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Flagship Brand Stores within Virtual Worlds: The Impact of Virtual Store Exposure on Real-Life Attitude toward the Brand and Purchase Intent

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ABSTRACT

Virtual hyperrealities, also referred to as virtual social worlds, have experienced increasing managerial interest in recent years. Although they have also received some attention in the academic literature, the extent to which corporate presences within such environments can influence attitude toward the brand and purchase intent in real life remains unclear. Based on a survey conducted among 580 Second Life residents, we show that exposure to flagship brand stores within virtual worlds positively influences attitude toward the associated brand and real life purchase intent. We furthermore show that a user's purchase experience (shopping frequency, purchase frequency, spending per purchase) and the gratification derived from the use of their purchases have a significant moderating effect on these relationships. Our results are of managerial and theoretical importance as they provide empirical evidence for spill-over effects between virtual worlds and real life and help to develop recommendations on optimal store design within virtual social worlds.

Key words: Avatar, attitude toward advertising, attitude toward the brand, flagship store, hyperreality, Second Life, social media, virtual social world, virtual world.

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INTRODUCTION

Since its rise in the late 1960s, postmodernism has been forecast to have a strong impact on the Marketing discipline. As discussed, for example, by Firat and Venkatesh (1993) and illustrated by Vargo and Lusch (2004), the basic conditions of this philosophical stream, such as fragmentation or the reversal of production and consumption, are closely related to the core domains of Marketing. Yet, surprisingly, only a few papers with a postmodern focus have been published in leading Marketing journals over the past 40 years (for a notable exception, see two special issues of the *IJRM* in 1993 and 1994, Firat, Sherry and Venkatesh, 1994; Venkatesh, Sherry and Firat, 1993). Nevertheless, postmodern ideas have increasingly spread into the business world. Examples of this evolution include the rising use of hyperrealities, i.e., artificially created settings that appear to be real for the individuals involved in them, in the context of tourist attractions (Grayson and Martinec, 2004), reality television shows (Rose and Wood, 2005), and retail settings (Edvardsson, Enquist and Johnston, 2005). As discussed, for example, by Edvardsson, Enquist and Johnston (2005), IKEA, one of the largest and most successful retail furniture companies in the world, uses hyperreal experience rooms as a strategic tool to create favorable and memorable pre-purchase service experiences.

Recently, hyperrealities have started to become even more important due to the creation of their virtual equivalents in the online world. One of the more prominent examples of these virtual hyperrealities, which are also referred to under the term virtual social worlds, is probably the online application Second Life (SL). Second Life is a three-dimensional virtual social world which users (who are called "residents") can enter through a downloadable client program. Second Life allows its residents to interact with one another in the form of personalized avatars, explore their environment and sell or buy virtual products and services. While some of these products and services are available free of charge, the higher quality and branded versions are usually sold for virtual money (Linden Dollars, L$). Such money can, among others, be obtained by exchanging real-life currencies via the Second Life Exchange at a floating exchange rate that is approximately stable at 250 L$ to the US$ or, alternatively, be earned in-world through jobs or interest payment (Kaplan, 2009). The high popularity of Second Life has recently motivated several real-life companies to start activities within Second Life, including Dell, Toyota, and American Apparel. These firms decided to set up virtual flagship brand stores within Second Life (called "islands"), which are subsequently used as hubs for brand communities and the distribution of virtual products and services.

Second Life in particular and virtual worlds in general have received some interest in the academic literature in recent years (see, for example, Barnes and Mattsson, 2008; Kaplan and Haenlein, 2009a; Kaplan and Haenlein, 2009b; Kaplan and Haenlein, 2009c; Lin, 2008; Wood, Solomon and Allan, 2008; Yee et al., 2007), and since 2008 there has even been a journal specifically dedicated to this subject (Spence, 2008). Although the hype around this topic has now come to an end, the market research company Gartner still estimates that by 2012, 70% of all organizations will have established their own private virtual world. Our analysis focuses on one question that has received less attention so far, namely the extent to which corporate presences within Second Life can influence brand attitudes and purchase intent in real life. Based on a survey among 580 Second Life residents, we show that exposure to Second Life flagship stores impacts real-life brand attitudes and purchase intent. Specifically, we observe a positive and significant relationship between a user's attitude toward a Second Life flagship store and his/her attitude toward the real-life brand and his/her attitude toward the real-life brand and real life purchase intent. In addition, our results indicate that a user's purchase experience and use gratification significantly moderate the relationship between store attitude antecedents, attitude toward a Second Life flagship store and attitude toward the real-life brand. This shows that different types of residents are likely to react differently to exposure to virtual flagship stores – a characteristic that needs to be accounted for when designing flagship stores within this environment.

