which are interwoven in the fabric of culture (e.g., Dant 1999). However, for others, such a view is unnecessarily limiting. In his influential volume on materiality, anthropologist Daniel Miller (2005, p.4) points out that the term has to move beyond any simplistic definition and “encompass both colloquial and philosophical uses... to refute the very possibility of calling anything immaterial... to refuse a vulgar reduction of materialism to simply the quantity of objects.”

The perspective on materiality adopted in this thesis is in line with material culture approaches represented by scholars such as Appadurai (1986), Kopytoff (1986), and Miller (1987, 2005). For them, the materiality of consumption is not just a passive expression of consumers’ psychological makeup or a projection of socio-cultural

conditions, but also an active agent of change able to structure action, create new meanings, and enable social connections.

This perspective on materiality also challenges the notion of immateriality. For instance, as hinted earlier, Miller considers the concept of the immaterial to be very elusive. He acknowledges that “people regard some things as less tangible or more abstract,” but quickly points out that the mere act of thinking about something abstract has already given it a form by creating consciousness and a material trace in the brain (Miller 2005, p.21). He challenges the notion of immateriality because, as he notes, “different understandings of immateriality become expressed through material forms.” Religion is a powerful example of this tendency: in many traditions, an understanding of god is materially mediated through temples, sacred objects, or rituals.

From this perspective, the material is not only what is tangible or physical, but also what is culturally significant, meaningful, or consequential. As Miller (2005, p.4) argues, the definition of materiality needs to consider “the large compass of materiality, the ephemeral, the imaginary, the biological, and the theoretical; all that which would have been external to the simple definition of an artifact.” This redefinition, he argues, will help us to be aware that social reality encompasses a number of different materialities; or, as he proposes, “regimes of materiality.”

Originating in material culture studies, this conceptual strategy of looking at materialities rather than one single materiality has opened up new avenues for inquiring into the relationships between society, culture, and technology (e.g., Slater and Miller 2007; Vannini 2009). It has proven especially productive for researchers in disciplines where the traditional notion of material as physically tangible has been problematized by digitalization.

As a result, in fields such as architecture and design (e.g., Senegala 2001), library studies (e.g., Manoff 2006), arts (e.g., Kaminska 2009) and art curation (e.g., Krysa 2006) researchers have begun using the term “digital materiality” to express the migration of objects from physical to digital form. While no single field can be credited with having coined the term, one of the earliest uses appears in Taylor’s (1999) work on sociality of the Internet. For her, “digital materiality” describes the ephemeral quality of digital artifacts, which makes preserving data gathered in online contexts more difficult.

Similarly, scholars dealing with issues related to materiality in digital consumption (e.g., Denegri-Knott and Molesworth 2010, 2012; Magaudda 2011; Lehdonvirta et al. 2009; Lehdonvirta 2010; Belk 2013; Slater 2002) needed to express the uniqueness of the contexts that they investigated. Thus, in this stream of work, digital materiality emerges as a set of arrangements between intangible graphical representations, digital artifacts, or simulations, experienced by consumers through the mediation of computer screens (cf. Kedzior 2009).

Recently, digital materiality has received a more extensive treatment from technology and organization scholars (e.g., Leonardi 2010; Kallinikos et al. 2010, Leonardi et al. 2012). As this literature points out, despite the lack of physical material properties, digital images, representations, and simulations can be considered material when we look at them through the prism of practical instantiation and significance (Leonardi 2010). From this perspective, computer software is material because it can actualize the abstract idea of management (e.g., controlling access privileges to a building). Materiality also surfaces when digital artifacts facilitate (or have significance for)

accomplishing certain tasks (e.g., for a writer, a word processor is as material a work tool as a hammer is for a carpenter).

Thus, in the process of digital consumption “what matters most about an artifact is not what it’s made out of, but what it allows people to do” (Leonardi, 2010). And as Lehdonvirta et al. (2009) note in their examination of virtual consumerism, consumer motivations for investing resources in digital objects (existing only as representations) are not much different from those that create desire for material possessions. Because digital commodities, like their tangible equivalents, can be used as markers of status and prestige or group membership, consumers are willing to spend money on them in order to sustain their existence in an online digital world.

In a similar vein also other authors (e.g., Leonardi 2010; Kallinikos et al. 2010) point out that when it comes to digital materiality, the physical materials (e.g., computer screens, keyboards) which make access to digital worlds possible are secondary to an understanding of digital consumption. What matters is the significance of digital objects to consumers. However, as many scholars (e.g., Kallinikos et al. 2010, Denegri-Knott et al. 2012, Watkins and Molesworth 2012) point out, digital objects are editable, interactive, ephemeral, open, and distributed. Therefore, digital materiality can be considered unstable and transfigurible which is vividly illustrated by the malleable identity of digital documents and problems of authentication and preservation of digital records (Kallinikos et al. 2010).

Another important issue in determining the nature of digital materiality is its relationship with physical materiality. One perspective on the matter is represented by Malpas (2009). As he points out, digital materiality is “non-autonomous” because it needs to be sustained by physically material hardware (e.g., computers, servers) and thus is embedded within the physically material world.

By contrast, Magaudda (2011, 2012) shows that the relationship between digital and physical materialities transcends embeddedness. In his conceptualization the relationship resembles a dialectic process. In the study of music digitalization, Magaudda documents how emergence of digital materiality (e.g., digital music in mp3 format) made certain forms of physical materiality (e.g., CDs) obsolete. In consequence, however, digital materiality necessitated emergence of new forms of physical materiality such as mp3 players (e.g., iPods). As he concludes, the interplay between physical and digital materialities (i.e., dematerialization) does not mean less physical materiality, but rather results in emergence of new physical forms.

The complex nature of digital materiality is also observed by Denegri-Knott and Molesworth (2010), who position digital (virtual) consumption as “a hybridization of the material and the virtual-as-imagination” (p.115). In their understanding, digital consumption is “liminal,” or “in-between.” The word liminal describes states or entities which are “neither here nor there; they are betwixt and between the positions assigned and arrayed by law, custom, convention, and ceremony” (Turner 1969, p.95). Here, therefore, liminality implies conditions of uncertainty, fluidity, and malleability.

This positioning corroborates Zwick and Dholakia’s (2006) findings from their study of an online investment portal which revealed that, devoid of physical tangible referents, digital materiality abounds in objects of epistemic consumption. Such objects are “characterized by an essential elusiveness of look, content, shape, and ‘story.’ This material elusiveness or lack of ontological stability turns the object into a continuous knowledge project for consumers” (Zwick and Dholakia 2006; p.21). Thus, this open-

endedness, or uncertainty about “what the object might become,” is what mobilizes consumers to remain engaged with the object.

Digital materiality has attracted the attention of the social sciences, arts, commerce, entertainment, communications, and a broad array of other disciplines. Its ubiquitous presence in people’s daily lives, and its ephemeral nature, problematizes meanings and practices often taken for granted, such as ownership, authorship, and realness. Art curators wonder about the best way to preserve digital creativity. Legislators, on the other hand, try to understand how to protect copyright from the infinite replicability inherent in digital objects. Marketing practitioners are interested in understanding the allure digital worlds have for consumers who spend countless hours shopping for “virtual” possessions, fighting imaginary battles, or reconstructing and editing their online identities. Despite the significance of digital materiality and the multiplicity of research efforts across disciplines, the phenomenon to a great extent remains *terra nova*.

In sum, for the purposes of this work, to be “material” is to have significance for consumers in the physical world. Thus, the research question, “how do digital worlds become material?” can also be stated as “how do digital worlds acquire significance for consumers in the physical world?”

2.3 Prior Research on How Digital Worlds Become Material

As discussed above, digital worlds are embedded in physical materiality (Malpas 2009). They cannot be separated from the physical world – for their very existence, they require wires, servers, processors, monitor screens, keyboards, headsets, etc. However, it is not physical materiality (or technical infrastructure) that makes consumers experience digital worlds as material (Leonardi 2010; Leonardi et al. 2012; Molesworth and Denegri-Knott 2012). Rather, consumers engage in a variety of processes that infuse their digital worlds with materiality.

With a few exceptions (e.g., Denegri-Knott et al. 2012), extant studies do not directly address this question. However, a number of scholars explicitly or implicitly discuss how digital worlds become material, or, in other words, how digital worlds become significant for consumers in the physical world. These studies can be organized into four research streams:

- 1) Anchoring Personal Identities in Digital Worlds
- 2) Migrating Social Phenomena into Digital Worlds
- 3) Feeling Digital Presence in the Corporeal Body
- 4) Using Online Resources in the Physical World

The studies presented in each of these streams are woven together by a common thematic thread. The first stream is concerned with ways in which the self can recreate itself in disembodied, electronic environments. The second stream examines the impact that digital worlds may have on social phenomena such as sharing or gambling. In the third stream, the studies examine embodied experiences that people have while immersed in a digital world. And finally, the fourth stream shows how aspects of consumers’ digital existence can be imported into their offline settings. All four streams are elaborated on in turn, in the following sections.

2.3.1 Anchoring Personal Identities in Digital Worlds

The first stream of research examines the ways in which consumers make their identities material online. For instance, Schau and Gilly (2003) inquire how consumers represent their identities online through personal websites. They find that consumer online self-presentation strategies rely on digitally-consumed products and services. The value of such activities is considered semiotic, as in these online settings functional value is absent. In physical materiality, the authors argue, the possibility of building brand associations is limited by financial or proximal factors. No such limitations exist online, where consumers are constrained only by their imagination. Interestingly, however, the digital consumption collages produced by consumers on their websites reflected mostly their current material reality rather than pure fantasy.

Another digital context in which consumers materialize their corporeal identities is blogging. In a study of blogs, Arsel and Zhao (2013) posit that materialization of identity in blogs happens over time as bloggers document their worldview, experiences and feelings, and create an extended narrative of identity. This process is a textual practice that engages and assembles digital materials such as text, images, and digital photos to materialize the identity online. Arsel and Zhao further argue that identities of bloggers also materialize online through complex forms of interconnectedness between different blogs.

In similar vein, a study by Schwob and de Valck (2010) looks at the construction of self in digital materiality by examining how consumer experiences can manifest as material in online discussion forums. Although their objective is not to theorize the materialization of digital worlds, the three mechanisms of emerging digital subjectivity that they map out shed light on how such materialization occurs. They demonstrate the co-constitutive role of consumers (subjects) and the digital objects of their consumption (i.e., online forum posts and shared information) in materializing consumer identities online through a set of three mechanisms: a) positioning; b) appropriation logic; and c) socialization and empowerment through objects.

As Schwob and de Valck explain, positioning denotes the effort to establish one's identity in a new digital environment with its own set of rules, different from the offline world. Because the rules may be unique of the specific digital environment, consumers face a process similar to acculturation (i.e., learning how to be in a new culture). The second mechanism, choosing an appropriation logic, describes the options available to individual consumers in line with their intended positioning. Appropriation logics are "coherent, routinized behaviors" (p.298) and are specific to each digital environment. By following a particular logic, consumers can attain a specific position: infrequent poster, expert, player, or social actor, for example. In other words, we would have different expectations regarding the behavior of someone considered a professional blogger and someone who only blogs casually. The third mechanism, socialization and empowerment through objects, acknowledges the active role of digital objects (i.e., forum posts from other users) in creating and recreating social meanings. These meanings usually pertain to expressions of personal authenticity in an online world, coping with the interpretative ambiguity of online events, and establishing ethics and morality in a malleable, digital environment.

In sum, Schwob and de Valck's (2010) discussion leads to the conclusion that, in a digital world, consumer identities become material through interaction with digital objects. Specifically, individual identity projects are materialized through the logic of positioning, whereas social roles online become material through appropriation. In

turn, the materialization of social reality in digital worlds is attained thanks to the socializing and empowering capacity of digital objects.

Similarly, in the context of online digital worlds, Taylor (2002) demonstrates how the presence of digital bodies (i.e., avatars) can facilitate life in a digital world and hence make these worlds material. She underscores that digital bodies can be used in many ways (to communicate, play, and signal group affiliation, for example), but fundamentally, she notes, “bodies root us and make us present, to ourselves and to others” (p.41). This phenomenon, known also as reembodiment, allows for social interactions in digital worlds and fosters the perception of the intangible environment as “real.”

Other researchers also examine the role of embodiment in making digital worlds material. For example, Kozinets and Kedzior (2009) see reembodiment as one of the major experiences in online digital worlds. They stress the importance of avatar bodies to the performance of self, and point out how consumers are affected by plasticity of digital materiality (i.e., re-worlding) as rules governing digital worlds can be a complete departure from physical materiality. In the same context, Vicdan and Ulusoy (2012) demonstrate how consumer creativity becomes materialized in the process of reembodiment. They raise an important question of ways in which the corporeal body is present in the process of reembodiment. As they concluded, while designing an avatar was a labor of fun and excitement, the physical body had a strong hold over the reembodied one – consumers were still concerned about maintaining eye contact and keeping appropriate distance from other digital bodies. Interestingly, while consumers creatively materialize their corporeal identities in a digital world they often construct multiple digital selves as a matter of experimentation.

2.3.2 Migrating Social Phenomena into Digital Worlds

The second stream of research investigates how social phenomena existing in the physical world are reflected, organized, and materialized in digital worlds. Most common in this stream are studies that look at the consequences of transposing social phenomena (such as gift giving and sharing) from the physical world to the digital world. For instance, studying peer-to-peer music file sharing, Giesler (2006) found that although gift giving, with all its traditional characteristics, existed on the Internet, it was also affected by the nature of the online context. His findings imply that due to the rhizomatic structure of peer-to-peer exchanges, gift giving online transcended the purely dyadic nature of its previous conceptualizations. As the author describes, the online gift-giving system “is more global in nature and exhibits a more nomadic and noncommittal type of gifting solidarity” (p.289).

Extending the discussion on gift-giving in digital worlds, Martin (2012) points out that the meaning of gift-giving in a digital world such as Second Life, is reformulated to reflect specificity of online digital environments (i.e., lack of scarce raw materials, endless replicability, ease of distribution, anonymity of individuals). Yet, even in a digital world, gift-giving preserves its basic materializing quality: it enables sociality through giving and receiving. In other words, residents who engage in gift-giving materialize the ideal of a community in a digital world.

Also Belk (2007) notices a similar phenomenon. In his study on sharing as an alternative to gift-giving and economic exchange, Belk notes that among other possible societal consequences, sharing fosters community. Considering the uniqueness of

consumer motivations behind sharing on the Internet – in offline settings, a more family-oriented practice – he points to two societal discourses that perpetuate online sharing: acts of altruism and expressions of egoism. Despite these motivational differences online and offline, Belk (2007) acknowledges that also in digital worlds sharing is an interpersonal process which can create feelings of community (p.131). Consequently, it can be argued that digital worlds become material to their users through sharing which has the capacity to materialize community relations.

Cotte and Latour (2009) ponder other consequences of movement between physical and digital worlds. In their study, they examine the changes in meaning that occur when the consumption experience of gambling migrates from offline to online settings. While offline gambling is a regulated and morally-debated activity, ease of access means that online gambling can become a significant component of a consumer's life. The Internet enables the consumption of contested public activities to occur in private spaces (such as the consumer's home) away from imposed societal limits, with little regulation or control. In line with a transformative consumer research agenda, the authors point out that the online decontextualization of consumption experiences may lead to social problems such as consumer addiction and indebtedness. Indeed, online gambling sites are made material partially because they produce similar consequences for consumers as gambling in physical casinos.

Taking a macro perspective, Firat and Vicdan (2008) investigate differences in consumption when consumers move from the physical to digital world. They point out the importance of new online literacy and argue that the conceptualization of literacy (i.e., the “ability to read into things and compose meaning within a culture,” p.393) has to expand to cope with the hypertextual, polysemic, and multisensory nature of the online world. Thus, to thrive in a new digital world, consumers have to acquire a new skillset which is equivalent to reading and writing in offline settings. In other words, materiality of digital worlds emerges as consumers learn new conceptual vocabulary and progressively make more sense of their reembodyed experiences.

Other studies in this stream investigate how certain offline phenomena give origin and meaning to consumers' lives in a digital world. This is exemplified in a study by Muniz and Schau (2005) documenting how users of discontinued Apple Newton computers migrated to a digital world and created a community online. Long after their product disappeared from the physical store shelves, consumers online were able to sustain the community by evoking deep brand meanings, replete with religious motifs. These included creation myths, the deification of Steve Jobs, tales of miraculous acts, and rumors of impending brand resurrection. In this process, consumers were drawing on multiple cultural resources that originated in their offline lives. The presence of these cultural resources in a digital world may be considered a materializing factor.

Finally, within this stream of research are studies that examine how the physical world is conceptually incorporated into digital worlds. Building on Hayles' (2002) concept of material metaphors, van den Boomen (2009) demonstrates how material metaphors are ubiquitous in computer interfaces, the usual gateways to digital worlds. As she notes regarding the mailbox icon, there is a clear parallel between understanding the function of a physical mailbox, and accessing a digital one. Obviously the two entities work in quite different ways in terms of the technology behind them. However, thanks to the incorporation of the material metaphor (transferring the meaning and functionality of a physical mailbox) in a digital world, consumers can easily access their messages without even thinking about the complex technology that makes it possible.

Material metaphors can thus enable consumers to move seamlessly from the physical world to the digital world and make their online experiences material.

In essence, this stream of research argues that digital worlds are material because, even after transposition from the physical to digital world, digital objects still fulfill similar symbolic and functional needs to their material progenitors: “to communicate and construct social distinctions, positions and bonds, and to pursue hedonistic projects and daydreams” (Lehdonvirta 2012, p.24).

2.3.3 Feeling Digital Presence in the Corporeal Body

The third stream of research insinuates that digital worlds become material because they produce effects (e.g., feelings, emotions, sensations, or perceptions), which could be felt by consumers in the physical world. For instance, Hoffman and Novak (1996) theorize that online services are capable of creating an optimal mix of mental stimulation and emotional arousal called “flow” (cf. Csikszentmihalyi 1991). It was later confirmed empirically (Novak, Hoffman, and Duhachek 2003) that flow is, in fact, experienced by consumers online, and that the experience is more likely to occur during goal-directed than experiential exploration. In their subsequent conceptual work, Novak et al. (2000) speculated that if consumers would experience flow in a digital world, it could have many positive outcomes (e.g., mitigating price sensitivity) and influence consumer behaviors. Thereafter, also this proposition was confirmed by Mathwick and Rigdon (2004) who prove that when consumers participate in an engaging, enjoyable online experience their attitudes toward a company appear enhanced. Thus, consumer engagement in digital worlds produces consequences which extend into the physical world.

However, digital worlds can do much more than induce flow experiences for consumers. As Maulana and Eckhardt (2007) show, digital worlds (in this case, websites) can also stimulate an emotional connection with consumers. They elucidate three factors (relatability, dependency, and sense of community) that create varying levels of emotional connectedness between consumers and websites, from “just friends” to “soul mates.” In similar vein, Zwick and Dholakia (2006) study an online investing site and conclude that certain kinds of online environments can forge quasi-social relations which have the capacity to substitute for more traditional forms of social bonds. Contrary to dystopian visions of isolation and alienation attributed to such connections, the authors concluded that digital worlds can, in fact, provide new forms of social relationships.

Moreover, experiences occurring in a digital world can impact corporeal bodies. In a study of self-construction through avatar embodiment, Vicdan and Ulusoy (2012) note that some informants experience feeling blood rush and excitement in response to actions of their avatars. Despite mediated presence (i.e., via avatar) in a digital world, consumers respond as if the events were directed at their corporeal bodies. This example clearly illustrates the capacity of digital worlds to evoke embodied sensations in physical world.

Experiences in a digital world can impact not only consumers’ corporeal bodies, but also the self. Yee and Bailenson (2007) termed this phenomenon the Proteus Effect. They demonstrate how changes to self-representations in a digital world (e.g., avatars) can impact individual’s behavior in the physical world. Thus, as their study shows participants who were assigned taller avatars displayed more confidence offline than

participants with shorter avatars. This illustrates how lived experiences in digital worlds can transform individuals, and be material in physical world. Collectively, studies in this category evidence how digital worlds can become material by producing experiences which are felt by consumers in the physical world.

2.3.4 Using Online Resources in the Physical World

The fourth stream of research alludes to the materiality of digital worlds by showing how aspects of consumers' digital existence can be imported into their offline settings. For instance, in their study of Apartment Therapy, a blog which allows exchanges between consumers about home design and domestic consumption, Arsel and Bean (2012) demonstrate how aesthetics can be materialized through everyday consumption. They discuss how three online performed practices – problematization, ritualization, and instrumentalization – shape consumer preferences, as expressed in offline purchases. In this case, consumer digital engagement in discussions of aesthetic preference materializes in offline domestic consumption.

Digital worlds also become material when consumer collaboration online produces tangible results in the physical world. In a number of studies (e.g., Humphreys and Grayson 2008; Muniz and Schau 2011), researchers have looked at consumer collaboration as well as marketers' crowdsourcing efforts online in order to determine how ideas generated in a digital world impact the physical one. Most often the context for these studies is an online site where consumers become prosumers (e.g., Threadless.com). In these online communities of creatives, consumers collaboratively craft and select digital designs which are then printed on products for sale.

Similarly, Nelson and Otnes (2002) show how consumers' engagement in digital worlds results in changes to their social reality in physical world. The authors examine online message boards to show how supportive interactions within an online community can help consumers create coping strategies and manage cross-cultural ambivalence offline, in their daily lives. Another instance of this phenomenon is documented by Vicdan and Dholakia (2013) in a study of consumer collaboration on social media and in virtual health communities. The study shows that consumers become empowered as they collaboratively create and share highly specialized medical knowledge online. Consequently, by shifting their own position within the healthcare system, consumers also transform other relations in the marketplace.

Finally, the remaining two studies in this stream deal with digital goods which can traverse the confines of unstable digital materiality and enjoy the status of precious possessions commensurable with their physical counterparts. As Denegri-Knott et al. (2012) argue, due to the unique nature of digital materiality (e.g., ephemerality), the notions of digital object ownership only parallel meanings of ownership in physical world. Thus, digital ownership necessitates constant consumer engagement in meaning cultivation. As the study demonstrates, one possible way to assert their ownership over a digital good is to rematerialize it in the physical world. In addition, through material substantiation consumers can also preserve personal meanings attached to a digital object. In similar vein, Watkins and Molesworth (2012) argue that attachment to digital objects mirrors meanings of material possession attachment. Yet, in addition to previously mentioned nature of digital materiality, they point to architecture of digital environments and marketplace forces as possible impediments to attachment formation.

2.4 Summary

The purpose of this chapter was to present a comprehensive review of issues related to digital worlds. First, it introduced the notion of digital worlds and outlined the cultural, economic and societal significance of the whole group of phenomena under this rubric. Second, the chapter dealt with major tenets related to materiality. Then, the presentation moved on explaining what is understood as materiality in the context of a digital world. As evidenced in this chapter, digital worlds display a specific kind of materiality (i.e., digital materiality) which is not equated with tangibility or physicality. The last section in this chapter presented a literature review in connection with the research question: How do digital worlds become material? With a few exceptions (e.g., Denegri-Knott et al. 2012), extant studies do not directly address this question. However, a number of scholars explicitly or implicitly discuss matters related to the significance of digital worlds in consumers' lives. This literature is discussed here, in four thematically organized categories.

The first reviewed group of studies highlighted ways in which embodiment is pivotal to making digital worlds material. Researches engaged with a wide array of contexts (e.g., personal websites, online discussion forums, blogs, and online digital worlds such as Second Life) to show how consumers cope with environments which require foundational identity work to be present for oneself and others. The materials and strategies of identity construction in a digital world depend greatly on the type of digital materiality which it represents. The strategies involved can vary from basic text-based practices (online discussion forums; Schwob and de Valck 2010) to elaborate creative design (Vicdan and Ulusoy 2012). Moreover, reembodiments may be elaborate stories told by posts and images (Arsel and Zhao 2013) or straight-forward visualizations (e.g., avatars). More importantly, liberated from constraints of physical materiality consumers in a digital world can pursue plural existence through multiple digital bodies (Taylor 2002; Vicdan and Ulusoy 2012). And, as much as avatar bodies can be venues for endless identity projects, they also seem to be held hostage by the corporeal habits (Vicdan and Ulusoy 2012).

The second group of studies examined the role of physical world in making digital worlds material. It would not be counterintuitive to say that when inhabiting new environments human beings are always trying to establish parallels to the old abode. Thus, work in this category reflected ways in which social phenomena present in physical world, are reflected, organized, and materialized in digital worlds. In the context of practices such as gift-giving (Giesler 2006; Martin 2012), sharing (Belk 2007) and gambling (Cotte and Latour 2009), researches documented shifts when physical world phenomena emerged in digital world practices: changes in the nature of phenomena (from dyadic to collective), motivations (egoistic or altruistic), or meaning (public and contested vs. private and unquestioned). Oftentimes transitioning from physical world to a digital world requires learning a new conceptual vocabulary which could reflect new reality (Firat and Vicdan 2008). Yet, in many other cases, the conceptual presence of the physical world is desired and makes digital existence more intuitive (van den Boomen 2009).

The third group of studies pointed to the materializing power of feelings, emotions, sensations, or perceptions in how digital worlds become material. Thus, studies in this category examined the evocative potential of digital worlds. As researchers demonstrated, digital worlds can be highly immersive and enjoyable (Hoffman and Novak 1996; Novak et al., 2000; Mathwick and Rigdon 2004), even if the activity is mundane. Positive experiences in digital worlds can also lead to positive attitudes in

physical world (Mathwick and Rigdon 2004). And, if positive experiences are invoked time and again, a digital world may become a friend in a nexus of quasi-social or interpersonal relations (Zwick and Dholakia 2006; Maulana and Eckhardt 2007). However, the consequences of consumer experiences in a digital world can also be very embodied (Vicdan and Ulusoy 2012) and transformative (Yee and Bailenson 2007).

The fourth group of studies alluded to the materiality of digital worlds by showing the results which they can produce in consumers' lives. The results, indeed, can be very profound: from shaping aesthetic preferences materialized through physical purchases (Arsel and Bean 2012) to shifting whole industries (Vicdan and Dholakia 2013). Consumer collaboration in a digital world can manifest in physical world through emergence of new forms of organization (Humphreys and Grayson, 2008; Muniz and Schau 2011), or alternatively, in a very tangible form as a product. The engagement with digital worlds can show up in a consumer's life as a positive influence providing support and empowerment (Nelson and Otnes 2002). Finally, when consumers treasure their digital possession, they often want to give them material presence or reproduce multiple times (e.g., Denegri-Knott et al. 2012).

In sum, as discussed in this section, researchers in the field of digital consumption studies and consumer research have engaged with certain issues related to the research question in this project. Yet, current observations are necessarily fragmented and incomplete. Thus the aim of this presentation was to meaningfully organize this body of knowledge and set the stage for presentation of the study's findings. The following chapter presents methodological choices and concerns related to this project.

3 METHODOLOGY

This chapter describes both the research methodology (a blend of ethnography and netnography) and the research context (a popular online virtual world called Second Life). In accordance with the exploratory nature of this study, as explained in Chapter 1, the research approach chosen here is a blended variety of ethnography and netnography (Kozinets 2010). This chapter begins with an overview of the ethnographic methodology and proceeds to a more detailed presentation of netnography. Next, it introduces the sites of fieldwork and discusses the sources of data gathered for this project. It then proceeds with a discussion about the significance of grounded theory for data analysis in this research. Finally, the chapter concludes with a consideration of issues of quality and ethics relevant to this study.

3.1 Ethnography

In order to present an argument for the methodology adopted for this project, it is necessary first to examine some of the central premises of ethnography, which forms its foundation. Ethnography is both an empirical and theoretical approach: its central purpose is to generate detailed description and analysis of cultures based on immersion in fieldwork. Its origins date back to the early twentieth century anthropological work of Malinowski, Boas, Radcliffe-Brown, and Mead, in which it was primarily used to study small indigenous groups in their cultures (Hammersley and Atkinson, 2007). The goal of ethnographic inquiry is to build an understanding of the cultural contexts in which humans are embedded.

A key distinction in ethnography is that between “emic” and “etic” understandings of culture (Geertz 1983). When ethnographers start their fieldwork they usually work with an emic (insider) perspective. For instance, emic accounts use participants’ own language to reflect their belief system, or to explain the significance of events they narrate. Emic knowledge is created and shared by the members of a culture. In other words, it tends to reflect the lives of participants in terms of their own lived experiences. As the inquiry progresses, however, ethnographers begin to develop etic (outsider) perspectives on their fieldwork. Etic accounts reflect a researcher’s views on the meanings of stories and events from the fieldwork, couched in conceptual or theoretical terms (Fetterman 1998). To illustrate: participants in a hypothetical study on gentrification could explain the displacement in their community with phrases such as “poor people get kicked out” and “rich people take over our area.” This would be an emic perspective. From an etic perspective, an ethnographer could perceive the situation as “tensions between social groups based on economic capital.” In brief, an emic perspective is often seen in direct quotes from fieldwork, while the etic perspective manifests in the researcher’s analytical commentary on data.

A priority in ethnography is the production of “thick description.” Thick description refers to detail-rich observation that reflects the complexity of cultural life, including tacit conventions as well as overlooked assumptions (Geertz 1973). Without that detailed context for their fieldwork, ethnographers argue, meaningful interpretation of human action would be hindered. The method relies, therefore, on a researcher’s immersion in the context, which can then be studied through immediate personal experience. Observation of and participation in the daily life of informants, or participants, as they are usually called in this type of work, constitute sources of ethnographic data. Thus, ethnography is often understood to be the written product of

an ethnographic investigation, as well as a methodological approach in which participation in the fieldwork, observation, and interactions in the field are all considered to be critical (Boellstorff et al. 2012).

In the broader context of the social sciences, ethnography has also become an umbrella term for a range of qualitative methods; including participant observation, in-depth interviews, and case studies (Baker 2004). Ethnography has become increasingly popular in marketing and consumer research since the late 1980s. Some of the earliest and most influential applications of ethnographic principles to the study of consumer behavior were done by Hirschman (1986), Belk, Sherry and Wallendorf (1988), Wallendorf and Arnould (1988), and O'Guinn and Belk (1989). These studies introduced the idea of "naturalistic inquiry" (Lincoln and Guba, 1985) to marketing research, focusing on topics as significant as, for instance, the sacred and profane in consumer behavior (Belk et al. 1989). Since that time, consumer ethnographies and ethnographies of consumption have continuously added depth and richness to the consumer research literature.

Researchers theorized about important consumer phenomena based on fieldwork in a diverse range of contexts. For example, Arnould and Price (1993) examined service relationships and consumer experiences in the context of river-rafting leisure outings. Penaloza (1994) investigated the consumption outcomes of the acculturation of Mexican immigrants in the United States. Holt (1995) theorized about consumption experience typology based on fieldwork among baseball game participants. Schouten and McAlexander (1995) explored subcultures of consumption by immersing themselves in a community of Harley-Davidson bikers. These days, ethnographic work in consumer research has matured to the point where it is considered a prominent methodology and research tool (Mariampolski 2006; Belk, Fischer and Kozinets 2013).

The foundations and principles of ethnographic fieldwork discussed above are particularly useful when researchers consider the underlying values embedded in the design and functioning of online virtual worlds (Boellstorff et al. 2012). Yet traditionally-understood ethnography requires adaptation in order to engage with the specific contexts of digital worlds. The next section will therefore consider such an adaptation – netnography.

3.2 Netnography

The emergence and dynamic growth of the Internet has been accompanied by increasing research interest in the study of online consumers. Consequently, the researcher's toolbox has quickly expanded, as offline quantitative and qualitative methods have been adapted to investigate consumer behavior through the Internet (Jones 1999; Mann and Stewart 2000). Initially, these adaptations often treated the Internet solely as a means of reaching consumers, overlooking the fact that the medium itself is a rich socio-cultural context that abounds in phenomena such as virtual communities (Rheingold 1993).

A more recent body of work acknowledges online social reality, looking at chat rooms, websites, blogs, and virtual worlds as sites of cultural work (Hookway 2008; Markham 1998; Schau and Gilly 2003; Boellstorff 2008). Depending on its focus, ethnographic fieldwork online can be divided into two main categories: (1) ethnographies which describe the role and capacity of the Internet in restructuring social relations in time and space (e.g., Hine 2000; Miller and Slater 2000); and (2) ethnographies which

concentrate on practices and meanings created by members of online virtual communities, where the primary site for their interactions is the Internet (e.g., Taylor 2006; Boellstorff 2008; Nardi 2010).

Online ethnography has been conducted under different monikers, ranging from virtual ethnography (Hine 2000; Moisander and Valtonen 2006) or cyber-ethnography (Catterall and Maclaran 2002; Fox and Roberts 1999) to netnography (Kozinets 1999). Differences in nomenclature between these approaches predominantly stem from the fact that researchers often worked independently from one another, in different fields of social science, trying to formulate an ethnographic approach relevant to the fast-developing online world. As well as adopting different names for the methodology employed, these studies each focused on different contexts and research questions. Yet, as Garcia et al. (2009:53) point out in their meta-analytical summary, there are three main convergence points regarding these early formulations of online ethnography:

1. Because online ethnographers are not physically co-present with their research subjects, they cannot use their interpersonal skills to access and interpret the social worlds they are studying. Instead, ethnographers must develop skills in the analysis of textual and visual data, and in the interactional organization of text-based CMC (Computer Mediated Communication).
2. The process of gaining access to the setting and research subjects is different in online ethnography because of the lack of physical presence and the resulting anonymity provided by the medium. Ethnographers must therefore learn how to manage their identity and presentation of self in visual and textual media and to do impression management via CMC modalities such as e-mail, chat, and instant messaging.
3. The blurring of public and private in the online world raises ethical issues around access to data and techniques for the protection of privacy and confidentiality. Ethnographers must learn how to apply standard principles of human subject protection to a research environment which differs in fundamental ways from the face-to-face research contexts for which they were conceived and designed.

As the above quote illustrates, regardless of how they named their methodologies, early online ethnographers struggled with similar issues regarding methods for data collection and analysis, obtaining access to the research setting and participants, and the ethics of conducting a study and protecting participants.

For the purpose of this work I decided to use an online ethnographic approach known as netnography (Kozinets 2002, 2006, 2010). The primary reasons for my decision were: (1) netnography was one of the very first attempts to formalize ways of conducting ethnographic fieldwork online, and through ongoing development it has emerged as a comprehensive, pragmatic method; (2) despite all the other competing renderings of online ethnography, netnography has been widely adopted in the field of consumer research (e.g., Visconti et al. 2010; Scarboto and Fischer 2013; Coskuner-Balli and Thompson 2013) which attests to its potency and effectiveness.

Although netnography was originally conceived as an online research method, netnographic inquiries are not solely restricted to online sites. Since the choice of fieldwork sites should be guided by the research questions, netnographic research may be conducted both online and offline. Offline study of primarily online phenomena may occur when, for example, virtual communities organize conventions where members can interact in the physical world. As stated by Kozinets (2006: 132), investigation is netnographic when “the data collection be analyzed to understand consumers in the online communal and cultural context in which they are embedded, rather than that the analysis be conducted so as to strip out context and present consumers or their practices as more general representatives of a wider group or more universalized

phenomenon.” The fieldwork method proposed by Kozinets (2002, 2006, 2010) includes four main elements: making a cultural entrée, gathering and analyzing data, providing trustworthy interpretations, and conducting ethical research.

The entrée stage of netnography includes both preparation beforehand and the moment of entering the field (Kozinets 2006). A netnographic study should start, before entrée, with the formulation of a set of specific marketing research ideas or questions. The next step involves identifying particular online forums and sites that could provide insight into these questions. Netnographic participation is the driving force behind data collection (Belk, Fischer and Kozinets 2013). In online contexts, researcher participation can include reaching out to online community members with questions or forum posts. While some researcher participation may be visible to members of the online communities, researcher participation can also involve other kinds of actions, such as reading discussion threads or following links to external resources pertaining to the community’s existence. It is important for researchers to adopt various forms of participation, so as to discover the cultural understandings embedded in the online community (Kozinets 2010).

Like ethnography, netnography is not tied to any one particular method of data collection or analysis. Three main types of data may be captured during netnographic study: data directly copied from online communication between community members; data inscribed by the researcher concerning his or her reflections on and observations of the community; and data gathered during the researcher’s direct and personal involvement with members of the community, such as through interviews or chatting. Additionally, introspection on cultural matters experienced by researchers themselves can be a valuable source of data. Auto-netnography (Kozinets and Kedzior 2009) is largely based on autobiographical data, consisting of a researcher’s personal reflection on what it means to be socialized into a new culture, and often reveals interesting insight on community membership.

In terms of data analysis, netnography usually implies assuming an inductive approach. Similar to other qualitative methods, netnographic research aims to build a thorough understanding of consumer practices in their cultural context (Kozinets 2006). Regardless of the specific data analysis approach adopted, most netnographic analysis focuses on finding patterns within and across individual chunks of data as it is collected, so that these pattern may then influence how the study unfolds.

During the course of netnographic data collection and analysis, researchers must pay attention to a number of concerns which can influence the trustworthiness of their interpretations. Due to the predominantly textual nature of online communication, conducting netnography means recording observations of textual discourse in virtual communities. Hence, balancing discourse (i.e., textual data) and observed behavior is not possible to the same extent as it is in offline participant ethnographies. Another concern is related to online anonymity and uncertain informant identity. Tackling this limitation in netnographic research requires shifting the unit of analysis from individuals and their personal characteristics to individuals’ observed behaviors, discourses, or acts.

Finally, in a netnographic inquiry, ethical concerns focus on two interrelated issues: the nature of access to online research sites (private versus public) and the grounds for assuming informed consent in cyberspace. Both these issues are addressed in a later section (3.6).

3.3 Research Context

The context of this study is an online virtual world called Second Life and its vibrant community. However, this study may be considered multi-sited as the fieldwork was conducted both online in the animated 3D world and offline at Second Life Community Conventions in hotels across the United States.

In brief, Second Life is an online virtual world designed to reflect an immersive and interactive virtual environment. The environment has continuous and persistent presence and models an Earth-like world, with notable exceptions (e.g., avatars can fly or teleport themselves from place to place). Otherwise, in Second Life the sun rises and sets, objects tend to obey gravity, and nature resembles well-known landscapes.

3.3.1 Online Virtual Worlds

Online virtual worlds are persistent, three-dimensional, animated spaces, usually simulated on the computer screen and accessible through a human-computer interface. Aesthetically, online virtual worlds can “feel” like an animated computer game. In online virtual worlds, users create animated representations of their bodies (avatars) and experience their in-world lives through these representations. Online virtual worlds are predominantly characterized by three qualities: persistency, interactivity, and immersion.

The persistency of online virtual worlds means that, unlike stand-alone or console-driven video games, an online world exists even if the individual user decides to exit and shut down the application. The world’s existence is still maintained by other users who are logged in, and the world will change and develop even though any one individual is not present. Interactivity in online virtual worlds is reflected by many types of interactions and social practices undertaken by human-controlled avatars. Oftentimes, avatars communicate in a chat-like manner, using voice or text-based instant messengers for private discussions. Finally, immersion denotes being aware of the online virtual world as a real space, separate from the one in which the user’s physical body resides. Immersion is to a great extent created by the interface graphics and the quality of interactions with other users.

Additionally, Kozinets and Kedzior (2009) identify three key phenomena which impact the social and cultural life in online virtual worlds: reworlding, reembodiment, and multiperspectivity. The notion of reworlding refers to the experiential dimensions of online virtual worlds. Because an online virtual world is a simulated space, the rules governing its existence are malleable and can easily change. Therefore, users have to be constantly ready to adapt their behavior and deal with situations where their expectations about how the online world operates are constantly problematized.

The second key phenomenon is reembodiment. This describes a process during which the person entering the online virtual world is both required and able to choose a new bodily form to represent him or herself. This element has been much considered and written about in both popular and academic accounts of online virtual world experiences (e.g., Taylor 2002; Cooper et al. 2007; Yee and Bailenson 2007).

The third phenomenon, multiperspectivity, encapsulates the notion that while consumers occupy a given online space, they can simultaneously be present in many digital worlds. To illustrate this point: a user can be present in an online virtual world

and at the same time be on Facebook, Twitter, or orchestrating a raid in an online game such as World of Warcraft. The user can also own and control more than one avatar by creating multiple accounts or using bot-like virtual agents. What seems to be role-play or identity experimentation adds a literally multiphrenic nature to what is usually an individualized point of view. Consumer research perspectives on this postmodern view of identity are discussed by, for example, Gergen (1991) and Firat and Venkatesh (1995).

Each of the phenomena discussed in this section highlights the fact that online virtual worlds are rich cultural contexts with a multiplicity of social interactions. These qualities mean that online virtual worlds are perfect sites for ethnographic fieldwork. It is important to stress that, despite being a product of computer simulations, online virtual worlds are not un-real. The sense of experienced “place” in online virtual worlds is very realistic and relevant for many users (Boellstorff 2008).

3.3.2 Second Life as an Online Virtual World

Second Life is a three-dimensional online virtual world where consumers live their virtual lives through animated representations, called avatars (see Figure 1). The form of an avatar can be changed as often as one likes, and Second Life residents can choose whether they want to be male, female, or some totally imaginary creation. Consumer-controlled avatars engage in many consumption activities familiar from the physical world, such as shopping, trading, socializing, or clubbing. They can freely communicate via text-based instant messages or use audio chat for private discussions. For many new users, first contact with Second Life evokes associations of a computer game.



Figure 1 Avatars in Second Life

Due to its similarity to MMORPGs (massively multiplayer online role-playing games) Second Life has often been miscategorized as a game. However, Second Life differs significantly from the concept of a game. Usually, games consist of rules that guide players in their attempts to attain the ultimate goal, be it accumulation of financial resources (e.g., Monopoly) or fictitious powers (e.g., role-playing games). Second Life denizens, however, are not given any arbitrary goal. They have to decide for themselves what the meaning of their presence in the online virtual world is, just as in the physical world. Second Life is different from role-play in that the existence of a role-playing

game is usually dependent on consistent interaction between the players. Even though there is strong communal aspect to Second Life, no one is obliged to interact with anyone else in order to sustain the existence of this online virtual world.

Second Life belongs to a distinct category of online phenomena usually referred to as online virtual worlds, synthetic worlds, or massive online universe (Castronova 2005). Online virtual worlds are considered massive because of the unlimited number of possible participants. Access to these environments is granted through the Internet, hence the adjective “online.” The term “universe” denotes the fact that each of these worlds can be organized in various ways, resembling or differing from the physical world in which users live.

Compared to other synthetic worlds such as Entropia Universe, Habbo Hotel, or There.com, Second Life has several unique features that made it a productive research site for this project. Unlike other online virtual worlds, Second Life does not impose any needs, requirements, or limitations on its residents to sustain in-world existence. For example, in Entropia Universe residents have to hunt and trade their virtual wares to keep themselves “virtually” alive. Being freed from such needs, consumers have complete freedom of choice as to what they will do in Second Life.

Despite the fact that Second Life is run by a San Francisco-based software company (Linden Lab), it is predominantly a product of its residents’ creativity. Linden Lab created and launched the concept of this online virtual world in 2003 and owns the servers that store Second Life data. However, Second Life residents who create objects in-world (e.g., pieces of clothing, buildings, and animations) retain the copyright to their creations.



Figure 2 American Apparel Store in Second Life

Finally, one of the most striking distinctions between Second Life and other online virtual worlds is that Second Life has a viable in-world economy. Residents of the

online virtual world can purchase land, trade their own creations, and buy objects created by others. Second Life has its own currency, the Linden dollar (\$L). Residents can purchase Linden dollars with US dollars (or other currencies) and can trade \$L back to US dollars through the “LindeX” – a Linden Lab-run currency exchange that balances supply and demand of the in-world currency.

When this project started in May 2007, Second Life had roughly 6 million registered residents all around the world, and \$200,000 USD was traded on Lindex during one day. Seven months later, Second Life had over 11 million registered residents, who were spending on average \$1.2 million per day. Over the years, many Fortune 500 companies and popular brands (e.g., American Apparel, Dell, IBM, and Toyota) have established their presence in Second Life and experimented with business applications of online virtual worlds (Hemp 2006; Kaplan and Haenlein 2009). Figure 2 depicts American Apparel Store in Second Life. However, when the initial media hype related to the novelty of online virtual worlds wore off, Second Life experienced a significant drop in registration numbers, and user interest in general. Still, in a press release issued for its tenth anniversary in June 2013, Linden Lab boasted 36 million accounts created since Second Life inception, \$3.2 billion USD in total transactions between the users, and an average of 400,000 new registrations each month (Linden Lab 2013).

3.4 Data Collection

Entrée into an online virtual world requires a number of preparations, to help ensure that the study can be conducted without unnecessary disruption. My first step was to review the Terms of Service created by Linden Lab and establish that conducting research in-world was not violating any regulations established by the service provider. I also confirmed that the copyright to content created in Second Life belongs to its creators. This was important for collecting visual data.

Online virtual worlds are graphics-intensive environments. Before I was able to delve in-world, I had to review the minimal hardware requirements (e.g., graphics card memory, processor speed) and the bandwidth of my Internet connection. Negotiating an animated virtual environment translates into heavy data downloads and high demand for processing power. Moreover, archiving netnographic data through video capture, recording audio (e.g., voice chat), or taking screen shots increases these technical requirements. It quickly became apparent that my three-year-old laptop was not able to handle the technical demands of Second Life, and I had to invest in new equipment.

Traveling to the field and establishing rapport involves several stages, including subscribing to the service, choosing a name, logging in, and learning how to move around and communicate in a new environment. Researchers are faced with a number of decisions concerning their reembodyment in an online virtual world, such as how to model an avatar and how to structure their presence in-world (whether to own a virtual home or office, for example). Each of these decisions communicates something about the researcher to the inhabitants of the online virtual world. For instance, proficiency in using the graphic interface to get around in-world attests to a researcher’s being either a “newbie” (a new arrival) or an experienced resident.

Netnographic research in online virtual worlds makes “unobtrusive lurking” impossible. A researcher participates in the field through embodiment in an avatar, which will be visible to other community members at most times. The participatory

character of netnography also compels researchers to learn about the cultural norms of the world in which the study is conducted, a crucial factor in establishing rapport. This process is facilitated by being attentive to other members of the community, reciprocating their help and advice.

It took approximately a week for my research avatar, Tray Arkin (see Figure 3), to learn how to get around in Second Life. It was crucial to be very sensitive to cultural norms and customs (such as how to dress and when to speak) in order “to belong.” Showing the signs of cultural awareness was a prerequisite to being treated as a true community member, one who takes in-world presence seriously. Within the first part of the project (mid-2007 to mid-2008), I would spend on average four hours a week in Second Life. Throughout this period I immersed myself in this new culture and established personal relations with members of the Second Life community.



Figure 3 Reembodied Researcher

In drawing a timeline for a netnographic inquiry, it is difficult to establish a minimal period of time necessary to spend in the field to acquire a good understanding of the phenomenon under study. The dynamics of change in online virtual worlds are variable and often dependent on external factors such as media hype (as was the case with Second Life during 2006 and 2007), technological innovation, and eventually the presence of alternative ventures launched by competitors. After the first year of fieldwork I realized that I had gained a good “emic” understanding of the Second Life culture. My “insider” status was apparent during the 2008 Second Life Community Convention in Tampa where I was invited to the unofficial exclusive party, and was being added to Second Life chat messenger “friends” lists by members of the community.

An important research decision to make was which sites to include in my fieldwork (Guimarães 2005). As pointed out by Taylor (1999), as well as in-world participation, many residents of online virtual worlds use a variety of other means to communicate online; such as web pages, discussion group postings, and blogs. Second Life is inhabited by a wide range of communities, often quite distinct. The question I faced

was not only which of the many diverse in-world spaces I should frequent, but also whether I should go outside Second Life and visit other sites in cyberspace, or even extend my participation offline and attend community conventions.