CONCEPTUAL FRAMEWORK

Our conceptual framework builds on the assumption that exposure to a flagship store within Second Life (or any virtual social world for that matter) impacts real-life brand attitude and purchase intent. We therefore hypothesize that Second Life flagship stores fulfill functions similar to other forms of (online) advertising, besides their primary purpose of serving as hubs for the distribution of virtual products and services. There are at least three different lines of thinking that can be used to justify this basic premise: First, it has been discussed in the retailing literature that companies install traditional (physical) flagship brand stores to achieve benefits that go beyond their basic role as points of sale. As highlighted, for example, by Kozinets et al. (2002, p. 17), *flagship brand stores,* which are defined as outlets that are owned by the manufacturer and carry a single (usually established) brand of product only, are operated at least partly "with the intention of building or reinforcing the image of the brand rather than operating to sell products at a profit." Using the example of the Milan-based furniture manufacturer B&B Italia, Doyle et al. (2008) demonstrate the value of flagship stores as a brand management device in the context of the Italian luxury furniture sector. In a similar spirit, Brakus, Schmitt and Zarantonello (2009) provide empirical evidence that the shopping and service experience which is delivered in such stores represents an essential part of the overall brand experience. Given that a central role of traditional advertising is equally to create favorable attitudes toward the brand (e.g., Shimp, 1981), this implies that traditional flagship brand stores fulfill the dual function of serving as an advertising medium and as a sales outlet. We assume that a similar thinking can be applied when analyzing flagship stores within virtual worlds, such as Second Life.

Second, it has been shown in the advertising field that online advertising can be an effective tool to influence brand attitudes and purchase intent both online and offline. Manchanda et al. (2006) analyze, for example, the impact of banner advertising on Internet purchasing and show a positive impact on repeat purchase probabilities. In a recent literature review, Ha (2008) summarizes more than 80 articles in leading advertising journals that have addressed the area of online advertising (e.g., banner ads, pop-up ads, rich media ads) since 1996. Consistently, these studies show that online advertising can lead to positive brand evaluations and tends to be more efficient in achieving this objective than traditional offline print advertising. It is therefore reasonable to assume that advertising on the Internet (be it in the form of traditional online advertising or of flagship stores within virtual worlds) can spill over to the real world and influence offline consumer behavior.

Finally, research in the area of consumer behavior has provided consistent support for the fact that consumers consider their activities within the online space as an integral part of their life and that there is a transfer of skills learned offline to the online world and *vice versa*. Yee and Bailenson (2007), for example, show that behavioral patterns familiar from the real world are equally applied in virtual settings – a phenomenon which they refer to as the Proteus effect. In a series of experiments, these authors provide evidence that subjects who are represented by more attractive avatars tend to be more intimate with confederates in a self-disclosure and interpersonal distance task and that subjects who are represented by taller avatars behave more confidently in a negotiation task. In a similar spirit, Schlosser (2003; 2006) shows that experiencing products in virtual environments leads to more favorable attitudes and higher purchase intentions due to higher object interactivity. Among others, these studies can be seen as an indication that consumers do not separate their online from their offline identity but instead use media such as Second Life or personal web pages to create an alternative presentation of themselves within the virtual space (Schau and Gilly, 2003). Given that both environments are therefore closely related in the mind of the consumer, it is likely that brand exposures and experiences made in virtual worlds will have an impact on brand evaluations and attitudes in real life.