Given that my initial research interest was driven by the meanings of “real” and “virtual” and the relationship between them, I decided that my fieldwork should not be solely limited to online, Second Life presence. Realizing that much of the communication I was interested in took place outside Second Life, I decided to follow my avatar participants wherever they were present, be it other venues online (e.g., blogs, forums, social networks), or offline (e.g., traditional community conventions). Counterintuitive as it may sound, some Second Life residents would meet annually offline in a formalized setting, which more closely resembled an academic conference than a free-spirited community meet up. Yet, it provided me with a unique opportunity to meet and talk to people behind avatars and peek into their physical lives. (For an overview of Second Life Community Conventions that I attended, please see Table 1.) Thus, given the multiplicity of “sites” to which I frequented, this research project is based on multimodal data gathering techniques.

Table 1 Second Life Community Conventions Attended

Event	Dates
Second Life Community Convention 2007	Chicago, IL: August 24-26
Second Life Community Convention 2008	Tampa, FL: September 5-7
Second Life Community Convention 2009	San Francisco, CA: August 13-16
Second Life Community Convention 2010	Boston, MA: August 13-15
Second Life Community Convention 2011	Oakland, CA: August 12-14; in-world participation

Data in this project can be grouped in two categories: primary and secondary. Primary data sources consist of fieldnotes, interviews conducted during Second Life Community Conventions, chat logs with Second Life residents, video and audio recordings made during Second Life Community Conventions, blogs of Second Life residents, and Second Life community forums’ discussions. For a detailed breakdown of the collected data, please see Appendix 1.

Writing fieldnotes is a standard practice in any ethnographic inquiry. As Emerson et al. (1995, p.4) put it, “Fieldnotes are accounts *describing* experiences and observations the researcher has made while participating in an intense and involved manner.” Thus, they are meant to record and reflect ethnographer’s experience *in situ*. When one writes one’s fieldnotes is also significant. As Alasuutari (1995) notes, first impressions or incidents in a new social environment can often be insightful, and it is difficult to reconstruct them once the researcher has “gone native.”

Throughout the project I wrote fieldnotes during my online exploration of Second Life, as well as while attending Second Life Community Conventions. While conducting work in the field, my observations were initially noted in the form of keywords or short sentences and then developed into more descriptive passages. Following Kozinets’ (2002) recommendation, on occasion I also took screenshots of my Second Life surroundings in order to illustrate and contextualize events I was describing. These enriched my fieldnotes and proved a great memory aid in the process of analysis.

Semi-structured interviews were conducted at Second Life Community Conventions and typically ranged between 30 and 70 minutes. During our conversations, many of my participants had their laptops out and were logged into Second Life as we talked. This created a natural backdrop for discussions. In line with general guidelines for ethnographic interviewing (e.g., Hammersley and Atkinson 2007), I entered the interview with a list of issues to be covered rather than a set of standardized questions. I adopted a similar approach for conducting interviews via chat in Second Life. I usually started the interview by asking participants to talk about the beginning of their Second Life presence. The exchange then proceeded in a relatively informal manner where, framed as non-directive questions, the following issues were explored: What attracted you to Second Life? How would you describe your experience of being in Second Life? How does Second Life relate to the rest of your life? What do people in your physical-world life think about your engagement with Second Life? What was your most surprising Second Life experience? What do you like the most/least about it? Is there anything you miss in Second Life when you are not in-world? How would you feel if you were to lose access to Second Life?

Depending on how the interview unfolded, I would probe more into the areas which seemed more relevant for my participants and also allowed me to address my research interests. For instance, many of my participants owned and operated businesses in Second Life, so the conversation naturally evolved in that direction. Thus, I would ask about the origins of their business idea; how they engaged in operating a business; what it meant for them to be a Second Life entrepreneur; what impact having a Second Life business had on their life; what people in their life thought about their business; and how they saw the future of their own enterprise. Interestingly enough, several times after an interview participants approached me on another occasion and, starting with “I was thinking about what you asked me yesterday, and...,” offered additional information regarding topics we had discussed. This was very helpful as it often offered some nuanced insight into their lived experience.

Like the previously-discussed screenshots, video and audio recordings create a record of participant observation for later review and analysis. I made recordings during Second Life Community Conventions, usually documenting events such as interviews, talks, presentations, exhibitions, and parties. I also took photographs at conventions. These were all very helpful in enriching my fieldnotes and providing a record of events unadulterated by memory and emotion.

I discovered in the course of the project that my participants also engaged with matters related to Second Life in other digital venues. Thus, saved threads of discussions from Second Life community forums and posts from blogs of Second Life residents became an invaluable source of data. The added benefit of using Second Life community forums was that I could always turn to individual members and inquire more about topics which became of interest to me at a later time. This is not usually possible in an interview that is unfolding in real time. Monitoring online discussions was also a good way to stay up-to-date with the latest developments in Second Life. In the later stages of research, I found especially valuable the asynchronous aspect of access to this information, as it granted me flexibility to be online on different days at different times.

My secondary data set (see Figure 4) includes cultural artifacts related to Second Life: published books (including manuals), documentaries about Second Life, electronic magazines and journals published in-world or dedicated solely to Second Life (e.g., *Avastar*, *Second Life Style*), and items collected at Second Life Community Conventions.

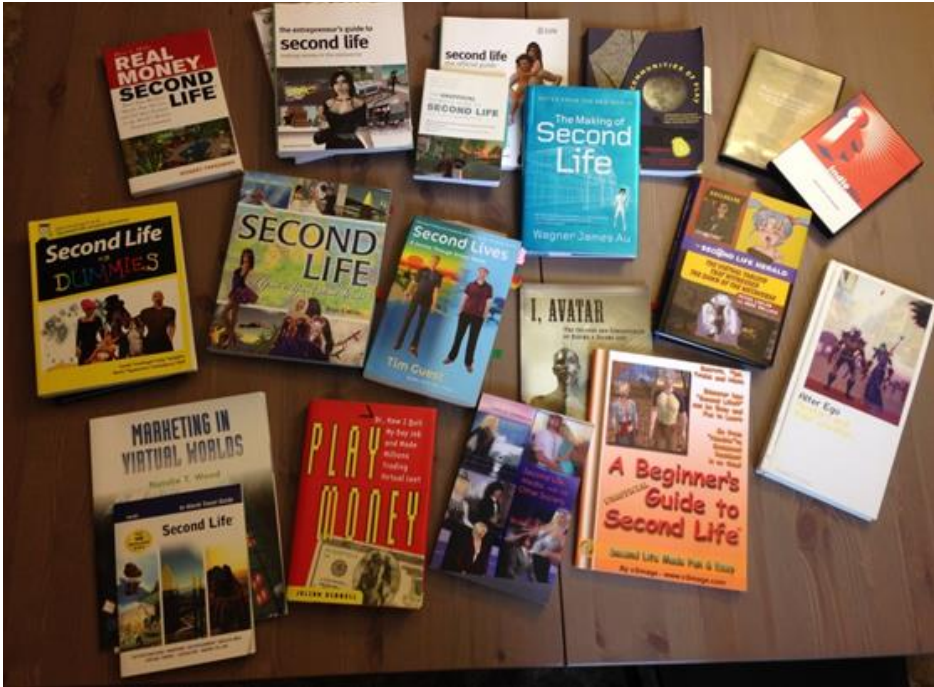


Figure 4 Secondary Data Set Sample

This data set aided my research in a number of ways. First, it gave me knowledge of the origins and historical development of the online virtual worlds phenomenon, and positioned it in the broader context of human-computer interactions. Second, in a very pragmatic way, it taught me how to use the technology (i.e., Second Life interface and client software) and by doing so, revealed some of the cultural assumptions built into the architecture of this environment. Third, it served as a source of information about the culture and community of Second Life and allowed me to look at them from multiple perspectives, often a departure from my own. Lastly, a researcher's engagement in fieldwork is always bound by time. Secondary sources of data helped me to extend this engagement beyond my presence *in situ*.

The diverse nature of the data gathered during this project called for a comprehensive approach to data analysis; this is explicated in the next section.

3.5 Data Analysis

The goal of data analysis in this blended ethnographic and netnographic study is to build an understanding of consumer behavior in the communal and cultural contexts in which materiality is problematized. By their nature, ethnography and netnography are not tied to any one particular method of data analysis (Hammersley and Atkinson 2007; Kozinets 2006; Boellstorff et al. 2012). For the purpose of this study, I adopted a grounded theory approach. According to Charmaz and Mitchell (2001:161), grounded theory techniques “can sharpen the analytic edge and theoretical sophistication of ethnographic research.” My application of grounded theory methods to ethnographic fieldwork is based on the guidelines set out by Charmaz and Mitchell (2001).

In the following sections, I explain how data analysis is usually construed in ethnographic research. I then describe how grounded theory techniques can enhance ethnographic work, and how they assist this project in answering the question: how do digital worlds become material?

3.5.1 *Ethnography and Grounded Theory*

In analyzing data, ethnographers follow a set of analytic procedures that O'Reilly (2009: 13) aptly describes in the following way:

Ethnographic analysis is something of a messy business that ethnographers learn through practice and experience. Largely, it comes down to having an inquisitive mind and imaginative sensibility, as well as a strong desire to explore various aspects of the social world and make some sense of it all. Making sense of it all is the stuff of analysis, and involves summarizing, sorting, translating, and organizing (coding). Analysis means moving from a jumble of words and pictures to something less wordy, shorter and more manageable, and easier for an outsider to understand. It involves exploring deeply to see what is there that might not be obvious; standing back to see what patterns emerge; thinking and theorizing to draw conclusions that can be generalized in some way or other, and writing.

As O'Reilly explains above, the point of ethnographic analysis is “to explore various aspects of the social world and make some sense of it all.” As a guiding principle, this takes precedence over the standard sequence of events customary in other forms of social research; namely, collecting and analyzing data, and presenting the results. In order to explore diverse and often newly emerging themes, ethnographers need to retain a greater level of flexibility. Whereas in survey research the questions are designed and set beforehand, the focus of an ethnographic study does not have to be predetermined. Usually, an initial idea will direct data collection and the collected data will in turn problematize existing knowledge on the topic. This, then, may lead to further data collection and the ongoing development of ideas. Participants, field sites, ideas, and lines of inquiry may be either included or excluded as the project develops. Such decisions are part of the ongoing process; data collection and analysis work in tandem because they inform one another. As Silverman (2001, 2013) points out, ethnographic analysis performed in this way corresponds to Glaser and Strauss's (1967) guidelines for conducting grounded theory work.

The final product in traditional ethnography usually resembles a story, or a collection of narratives, that represents the researched phenomenon (Emerson et al. 1995). Van Maanen (1988) refers to written ethnographies as “tales,” and distinguishes three main categories by writing style: realist, confessional, and impressionistic. Frequently, ethnographies owe their lengthy character to the presentation of “thick” description (Geertz 1973). Thick description, for Geertz, specifies many details; not only facts, but also commentary and interpretation. In his thorough examination of thick description, Ponterotto (2006: 547) presents its function and benefits in the following way:

A thickly described Discussion section of a qualitative interview report successfully merges the participants' lived experiences with the researcher's interpretations of these experiences, thus creating thick meaning for the reader as well as for the participants and researcher. The reader is, thus, able to digest the essential elements of the findings, and is able to discern whether she or he would have come to the same interpretive conclusions as the report's author.

As Ponterotto concludes, thick description in ethnographies plays an important role in evaluating their quality. However, it also means that they are frequently perceived as descriptive, rather than theoretical (Creswell 2007). In order to move an ethnographic

project closer to theoretical interpretation, Charmaz and Mitchell (2007) propose the use of grounded theory methods.

Broadly speaking, grounded theory is an inductive method of theory building that generally entails coding data and organizing codes in conceptual frameworks to develop explanations of social phenomena (Glaser and Strauss 1967). The founding fathers of grounded theory, Glaser and Strauss, developed it with the purpose of generating new theories in social science fields lacking theoretical foundation (Locke 2001). They also aimed to contest both the privileged status of quantitative research and the notion that qualitative research does not generate theory, but only description (Fischer and Otnes 2006).

Over the years, Glaser and Strauss developed divergent views as to how their method should be used (Strauss 1987; Strauss and Corbin 1990; Glaser 1992). These discrepancies are still the subject of vibrant discussions in the social sciences (e.g., Mills, Bonner and Francis 2006; Jones and Noble 2007; Kelle 2007). A key difference between their approaches focuses on how theory emerges, and the role of the researcher in this process. Glaser maintains that researchers should not bring any a priori knowledge to the study and should attempt to reduce their personal influence on the emerging interpretation by staying close to the data (Jones and Noble 2007). Strauss (1987) encourages researchers to acknowledge the impact of their personal experience and knowledge, and indeed to use it as an asset in developing theoretical perspectives on the data. While Strauss's position moves closer to acknowledging postmodern critiques of social research, both approaches are often criticized for perpetuating assumptions inherited from the method's "objectivist origin" (Fischer and Otnes 2006:20).

In response to the critique of grounded theory's positivist heritage, a student of Strauss and Corbin, Kathy Charmaz, developed a constructivist approach (Charmaz 2000, 2006). Constructivist critics of Glaser's version disapprove of his objectivist assumptions about the superior value of logic and the imperative to invariably follow strict analytic procedures. Additionally, constructivists are troubled by his ontological assumptions (regarding, for example, the existence of an external, objective world) and epistemological assumptions (for example, the existence of an unbiased researcher who "discovers" theory). Similarly, Strauss and Corbin's (1990) approach is criticized for reinforcing prescriptive analytic procedures and elevating verification to a necessary step in theory development. Responding to these reservations, Charmaz (2005, p.509) explains:

A constructivist approach emphasizes the studied phenomenon rather than the methods of studying it. Constructivist grounded theorists take a reflexive stance on modes of knowing and representing studied life. That means giving close attention to empirical realities and our collected renderings of them – and locating oneself in these realities. It does not assume that data simply await discovery in an external world or that methodological procedures will correct limited views of the studied world. Nor does it assume that impartial observers enter the research scene without an interpretive frame of reference. Instead, what observers see and hear depends upon their prior interpretive frames, biographies, and interests as well as the research context, their relationships with research participants, concrete field experiences, and modes of generating and recording empirical materials.

Thus, in Charmaz's constructivist version of grounded theory, conceptual categories emerge through the researcher's interpretation of data; they are a version of reality, rather than an objective presentation of it.

3.5.2 *Role of Literature Review*

Constructivist grounded theory also departs from its original formulation regarding the role and use of prior literature throughout the research process. Originally, Glaser and Strauss (1967) recommended delaying the literature review, or more broadly any engagement with literature, until later stages of research. Their recommendation was based on the premise that grounded theory should be used to develop new theories for fields that are under-theorized. They believed that too much reliance on extant literature could prevent researchers from seeing social phenomena in a new light, and hinder the development of new theories.

In contrast, constructivists contest the assumption that theoretical insulation is possible. As Charmaz (2005, p.509) points out, grounded theorists need to be aware of “their prior interpretive frames, biographies, and interests,” rather than denying their existence. By doing so, they can avoid developing limited and reductionist representations of the phenomena under study. Undeniably, when starting a new study, most researchers already have an understanding of prior literature, as their exposure to theories in the field increases with years of experience. However, constructivists advocate being receptive to extant literature early in the process – it is not only unavoidable, but also beneficial. For instance, extant theories can sensitize researchers and provide a starting point for initial observations and interviews. Prior literature can also aid in theoretical sampling, alerting researchers to new areas where richer data can be collected (Charmaz and Mitchell 2001).

I did not conduct a formal literature review prior to the inception of this study. However, through my professional engagements and my education profile I had already been exposed to a broad array of theoretical and practical topics regarding the world of Internet phenomena. From the beginning, I stayed very receptive to any knowledge regarding the context of my study, Second Life. I purchased official and unofficial guides, manuals, and handbooks that discussed Second Life (see Figure 4, secondary data). Also, the media frenzy around the topic of online virtual worlds created a very specific information landscape, where hardly a week went by without a sensationalist headline about Second Life (see Figure 5).



Figure 5 First Second Life Millionaire (source: *Businessweek*, 05-01-2006)

My initial focus on why people buy “virtual” stuff with “real” money prompted me to investigate literature on the construction of social reality (e.g., Searle 1995; Caughey 1984) and notions of the real and the virtual (e.g., Shields 2003). Engagement with this literature allowed me to unpack mainstream discourses surrounding the unreality of Second Life, and reconcile it with what I experienced doing fieldwork. Finally, in trying to understand why so many people struggled with acknowledging that online virtual worlds produced “real” consequences for those involved in them, I stumbled on material culture studies and their focal interest, materiality (e.g., Miller 2005; Dant 2004). Exposure to this field informed my understanding of what materiality entails, and helped me conceptualize links between physical and digital materiality.

I also need to acknowledge the influence of published academic work based on fieldwork in online virtual worlds (e.g., Taylor 2006; Castronova 2005; Boellstorff 2008; Malaby 2009), as well as academic journals dealing with digital worlds (e.g., *Journal of Virtual Worlds Research*, *Games and Culture*, *First Monday*). Keeping track of academic discussions provided constant validation of the significance of my research effort, and also helped me sensitize my analysis. As in the offline world, it is impossible to attend to every aspect of life in an online virtual world. Therefore, the work of other researchers provided ideas about possible areas for theoretical sampling (e.g., Slater 2002).

To conclude, while this project did not start with a literature review, prior literature, media interest, and general societal discourse regarding digital worlds had an impact on how I interacted with the field and how I set my analytical focus.

3.5.3 Process of Data Analysis

In considering the constructivist formulation of grounded theory, many scholars (e.g., Charmaz and Mitchell 2001, Pettigrew 2000, Timmermans and Tavory 2007, O'Reilly 2009) have noted that it has many points in common with the basic tenets of ethnographic analysis (as described in the previous sections). These authors also conclude that applying constructivist grounded theory's analytic procedures to ethnographic study offers two major benefits.

First, ethnographers often lay themselves open to the charge that their work is merely descriptive. For many ethnographic studies, being descriptive fits the general purpose of the study and addresses the needs of the audience to which they cater (cf. Van Maanen's 1988 "tales"). Researchers who intend to present a more theoretical rendering of their fieldwork have to engage with more structured methods of data collection and analysis. Yet, as Boellstorf et al. (2012:159) remark:

The work of data analysis is often forgotten in discussions of ethnographic research... ethnographers have been far less transparent about the intermediate step of data analysis that makes possible the transition from data to text. Too often this step is treated as a black box, as if it is simply the brilliant minds of individual researchers that make connections and draw conclusions.

In such cases, grounded theory offers guidance on how to proceed with data collection while simultaneously maintaining an analytic focus. Through systematic engagement with grounded theory methods, ethnographers can transition from description to theory development.

Second, ethnographic fieldwork is often open-ended in terms of data collection. This is necessary to allow researchers to account for complex cultural phenomena. Nonetheless, this open-endedness also presents challenges, especially for inexperienced researchers. They can end up overwhelmed by countless opportunities for data collection; or, on the contrary, not be able to identify the data appropriate for their project. Consequently, when ethnographers start writing up their work, they may lack the kind of data that allows them to support the storyline they are creating. Applying grounded theory strategies requires researchers to engage with data early, when they are still in the field. Coding, creating categories, and noticing emerging relationships between concepts, focuses the researcher's theoretical lens and informs further data collection, to advance theoretical development.

To sum up: by incorporating grounded theory's analytic procedures, this study benefited twofold: (1) "thick" ethnographic data enlivened the analysis, and helped organize often fragmented observations into meaningful entities; (2) grounded theory techniques provided a template for an early engagement with the data and sustained my theoretical focus throughout the process.

Following the debate on the origins and varieties of grounded theory perspectives, Charmaz and Mitchell (2001, p.161) conclude that regardless of ontological and epistemological entanglements the common denominator for all variants of grounded theory includes:

- simultaneous data-collection and analysis;
- pursuit of emergent themes through early data analysis;

- discovery of basic social processes within the data;
- inductive construction of abstract categories that explain and synthesize these processes;
- integration of categories into a theoretical framework that specifies the causes, conditions, and consequences of the process(es).

Data analysis in grounded theory begins with open or initial coding. The underlying premise is that codes are developed directly from data through an emergent process in which researchers look for patterns, surprises, meanings, and motivations (Charmaz 2006). The purpose of developing codes is to classify, organize, summarize, and synthesize data. Line-by-line coding, however, works best with well-structured interviews and conversations rather than with scattered observations, fieldnotes, and random anecdotes typical of an ethnographic data set (Charmaz and Mitchell 2001).

Another critique of line-by-line coding points to the fact, that it frequently decontextualizes data and treats it as self-evident and unproblematic (Charmaz 2006). The problem for ethnographers here is that most ethnographic data consists of observations related to mundane behavior without explicit contextual situatedness. What situates and contextualizes ethnographic observations are fieldnotes and analytic memos, which are usually provided separately. Unifying and extrapolating both kinds of data is therefore central to a successful analysis.

During the process of initial coding I stayed open to exploring issues arising from the data regarding my participants' understanding of their Second Life experiences. As presented in Table 2, below, the first codes I developed were frequently *in vivo* (i.e., taken directly from the data). Following the recommendations of Charmaz (2006), the codes were kept active (e.g., "playing," "talking," "growing") to highlight their process-oriented nature.

Table 2 Sample of Coding

Codes	Verbatim
"Playing" Second Life Getting sucked into it Supporting the "habit" Supporting real life	Q: Tell me a little bit more about how your adventure with Second Life started. ... a lot of my friends from the other games were always talking about Second Life and they were playing it on a regular basis so I started playing that. I started playing that, and after a few days I was really sucked into it, I really enjoyed it. And I just played for the love of playing for a long time. A couple of months into it, I started a club and the club was kinda my hole, so actually I was devoting a lot of time and money to the club. So I started dealing the land to hopefully support my habit and from there my land business grew and grew and grew. Now I am at the point where I support myself in real life to a certain extent with my land dealing. So now Second Life is just like... I don't know... it's like my life now ... Q: How did you come up with your business idea? I started small. I started buying mainland plots and I'd buy them

<p>Starting small Taking risk Cashing in on playing game Dreaming big</p>	<p>and resell them and I... like... I think the first month I did it, I was paying like \$75 a month in tier and I said... you know I have a real life husband..., I said, you know what, let me spend another \$75 this month, I'll just give it a try and see what happens. So the first month I made like \$400 and I was like this is great. I am actually making money playing my game in my extra time and it's just kinda snowballed, grew bigger and bigger and it was always my big goal to have an island...</p>
<p>Taking Second Life seriously Accepting instability</p>	<p>Q: So would you ideally see yourself living off money made in Second Life?</p> <p>I consider Second Life my job and I do alright with it but it's not stable...one day someone might do really, really well and then not quite as well depending on how landmark is going. It's a risk and I wouldn't depend on it solely at the moment. But I do consider it my job.</p>
<p>Being trustworthy Keeping consistency Stabilizing power of reputation</p>	<p>Q: So what is your recipe for success? What do you consider a key success factor in your business?</p> <p>I think people consider me trustworthy. I try to do right by my customers that I do have. And most of my customers are repeat customers or friends of people I've dealt with. And people refer me. I think... I don't know... if you're honest to people and straightforward they remember you and it's worked out well for me...</p>
<p>Growing potential Virtual game real convention Growing population Growing potential</p>	<p>Q: What do you think the future of virtual worlds is?</p> <p>Obviously it's growing and I would have never thought I'd be in Chicago for a convention for a game I play, you know. When I first started playing there was one, two, three thousand players on it any given time and now it's forty-eight to fifty thousand people on during the weekends at the same time. I am not sure where it's gonna go, but obviously it's gonna get big and it's gonna continue to grow. I am just here for the ride.</p>
<p>Virtual job real dough Hedging against instability</p>	<p>Q: Is it a significant part of your income that comes from Second Life?</p> <p>Yeah, I'd say I generally make as much as my husband. He is a dispatcher for a trucking company and coordinator... but it's [my income's] not dependable... some months I do and some months I don't, so...</p> <p>(Sarah Nerd, conversation, Chicago Second Life Community Convention 2007)</p>

Accordingly, as the data set expanded I adopted a more holistic approach to coding, as a better fit for working with an ethnographic dataset (cf. Charmaz and Mitchell 2001). Instead of coding line by line, data were coded in whole chunks, as anecdotes or narrative vignettes. Such treatment preserved one of the benefits of ethnographic

fieldwork; namely, the richness of data, which helps discern interconnections between individual cases and ostensibly separate incidents. By following this technique, I anticipated that in the later stages of this study I would be able to present a theoretically oriented understanding of how digital worlds become material illustrated by descriptively grounded data excerpts. As the analysis continued, the emerging fuller picture of the process studied helped me to reconcile and contextualize additional interpretations that emerged from the data.

In the later stages of analysis, I also used focused coding (O'Reilly 2005), which scrutinizes code use and looks for patterns. Some codes always prove more useful and applicable across the data set. These codes often formed clusters, which is a clear indication of their analytic potency. Thus, at the stage of focused coding my attention was drawn by codes which appeared more frequently or addressed (subsumed) a broader range of issues under one meaningful and analytic heading.

For instance, in the coding example above I initially coded parts of the conversation as "Accepting instability" and "Hedging against instability." However, during consecutive rounds of coding I realized that focused codes – "Instability" and "Stability" – more abstractly address a range of tensions related to the fluid nature of digital materiality. Sometimes participants would convey a belief in the enduring quality of Second Life reality, only to bemoan its ephemeral digital character minutes later. Another example originates in *in vivo* code – "Getting sucked into it." Unlike other participants, Sarah merely touches on the meaning, consequences, and sources of the "habit"-like feeling of being "there" while in Second Life. The codes which addressed other participants' similar experiences evolved into "Immersion," which later on was subsumed by "Reembodiment."

Another important step in data analysis is memo-making. This happens concurrently with coding and entails reflecting on the meaning of the codes, and developing some initial analytic ideas regarding analyzed data (Charmaz 2006). Creating memos forces the researcher to pause and reflect on the process. It brings analytic focus to data collection, and can help crystallize the researcher's ideas (O'Reilly 2009). I thus engaged in memo-writing to reflect on the meaning of the codes which I had assigned. My memos often included material taken directly from fieldnotes; in the process of being written up they often acquired a more analytical perspective. Writing memos also forced me to reflect on my assumptions and sometimes to articulate an analytic connection between different codes.

Frequently, comparative analysis took place when I was writing memos, as I often realized that certain incidents fit together under the same codes, and that some codes belonged together in the same categories. Thus while looking at the chunks of data more holistically I could notice connections between codes that sometimes were separated from each other by several pages of text. For instance, in the case of the two codes "Instability" and "Stability," both phenomena were not usually discussed successively, but appeared as fragmented interjections throughout conversations.

The sample memo in Table 3 references my conversation with Sarah Nerd. It echoes my developing sense of the significance of certain dichotomies such as virtual/real and stable/unstable.

Table 3 Sample Memo

 Group

SARAH NERD ESTATES

Founder: Sarah Nerd
Maturity:  General

Just a group to quickly get information to the residents of Sarah Nerd Estates and mainland rentals. NO SPAM PLEASE. Im Sarah Nerd for assistance. Please see the rental



Sarah Nerd is a well-known and highly respected real estate mogul in Second Life. Sarah's introduction to SL came via her interest in gaming, specifically the game called Sims Online. She heard about SL from her online friends, and quickly acculturated to the digital world, which had a thriving social life. Soon after she created an account in SL, she was buying and developing real estate, an avocation which quickly evolved into a vocation. In the interview excerpt Sarah Nerd is recounting how Second Life slowly became an integral and very stable part of her "real" life.

Sarah's feeling of stability is closely related to her popularity and reputation which was established and grew in SL, enabling her business to thrive. Sarah's reputation at the time of the interview illustrates a relatively stable existence insofar as she does not worry about interpersonal turbulence with in-world clients and friends. Because she perceives SL as stable, she attributes consistency and reliability as major factors contributing to her success in-world. At the same time, although Sarah's business reputation is consistent, her SL income is not which is reflected in her assessment of the conditions at the early days of her online venture.

Her initial investment success encouraged further investment but Sarah is clear that she is not able to depend upon her SL income as she might on her SL reputation. As in real life, entrepreneurs are subject to the vicissitudes of the marketplace, and she has no guarantee that her business will flourish. Sarah's feelings of instability are very apparent when she answers a question regarding the future of SL and virtual worlds in general. Even though Sarah sees a bright future for the growth of virtual worlds, the relative instability of the virtual world is lurking within her statement when she expresses the temporary character of her commitment by saying: "I am here for the ride".

The malleability of rules regarding the functioning of online virtual worlds seems to be often mentioned as a source of instability. Many land developers in SL experienced a serious drop in the value of their property when Linden Lab in 2006 changed the rules of teleporting in-world. Prior to the change, avatars could only teleport themselves using specially designed teleport spots. Therefore, land located near a teleport spot was worth a lot more as it was generating more traffic. By allowing avatars to teleport freely from any place in-world Linden Lab restructured the whole pricing model behind land ownership, and as a result, many Second Life developers lost their in-world fortunes almost overnight.

This memo also highlights the benefits of merging various sources of ethnographic data with grounded theory's memo-writing. Usually grounded theorists base their memos only on their collected interview data. However, ethnographers have at their disposal a much broader repertoire of possible data sources (e.g., fieldnotes, documents, visual

material, etc.) which they can integrate into their memos. Consequently, the last paragraph of the sample memo represents my attempt at contextualizing perceptions of instability by incorporating knowledge from secondary sources.

The memos incorporated into my research journal turned out to be a good way of documenting my trail of thoughts. This was helpful in the later stages of research for keeping track of codes, developed categories, and processes. Crystallized memos also became a part of the presentation of findings and allowed me to delimit the study's analytic boundaries from a very general initial preoccupation with the culture of Second Life to a focused inquiry of digital materiality and the ways in which digital worlds become material.

When the initial analysis has been completed, grounded theorists use theoretical sampling to fortify already developed categories with relevant data. As originally recommended by Glaser and Strauss (1967), theoretical sampling continues until "saturation" has been achieved, which means that no significant new information or ideas emerge with extra data. However, constructivists (e.g., Charmaz and Mitchell 2001) find this recommendation troubling, since the fact that one category is saturated does not necessarily mean it is more significant than other categories in telling the theoretical story.

In the final stages of analysis, the focus of this study was set on theorizing how digital worlds become material, and eight distinct categories (processes) emerged from my analytic memos: reembodyment, material metaphors, reification, valorization, interconnectedness to other digital media, rematerialization, dematerialization, and embodying experiences. At this point, I turned to theoretical sampling to elaborate on and refine the processes to make them conceptually more robust. In line with the constructivist critique of saturation, I considered a process category significantly saturated when it was able to vividly represent its theoretical point and enable readers of my work to assess it.

Possibly the most telling example of the advantages of theoretical sampling is visible in the way one of my eight tentative categories – "embodying experiences" – was developed. Throughout the data, I found tropes that events experienced by avatars on the screen meant a lot more than just a simulation for people behind the avatars. These experiences were described very vividly as intense, appealing, and often "very real."

Unsurprisingly then, many informants expressed their deep disappointment that their physical bodies were not partaking in these experiences. Yet, my fieldwork revealed a case where some people actively engaged in bridging the digital-physical divide. The case in point was members of the furry community attending Second Life Community Conventions wearing their fur suits, to resemble their Second Life furry avatars as closely as possible. However, relying solely on this one case would make the category unnecessarily thin. Thus, by steering my analytic focus toward the phenomenon of recreating Second Life experiences in the physical world, theoretical sampling assisted me in saturating this category.

During a consecutive Second Life Community Convention my sensitized mind was able to discern another case to corroborate the significance of this category. One of the presenters at the convention addressed issues related to the existence of intimate relationships between avatars in Second Life, and the unsatisfactory aspects of simulated virtual sex. In the course of her presentation she elaborated on the topic of teledildonics, which helped saturate the category of embodying experiences.

Apart from theoretical sampling, in the final stages of my analysis I also engaged with theoretical sorting. In this process, I followed Charmaz's (2014, p.215) directive:

In grounded theory, sorting goes beyond the first step in organizing a paper, chapter, or book: sorting serves your emerging theory. It gives you means of creating and refining theoretical links. Through sorting you work on the theoretical integration of your categories. Thus, sorting prompts you to compare categories at an abstract level.

As mentioned previously, the first phase of the process of sorting my analytic memos allowed eight tentative categories (processes) to emerge. In the next step, I started comparing these categories, to explore connections between them. First, through juxtaposition of the processes, I recognized that a digital-physical dichotomy seemed to be the underlying organizing logic, and that in each case a process has a direction (i.e., from physical to digital world, from digital to physical world and from one digital to another digital world) as well as a distinct accompanying motivation.

Following Charmaz's (2006, 2014) recommendation regarding ways of teasing out and demonstrating relationships between the categories, I engaged in diagramming. In this process, the visualization of the physical-to-digital and digital-to-physical links prompted me to realize that on a higher level of abstraction, the processes of reembodiment and rematerialization are broader, all-encompassing categories. When organized by direction they revealed the capacity to subsume the remaining categories: reification, valorization, dematerialization, and material metaphors. The visual aspect of diagramming proved very useful for creating a consistent discussion of the distinct processes. For instance, it forced me to clearly articulate the remaining category of digital to digital interconnection as a separate process where I do not sharply delineate reembodiment and rematerialization.

Lastly, it is important to note that in contrast with the ethnographic tendency to produce lengthy tales about participants' lives, grounded theorists tend to use short excerpts of participants' stories within the theoretical points they discuss. They aim to provide just enough verbatim data to make their abstract analytical points strong, interesting, and persuasive. As Charmaz and Mitchell (2001, p.170) point out: "conceptual analysis takes center-stage; stories and scenes and, therefore, individuals play minor parts on the illustrative sidelines. Thus, grounded theory works may sacrifice subtlety and nuance for clarity and explicitness." This logic has greatly impacted the presentation of findings in the next chapter.

3.6 Ethics

Ethical issues in online research have sparked many discussions (e.g., King 1996; Walther 2002) and are a recurring topic in journals such as *The Information Society*, *Ethics and Information Technology*, and, more recently, *The International Journal of Internet Research Ethics*. Despite the plethora of work on the topic and a number of guidelines prepared by scholarly workgroups (e.g., the Association of Internet Researchers – AoIR), ethics in online research is still an open debate. Ethical concerns in a netnographic inquiry usually focus around two issues: quality of interpretations and access to the field.

3.6.1 Quality

Netnography in online virtual worlds raises concerns about online anonymity (i.e., when the identity of the person behind an avatar remains doubtful or unknown). In the present project, the potentially negative effects of anonymity on data interpretation were greatly offset by the fact that I participated in my informants' lives both in-world, in Second Life, and during community conventions organized in more traditional offline settings. Additionally, the research questions in this work did not pertain to the truthfulness of individual identities but rather to the specific social and cultural processes relevant to digital materiality. Thus, online anonymity was not a major concern in the study.

Moreover, long-term immersion in the online virtual world allowed me to form social relationships with some residents and observe them over a longer period of time. Avatars in Second Life are known by their first and last names, and thus are easily identifiable. As Mann and Stewart (2000) point out, maintenance of a consistent identity is a good proxy for judging the informant's trustworthiness.

Online virtual worlds are usually equipped with communication tools, making member checks relatively easy. When my initial interpretations of data emerged, I used Second Life's instant messenger's function, or "buddy list," to contact the Second Life residents I had befriended and discuss my ideas. I also used consecutive Second Life Community Conventions as forums for discussing my emerging findings and soliciting comments from the "natives." By opening my netnography to collaborative interpretation (see also Catterall and Maclaran 2002), I fortified the trustworthiness of my findings.

3.6.2 Access

The nature of access to online research sites (private versus public) and the grounds for assuming informed consent in cyberspace are two of the most important ethical considerations in netnographic work. Online virtual worlds are usually owned and managed by companies, and it remains debatable to what extent they are public or private sites. Therefore, before this study began I reviewed the "Terms of Service" published by Linden Lab for users of Second Life, to ensure that no ethical standards would be breached by conducting academic research and collecting data in-world. Not all spaces within Second Life are public, and certain parts of the world have private owners. In such cases, they were considered private, and the owner's consent was always obtained before any data collection took place.

Despite the continuing debate around online research ethics, there seems to be a consensus around the following three recommendations: (1) researchers should inform members of an online community about their presence in that community, and reveal their affiliations and research purpose; (2) confidentiality and anonymity of informants should be assured by providing them with pseudonyms and not using their usernames; and (3) the researcher should be open to feedback from members of the online community under study (Kozinets 2002, 2010; Boellstorff 2008).

To meet these requirements, I used a number of strategies. My status as a researcher was disclosed in my avatar's profile. If I was chatting with a group of avatars and the message was directed at the general public, I always announced the purpose of this communication and referred everyone to my profile. In personal communications, I

used special, interactive notes with information about the study and an annotation about my research credentials and affiliation (see Boellstorff 2008).

Regarding informed consent, in personal forms of communication (such as instant messages) I asked Second Life residents to explicitly agree to participate, having informed them that this communication could be used in the study. In public spaces where it was not possible to receive permission from everyone, I disclosed my research interest right at the moment of arrival in the public forum where everyone could see posted text messages.

Taking into consideration the complexity of avatars' identities and their ambiguous links to their owners in the offline world, the guarantee of confidentiality is of utmost importance. The following statement from one of the residents illustrates this point well:

many people (including myself) who identify quite strongly with their avatars in-world – we have lives there (ridiculous as this may sound) and really just as much as I would not like my living room to be broadcast online (twittering is selective – so those of you who see me avidly twittering – don't for a moment think that's everything that's going on;-)) – I would not like everything I do on second life revealed. But revealing my avatar name in someone's research will allow for connections to be made. (Radhika Gajjala, *Air-L Digest*, Vol. 44, Issue 10)

Therefore, whenever requested, an avatar's identity was concealed by a fictitious name. In this way, no connection could be made to either a real avatar identity, or to the person behind the avatar, either from information used in verbatim citations or descriptive data in fieldnotes.

Overall, this ethnographic and netnographic study was conducted in a way that engaged others only to the extent to which they agreed to participate, and aimed to give accurate accounts of their stories, points of view, and actions. At the inception of this project, there were very few guidelines regarding academic research in online virtual worlds. Since then, many comprehensive treatments of the subject have been published (e.g., Boellstorff 2008; Boellstorff et al. 2012). Still, “no set of a priori rules of ethics can predict the range of situations to which ethnographers must be prepared to respond with tact, sensitivity, and caution” (Boellstorff et al. 2012:129).

Methodological choices described in this chapter, though not unusual, were original in the way in which they intersected: a blended, netnographic and ethnographic approach to data collection was used with grounded theory tools to aid the process of analysis. This intersection proved very productive, in that it allowed for the emergence and crystallization of findings. The next chapter showcases the main findings of the study.

4 FINDINGS

4.1 Overview

As discussed in previous chapters, extant research establishes that digital worlds are material to consumers (e.g., Leonardi 2010; Kallinikos et al. 2010; Belk 2013). However, less is known about how digital worlds become material. The Findings presented in this chapter aim to redress this gap. Drawing on prior research and an ethnographic and netnographic investigation into the digital world, Second Life, my research shows that digital worlds can become material through five distinct processes. These are presented below (for a summary, see Table 4).

Table 4 How Digital Worlds Become Material

Process	Definition	Motivation	Example
Physical to Digital Reembodiment	Reconstituting aspects of embodied (physical) selves in digital selves	To have a locus for one's online identity projects	Creating avatars in Second Life, including profiles, skins, and outfits
Physical to Digital Rematerialization	Transferring aspects of physical objects to digital worlds	To establish continuity and stability between offline and online worlds	Taking pictures offline for an avatar's digital album in Second Life; using material metaphors in digital environment
Digital to Physical Reembodiment	Incorporating aspects of digital selves into embodied (physical) selves	To extend the online experiences of one's avatar identity into the physical world	Dressing up as one's avatars in offline settings; using "teledildonics" to experience simulated avatar sex in corporeal body
Digital to Physical Rematerialization	Recreating aspects of digital objects (and practices) in physical objects (or practices)	To substantiate one's online presence as consequential offline	3D-printed figurines of one's avatar; printing screenshots of Second Life creations for family members
Digital to Digital Interconnection	Interconnecting digital selves and objects across digital worlds	To anchor, expand, and sustain one's online life, beyond one specific digital world	Creating Facebook, Twitter, and YouTube accounts for one's avatar

4.2 Physical to Digital Reembodiment

Physical to digital reembodiment denotes the reconstitution of aspects of the embodied (physical) self into a digital self or selves. To exist in Second Life, consumers begin by opening accounts, generally providing their names and emails. Next, they create avatars – graphic animated representations that instantiate their presence in a digital world. New users can begin their Second Life existence with a generic, humanoid avatar or a more fantasy-based shape such as a furry (i.e., an animalesque avatar). This process is illustrated by Figure 6.



Figure 6 Creating an Avatar (source: Second Life viewer)

Creating an avatar in Second Life highlights differences between embodiment in physical and digital worlds. More specifically, during the process of digital reembodiment residents are offered a number of choices that are not immediately available in the physical world, such as the selection of gender and the appearance of body parts. Although it can be argued that the physical world abounds in examples of people transforming their bodies through surgeries (e.g., sex reassignment) or workouts, the effort that such change requires cannot be compared with a few clicks of a mouse in a digital world.

The act of creating an avatar as opposed to choosing just a nickname (e.g., in a text-based chat room) makes the digital self more material. In a digital world, the self as reembodied in an avatar is pervasive, and exists even when the avatar's owner is logged out. When Second Life denizens log out, their avatars do not leave Second Life. Rather, avatars revert to a sleep-like state, awaiting rejuvenation when their controller returns. Thus, avatars serve as a locus or container for consumers' online identity projects. Consider the following excerpt:

It's like you gain a real existence, not like in a chatroom where you log out and it doesn't exist... well, maybe you existed to some extent because you could have a profile on AOL, but here you can have your home, your virtual body, and your friends to come back to. Things you like and are used to. People really respond to what your avatar looks like. Just look how many businesses are willing to help you look better? (Jimmy, Second Life Community Convention, San Francisco, 2009)

The relationship between an avatar and a person behind it can be a complex one. The following forum post reveals connections between "real existence" and Second Life embodiment. In a response to a question regarding why some grown-ups assume child-shaped avatars in Second Life, Colette replies:

I agree with Czari. I am most comfortable in my av [avatar] because she looks like me. When I am hanging out with someone, it feels less detached because I can see myself... or a version of myself in front of me. Sure, no one is as perfect as their avatar, hence the reason I am looking for undershirt abs! I think that we all create avs that make us feel the most comfortable. I did comment about child avs in the other thread. I understand your position, but I still think that it is strange. I don't mean that in a judgmental or harsh way. I just think SL is an adult world. I act in a way that I would not in front of children, so the idea of hanging out with children (real or not) makes me uncomfortable. (Colette Forester, forums.secondlife.com, 05-07-2008)

For Colette, the feeling of being "less detached" means that she can more fully relate to her presence in the digital world. It also underscores the behavioral template that she applies to gauge her actions in Second Life. In this case, reembodiment in a relatable avatar implies the existence of a broader issue: Colette uses offline standards to determine what is appropriate in her behavior in-world. She does not distinguish between the materiality of her actions in physical and digital worlds.

A strong relationship to one's avatar can also create a particular perception of "being there" which is known as telepresence, a phenomenon studied in relation to experiences of virtual reality (e.g., Steuer 1992). The experience of having a body in a digital world adds to the perceptions of "realness" and is vividly illustrated in the following quote:

I probably wouldn't have said so when I was new, but now that I've been here awhile, I have to agree... yeah, SL is pretty real to me. Logically, I know it isn't a 'real place,' in the same way that the city I live in is real, but when I'm here, inhabiting the body of Ilia, it feels real enough.

Someone else mentioned the Matrix, and I think that's a perfect example... in that same way, SL challenges you to rethink what 'reality' is. It's made to be totally immersive: we have almost total freedom, there are no goals and not many restrictions. SL is designed to suck us in and make us believe it's real.

When Trinity and Neo entered the Matrix, it became real to them, even though their physical bodies were actually sitting in a chair somewhere. It's as if the existence of the place is determined by how the brain perceives it, rather than where the physical body is. Taking that into account, I don't think it's too weird to see SL as 'real.' (Ilianexsi Sojourner, forums.secondlife.com, 04-13-2007)

In her own words (“SL is designed to suck us in”), Ilianexsi stresses how “immersive” Second Life is for her by drawing a parallel with the cult movie *The Matrix*. She also acknowledges the importance of her body in creating a sense of presence and thus, making the digital world material and “real enough.” Interestingly, Ilianexsi explains that Second Life is material for her even without tangible physical presence. As she concludes, her Second Life existence resides in her own perceptions of it, and not in some physical location.

Second Life residents usually customize their avatars with a variety of “skins,” constellations of unique hairstyles, faces, and body parts. On their skins, they layer clothing and accessories, eventually resulting in highly unique avatars. Over the years, Second Life has had several in-world magazines dedicated solely to the latest trends in Second Life fashion (e.g., *Second Style*, *AvatarStyle*). This illuminates the importance of pursuing a distinct visual identity for one’s avatar. As Figure 7 shows, Second Life residents are presented with multiple style options offered by Second Life designers in exchange for Linden dollars (in-world currency).



Figure 7 Second Life’s Fashion (source: www.secondstyle.com; *Second Style*, no.11, cover & p.58-59)

Reembodiment also occurs through the construction of avatar profiles (see Figure 8), which provide a personal history with basic information about avatars (e.g., their in-world birth date, their home location, and their Second Life community memberships). As the following quote shows, profiles are a very important identity management tool:

So, I was thinking about profiles tonight and how I would compose this forum post. I re-did my profile after much thought – put emphasis on certain words and added new information. I think I got it to where I am happy with it. However, I wondered what information do people look for in profiles? What information makes you wanna even bother talking to in local chat or IM that person? What are some suggestions to making a friendly profile, yet, keeping it slanted to avoiding misunderstandings? (Raimi Syaka, community.secondlife.com, 06-01-2013)

While avatars are conduits for visual ways of constructing and communicating Second Life identity, profiles are their textual equivalent. Often, profiles are the more permanent and persistent component of this identity; the avatar appearance can shift quickly with a few clicks of a mouse. Profiles can also provide more information about Second Life residents and thus supplement identity management, as Raimi’s concern for “making a friendly profile” reveals.