RESEARCH MODEL AND HYPOTHESIS DEVELOPMENT

As highlighted above, we assume that exposure to a Second Life flagship store can influence real-life brand attitudes and purchase intent in a similar way as traditional advertising. To investigate this hypothesis, we apply a modification of the well-established attitude toward the ad – attitude toward the brand (A_{Ad} – A_{Brand}) model to our research setting (See Figure 1). The relationship between A_{Ad} and A_{Brand} has been investigated regularly in advertising literature, starting with the seminal papers of Shimp (1981) and Mitchell and Olson (1981). Consistently these studies support a causal relationship between A_{Ad} – A_{Brand} and A_{Brand} – purchase intent. In an analogous way, we assume that a Second Life resident's attitude toward a Second Life flagship store (A_{Store}) influences his/her attitude toward the real-life brand which subsequently drives real-life purchase intent. In this context we define a Second Life resident as a user who owns at least one Second Life account and uses this account on a regular basis. Regarding the antecedents of A_{Ad}, MacKenzie and Lutz (1989) discuss that ad credibility, attitude toward the advertiser, attitude toward advertising and mood jointly influence attitude toward the ad. The influence of ad credibility on A_{Ad} is consistent with literature in the area of source credibility theory stating that information from credible sources tends to be more effective than from incredible ones (e.g., Hovland and Weiss, 1951). The influence of attitude toward advertising and toward the advertiser on A_{Ad} is consistent with a process of generalization in which consumers' general affective reactions influence attitudes toward specific advertising messages. The impact of mood on A_{Ad} is consistent with research showing that transient feeling states that are subjectively perceived by individuals (i.e., mood) have a substantial influence on consumer behavior (See Gardner, 1985b, for a review). In analogy, we assume that AStore is influenced by store credibility,[1] attitude toward the shopkeeper, attitude toward purchasing on Second Life and mood. This leads to the following set of hypotheses:

H_1: A user's attitude toward a Second Life flagship store is positively influenced by (a) store credibility, (b) attitude toward the shopkeeper, (c) attitude toward purchasing on Second Life and (d) mood.

H_2: A user's attitude toward a Second Life flagship store positively influences his/her attitude toward the real-life brand.

H_3: A user's attitude toward the real-life brand positively influences his/her real-life purchase intent.

Within this general framework, we assume that the relative importance of different variables is not the same for different types of Second Life residents. Specifically, we hypothesize a moderating role of a Second Life resident's usage intensity, purchase experience, and use gratification on the aforementioned relationships. With respect to usage intensity and purchase experience, it has been shown that repeated exposure to an activity leads to different types of behavior due to mechanisms such as conditioning (e.g., McSweeney and Bierley, 1984; Stuart, Shimp and Engle, 1987) or the use of scripts as a basis for decision making (e.g., Wofford and Goodwin, 1990). Exemplary studies that support such thinking in an online context include Gefen, Karahanna and Straub (2003) for e-Commerce, Kang et al. (2006) for the use of e-coupons, Qiu and Papatla (2008) for the acquisition of free online content, and Lemmens and Bushman (2006) for the emotional consequences of violent video game consumption. Within our research framework, we expect for example that store credibility as well as attitude toward the shopkeeper or purchasing on Second Life can only build up over time and, therefore, are likely to play a different role in influencing store attitudes for low *versus* high levels of usage intensity/purchase experience. More generally, we postulate that the relative importance of different store attitude antecedents as well as the strength of

1. According to Erdem and Swait (2004), credibility can be defined as the believability of an entity's intentions at a particular time. Credibility consists of two main components which express the ability (i.e., expertise) and willingness (i.e., trustworthiness) to deliver what has been promised. As shown by Erdem and Swait (2004), brand credibility increases the probability of the inclusion of a brand into the consumer's consideration set as well as brand choice conditional on consideration. Our construct of "store credibility" extends this idea of brand credibility (or source credibility in general) to flagship stores within virtual worlds.