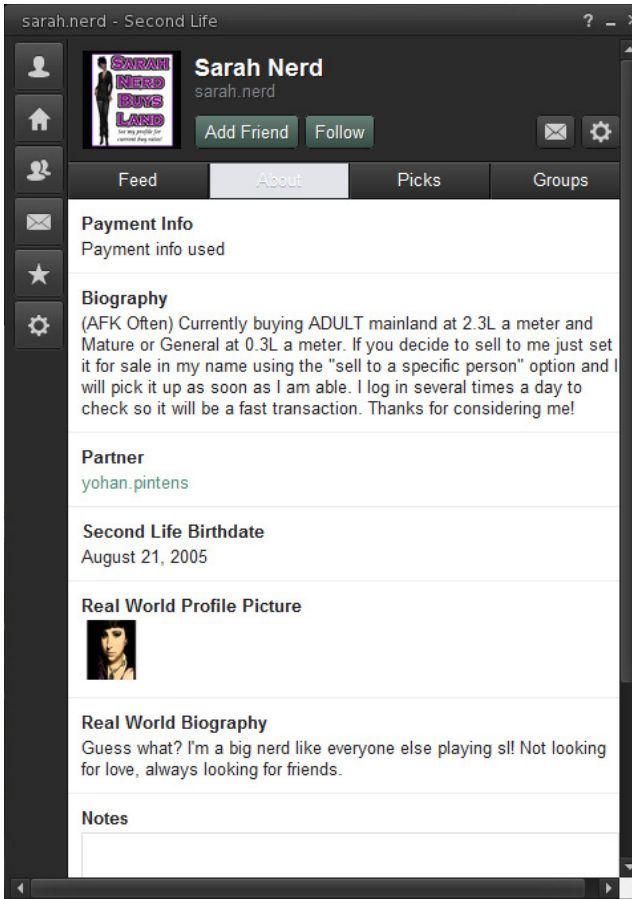


Figure 8 Sarah Nerd's Second Life Profile

Additionally, as Figure 8 demonstrates, profiles give Second Life residents an opportunity to link their identities in Second Life and “Real World” (i.e., rubrics: “Real World Profile Picture,” and “Real World Biography”). The extent to which residents take this opportunity certainly varies. However, I noticed during fieldwork that the more involved a resident is in Second Life, the more fully developed is their profile (e.g., greater level of detail, more creative textual representations, etc.)

For many Second Life residents, avatar construction is a highly involved and continuously evolving creative endeavor, shaped by changing personal preferences and ongoing interactive feedback from other residents. The following online forum post titled “Avatar Obsessed” illustrates the engrossing nature of avatar creation:

I have become obsessed with tweaking my Avi and making it more realistic. My question is: what shape or skin designer is your favorite, and whom do you think has the most attractive and realistic Avatar components? (Pixlie, community.secondlife.com, 01-02-2014)

“Obsessive” engagement with perfecting one’s own avatar’s appearance resembles what Zwick and Dholakia (2006) call an epistemic consumption object. As the authors explain, “lack of ontological stability turns the object into a continuous knowledge

project for consumers... [C]onsumers become attached to the object in intimate and quasi-social ways” (p.17). Following this line of thought, it can be argued that the materializing power of reembodiment lies also in consumers’ continuous engagement with their avatars as identity projects.

To summarize: digital worlds become material to their inhabitants in the process of physical to digital reembodiment, as aspects of the embodied (physical) self are reconstituted into a digital self, or selves. What makes avatars material is the fact that they act as loci of digital identity and are enduring visual representations of consumer aspirations, fantasies, and feelings.

4.3 Physical to Digital Rematerialization

Physical to digital rematerialization denotes the rendering of physical objects, or some of their aspects, in digital worlds. Second Life residents usually engage in this process to establish a sense of continuity and stability while moving between physical and digital worlds.

When people inhabit new spaces, they often bring along items which create a sense of identity and remind them about their past (e.g., Belk 1991; Turkle 2007). For instance, when people immigrate to new countries, they bring along mementos, objects, and photographs from their country of origin (Mehta and Belk 1991).



Figure 9 Paris in Second Life

In a similar vein, Second Life residents rematerialize artifacts from their physical surroundings and incorporate them into their digital lives. Many of the most famous Second Life sites, such as Second Life Dublin or Paris (see Figure 9), are recreations of physical world capitals built in-world by inhabitants. In a forum post titled “New to

SL,” a Second Life user reveals his desire for visiting a rematerialized equivalent of familiar, physical surroundings:

I'm new to SL, and I just still don't seem to get it. I downloaded SL a long time ago, then uninstalled it because I didn't understand it. Two days ago I downloaded it again and tried to learn and get a grasp for it. I still just have a question if you guys wouldn't mind answering..

Are there any 'realistic' cities in SL that are actually populated. What I mean is for example... Are there areas that have stores, houses, police stations, town halls. And stuff like that for like a real life role play? Pardon my ignorance, its just everything I see is all about SEX and GAMBLING. If not. Perhaps I just don't understand what SL really is? (Philip Weyland, forums.secondlife.com, 10-08-2006)

This post reflects concerns often raised by people who have moved between two cultures. They experience disappointment with a strange and perplexing new world, and mourn the lost comfort and familiarity of the old world. On the one hand, this new world seems to have something irresistibly attractive as, despite his initial frustration, Philip has returned to Second Life. But on the other hand, Philip still cannot relate to the culture of “sex and gambling” which he sees as pervasive. He longs for “realistic,” digital settings and a predictable set of socially acceptable behaviors, even though he seems to be primarily interested in identity experimentation (“real life role play”). It is worth noting that Philip’s need for familiarity may well be because of Second Life’s relative novelty; with time, the appeal of rematerialized physical surroundings diminishes.

Physical to digital rematerialization can also take a more mundane form. For example, when I visited one of my informants, Mia Foxx, in her Second Life home, I observed the following scenery:

The house was an interesting blend of items designed by her, some freebies, and furniture she’d bought in-world. Interestingly, the walls were decorated with pictures of real people. She explained that these were her best friends from RL and she always liked to have them around. Yet she didn’t have photos of her own RL self, nor of her SL friends. She said that her virtual home mirrored her real life abode, in that she always wanted to be surrounded by things which remind her of the people she loves. (Fieldnote, Second Life, 02-09-2009)

By rematerializing elements of her physical world in her virtual home, Mia creates a sense of continuity and stability in the otherwise ever-changing digital world of Second Life. Like Mia, many other residents scan pictures of physical possessions and display them in Second Life. When I asked about this curious practice, my interviewees expressed a desire for continuity between their physical and digital worlds, fulfilled by the presence of familiar objects. Consumers also emphasized their desire to share their offline lives with other Second Life denizens. These desires are well illustrated in the 2011 HBO documentary titled “When Strangers Click” by Robert Kenner.

Kenner’s documentary demonstrates how online relationships can transcend the boundaries of digital worlds. One of the storylines shows how Jonas (a.k.a. Bara Jonson in Second Life), an entrepreneur-musician in the remote Swedish countryside, develops a relationship in Second Life with a woman living in the United States. Jonas eventually visits the US and the couple unintentionally conceives a baby. Unfortunately, obstacles raised by US immigration officials force the couple to live apart, in a long-distance relationship. As the movie shows, the pains of separation are alleviated by daily contact via Skype, so that Jonas can see his baby; and in Second Life, where he and his partner can spend time together. In one scene, we see the avatars of Jonas, his partner, and their Second Life friends in their Second Life home sitting on a sofa and sharing their baby’s pictures (see Figure 10). Rematerializing photographs into his digital world

allows Jonas to display the same artifacts of memory in his Second Life home and his real world home, thus imbuing both spaces with a similar emotional resonance.



Figure 10 Avatars and their Baby (source: “When Strangers Click,” HBO 2011)

To establish a sense of familiarity and continuity, physical to digital rematerialization must follow a specific logic. The following forum post reveals an aspect of this logic:

One thing that drives me crazy in SL is the oceans. I love to be around water and I love to go out on the water but I notice that on most sims you can't get more then 2 feet and you hit a red line! lol. Maybe SL has this and I just don't know about it but it would be nice if in SL there was a huge Linden ocean. Just like in RL. Where it does not really belong to anyone. People could take boats out and such. I don't know just a thought! (VooDoo Bamboo, forums.secondlife.com, 12-01-2006)

The post creator, VooDoo is clearly frustrated by the apparent differences in how physical and digital worlds function. His post suggests that the environment of Second Life is material for him when it follows “just like in RL [real life]” logic. This logic is important because it helps him understand how to interact with digital environments. It could thus be inferred that the closer the organizing logic of a digital world is to the rules of physical existence, the more material that digital world appears to its users. In such cases, navigating through one’s digital existence appears intuitive and effortless.

Second Life’s graphic interface also enables physical to digital rematerialization, in a very specific way. On close inspection it is apparent that the graphic interface (“Second Life Viewer”) is saturated with “material metaphors” (Hayles 2002; van den Boomen 2009). Such metaphors condense two references: they blend a material, indexical reference (e.g., “Inventory” as a place for storage) with a conceptual reference (e.g., a screen button labeled “Inventory” references a storage space for avatars’ digital belongings). For an illustration, please see Figure 11.

Similarly, a “Chat” button allows communication via text-based messages, and a “Fly” button allows an avatar to float in the air. The “Friends” button displays the contact information of all Second Life avatar friends, making it possible to monitor who is currently online and available for socializing.



Figure 11 Material Metaphors in Second Life Viewer

Responding to my question about how residents collect and organize their digital artifacts in Second Life, one of my informants stated:

It's really easy, because your inventory is like your virtual closet... you can keep everything there, in one place. Maybe my real closet is a bit neater because my inventory is a mess [laughing]... I think I am a virtual hoarder... so sometimes when I need to quickly find an item it may take a while. Not a good thing when you're having [virtual] sex and the other person is waiting until you find the right prop [laughing]. (Amy, 2008 SLCC Tampa)

From Amy's comment about the Second Life inventory being "like your virtual closet" it is evident that material metaphors play a very significant role in materializing digital worlds, in that they facilitate meaning transfer between the physical and digital worlds. Thus, they play an important role in allowing consumers to bridge the physical-digital divide.

In addition to material metaphors, physical to digital rematerialization can be also aided in other ways. Consider how the significance of meanings and expectations in regards to digital objects is presented in the following forum post:

What is the situation with having a casino on SL - I have a resident who wants to sell me a roulette table, Blackjack Table and slot machines.

I wanted to check first about the law with casinos in SL

Some ppl have said they have seen casinos in SL - is it allowed and if so are there certain games allowed? (Rolday Wylie, forums.secondlife.com, 07-10-2008)

Interestingly, in a digital world where gambling devices could take any number of unique forms limited only by their creators' imagination, their physical equivalents are still alluded to. This takes place via: 1) names (i.e., roulette table, Blackjack table, slot machines); and 2) visual representation, which is consistent with their physical counterparts (see Figure 12).



Figure 12 Gambling in Second Life – Blackjack Slot Machine

Both types of connections to the physical world help to successfully materialize these digital, intangible gambling devices. So much so, that Rolday does not even question the ontological status or functionality of a Second Life blackjack slot machine (i.e., whether it works like a “real” blackjack slot machine and can be used for gambling). In this case, physical to digital rematerialization benefits from what Norman (1999) calls

perceived affordances of objects. Perceived affordances are qualities of objects as seen by users. In other words, people tend to behave toward objects according to their expectations of what these objects are able to do. As Norman (1999, p.39) explains:

When you first see something you have never seen before, how do you know what to do? The answer, I decided, was that the required information was in the world: the appearance of the device could provide the critical clues required for its proper operation.

Accordingly, even though the object is digital (and intangible), the visual clues provided by its representation (i.e., resemblance to a physical Blackjack slot machine) are enough to link it to the perceived affordances of its physical equivalent. In this way, perceived affordances aid physical to digital rematerialization and make Second Life gambling possible.

Physical to digital rematerialization is frequently accompanied by an underlying logic imported from the physical world. Kate Amdahl, a long-time resident of Second Life and a blogger, reveals an instance of this logic as she recounts the reasons for moving to a new Second Life home in a different in-world location:

... And as for me, I needed a change of scene, for two reasons. First, I had never really finished making my new home my own. My old home, the beach house with the magic elevator and the sky waterfalls, felt like home. This one I never got far enough to make feel like that. What's more, I didn't want the responsibility. I wanted to move somewhere with more residents, somewhere new, and somewhere predecorated. So I packed up my belongings and let my rent expire. It didn't take me long to pack everything up. It's funny how in Second Life you can just pack everything into your inventory, you don't have to change out of your go-out-dancing dress and heels, and the place is already broom clean without you having to do any work.... (Kate Amdahl, www.kateamdahl.livejournal.com, 11-11-2011)

Besides acknowledging the critical role and convenience of Second Life "inventory," in line with the previously discussed function of material metaphors, Kate's post reveals how her expectations and behavior in Second Life manifest the presence of the physical world logic. Discussing the reasons behind the move, like people in the physical world Kate wanted a change of scenery; she expressed a lack of attachment to the place she was leaving, as she never made the home her own. Kate also "didn't want the responsibility" for arranging her residence and opted for a "predecorated" place, the equivalent of a furnished apartment.

In a similar vein, the existence of physical world logic is also demonstrated in the following online discussion excerpt:

I'm continuing to find SL an absolutely fascinating place. One thing that jumps out at me, however, is the issue of "realism". This was brought out recently with a discussion with a friend about how she really likes the experience to be "realistic". She does TP around, of course, but come to think of it I've only seen her fly when she was at my skybox and wanted to look around. Not to tell tales out of school, also, but I've also noticed that she is always in full underwear, stockings and so on. I find this to be an interesting phenomenon, as many of my dear friends here push the envelope in the opposite direction. Would anyone like to comment on their personal views? (Jackie Silverfall, forums.secondlife.com, 06-29-2009)

In response, another Second Life member posted:

Isn't this just another side of the fascination of SL? You can do is as realistic as possible or as fantastic as you can imagine. I for my person have one serious ava, who is a teacher in SL and behaves very realistic ... yes and even wears underwear. Plus, I have two alts that play the wild part, change their look and live fantastic adventures, the more unrealistic the better. So, what you see can also be performed by one single person ... (Danziel Lane, forums.secondlife.com, 06-29-2009)

What stands out in this exchange is that being “realistic” or appearing like a professional “teacher” in the digital context is manifest by conforming to a set of social norms and expectations originating in the physical world (e.g., regarding a teacher’s appearance in a physical school). While physical to digital rematerialization happens on the level of matter (i.e., physical, tangible stuff rematerializes as digital representations stored in a file), the concomitant reappropriation of meanings, social norms, and expectations from the physical world plays a significant role in this process.

To summarize: physical to digital rematerialization denotes the rendering of physical objects, or some of their aspects, in digital worlds. This process benefits from the transferal of physical world logic into the digital world, as evidenced by the presence of material metaphors and perceived affordances. This form of rematerialization offers Second Life residents a sense of continuity and stability while moving between physical and digital worlds, and makes their acculturation in the new environment easier.

4.4 Digital to Physical Reembodiment

Digital to physical reembodiment refers to the incorporation of aspects of the digital self into the embodied (physical) self. Although prior research has frequently documented physical to digital reembodiment (e.g., Markham 1998; Taylor 2002; Belk 2013; Meadows 2007; Kozinets and Kedzior 2009), with a few exceptions in the field of human-computer interaction (e.g., Haans and Ijsselsteijn 2012), digital to physical reembodiment remains largely unexplored in consumer research and digital consumption.

The vividness and “realness” of Second Life experiences are often-recurring themes in personal accounts given by Second Life users. As demonstrated throughout this chapter, Second Life denizens underscore the importance of their “true,” in-world friendships and intimate relationships, the value of their digital possessions, and the cost of their creative labor.

However, this idyllic picture is repeatedly muddled by the shortcomings of technology, which does not allow users to fully experience the digital world with the physical body. The following posts are some enthusiastic responses to a question posted on Second Life forums regarding a hypothetical possibility of having access to an extra-sensory function, beyond sight and hearing, which could correspond to experiences in a digital world:

... touch would be nice, similar to vision, it should not work 100% like the real thing, I mean, unless you got some unconventional display device, you can't really go blind by staring at the brightest that can exist in SL, so the haptic feedback (real, like with a robotic suit or something, or simulated, with a more Matrix like approach, doing it directly in the brain) wouldn't be enough to harm (unfortunatly for hearing this isn't something all that common, many headphones and speakers people user are more than able to harm the listeners :/ (TigroSpottystripes Katsu, forums.secondlife.com, 11-27-2008)

In another post, the same user continues:

... besides haptic feedback, having additional senses would be interesting too, like having a third eye starting at the minimap (perhaps something done with those electric "screens" I saw on tv a while back, that would produce small electric shocks instead of dots of light for pixels, and would be placed ont he tongue or the forehead or something, and people seems to be able to learn to "see" thru that), or some indirect sense like morse-coded vibrations of the chair translated from the chat history (TigroSpottystripes Katsu, forums.secondlife.com, 11-29-2008)

As these excerpts suggest, from the poster's point of view, multi-sensory stimulation of his Second Life experiences onto his physical body would be a desirable quality. Echoing similar sentiments, many other Second Life users actually engage in digital to physical reembodiment to extend their avatars' experiences and sensations into the physical world. Second Life is a fertile ground for consumers to act out their fantasies. It's not surprising, then, that simulated sexual encounters are one of the most popular digital pastimes. However, perhaps equally unsurprisingly, simulated avatar sex is usually considered merely a substitute for a physical encounter. Consider the following quote:

The cartoon animations of SL sex are goofy at best, the connection and arousal comes from the verbal/textual interaction between the parties concerned. In RP I often am in "Adult" situations, and there is very little wanking involved, I am usually too busy trying to keep a literate story going. Sometimes the animations never even keep pace with what is going on in the story.

While I don't engage in personal romantic relationships in SL anymore, I have in the past. And yes, they got physical at times, and admittedly sometimes simultaneously in real time. But a lot of times not. However, what transpired was often the basis for RL personal fantasy time, and sometimes even inspiration when being with a RL partner. SL has been a great testing ground for widening some of my sexual and emotional boundaries... (Brenda Connolly, forums.secondlife.com, 06-10-2009)

Similarly, another Second Life user points to the shortcomings of simulated sex:

I say this without bias because I don't do 'sex' in SL I did..... way back in the beginning, as more of a curious exploration of just exactly what was possible between two avatars. But it never meant anything to me.... it never turned me on..... I never developed any kind of connection to anyone. It was pixel clinical and ultimately completely empty and boring. I moved past the fascination pretty quickly. I'm a realist, with a RL partner to do all those nifty things with which is way more appealing to me. (Milla Alexandre, forums.secondlife.com, 06-09-2009)

These descriptions of simulated experiences which are “goofy at best,” “pixel clinical,” and with which “the animations never even keep pace,” communicate disappointment with the existing technology. To circumvent these shortcomings and enrich the spectrum of their sensory perception, some Second Life residents experiment with teledildonics. As Lynn (2007) explains, teledildonics is the use of USB-connectable sex toys that can be manipulated remotely by another party. In this way, a simulated sexual encounter in Second Life can produce “real” physical sensations for its participants in their physical bodies.

Figure 13 illustrates one of the commercially developed solutions available to Second Life residents and describes its functioning. In brief, behaviors that are simulated and animated in Second Life are transferred to a computer application, which controls a USB connectable device (in this case a sex toy). On the user end, in the physical world the device reproduces the intensity of a Second Life encounter.

About Xcite! Touch™



Xcite! Touch toys are designed to sync with a real life sex toy. They bridge the gap between the virtual world and the real world in a way that will blow your mind and enhance your sexual enjoyment beyond anything you've experienced before.

Once you purchase and install the proper equipment, using Xcite! touch involves just a few simple steps.

- 1 Wear your touch compatible toy in Second Life
- 2 Connect your compatible vibrator(s) to your computer's USB port and run the Xcite! Touch application.
- 3 You or your partner(s) play with your Second Life touch toy.
- 4 Go wild as your real life toy vibrates in sync with your Second Life toy.

Figure 13 Bridging the Gap between Digital and Physical Worlds (source: www.getxcite.com/touchinfo_v2.php)

Another example of digital to physical reembodiment is a practice of dressing up as one's avatar in offline settings. For instance, during the evening ball at 2007 Second Life Community Convention in Chicago a number of participants dressed as their online counterparts.



Figure 14 Furrries at 2007 Second Life Community Convention

To illustrate, Figure 14 depicts two Second Life residents who belong to the furry community dressed in costumes known as “fursuits.” Furrries represent one of the biggest Second Life communities. As Winterman (2009), in her thorough overview of the community, summarizes:

No standard definition exists but generally furrries are people who have a fascination with anthropomorphic animals. These are animals that are given human traits, like walking and talking. They can be anything from cartoons characters like Bugs Bunny to computer game personalities like Pokemon. The scene has its own art, animation, comic books and literature, but activities are largely conducted online – where furrries adopt “fursonas” for role playing... Some furrries assume animal traits – known as zoomorphism – and identify strongly with certain species. This can range from adopting an online persona to wearing a tail or full-sized fur suits... “Fursuiters,” as they are called, bemoan society’s inhibitions and look admiring at the animal kingdom where creatures have more freedom to be expressive. Touching, petting, hugging and “skritchng” (lightly scratching and grooming) is common at social gatherings. And most do not remove their costumes in public areas, to prevent breaking the illusion. “There’s a magic moment when you put a costume on and see yourself in the mirror,” says Mr. Woods [one of the interviewees]. “It’s simultaneously disorienting and exhilarating. You actually do feel that you’ve changed for just a moment.”

Even though their distinct visual identity and uninhibited, animalistic behavior frequently makes furrries the focus of various attacks, the act of wearing the costume is transformational, as Winterman’s interviewee Mr. Woods makes clear,. Similarly, in my fieldnote from the 2007 Second Life Community Convention, in a Chicago hotel, I noted:

It’s amazing how “normal” people who wore regular, conference-like clothing completely transformed their appearance and demeanor within the span of just few hours. I can’t recognize people with whom I had conversations this afternoon and even if I insisted on them revealing their human identity they would refuse to break the character. It’s impossible to interview them when they are doing their furry performance. (Fieldnote, 2007 Second Life Community Convention, Chicago)

When dressed in “fursuits,” people completely took on their furry characters. They displayed behavior that could be described as more animalistic and less inhibited, typical of how furry avatars act in Second Life. It can be argued that a fursuit acts as a catalyst for this metamorphosis and therefore is a crucial element of digital to physical reembodiment. This also explains why obtaining a realistic-looking fursuit is highly desirable, yet quite challenging, as reflected in the following post:

Just as an aside, do any of you realize how much one of those fancy “Mascot costume” fursuits costs? I looked into it once. A decent one, with a full-body suit and a well-made head, can easily start at more than TWO THOUSAND US DOLLARS! And that is without getting into options like eyes that blink, mouths that move, tails that wag, or voice changers... Sure, if you can sew and are an artist, you might make one yourself for less, but the ones that you look at and go “Wow!?” That is one heck of a lot of money that just walked into the room.

Hummm. Buy a fursuit, or a new computer? No contest. And no fursuit, for me. *grins* I’ll settle for my little fur fox tail, hanging down the back of my skirt. And maybe a headband with some fox ears on it. (Ceera Murakami, forums.secondlife.com, 10-04-2007)

This post reveals the significance of getting as close to the digital simulation as possible, by paying attention to specific details of a furry appearance (“eyes that blink, mouths that move, tails that wag”). Unfortunately, as Ceera notes, it comes at a price that many find prohibitive.

In his book *I, Avatar*, Meadows (2007) shares his observation that people’s Second Life avatars are vehicles for tentative identity experimentation. Given the evidence presented above, it can be argued that consumers’ willingness to reembody their

avatars in the physical world is a logical extension of their identity experimentation in Second Life. As one of my informants pointed out:

When I dress up as my furry [avatar] I want to be a furry, see what it feels like to be able to do all these things [I do in SL]. (FurBall, 2008 Second Life Community Convention, Tampa)

Normally, displaying the uninhibited behaviors typical of furies would not be acceptable in the physical world. However, by putting the fursuit on, FurBall and other furies attempt to escape the social imperatives governing our everyday lives and, at least for a moment, recreate their Second Life experience. Thus, the physical reembodiment of an avatar usually occurs when an identity experiment in Second Life has proved so satisfying that the consumer chooses to extend the experience into the physical world.

To summarize: While the process of physical to digital reembodiment makes digital worlds material by giving consumers a locus (e.g., an avatar) for a visual recreation of their identity in digital worlds, in the process of digital to physical reembodiment digital worlds become material as people recreate, reenact, or extend their avatar experiences into the physical world using various materials and technologies.

4.5 Digital to Physical Rematerialization

Digital to physical rematerialization refers to the process of recreating aspects of digital objects (or reifying the consequences of digital practices) in the physical world. Consumers usually engage in this process to substantiate their digital presence as consequential for the physical world. Substantiation can preserve evidence of their digital lives from annihilation, or help them share aspects of their digital lives with significant others who are not a part of their digital existence.

Digital to physical rematerialization is most evident in Second Life residents' efforts to make tangible digital artifacts from their Second Life existence. During the 2007 Second Life Community Convention, I met an entrepreneur who created "Fabjectory," a business catering to this very need (see Figure 15). Here is how the owner describes his business concept:

It started off as something that I wanted for myself, to take creations that are done in Second Life and use Second Life as a general 3-D modeling tool to create real life items. So, you know, we created some basic prototypes and investigated some of the different graphic prototyping models, and they all went really bad. They were very tiny and one color, and no details. So now we were able to form a partnership with Z-Corp who is the manufacturer of 3-D printers that we use. So their 3-D printing process actually creates full-color 7-inch high models for all of our customers and they all seem to really like it because is digitally re-created just like from an inkjet printer. You got very fine details, fine textures, text and lettering and all the things that [customers are] really interested in spending a great deal of time in SL. We are very excited about being able to take all the creativity that people have in Second Life where everyone is a 3-D modeler and open them all up to bringing items into the real world as well. (Mike Fabjectory, 2007 Second Life Community Convention, Chicago)

Mike's attention to detail reflects some consumers' investment in rematerializing an intricate replica of their avatars. Many clients who placed orders for a 3-D print of their avatar talked about it in a manner that resembled creating a bust of an ancestor – demonstrating heritage, and displaying pride. In my fieldnote from the event, I noted:

People who were inquiring about Fabjectory's services revealed something interesting about their involvement with their avatars. Some, while asking about the precision with which avatars are 3-D printed, went into great detail telling how much time it took them to attain the SL look

they desired and stressed how disappointed they would have been if the physical copy didn't reflect their SL presentation. From the way they talked I gathered that the relationship between them and their avatars was very intimate. These were more discerning customers. Other potential customers focused on how valuable the experience of having something to remind them of their "virtual" lives, would be. Interestingly, many of them were individuals who run businesses in SL and for them their avatars represent their brand. (Fieldnote, 2007 Second Life Community Convention, Chicago)



Figure 15 Rematerializing Avatars (source: Fabjectory)

Following Mike's business concept, many other Second Life designers tried to capitalize on the popularity and appeal which their merchandize had attained in-world. Over the years, as the price of 3-D printers dropped and companies providing 3-D printing services proliferated, digital to physical rematerialization became possible on a larger scale. For instance: Maxi Gossamer owns "Gossamer Jewelry," a well-known Second Life destination for jewelry and accessories. Motivated by her success in-world, Maxi decided to rematerialize a line of her jewelry by printing it 3-D via a service called shapeways (see Figure 16). When the story about Maxi's leap from Second Life to the physical world was covered by the New World Notes, a reputable Second Life blog, one reader commented:

I'd really love to get my SL wedding ring 3D printed, especially since my husband and I met in SL, married in SL and in RL, and we're still married and still very much in love. Our rings in SL were custom-designed by Jackal Ennui in 2007, and our real life wedding rings are similar to the SL rings, though not nearly as beautiful as the ones Jackal made for us. Thanks for the story. This is definitely something to think about. (Sansarya, nwn.blogs.com/nwn/2012/12/3d-printing-sl-to-rl.html, 09-13-2012)



Figure 16 Maxi Gossamer's Jewelry, Digital and Physical (source: maxi-gossamer.blogspot.co.uk/2012/12/maxi-gossamers-second-life-jewellery.html)

The comment cited above illustrates the significance that rematerialized digital objects may have for their owners. For Sansarya, the physical copies of her Second Life wedding rings preserve valuable memories. Even "though not nearly as beautiful" as the digital originals, the rematerialized rings are a constant reminder of how she met her husband, fell in love, and got married.

Similar to 3-D printing, some users rematerialize their Second Life existence in the physical world through self-made artifacts, such as printouts of screenshots from Second Life. Second Life residents often adorn their physical desks and rooms with printouts of avatars, buildings, and spaces from the virtual world, as well as other digital creations. I became aware of this during an interview, when I noticed an interesting desktop background image on my participant's laptop. The image depicted a work table with sheets of paper affixed to the wall right behind the computer. I noticed that the presentation of printouts resembled a display of family photos on a mantelpiece. In reply to my question about the meaning of these printouts, I was told:

You know, every time I'd build something cool I would like to show it to my mom. She doesn't get it... this whole virtual thing freaks her out... so unless I get her to look at the screen or print it out, she can't admire my work. I guess it's like taking a picture to capture the memory of something. Besides, having some really good shots makes a great portfolio. I had people who didn't know I was a designer come over and ask me about the pics and my work. (Celine, 2009 Second Life Community Convention, San Francisco)

Here Celine explains how the act of printing out her creations and displaying them in a visible place authenticates and legitimizes her claim to being a "real" designer. This form of rematerialization allows residents to anchor their Second Life presence in the physical world. It is also aimed at people from the outside, as it offers them a glimpse into the creator's life in a digital world; it also presents a story (e.g., about being an authentic designer). Van Dijck (2007, p.21) calls such stories "mediated memories," defining them as "the activities and objects we produce and appropriate by means of media technologies, for creating and re-creating a sense of past, present, and future of ourselves in relation to others." Through digital to physical rematerialization, mediated memories of Second Life residents' lives can enter their physical lives. The demand for commemorating precious Second Life moments has given birth to a whole new in-world profession — the Second Life photographer — and boosted the production of "machinima," a genre of animated movies set up in digital environments.

The process of digital to physical rematerialization is premised on the fact that to a certain extent Second Life residents treat their digital possessions as "real." During my fieldwork, I noticed that Second Life residents refer to the digital images and representations which constitute digital worlds as they would refer to tangible objects (cf. Slater 2002). As an illustration, consider the following, the response to a question I posed about the rationale for buying digital possessions:

Well, I don't need any of the stuff that I get here...but my avatar does! How am I supposed to show up to a party without a great outfit? You know, when you are a newbie it is soooo obvious and people tend to ignore avatars who don't work on the way they look. So these things I have in my inventory are real and useful for my avatar. You can buy them and you can sell them, you can give them to someone. It's annoying when people ask you why you spend real money on fake stuff.... (Mike T., 2010 Second Life Community Convention, Boston)

This quote demonstrates the reified nature of digital possessions in Second Life. Specifically, digital possessions undergo reification (i.e., acquire meaning similar to physical objects) in the context of the avatar's life and in this way become relevant to his controller in the physical world. As Mike T. points out, "I don't need any of the stuff... but my avatar does!" For Mike, a certain configuration of pixels represents a functional outfit for an avatar's night out in Second Life.

Reification of digital possessions is also important for understanding acts such as digital theft. In a digital world, where ideal replicability of objects exists and there are no scarce material resources, traditional notions of theft as removing the owner's access to personal property are problematic. "Stolen" digital possessions are copied in an unauthorized way, yet their rightful owner is not deprived of them.

The following example illustrates this issue. *The AvaStar*, a Second Life tabloid modeled on *The Star*, carried an article about a campaign launched by in-world designers protesting the "theft" of their intellectual property rights to objects (e.g., avatar designs and body skins) which they had produced in Second Life (see Figure 17). Long hours of work dedicated to scripting digital objects were wasted when hackers used a programming glitch to steal and copy the designers' original creations. The stolen content was then re-sold at a discounted price, or even given away as "freebies."



Figure 17 Campaign against Content Theft (source: *AvaStar*, no.63, 02-29-2008)

The underlying problem, Second Life designers believed, was the common fallacy that stealing means permanently taking something away from someone. In order to further the perception that virtual creations constitute (digitally) material property, Second Life designers decided to collectively launch an awareness campaign. The main message rematerialized stolen Second Life content by linking it to consequences in the physical world: hurting the people behind avatars. Simultaneously, a number of successful lawsuits reified digital content as property by demonstrating consequences for violators in their physical lives. Thus, Second Life content creators represented by a Philadelphia-based law firm, Buchanan Ingersoll & Rooney PC, contributed to establishing a legal precedent for digital content protection.

As this content theft example underscores, the scarce resources in a digital world are creativity, skills, and the time necessary for creating digital objects. Thus, the crux of theft in a digital world lies in an absence of compensation for the creator's work and creativity. The initiators of the campaign were able to show that digital creations are material by virtue of the consequences for their creators in the physical world.

However, reification in the process of digital to physical rematerialization is not limited to digital objects alone. Even certain Second Life activities, for instance in-world gambling, can be reified. In Second Life, gambling existed almost from the very beginning, but was simply considered entertainment; winning did not translate into any exchangeable rewards. This situation changed when Linden Lab decided to launch the currency exchange (LindeX) and enabled the exchange of Linden dollars (\$L) to real world currencies, such as US dollars. The newly-opened possibility of converting winnings from Second Life gambling into physical world yields reified Second Life gambling and rematerialized it.

The effectiveness of this rematerialization is attested to by the fact that local and international tax authorities took a sudden interest in Second Life gambling, as gambling remains a heavily-regulated and taxed activity. Consequently, Linden Lab

prohibited in-world gambling in an attempt to obey the legal regulations of the respective countries where the company was present (Konrad 2007).

It is also worth noting that in the process of rematerialization, reification frequently co-occurs with valorization. While reification foregrounds perceptions of “realness” by pointing to consequences in the physical world, valorization attains the same goal by assigning monetary value to Second Life creations and labor performed by residents. In the absence of a physical outcome of one’s work, valorization in Second Life can be problematic. The following reply to a question regarding an appropriate way of “pricing an item” in Second Life illustrates this complexity:

... Apart from what you mentioned, the most important factor we take in consideration while pricing is the time it took us to make the item. An item that only took four hours to make has a lower price then (sic) an item that took 20 hours. (In general, my time spend (sic) on an item is more like 20 hours then like 4 hours.)” (Madeliefste Oh, www.community.secondlife.com, 03-13-2011)

As the above post shows, one way to valorize a digital object is to express its value as a function of the time and sacrifice needed for its creation. Corroborating this point, during a discussion about piracy and theft another informant remarked:

I’ve spent real hours creating my designs. I may be represented by an avatar in Second Life, but the work my avatar stands for is done by my physical body out of a limited resource, which is my time. And it doesn’t matter whether someone copies my original designs or the stuff I bought. It’s stealing. These are my belongings, and I bought it all with the money I earned in-world. (AnnMarie M., 2008 Second Life Community Convention, Tampa)

Like Madeliefste, AnnMarie valorizes her designs in relation to the “real hours” her physical body spent creating them. In this way, she both valorizes and reifies her Second Life work. Valorization can also have other sources, such as the marketplace logic of demand and supply. Thus, the value of digital items is set in relation to readiness to pay a particular price. Continuing the previous discussion about pricing an item, another Second Life resident, Rya Nitely adds:

When I started selling my creations I priced them according to what I would be prepared to pay. I was a resident and customer in Second Life for a long time before I became a seller, and back then I always cringed when I saw anything that cost over L\$1000. I thought really hard before buying so I could keep my hobby as inexpensive as possible. I know what it feels like to want something and see it as being too expensive so I price my items relatively low and always charge under L\$1000. (Rya Nitely, www.community.secondlife.com, 03-16-2011)

Through her long-term immersion in Second Life, Rya had developed a sense of an appropriate price; she applied this valorization logic to setting prices for her own business. In contrast with the previous instances of valorization, this example highlights the significance of customer perceptions for assigning value to digital objects.

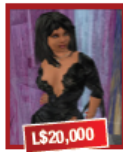
Interestingly enough, valorization logic is also reflected in the remuneration discrepancies between different Second Life occupations. As Figure 18 depicts, Second Life labor is valorized accordingly to the time, skill level, and creativity necessary to complete the task. Consequently, an Second Life scriptor (an object programmer) earns in a day as much as a camper (an avatar who just sits in a location to create traffic) will earn in a week.

FORTUNES IN FASHION

FASHION designers are the best-paid residents in Second Life according to a survey carried out by The AvaStar.

Well-established members of the profession can earn upwards of L\$20,000 a day – around US\$75.

But by and large, SL workers do not earn enough money to make a substantial difference in RL, as our survey shows:



L\$20,000

Fashion Designer:

L\$20,000 a day and upwards

Wiccan Sojourner has been working as a designer for two years. "Daily, I can make between L\$20,000-60,000. Styles like Goth and lacy/sexy sell the best."



L\$200

Scriptor: L\$200 per hour

Masato Beckham works for a Japanese corporate and earns L\$1,000 per five hours. "I charge L\$50 to install a script, like a sensor to pick up people's names when they enter a building."

Club Owner: More than L\$10,000 per week

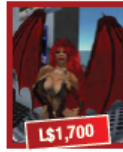
Kitana Eclipse owns Club Xquisite. "Roughly we bring in about L\$1,500-2,000 a day. The money comes from escorts and dancers – we receive a percentage."



L\$10,000

Escort: L\$1,700 a night

Searph LJanfair charges L\$500 for 30 minutes in a small private club, earning L\$1,700 a night. "Oral sex is L\$350 for 15 minutes, and a nude private dance costs L\$300 for ten minutes."



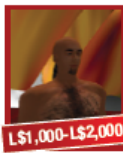
L\$1,700



L\$1,000

Private Detective: L\$1,000 per week

Zachariah Zelmanov owns the I-Spy detective agency. "Because our caseload varies, so does our income, but I don't do my job for the money alone."



L\$1,000-L\$2,000

Artist: L\$1,000-L\$2,000 per week

Snaper Strong makes just enough from selling his artwork to keep his gallery going. "I don't charge other artists to show their work. I pay to stay."

Camper: L\$200 per week
Thunderbolt Voyager camps at various places in SL, and says his earning power is limited. "I'm a rather poor guy. Most areas where I camp I only earn around L\$18 an hour."



L\$200

Greeter: L\$75-100 per hour
Dilbert Dilweg is the co-owner of Phat Cat's Jazzy Blue Lounge. "We pay our greeters L\$75-\$100 per hour, which is what the hosts and hostesses we employ get paid as well."



L\$75-L\$100



L\$100,000

Builder: L\$100,000 for a big build

Amondo Lazarno says the building market varies. "It can change quite a bit based on factors of skill, speed and a good eye for décor."



L\$450

Model: L\$450 per hour

Nell Barrymore charges L\$75 for ten minutes' work, although the job has high overhead costs. "My body and equipment were all extremely expensive."

Figure 18 Valorizing Labor in Second Life (source: AvaStar, no.5, 01-19-2007)

Valorization of labor in Second Life and the ability to convert in-world earnings to physical world currencies offer strong incentives for establishing Second Life design and content-developer companies. As earlier examples demonstrate, Second Life entrepreneurs tend to reify their work in-world as a "real" job. To argue this point, they frequently discuss the impact of their Second Life income on their physical world budgets. One of my informants, Sarah Nerd, explains this in the following way:

A couple of months into it [Second Life presence], I started a club and the club was kinda my hole, so actually I was devoting a lot of time and money to the club. So I started dealing the land to hopefully support my habit and from there my land business grew and grew, and grew. Now I am at the point where I support myself in real life to a certain extent with my land dealing. So now Second Life is just like... I don't know... it's like my life now.

Then, queried about the significance of her Second Life earnings for her family budget, she adds:

Yeah, I'd say I generally make as much as my husband. He is a dispatcher for a trucking company and coordinator... but it's [my income's] not dependable... some months I do and some months I don't, so... (Sarah Nerd, conversation, 2007 Second Life Community Convention, Chicago)

Sarah's perspective on her engagement with Second Life presence shifts from an expensive hobby (a "habit") to a "real" job. Evidently, this shift occurs as her time engagement and effort in Second Life rematerialize as physical world income. Arguably, the amount of her Second Life earnings (i.e., "as much as my husband") also plays a significant role in Sarah seeing her Second Life real estate business as a legitimate form of employment.

To summarize: in the process of digital to physical rematerialization, digital worlds become material by giving digital objects a literally physical existence or by extending the consequences of digital practices into the physical world. This process can be facilitated by reification (i.e., imbuing digital objects and practices with meanings similar to physical equivalents) and valorization (i.e., assigning value, which is actual in the physical world).

4.6 Digital to Digital Interconnection

Digital to digital interconnection refers to the process of interconnecting digital selves and objects across different digital worlds. Consumers engage in this process to anchor, expand, and sustain their online lives across multiple digital worlds. In other words, consumers secure the existence of their avatars and digital creations by maintaining their simultaneous presence in multiple digital worlds.

The reason behind creating digital to digital interconnections and the significance of this process is well illustrated by the unfortunate event described in the following forum exchange:

A very good friend of mine got the message that her account is suspended due to age verification. Now I know for a fact she's 18 + so I was like: WTH?? What can she do about this? She can't login here herself obviously so on behalf of her I'm asking the question. (Mandy Carbenell, forums.secondlife.com, 05-01-2007)

To which another member replied:

This may be a crazy idea, but suppose Linden Labs would INFORM people if they put a ban on them, stating the reason why, wouldn't that help to avoid some of the confusion? (White Hyacinth, forums.secondlife.com, 05-01-2007)

Judging by the language of the initial post, the situation described is clearly traumatic for both the owner of the suspended account and her friend who is actively seeking help. Second Life residents often perceive Linden Lab's actions as arbitrary and unexpected. Given the fact that many residents are heavily invested in being present in Second Life, access to their accounts is a crucial aspect of their digital lives. The next two excerpts reveal the magnitude of emotions that can follow an account suspension:

About July 19 my account in SL was disabled, after having been around for a year or so (note to Linden in case they read this: I just set this account up to be able to communicate as I've been banned from the forums too. I will terminate this as soon as this matter comes to an end somehow).

I am absolutely positive I did nothing against the TOS [Terms of Service], never bought Lindens elsewhere than from Linden themselves, did not harm or annoy anybody. I received no warning and no communication from Linden. I just came home, found I was disabled and that was it.

I filed what they call a support ticket on July 20th. It is now the 24th and noone has bothered just to indicate what the problem might be, let alone provided any solution. I'd be happy just to know that a live person was currently looking after it.

I cannot afford overseas calls just to be put on hold indefinitely.

No idea if someone in charge ever reads this, guess I'll know when they shut down this account too before I can cancel it again.

My current impression is that at a certain point companies become so huge that they do not have to care for the individual customer any more.

Why am I actually writing this? No idea. Maybe it's the faint hope that someone at least checks forum entries for abusive messages and reads it... any comments from more experienced users would be welcome too. (Sindri Jarvinen, forums.secondlife.com, 07-24-2008)

Sindri seems to be facing a Kafka-esque situation. He does not know the reasons behind his Second Life account problems, and his attempts at contacting Linden Lab to find out why his access was terminated are futile. His post reveals feelings of helplessness ("Why am I actually writing this? No idea."), frustration, and undeserved punishment ("I did nothing against the TOS"). Second Life forum members were quick to respond to Sindri's cry for help with their own horror stories and words of sympathy. However, one post stands out in the whole thread:

Sindri, I feel for you. A friend has just gone through this experience, for no reason whatsoever! He found that his account was inaccessible. He is one of the nice guys and had not done anything wrong or done anything to anyone. He was never sent an email or anything to explain why this had happened.

He sent in a ticket asking them to help and asking why had it happened. They just ignored that! He sent another ticket which remained unanswered. So he sent a third one as this time he was panicking a bit. They answered that. Told him not to write anymore and that he was spamming their system sending in these tickets! That really upset him. He tried Live Chat three times and each time he hung on and hung on and no-one "Chatted" to him once it had been opened up. He "Chatted" to them but got no response each time.

He also asked them if they were still taking his classified payments because he could not get in to cancel the ads. They ignored that. He asked them if he was still getting his stipend. They ignored that. He asked them if the payments that were being made to him for rent were in fact coming to him or going to them. They ignored that!

Just as much as it was out of the blue that his account got disabled, with no warning, no message, again out of the blue, he could get back in. He feels they stuffed up somewhere, but he was so upset by this treatment that he came back, sold all his land and said he had lost his enjoyment of the "game" and it was thanks to us, his friends, we are the only reason for him staying. Unfortunately, apart from the couple of times he came in to sell his land and catch up with us, we haven't seen him here since! I think he is just not going to come in anymore which is such a shame as he is such a lovely guy and was always good for a laugh.

He may well answer this himself if he is still reading the forums. I am fairly sure he won't mind me mentioning this. It is good that people are alerted to the fact that this can happen any time without warning and if you spend a lot on tier, adverts and so on, you stand to lose everything if you don't get back before they close your account permanently. Which is one of the reasons why he sold his land, apart from all the dismay he felt. (And must still be feeling as he just doesn't come in - if you are reading this, your friends miss you so much)!!

I wish the best to you Sindri, although I can't really help with suggestions for your best way to deal with this. Maybe like my friend, you will find out of the blue, you can get back in again. Just keep trying. (Honeysuckle Humby, forums.secondlife.com, 07-24-2008)

Similar to many others, Honeysuckle, the author these words, responds with a post of commiseration. Despite the fact that the events described above did not concern her directly, her long, detailed, and emotionally-charged account of a friend's misery attests to the fact that the whole situation was also disruptive to her. By stating: "we are the only reason for him staying," Honeysuckle divulges the real value of having access to Second Life – ability to maintain one's social life.

To avoid the fate of residents whose accounts have been terminated, many Second Life residents create blogs, Facebook, Twitter, Instagram, and YouTube accounts for their avatar identities (see Figure 19). They also create Flickr photo streams of their avatar's ever-changing appearances, fashions, and whereabouts. For communication among avatars, they use Skype, mobile text messaging, and various instant messaging applications beyond Second Life software. Having other digital outlets where an avatar's identity can be performed assures that residents will always have access to at least some aspects of their digital identities and their digital lives.

The image shows a survey question from Facebook.com/secondlife. The question is "What other social networks, sites or apps are you sharing your Second Life on?". Below the question is a list of social media platforms, each with a checkbox and a three-dot menu icon to its right. The platforms listed are Facebook, Google+, YouTube, Twitter, Flickr, Blogspot, Tumblr, OpenSimLife, and Plurk. At the bottom of the list is a text input field with a plus sign and the text "Add an answer...". Below the input field is a link that says "15 More". At the bottom of the survey box, it says "Asked By" followed by a name and "471 Votes · 19 Followers".

Figure 19 Popularity of Social Networks among Second Life Users (source: facebook.com/secondlife)

Second Life residents frequently resort to complex identity management strategies. For example, one of my informants, Drawdweeb Latte, has two sets of social media accounts: one for his avatar identity, and a separate one for his corporeal persona. Drawdweeb maintains the separation because of his professional work outside of Second Life. However, multiple digital outlets where his avatar identity is present

provide him with an opportunity to showcase and discuss his Second Life creations with different audiences outside Second Life.

The process of anchoring and orchestrating one's digital identity in multiple digital environments is constant work. The danger of falling prey to the fluid and temporary aspect of digital worlds is well illustrated in the following blog post – a response to Facebook's efforts to enforce its Terms of Service (TOS) and shut down the profiles of users of non-authenticated identity.

Logging into Facebook today was like logging into a virtual funeral. I watched connections drop ten at a time until I lost roughly 70. Yes, Facebook deleted 70 of my connections, but sadly thousands of accounts have actually been deleted. About three and a half years ago I heard a rumor that Facebook was going to begin sifting through accounts and start deleting Second Life avatar profiles. Well over three years later they have kept that promise leaving many of my connections baffled as to where their Second Life friends have gone. (Kim Randall, blogger, www.kimrandall.me)

In the quote above, Kim bemoans the loss of her extended communal self as Facebook destroys her social network by deleting "unverified" accounts. It seems that the possibility of being discontinued constantly threatens digital identities. However, since the fatal events described by Kim, the social networking site has revised its TOS and even allowed the creation of an official Second Life Facebook page (see Figure 20).



Figure 20 Official Second Life Facebook Page (source: [facebook.com/secondlife](https://www.facebook.com/secondlife))

Interconnections in digital worlds and especially social networking platforms enable users to preserve their avatar identities. Multiple interlinkages across different social media minimize the risk that an avatar identity can collapse and totally disappear. They can also serve as memory reservoirs and document the past, present, and envisioned future of online identities. In this way, Second Life residents not only keep their identities anchored, but also make those identities broadly accessible to different

audiences, independent of any one digital world. Thus, an avatar's life may extend far beyond the boundaries of Second Life.

Another example of digital to digital interconnection is the OpenSim initiative, otherwise also known as interoperability. In October 2007, the Reuters news agency in Second Life published a news story about IBM and Linden Lab's efforts to enable borderless travel across different digital worlds. Having realized that a large number of Second Life users are simultaneously present in other digital environments, the two companies started exploring possibilities of avatar travel across different platforms. Even though the OpenSim initiative did not become a prevalent mode of digital existence, it was an important step in acknowledging Second Life residents' effort and desire to maintain consistent online identities across different digital venues.

To summarize: the process of digital to digital interconnection materializes a digital world by interlinking or replicating avatar identities and digital objects across multiple digital worlds; such as personal websites, blogs, and social networking sites. The assemblage of digital avatars, objects, and their interconnections is more material than any single element can be, because the bulk of the constellation can persist in cyberspace even when a platform terminates an individual's account or a company goes out of business.

The five processes discussed in this chapter illustrate how digital worlds become material to their inhabitants. The following chapter puts the main findings of the study into perspective by positioning them in the larger conceptual debate about digital materiality. Then, it presents a discussion of the theoretical and methodological contributions to consumer research and digital consumption studies offered in the present work.

5 DISCUSSION

This chapter begins by summarizing the study's main findings and discussing its primary contribution: a conceptual framework that illuminates connections between the physical and digital worlds, and identifies processes through which digital worlds become material. Thereafter, other theoretical contributions of the study are discussed and followed by a presentation of the methodological contributions to consumer research and digital consumption studies. The chapter ends by presenting the managerial implications of the current study, and outlining avenues for further research.

5.1 How Digital Worlds Become Material: A Conceptual Framework

The inception of this research project was motivated by an attempt to explain why, in digital worlds, people buy “virtual” (meaning unreal) stuff with “real” money. In the course of this investigation, it became apparent that what was happening in the digital world was not unreal. More importantly, it seemed that perceptions of “realness” were relative to one's vantage point: looking from the inside, or the outside, of the digital world. If then, for some people, digital worlds were material (i.e., significant and consequential for their offline lives) and experienced as “real,” the question was no longer whether they are material, but how they become material (see Figure 21).

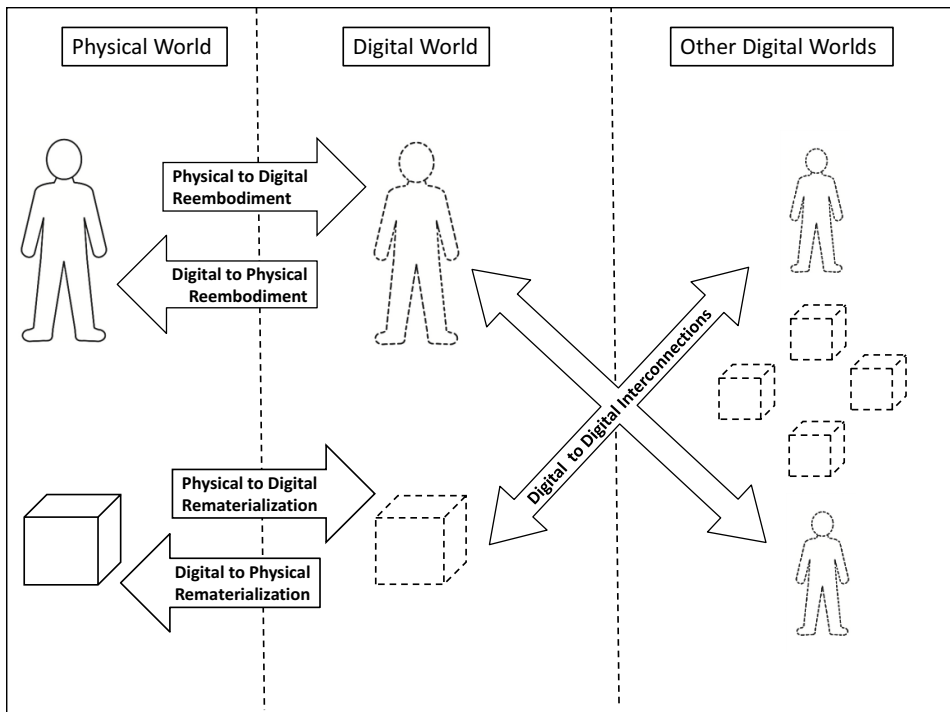


Figure 21 How Digital Worlds Become Material

The stage for addressing this question has been set by previous research. As Denegri-Knott and Molesworth (2010, 2012) have demonstrated, to understand consumer behavior in a digital world, we have to acknowledge the simultaneous presence of the physical world and consumer imagination (i.e., the virtual) as factors shaping digital consumption. The space in which digital consumption occurs is a hybrid of the physical and virtual worlds – for example, it is observable outside consumer subjectivity, and it allows for the existence of imaginary creations. In other words, it is “somewhere between the imagination and the material” (Denegri-Knott and Molesworth 2010, p.110). Owing to its unique characteristics, in the present work this space is referred to as digital materiality.

Beyond delineating the three domains (i.e., physical, digital, and virtual) that converge in digital materiality, Denegri-Knott and Molesworth (2010) also notably account for how the virtual is materialized in digital materiality (i.e., in practices which actualize consumer daydreams and fantasies and enable experimentation). Yet, in their conceptualization of the interplay between digital and physical materialities, the authors only allude to the materializing potential of consumer desire stimulated by digital interactions, and the financial flows that connect the digital and physical worlds. Therefore, the conceptual framework proposed here extends Denegri-Knott and Molesworth’s (2010, 2012) foundational work by focusing on the interplay between digital and physical materialities and demonstrating its materializing potential. This interplay is exemplified by the five processes briefly discussed below.

The first process is physical to digital reembodiment. This process is defined as the reconstitution of aspects of the embodied (physical) self into a digital self or selves. Examples of this process in Second Life include the creation of an avatar, or of profiles, skins, and outfits. Avatars are enduring visual representations of consumer fantasies, fashions, and feelings (Meadows 2007). According to Taylor (2002), avatars make consumers in online virtual worlds more “present” to themselves and others. Avatars, and their presence in digital worlds, are made even more material by the extensive time and energy that consumers invest in creating them, and in cultivating relationships with the avatars of others. Consumers are motivated to engage in this process to have a locus for online identity play and experimentation.

The second process is physical to digital rematerialization. This process is defined as the transferal of aspects of physical objects to digital worlds. Second Life examples of this process include taking pictures of people in the physical world for an avatar’s digital album, or using physical world terms for Second Life equivalents, such as “inventory” and “chat.” In essence, digital environments are made material by both the creation of digital mementos of the physical world and the presence of links to it (e.g., material metaphors and perceived affordances of objects). Consumers are motivated to engage in this process to establish feelings of continuity and stability between offline and online worlds. Thanks to digital replicas of treasured possessions, and familiar concepts for novel surroundings, consumers can quickly and smoothly acculturate to the world of Second Life.

The third process is digital to physical reembodiment. This process is defined as the incorporation of aspects of the digital self (e.g., experiences) into the embodied (physical) self. Consumers are motivated to engage in this process to extend an avatar’s online experiences into the offline world. Second Life examples of this process include dressing up as avatars in offline settings, or using teledildonics to experience sex among avatars. While the first process, of physical to digital reembodiment, makes digital worlds material by giving consumers’ experimental selves concrete visual

representations in Second Life (i.e., avatars), this third process, of digital to physical reembodiment, makes digital worlds material by extending consumers' digital experiments into physical world reenactments and, by doing so, authenticating them as material.

The fourth process is digital to physical rematerialization. This process is defined as recreating digital objects (or reifying the consequences of digital practices) in the physical world. Examples of this process include 3D-printing one's avatar or Second Life jewelry, as well as printing out screenshots of Second Life creations. The process of digital to physical rematerialization makes digital worlds material by giving digital objects a literally physical existence or by linking digital practices (e.g., Second Life gambling) to outcomes in the physical world. This process is facilitated by reification (i.e., treating digital objects as tangibly material) and valorization (i.e., materializing digital objects and practices by assigning value in the physical world). Through this process, consumer digital practices become consequential offline. Material instantiation (e.g., a 3-D avatar) can preserve aspects of consumers' digital lives from annihilation, or help them share online lives with significant others who are not a part of their online existence.

Lastly, the fifth process is digital to digital interconnection. This process is defined as interconnecting digital selves and objects across digital worlds. Examples of this process include creating Facebook, Twitter, and YouTube accounts for one's avatar identity. The process of digital to digital interconnection helps make a digital world more material by interconnecting or reproducing digital avatars and objects across multiple technological platforms and diverse social media. The constellation of digital avatars, user profiles, digital objects, and their interlinkages is more material than any single instance can be, because the bulk of the assemblage can persist in cyberspace, even after a digital world terminates an account or the company behind a digital world goes out of business. Consumers are motivated to engage in this process to anchor, expand, and sustain their online lives beyond one specific digital world.

It has been evidenced throughout this work that digital worlds have materiality for the consumers who inhabit them. Yet, as the findings of this study show, digital materiality is not an innate, unchangeable quality, but rather emerges when consumers move between the physical and digital worlds. As the proposed framework illustrates, materiality in digital spaces emerges when consumers (1) transfer their bodies, identities, or selves (i.e., reembodiment); or (2) transfer their possessions, props, or other objects (i.e., rematerialization). The originality of this conceptualization lies in the fact that it allows for the bi-directional nature of this transfer: from the physical world to the digital world and from the digital to the physical world. Another unique feature of this framework is that it also accounts for the emergence of materiality when one digital world becomes interconnected with another by a transfer of identities and objects.

Such conceptualization has two major consequences. First, defining the nature of digital materiality as emerging and ontologically open (cf. Kallinikos 2010; Zwick and Dholakia 2006) means that it has to be perpetually maintained by consumers as they engage in reembodiment, rematerialization, or building digital interconnections. Such consumer engagement results in new forms of consumption. Thus, even though digital materiality is often associated with dematerialization and a decrease in physical consumption (cf. Magaudda 2011), consumers in digital worlds are constantly faced with new forms of non-physical consumption.

Second, acknowledging the materializing potential of digital to digital interconnections provides an alternative explanation to the rapid proliferation and growing popularity of technologies such as smart phones and tablets. If one form of digital materiality triggers the presence of other digital materialities, then the more forms of digital materiality consumers have in their life, the more they experience a need to be anchored in their material backbone, digital devices.

The next section discusses further theoretical implications of the proposed framework.

5.2 Theoretical Implications for Consumer Research and Digital Consumption Studies

In this section, I issue a number of theoretical challenges, extensions, and refinements to the fields of consumer research and digital consumption studies. The development of this typology, consisting of five processes that explain how digital worlds become material, sheds new light on a number of related topics investigated in consumer research and digital consumption. This overlap enables me to draw theoretical conclusions beyond what is currently offered by the existing literature in both fields. The following subsections raise important questions about the current use of terminology (e.g., rematerialization vs. dematerialization), problematize the notion of a digital cornucopia of brand imagery, and advance understanding of identity management beyond issues related to aligning online and offline identities. Moreover, they add to an understanding of sources of digital identity, consequences of ubiquitous presence of digital worlds in geographically constrained realities, and motivations behind sharing digital images of physical surroundings in digital worlds. The penultimate subsection corroborates previously-raised claims (e.g., Denegri-Knott and Molesworth 2010) regarding the significance of digital worlds as venues for experimentation beyond physical-world norms of acceptability. The final subsection examines how constant engagement with reembodiment in digital worlds impacts consumers' ability to adapt to the changing conditions of digital existence.

5.2.1 Dematerialization versus Rematerialization

In prior research, the transformation of physical objects in the offline world into digital objects in the online world is widely known as dematerialization (e.g., Belk 2013). In line with arguments of Magaudda (2011) and Denegri-Knott et al. (2012), I argue that dematerialization is a confusing misnomer because the concept inaccurately suggests that objects lose materiality in digital worlds, which runs counter to my findings. As Belk (2013) himself notes, dematerialized goods are not lacking materiality, but rather acquire new forms of materiality that enable new ways of acquiring, collecting, distributing, consuming, and sharing.

In my research, I show that rematerialization is a much more valuable and accurate conceptualization of this process, because it focuses researchers' analytical attention on what is left of an object after its movement from the physical world to a digital world, rather than on what is lost (i.e., in most cases, tangibility). Therefore, just as acquiring a digital body (avatar) in digital worlds is "re"-embodiment, so too object representation in digital worlds is "re"-materialization – a process of recreation in a different regime of materiality. I add to Magaudda's (2011) work by showing how the same object travels

between different regimes of materiality and how this process is facilitated by the presence of material metaphors and perceived affordances. My findings confirm observation made by Denegri-Knott et al. (2012) that consumers engage in rematerialization in order to preserve the relationship with the object and its meanings.

5.2.2 Brand Associations in Digital Worlds

Schau and Gilly (2003) posit that in real life, consumers' associations with brands are limited by financial and proximal factors, but no such limitations exist online. Their finding was based on observations circa 2000, and that date is significant. My research was conducted circa 2010, a decade later, and digital worlds developed rapidly during that time. I found that Schau and Gilly's claim remains true for some digital worlds, but not all. Over the course of my research, the digital world of Second Life became increasingly populated with commercial forces, including brands long established in the physical world (e.g., BMW, Nike, Sony, etc.) as well as emergent brands (e.g., Corrupted Innocence, 1 Prim Wonders, FAD, Kakaue Kreation, Renegade, etc.). Avatars in digital worlds cannot associate with these brands as freely as Schau and Gilly's (2003) research might suggest. Many cars, fashions, and other lifestyle goods and services produced by these in-world commercial brands are not free, and some brands are not proximal; they can only be accessed by special forms of in-world travel. Looking back, it seems as though Schau and Gilly's (2003) findings are evocative of early discourses of a free and open Internet. By contrast, my later findings in Second Life are more evocative of a hybrid Internet, in which certain forms of brand associations are free and unlimited while others are costly and exclusive.

5.2.3 Realism versus Fantasy in Digital Self-Presentation

Schau and Gilly (2003) also find that the digital collages many consumers produce on their websites mostly reflect consumers' current physical realities, rather than fantasies. By contrast, my research finds that consumers' digital lives in Second Life are far more fantastical than Schau and Gilly report. Avatars and their digital homes, for example, are often radically different from users' physical selves and homes: a man living in suburbia with his wife in the physical world may be a woman living in an apartment in Second Life. This issue is well covered by Denegri-Knott and Molesworth's (2010) foundational work on digital consumption where they discuss the practices: actualization of consumer fantasy, and experimentation. I add to their work showing that consumers sometimes want to extent their digital consumption practice and embody the experience in physical world.

5.2.4 Online Identity beyond Digital Bodies

Taylor (2002) explains that digital bodies (i.e., avatars) serve to “root us and make us present, to ourselves, and to others” (p.41), thus making experiences in digital worlds more “real.” My research extends her explanation of the importance of digital bodies in significant ways. I show that consumers can root their avatar’s lives well beyond a single digital embodiment in a single digital world. Digital worlds and their interlinkages enable consumers to root an avatar’s life across several digital worlds at once. For example, an avatar can be primarily rooted in Second Life, but also actively participate in discussions with friends on Facebook, Twitter, and YouTube. Such digital to digital interconnections can be understood as avatars’ secondary and tertiary “roots.” This observation is significant because it enables avatars to make consumers simultaneously present to multiple others in multiple digital worlds. Moreover, if an avatar is deleted or eliminated in one digital world, it can nonetheless live on in others.

5.2.5 Omnipresence of Digital Worlds and Legal Regulations

Cotte and Latour (2009) examine the similarities and differences between offline and online gambling. They find that online gambling is a major social problem because it is more accessible than offline gambling, while the financial and psychological consequences are just as material. In my research, I discovered that gamblers in Second Life initially had a choice to gamble in a variety of venues, until 2007, when Second Life banned gambling. Second Life’s reasons for banning gambling are revealing. On the one hand, Second Life is committed to allow all types of Second Life activities to flourish. On the other hand, Second Life is obligated to meet the regulations of all the countries where its users reside. The plurality of gambling regulations across the world proved too difficult for Linden Lab to manage, so they banned gambling (Konrad 2007), angering some consumers and losing potential profits.

Together, Cotte and Latour’s (2009) study and my research show that online gambling has material consequences both for producers and consumers of digital worlds. Far from being a free-for-all frontier for unbridled fantasy, digital worlds are slowly but surely becoming extensions of physical worlds. While Cotte and Latour (2009) emphasize the amplified negative consequences of online gambling for consumers, my research discovered the amplified negative consequences of online gambling production in Second Life. If an entrepreneur develops a casino in the physical world, he or she must only follow local regulations. However, as the producers of Second Life and in-world entrepreneurs learned, they must not only follow local regulations where their own offices are headquartered, but also follow local regulations where their users are located.

5.2.6 The Comfort of Familiar Stuff

In their study of an online design community (Apartment Therapy), Arsel and Bean (2012) demonstrate how consumers experiment online with the decor of their offline homes. They upload photos for online critique and discussion, and then revise their interior decors, in a continuing cycle of design, discussion, and re-design. My research showcases a parallel phenomenon of interplay between the physical world and Second Life spaces, but with important caveats. As in Arsel and Bean’s (2012) study, my study also shows that consumers upload photos of their offline surroundings. However, the purpose of these uploads is not to invite critique and discussion, but to forge continuity

between offline and online lives. Just as consumers might have photos of their primary homes in their vacation homes, and vice versa, so too consumers display photos of their physical-world homes or treasured possessions in Second Life homes, and vice versa.

5.2.7 *Consumer Yearnings for Social Validation*

There are also commonalities between the Apartment Therapy and Second Life communities. In both digital worlds, consumers are yearning to express, legitimate, and share various desires, fantasies, and yearnings that are unfulfilled in ordinary offline life. In the Apartment Therapy community, like-minded consumers negotiate and refine a relatively narrow genre of home design, called soft modernism (Arsel and Bean 2012). In this digital world, consumers need not apologize for their obsessions with the appearance of their interior spaces, their compulsive desires to regularly re-invent their interior decor, or their preferences for a particular mode of interior design. Thus, Apartment Therapy provides consumers with a sense of community, and a place where their aesthetic tastes are fostered, legitimated, and nurtured. Second Life similarly provides consumers with an opportunity to express not just aesthetic preferences, but whole identities, lifestyles, and relationships not possible in the physical world. What both contexts demonstrate is the consumer yearning for spaces in which they can follow their desires and fantasies, and experience social support.

5.2.8 *Avatars as Epistemic Consumption Objects*

This study applies Zwick and Dholakia's (2006) concept of "epistemic consumption objects" to better understand the relationship between avatars and their owners. Epistemic consumption objects are evolving consumption objects that are continually enriched and renewed by consumer interactions and reflections.

Although the primary purpose of avatars is to root or stabilize identities in an online world, my research also finds that consumers keep changing aspects of their Second Life avatars as that avatar interacts with Second Life friends and receives feedback. A conventional explanation of this phenomenon is identity experimentation (e.g., Arnould and Thompson 2005): consumers keep changing their identities because identity experimentation is a social norm in modernity and the age of consumerism. However, viewing avatars as epistemic consumption objects offers an alternative explanation.

Consumers keep updating their avatars because the function of an avatar is to represent one's digital presence, and the purpose of one's digital presence keeps changing as one interacts with others in that digital world. For example, a new user may choose a more standard avatar, to fit into Second Life and explore what happens there. However, as that user makes new friends, finds communities to belong to, and establishes occupational and leisure activities, the function of the avatar changes as well. Now, the function of the avatar is to maintain friendships, individuate in communities, and better perform occupational and leisure activities. To that end, the user may refine their avatar to reflect their friends' tastes, their communal ideals, and their occupational and leisure interests. From this perspective, it is not only consumer identity experimentation but also the evolving practical function of an avatar that drives its continual evolution.

5.2.9 Summary of Theoretical Contributions

The theoretical contributions of my study encompass a wide variety of topics relevant to consumer research and to digital consumption studies. (For a summary of contributions, please see Table 5). Specifically, I advocate a shift in current terminology by replacing dematerialization (which does not capture the complexity of the process) with rematerialization (which allows a focus on what is really significant, beyond the loss of tangibility).

Table 5 Summary of Theoretical Contributions to Consumer Research and Digital Consumption Studies

Topic of Contribution	Status Quo	Theoretical Contribution
Dematerialization versus Rematerialization	The transformation of physical objects in the offline world into digital objects in the online world is widely known as dematerialization (e.g., Belk 2013); more correct would be rematerialization as new forms of materiality emerge in the process of digitalization; Magaudda (2011)	Consumers engage in rematerializations of equivalent objects between different materialities; often this process is facilitated by material metaphors and perceived affordances
Brand Associations in Digital Worlds	Circa 2000, consumers' associations with brands are limited by financial and proximal factors, but no such limitations exist online (Schau and Gilly 2003)	Circa 2010, Schau and Gilly's (2003) claim remains true for some digital worlds, but not all; in Second Life, some branded lifestyle goods and services require payment and require special forms of in-world travel to access
Realism versus Fantasy in Digital Self-Presentation	Avatars and their self-presentation divorced from reality as actualization of fantasy and experimentation (Denegri-Knott and Molesworth 2010)	Consumers' digital lives in Second Life fantastical, yet some of them would like to embody this experience in physical world
Online Identity beyond Digital Bodies	Consumers' digital bodies (i.e., avatars) serve to "root us and make us present, to ourselves, and to others" (Taylor 2002)	Consumers' digital bodies can be manifold and interconnected across Second Life, Facebook, Twitter, YouTube, etc., making consumers simultaneously present to multiple others in multiple digital worlds

Omnipresence of Digital Worlds and Legal Regulations	Online gambling is more accessible and easy than offline gambling, but the financial and psychological consequences are just as material (Cotte and Latour 2009), making online gambling rather dangerous	Online gambling is also more challenging to produce and sustain as regulatory logics change; Second Life entrepreneurs must now not only follow local regulations where their own offices are headquartered, but also follow local regulations where their users are located
The Comfort of Familiar Stuff	In online domestic design blogs, consumers upload photos of their physical homes for online critique and discussion, and then revise their interior decors, in a continuing cycle of design, discussion, and re-design (Arsel and Bean 2012)	In online virtual worlds, consumers upload photos of their physical homes not to invite critique and discussion, but to forge continuity between offline and online lives
Consumer Yearnings for Social Validation	In online domestic design communities, consumers need not apologize for their obsessions with the appearance of interior spaces, their compulsive desires to regularly re-invent their interior decor, or their preferences for a particular mode of interior design (Arsel and Bean 2012)	Second Life similarly provides consumers with an opportunity to express not just aesthetic preferences, but whole identities, lifestyles, and relationships not possible in the physical world; accordingly, this research corroborates the notion that consumers yearn for spaces in which they can follow their desires and fantasies, and experience social support
Avatars as Epistemic Consumption Objects	Epistemic consumption objects are evolving consumption objects that are continually enriched and renewed by consumer interactions and reflections (Zwick and Dholakia 2006)	Avatars are epistemic consumption objects; consumers keep updating their avatars because the function of an avatar is to represent one's digital presence, and the purpose of one's digital presence keeps changing as one interacts with others in that digital world

I also problematize the notion of a digital cornucopia, by showing that building online identities by association with brands is not free for all. Despite the implicit replicability of digital objects, limitations are imposed when it comes to using digital brands. Furthermore, I offer a problematization of the process of identity management (online and offline). As previous research has indicated, in some digital worlds (e.g., personal websites) people try to align their offline and online identities. The findings of my study supplement this view by documenting that consumers are encouraged to treat other digital worlds as vessels for living out their fantasies which can be physically embodied.

Moreover, building on prior understanding of the function of avatars, I extend this discussion by showing that online bodies (avatars) are not the sole source of online identity. That can also emerge and be maintained through a nexus of connections between various digital worlds. This research also clarifies how the omnipresence and geographic unboundedness (i.e., transcending geographic boundaries) of digital worlds can have negative impacts for both consumers and producers (e.g., when global access collides with localized legal regulations).

In addition, this study advances understanding of what motivates consumers to share digital images of their surroundings with others online. Social validation has been discussed as a motivation; to this I add desire for continuity and familiarity. The findings of this project also corroborate a previously raised argument about digital worlds as venues for consumers to express identities, lifestyles, and relationships not possible in the physical world. The final contribution stems from offering a better understanding of the process of avatar creation by linking it to epistemic consumption objects. Consumers' constant engagement with their avatars is not a meaningless, vain activity, but rather an adaptive response to changes in a digital world.

5.3 Methodological Implications

This section discusses how the integration of blended netnography as a method of data collection with the application of grounded theory techniques to ethnographic data analysis can produce insights for consumer researchers. Specifically, these insights should be of use to scholars grappling with a complex phenomenon anchored in multiple settings (e.g., offline and online), as well as those who are struggling with moving their study from "thick," ethnographic description to a conceptually and theoretically developed work.

As discussed in the methodology chapter, both ethnography (e.g., Belk, Sherry and Wallendorf 1988; Wallendorf and Arnould 1991; Schouten and McAlexander 1995) and netnography (e.g., Visconti et al. 2010; Scarboto and Fischer 2013; Coskuner-Balli and Thompson 2013) have been successfully used in consumer research. With the exception of a handful of studies (e.g., Schau and Gilly 2003), however, blended ethnographic-netnographic approaches have rarely been utilized. It is worthy of note that even in cases where studies employed blended approaches, the netnographic part of the study was mainly conducted on forums, notice boards, and blogs. In such spaces, questions of a researcher's reembodiment and level of interactivity with the environment were often not as central to the project.

Online virtual worlds are complex environments: simulated and animated, mediated and interactive. Consequently, observational methods, which are the crux of ethnographic methodology, cannot be directly applicable. Researchers who intend to study these online phenomena have to prepare themselves accordingly prior to *entrée* into the field. They have to amass knowledge about the architecture of an online virtual world (i.e., the way in which it is organized) to be able to put into context its avatars' actions, behaviors, and customs. Certainly, learning everything about the environment is impossible. However, the preparation required before *entrée* is much greater than for other digital worlds such as blogs, forums, or personal websites. In response, the methodology chapter presents a number of issues that would need to be considered at the outset of the study (e.g., what is the appropriate way of representing oneself as a researcher behind the avatar? Do terms of service (TOS) allow for research? What are the options for data collection within an online virtual world?). These guidelines can

assist beginner netnographers in addressing many important methodological issues that may not be apparent at the very beginning of the project.

The uniqueness of this study also lies in the fact that it investigates a phenomenon that crosses many boundaries. Digital materiality is entangled in many dichotomous distinctions: material/immaterial, real/virtual, tangible/ephemeral, online/offline, to name but a few. Undoubtedly, this loaded conjunction of meanings does not allow for a cookie-cutter methodological approach. To map out such a complex phenomenon, the approach has to be flexible and all-encompassing, able to cross multiple boundaries and follow processes where they take place.

Accordingly, while this study started as a netnographic investigation, it evolved into a blended variety of ethnography and netnography in order to account for the simultaneous coexistence of physical and digital worlds. In the course of the study, it became evident that discussing digital materiality separate from the physical world made little sense. Digital materiality is non-autonomous, in that the physical offline world (or its tangible technological infrastructure) is its backbone. Thus, to map out the ways in which digital worlds become material it was necessary to examine links between the online and the offline. It would have been impossible to attain this goal through a pure netnography. This study demonstrates how a blended netnographic method can be used to investigate the nature of a phenomenon that transcends the boundaries of an online context and is linked to a larger social and material world.

Apart from the selection of an appropriate method for researching boundary-transcending concepts like digital materiality, it may be problematic to find suitable sites for offline fieldwork to complement the netnographic data. With the proliferation of mobile communication technology, consumers swiftly move (if not simultaneously exist) between the digital and physical worlds throughout their day. As a result, it is difficult for ethnographers to gain a “big picture” understanding of consumer behavior through fragmented observation. This study offers a solution by pointing researchers in the direction of community- or interest-based offline events. These provide rich contexts for focused observation. My participation in multiple Second Life Community Conventions allowed me to gain insights which otherwise would have been inaccessible without considerable financial commitment, excessive travel itinerary, and multiple weeks’ worth of shadowing informants in their daily lives.

Finally, this study contributes methodologically to consumer research through demonstrating how combining ethnographic fieldwork with a grounded theory approach to data analysis can assist researchers in conceptual development and theory building. As explained in the methodology chapter, this particular methodological combination offers two major advantages over each method implemented separately. First, it offers ethnographers a more explicit set of analytical guidelines focused on generating theory rather than simply presenting a “thick description” of the studied phenomenon. Second, it focuses ethnographic fieldwork. Ethnographers often struggle with the large amounts and varieties of data they collect. This temptation to collect superfluous data is even greater in digital settings, where data can be gathered mechanically (e.g., by downloading whole blogs, forum posts, etc.). Since grounded theory stresses engaging in data analysis early on in the research process, the application of its analytic techniques focuses the study’s data collection and assures that the right kind of data is collected to document and illustrate the findings.

In conclusion: this study demonstrates how the integration of two methodological decisions: a) choice of blended netnography (i.e., ethnography for offline- and

netnography for online settings); b) application of grounded theory techniques to ethnographic data collection; have facilitated the study of a complex phenomenon in multiple settings, as well as advancing the analysis toward theory development.

5.4 Managerial Implications

This section offers a host of managerial implications, which are mapped onto the five processes described in the findings. First, the implications of identity play in the process of physical to digital reembodiment are discussed. Then, insights regarding the rematerialization of certain aspects of the physical world in digital environments are considered. Next is an overview of applicable ideas based on digital to physical reembodiment, which stress the attractiveness of digital experiences. The discussion then moves on to the relevant consequences of digital materiality's inherent instability. The section concludes with a presentation of insights from the process of digital to digital interconnection, uncovering a number of ways in which digital materiality could be stabilized in the absence of an object's physical tangibility.

5.4.1 Insights from Physical to Digital Reembodiment

Based on the findings of this study, as well as prior literature (Markham 1998; Turkle 1995), it is clear that consumers engage in complex identity work in digital worlds. While consumers inhabit a corporeal body in the offline world, in virtual environments they lack an obvious container for their identity. Reembodiment, understood as a process of representing one's presence (e.g., through an avatar) in a digital world, is crucial not only to represent an individual's identity, but also for community formation. Being visible to others is a requirement for establishing sociality – it allows consumers to engage and interact with each other. Taking this observation as a starting point, marketers and online services developers should allow consumers to be represented in online environments (such as online stores) as avatars rather than just nicknames. The process of creating avatars offers many more opportunities to express one's identity and therefore could have a higher likelihood of building lasting attachment between consumers and online services.

Marketers trying to engage consumers online need to provide them with opportunities for identity creation and re-creation. Identity play is a spectrum. Some consumers may want to recreate their offline identities, while others may want to pursue fantasy identities. Assuming more than one identity, which is not uncommon online, means that consumers have to engage in constant identity management. Hence, providing consumers with the resources to pursue any position on the identity spectrum is as important as providing them with tools to successfully manage these identities (whether separate or integrated).

What constitutes these resources will largely depend on the nature of the digital world. In the context of Second Life, for instance, these resources are an avatar's clothing and possessions. It is not surprising, then, that consumers draw on similar symbolic meanings (e.g., brands) when creating their identities. This allows marketers to be a part of this process. Assuming that consumers in digital worlds want to directly incorporate offline brands would be naive: as this study implies, even if present, offline brands are reappropriated and their meanings are reworked in digital worlds. When brands move from the physical to the digital world they have to be ready to become relevant to consumers in new ways. For example: Coke can no longer quench thirst, but

its fun and cheerful brand essence can be translated into a fun and entertaining activity in a digital world.

5.4.2 Insights from Physical to Digital Rematerialization

In the process of physical to digital rematerialization, consumers migrate their physical surroundings into digital worlds. Initially, consumers are trying to achieve familiarity within the new digital environment. This phenomenon is exactly what marketers struggle with when they engage in “advergaming” – integrating advertising with entertainment in online virtual worlds. One of the major managerial concerns when introducing a new online game is gathering a critical mass of users whose interactions can then attract a broader audience. To encourage consumers to participate in advergaming, marketers need to lower the perceived consumer effort and risk of joining in. For example, marketers could shorten the profile creation process and make initial in-world interactions very straightforward.

Furthermore, marketers could allow consumers to customize their virtual environments by bringing in “stuff” from their offline world (e.g., digitized images of their homes and favorite possessions). These familiar markers can help consumers build stronger emotional bonds with their new digital environments. Thus, marketers can increase a consumer’s sense of investment in a new advergaming scenario. To make consumer navigation easier, marketers could also use a number of material metaphors (e.g., in-world mail, online inventories, etc.) to make online virtual worlds more familiar. Intuitive interfaces increase the likelihood of consumer adoption and decrease dropout rates among users.

5.4.3 Insights from Digital to Physical Reembodiment

As the process of digital to physical reembodiment makes clear, consumers are looking for ways to align what is happening in the digital world with their physical world reality. One way this could occur would be through expanding consumers’ online sensory spectrum. In addition to seeing and hearing, some users may want to be able to experience touch, temperature, or smell. Even though there have been attempts to provide consumers with appliances to deliver more stimulation, these design ideas have not yet been developed into commercial products.

In a more figurative way, marketers could bring digital worlds closer to the physical body by allowing consumers to embody their digital lives in physical surroundings, through themed environments (such as an amusement park) or carnivalesque events where certain societal rules could for a time be suspended, creating an outlet for otherwise unacceptable behavior. Often, the fact that online virtual worlds are supported by offline events (e.g., Second Life Community Conventions) is met with surprise. Yet it attests to the value of giving consumers multiple points of material engagement with the digital world.

Finally: events that take place in the digital world impact on consumers’ physical well-being (e.g., Turkle 1995). Therefore, the process of digital to physical reembodiment has the potential to be of significant consequence for consumers. A number of researchers (e.g., Alliance Library System 2010; onlinetherapyinstitute.com) have already experimented with creating virtual “adventures,” therapeutic narratives which, re-lived in a digital world, could help people overcome their traumas in physical

surroundings. Thus, the transformative aspect of reembodyment could help consumers cope with otherwise difficult and stressful situations. By creating digital world scenarios to help model desired responses in physical reality, companies could contribute to societal well-being.

5.4.4 Insights from Digital to Physical Rematerialization

One of the motivating forces behind the process of digital to physical rematerialization is the consumer perception of digital materiality as unstable; for example, emails disappear into cyberspace, virtual possessions vanish irretrievably, and ownership is problematized. This understanding could be key to the development of new products and services. Because of digital matter's design versatility, digital worlds are great venues for unleashing consumer creativity. Consumers often spend long hours perfecting their creations, and the fear of losing them pushes many to create a physical trace of their work. Companies could create a service offering consumers an opportunity to create high-quality physical reproductions of their digital creations. As the findings demonstrate, the presence of these digitally created objects in the physical world has a materializing quality, both for their creators (for whom a lived digital experience is preserved), and for people around them.

Awareness of the consumer propensity to rematerialize digital possessions could be very useful to companies offering digital product (e.g., software), to help counter online piracy and theft of intellectual property rights. Often the culprits do not feel as if they are stealing a movie if they are downloading it for free from the Internet. However, few would consider stealing a DVD of the same movie from a store. Thus, if a company is struggling with piracy issues, it could attempt to use digital to physical rematerialization as a strategy to stabilize the meanings of property and ownership in online environments. For example, a company whose offering is primarily digital could follow up with a consumer regarding their purchase via regular mail and attach a congratulatory paper card with a code, which would offer some kind of user bonus (e.g., the ability to activate extra features in the software package) for purchasing a non-pirated copy.

The significance of digital to physical rematerialization is also visible in the sector of the video gaming industry where the action happens in a digital world. As a diversification strategy, Nintendo, the manufacturer of Wii, joined forces with the developer Activision to launch a game called "Skylanders." The game requires players to use a special "Portal of Power" physical controller to change gaming avatars, which have been physically rematerialized as figurines, like traditional superhero toys. Usually, changing gaming avatars happens on the TV screen with the use of a remote control. In the case of "Skylanders," the presence of these physical components is a crucial element of play. When the game is not being played, these figurines are still physically present in the consumers' offline world, increasing and extending their engagement with the game. The tangible figurines, which represent in-game avatars, could also be used in make-believe play, similar to playing with lead toy soldiers.

5.4.5 Insights from Digital to Digital Interconnections

The process of creating digital to digital interconnections highlights the need to preserve digital identities, objects, or experiences by linking them to other digital "stuff." The growing fragmentation of online social media means that consumers often

have to navigate several digital worlds; for instance, manage a number of profiles on different social networking services. Actively managing and populating these sites with content can be very time-consuming. Hence, instead of raising walls around their own services, companies should enable consumers to move between various services in a more fluid and coordinated way, possibly by linking with services not in direct competition.

Consumption of media, especially TV, has recently been transformed by the presence of the “second screen,” as consumers often use more than one digital medium at the same time. Simultaneous consumer presence in different digital worlds is at the center of digital to digital interconnections. That is why marketers could benefit from streamlining the process of moving between these worlds so as to provide structure and meaning to consumers. For example, companies could increase consumer involvement by developing complementary content (e.g., contests, stories, unique forms of participation) for each digital medium, rather than just recycling the existing content and adjusting its formatting based on the new medium’s requirements.

For a company struggling with piracy issues, digital to digital interconnection may help stabilize the meanings of property and ownership in online environments. For example, when users download an mp3 file by legal means, software such as iTunes allows them to view album art, post their purchase to Facebook, and link to other songs by the same artist. However, these digital to digital interconnections are not accessible to someone downloading a pirated version of the mp3. Thus, digital to digital interconnections give greater legitimacy to the non-pirated mp3.

Finally, any sudden changes to digital content can affect consumer satisfaction and perceived risk levels. It is easy to imagine situations where consumers lose access to features of their favorite software packages (e.g., lists of favorite websites) upon reinstallation. Companies offering digital product services could develop ways to help stabilize consumer perceptions regarding digital offerings. A useful model is demonstrated by publishers of scientific databases; in order to avoid situations where the location of an article suddenly shifts and the consumer can no longer locate it, the publishers provide a DOI link; a stable reference to a digitized copy of a desired document. Additionally, the proliferation of “cloud” storage services indicates that consumers are getting more comfortable with stabilizing their presence in digital worlds by anchoring in other forms of digital materiality.

5.5 Conclusions

This section reviews the main points made throughout the chapter and relates them to a set of broader issues significant for consumer research and digital consumption studies. First, the implications of theoretical development are considered. Then, the discussion moves on to the significance of the methodological contribution. And finally, the section finishes with an examination of the managerial implications.

As discussed earlier, the primary contribution of this research lies in a conceptual framework for understanding how digital worlds become material. The five processes that constitute the framework address various aspects of the interplay between digital and physical materiality, and explore the interconnected nature of digital worlds.

In a very direct way, the process of physical to digital reembodyment highlights the innate human need to have a locus for one’s identity. In physical materiality, our bodies

are the locus for the self. In digitally material environments, this issue is problematized. Having a digital body, or any other form of digital presence, requires effort. Due to the fluid nature of digital materiality, this effort can turn into identity play. Assuming fantasy identities and swapping genders and body types at a click of a mouse all become possible with digital material. However, reembodyment can also turn into hard work, requiring resources; your avatar may need sophisticated new skins, outfits, or gadgets to maintain its social attractiveness. In a digital world, the self is never limited to one body. People can assume multiple avatar identities, trying on new bodies like new clothes.

The process of physical to digital rematerialization brings the known and familiar into environments that are often new and different from consumers' offline reality. Having emigrated from one country to another, migrants find comfort in familiar foods, rituals, and language; so, too, the denizens of digital worlds incorporate the logic of their offline socialization into their digital existence. As they acculturate to the demands of the new digital culture, they are likely to adjust some of their behaviors. However, leaving the old cultural template completely behind does not seem possible. The presence of material metaphors and perceived affordances in a digital world are premised on this assumption.

Avatars can easily explore the fantastic realities of digital worlds. They can escape the limitations of physical bodies, as well as the cultural, social, and economic backgrounds of their creator. Newly minted identities may be very attractive, yet completely unattainable in the offline world. Digital to physical reembodyment hinges on the perceived attractiveness of digital world experiences and the willingness and ability to reembody them in the physical world. Beyond the well-established experiences of telepresence (Steuer 1992) and flow (Csikszentmihalyi 1991), consumers seem to desire complete immersion and multisensory stimulation.

The attractiveness of life in a digital world often triggers a need to preserve and document memories. Rematerializing one's avatar as a physical figurine, or recreating a digital design in the physical world, seem to be serving this exact purpose. Being able to point to a material artifact and tell a digital-world story about it helps bridge the gap between the worlds. Also, by virtue of rematerialization, valorized work and reified gambling in a digital world acquire markers of realness in the physical world.

Finally, digital to digital interconnectedness highlights the growing fragmentation of the digital mediascape. Consumers are simultaneously present in a number of digital worlds. However, such redistributed digital presence has both advantages and challenges. As this study shows, being anchored in multiple digital worlds may be a smart strategic move given the ephemeral nature of digital materiality. It may also allow a more flexible and targeted presentation of one's online identities, as different audiences will have access to different venues. But a complex system of identity management may be a challenge to orchestrate, align and maintain, as anyone who owns Facebook, Twitter, and LinkedIn accounts will recognize.

The five processes mesh with a number of topics investigated in consumer research and digital consumption. The conceptualization of rematerialization in this work, as a process in which matter changes form but does not disappear, problematizes previous uses of the term dematerialization. The myth of online virtual worlds as a digital cornucopia is dispelled, as processes of reification and valorization delineate the scope of exchanges in a digital world. The proliferation of complex digital environments (e.g., Second Life vis-à-vis a website) offers more advanced ways of managing self-

presentation online, and increases the number of outlets through which one can maintain and communicate one's identity. Digital worlds are not easy environments to regulate; both national governments and owner companies struggle to impose regulations onto this borderless phenomenon. Sharing images of one's physical surroundings in a digital world can have different meanings depending on the context in which they are shared. Besides communicating aesthetic preferences, images can instill feelings of comfort and familiarity. Finally, avatar bodies can be construed as venues of epistemic consumption. In an ongoing pursuit of different identities in digital worlds, avatar owners are constantly engaging in adjusting avatar appearances to reflect changes in the meaning of their digital presence.

A final note regarding the methodological choices in this study: it is important to point out that both the context (i.e., a digital world) and the phenomenon studied (i.e., digital materiality) required a number of adjustments to the traditional renderings of ethnography. It should also be noted that traditional observational methods do not have the same functionality in animated online virtual worlds. Additionally, when represented by avatars researchers are faced with the necessity to consciously make choices about their reembodiment. With respect to the researched phenomenon, its lack of clear boundaries and interdependent nature (i.e., digital materiality is embedded in physical materiality) resulted in the decision to extend fieldwork from online to offline settings. Finally, a unique combination of ethnographic data collection and grounded theory analytic techniques was employed in order to turn "thick description" into a theoretically oriented conceptualization.

This study offers some useful managerial insights into the nature of digital materiality as perceived by consumers. Specifically, they highlight the importance of providing opportunities and resources for self-expression and reembodiment in digital worlds. They also stress the significance of tapping into the logic of the physical world and weaving it into the design of digital worlds. This may increase adoption rates as consumers seamlessly operate intuitive interfaces. Also, consumer attachment and loyalty to digital offerings may increase if consumers are able to customize environments with their own digital images. Marketers could deploy devices providing multisensory stimulation, enabling consumers to bridge the experiential gap between simulated and embodied behavior. In the continued commercialization of various digital platforms, such as games and educational software, it is vital to acknowledge the transformative potential of experiences in digital worlds. Finally, digital materiality is often perceived by consumers as unstable. This study shows that introducing physically material touch-points in the process of consumption is an effective method of stabilization. Alternatively, as demonstrated by the findings, marketers could create multiple digital to digital connections in order stabilize digital materiality.

5.6 Suggestions for Future Research

As this study represents a novel approach to understanding consumer behavior in online virtual worlds through the perspective of digital materiality, manifold research opportunities emerge.

First, it would be valuable to investigate whether consumers' experiences are context-specific, or whether they change across different digital worlds. New digital materialities – mobile devices, smart phones, and tablets – have already emerged, and undeniably have significant impact on consumers' lives.

Second, future research could also explore whether consumers' perceptions concerning the nature of digital materiality (stability/instability) are determined by demographics, especially age and education. As the "net generation" (Tapscott 2009) continues to increasingly dominate the Internet, it is possible that familiarity with the technology will also influence this generation's perceptions of digital materiality.

Third, in regards to the framework of processes between physical and digital worlds, future inquiries could explore any alternative processes that may assist in materializations from one world to another. Are the five processes presented in this study (see Table 4) exhaustive of all the ways in which digital worlds become material?

Finally, the concept of materiality could be used in connection with other consumer phenomena and contexts where the pervasive presence of analytic dichotomies (e.g., real versus virtual) obscures the researcher's gaze and hinders efforts to create comprehensive middle-range theories.

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APPENDIX 1: ETHNOGRAPHIC AND NETNOGRAPHIC DATA COLLECTION

ETHNOGRAPHIC AND NETNOGRAPHIC DATA COLLECTION	
General Aspect of Fieldwork	Fieldwork Details
Time Span	- mid 2007-mid 2008: intensive netnography in Second Life, in-world -2008 -2011: engagement with blogs, community forums -2007-2011: visits at SL Community Conventions
Fieldnotes	Approx. 120 pages
Interviews & Conversations	Approx. 25h (16 unique informants & 6 group conversations)
Chat Logs	300 pages
Video & Audio Recordings	Approx. 17h
Blogs & SL Community Forums Post	417 pages Blogs: a mix of individual residents blogs and well known SL personalities (e.g., New World Notes)
Screenshots	Approx. 150
Photos	26
Secondary Sources of Data	Aprox. 900 pages Books, SL user manuals, in-world magazines (e.g., Avastar, SL Style, Best of SL); materials collected at SL Community Conventions Documentaries about SL (e.g., Life 2.0, When Strangers Click)

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RICHARD KEDZIOR

HOW DIGITAL WORLDS BECOME MATERIAL: AN ETHNOGRAPHIC AND NETNOGRAPHIC INVESTIGATION IN SECOND LIFE

Changes in consumption related to digital technologies, digitization and the emergence of new media have been topics of great interest to both academics and managers. The backbone of all of these changes, the Internet, has penetrated consumers' daily lives and changed the way they work, shop and socialize. New digital spaces (e.g., social networking sites, massively multiplayer online games, and online virtual worlds) have become important conduits for sociality and consumption as evidenced by the time and money consumers spend online. Yet, frequently the social, cultural and economic significance of digital worlds has been dismissed due to their "immaterial" character.

The evidence discussed in this volume demonstrates that consumers experience digital worlds as material, yet materiality in this instance transcends the conventional notions of tangibility and physicality. Thus, this study introduces the concept of digital materiality to more accurately describe the phenomenon of materiality in digital environments, and focuses on the ways in which materiality emerges in digital worlds. To this end, the conceptual framework presented here maps out five distinct processes through which digital worlds become material to their

consumers. Each of these processes is driven by a set of consumer motivations which correspond to consumer perceptions of digital materiality.

Apart from theoretical contributions to academic literature, this research also has a number of managerial implications that can benefit professionals working with digital media. The ideas discussed here may be especially valuable for public policy makers and product managers struggling with the inherent instability of digital materiality. Some of the insights can also cast light on ways in which businesses could expand their market offerings by complementing existing product lines with either digital or physical components.

This interdisciplinary work is positioned within Consumer Culture Theory and Digital Consumption Studies, and draws on the extant literature in consumer research, cultural studies, anthropology, and human-computer interaction.

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