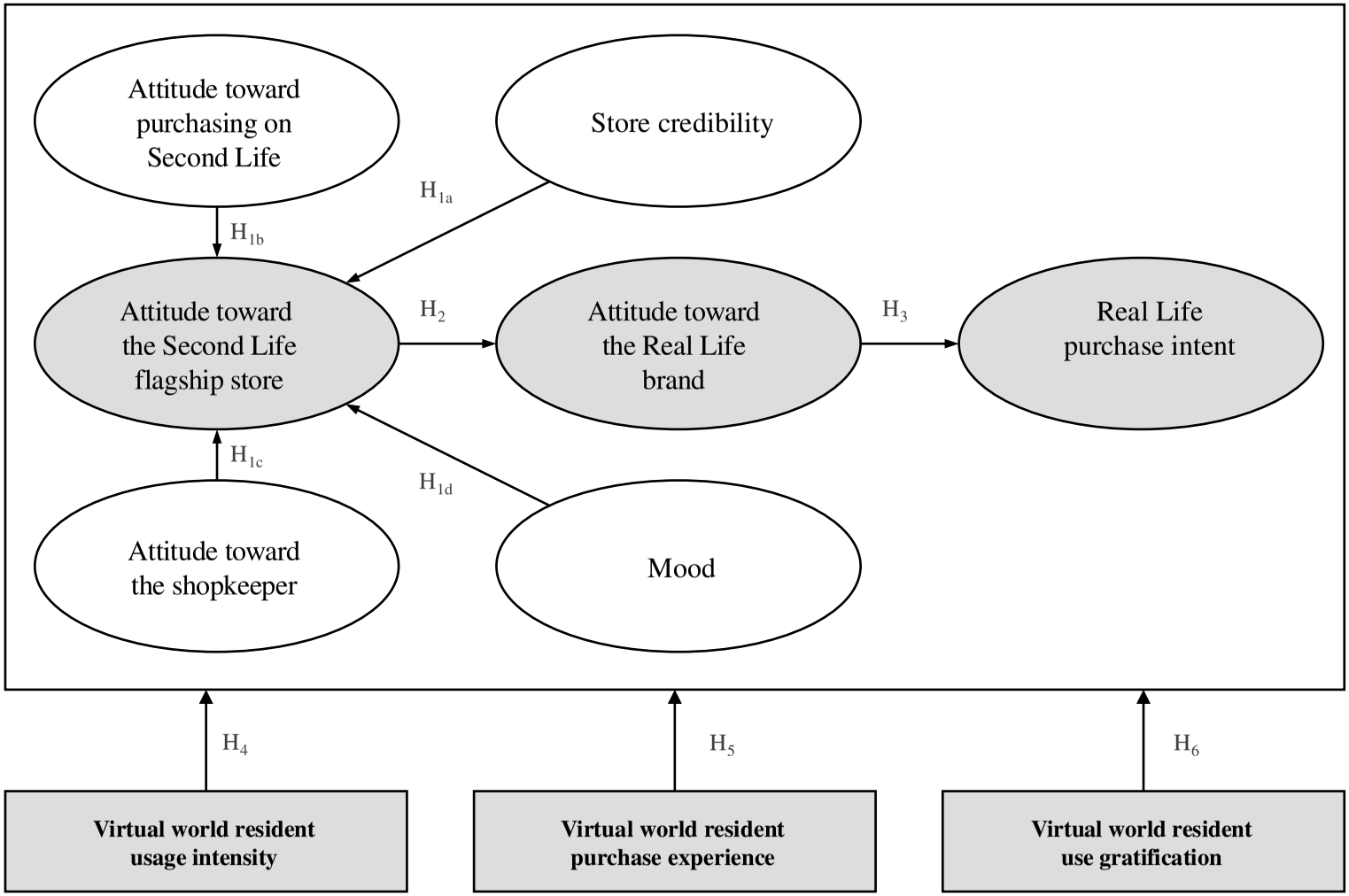

Figure 1. – Research model and hypotheses

the relationship between store and brand attitude change with increasing levels of usage intensity (e.g., usage duration, weekly usage) and purchase experience (i.e., shopping frequency, purchase frequency, and spending per purchase). This leads to the following two hypotheses:

H_4: A user's usage intensity of Second Life will have a moderating effect on the impact of (a) store attitude antecedents on the attitude toward a Second Life flagship store and (b) attitude toward a Second Life flagship store on the attitude toward the real-life brand.

H_5: A user's purchase experience within Second Life will have a moderating effect on the impact of (a) store attitude antecedents on the attitude toward a Second Life flagship store and (b) attitude toward a Second Life flagship store on the attitude toward the real life brand.

Regarding the moderating impact of use gratification, it has been discussed regularly in mass media research that consumers use media to fulfill certain needs, i.e., to satisfy certain kinds of gratification (See Katz, Blumler and Gurevitch, 1973-74, for an early summary of uses and gratification research). In one of the first studies in this area, McQuail, Blumler and Brown (1972) applied a uses and gratification perspective to the analysis of television quiz shows and showed that self-rating, excitement, and educational appeals can be used to explain the consumption of such programs. In the last few decades, use gratification has regularly been applied to investigate factors driving the consumption of new media. Exemplary recent studies include Stafford, Stafford and Schkade (2004), who investigate gratification of Internet usage, and Chung and Kim (2008) who applied this approach to the analysis of blog use by cancer patients. In the area of virtual worlds, Kaplan and Haenlein (2009a; 2009b) have identified four key motivations for Second Life usage: the search for diversion, the desire to build personal relationships, the need to learn, and the wish to earn money. In our analysis, we assume that the gratification that Second Life users intend to achieve with their usage will have a moderating effect on the relationships expressed in H_1 and H_2. Specifically, we postulate that the motivations for Second Life usage influence the relative importance of different store attitude antecedents as well as the strength of the relationship between store and brand attitude. This assumption is consistent with the work of Liang, Lai and Ku (2006-2007) who have shown that Internet use gratification moderates user satisfaction with personalized online services, as well as with Ko, Cho and Roberts (2005) who provide evidence that use gratification influences Internet users' attitudes toward interactive advertising sites. Combined, this leads to the following hypothesis:

H_6: A user's use gratification of Second Life will have a moderating effect on the impact of (a) store attitude antecedents on the attitude toward a Second Life flagship store and (b) attitude toward a Second Life flagship store on the attitude toward the real life brand.

RESEARCH METHODOLOGY

We decided to test the aforementioned hypotheses using a quantitative (*vs*. qualitative) study as this approach allows for the use of formal statistical procedures to verify the accuracy of our predictions and additionally provides us with an estimate of the strength of the effects hypothesized within our research model. Within the field of quantitative methods, we opted for a survey-based approach, which ensures a higher degree of external validity than other alternatives, such as, for example, laboratory experiments.

Measurement scales and Data collection procedure

Within our conceptual framework, we operationalized store credibility using an adaptation of the brand credibility scale developed by Erdem and Swait (2004), including dimensions of expertise and trustworthiness. For the attitude toward purchasing on Second Life, we relied on Iyer and Eastman (2006) and adapted their measure of attitude toward e-Commerce. Attitude toward the shopkeeper and attitude toward the Second Life flagship store were operationalized using an adaptation of items used by MacKenzie and Lutz (1989). For mood, we used a

four-item scale proposed by Swinyard (1993). Attitude toward the real life brand relied on a three-item scale proposed by Gardner (1985a) and real life purchase intent was measured as suggested by Baker and Churchill (1977). Use gratification was measured with scales derived from McQuail et al. (1972), building on the work of Kaplan and Haenlein (2009a; 2009b). Following the recommendations of Cox (1980), all items were measured on 7-point Likert scales with the default response cues being strongly disagree (–3) and strongly agree (+3). All scales (See Appendix for details) were pre-tested using a sample of 22 students, which resulted in mild changes in wording, and proved to have good reliability in our final sample.

Since the nature of Second Life makes it difficult to obtain a sufficiently large and representative sample of potential survey participants, we collaborated with a market research firm (Repères) that maintains a representative panel of 10,000 Second Life residents. To build the panel, Repères started to install opt-in terminals at different locations in Second Life (e.g., residential areas, shopping malls, night clubs) and set up an affiliate program with well-established Second Life residents in October 2006. Using official user statistics provided by Linden Research Inc., the operator of Second Life, Repères regularly verifies that their panel is representative of the Second Life population in terms of key user demographics (e.g., gender, age, country of origin). For our study, we contacted a subset of this panel with the task of visiting one of five pre-selected Second Life flagship stores. This store list was obtained by matching the Interbrand Best Global Brands Ranking with the directory of corporate presences in Second Life, paying special attention to including stores from different sectors and contained the Dell Factory on Dell Island, the Mercedes Benz Island, the Nike Main Store, the Philips Design Island, and the Sony BMG Island.[2] Panelists were subsequently asked to visit one of these five stores and to send screenshots from their visit back to the market research company to ensure that all respondents were exposed to the Second Life flagship store prior to survey participation. Subsequently, respondents were contacted a second time with a link to a web page containing our online survey. Respondents were first asked to describe their impression of the Second Life flagship store in one or more sentences (to increase salience of the stimulus) and then to answer all subsequent questions using this Second Life flagship as a reference, before they received a compensation to remunerate them for their effort.

2. Specifically, we relied on the 2007 Best Global Brands Ranking which includes the 100 most valuable brands worldwide. First, we checked for the Top 50 brands whether an official corporate presence existed within Second Life. This resulted in a total of 13 matches. Second, we identified the industry sectors these 13 brands belonged to (Computer services, hardware and software: 6, Automotive: 3, Consumer electronics, Sporting goods, Diversified and Beverages: 1). Third, we selected one brand with a Second Life presence within each of these sectors (Computer services, hardware and software: Dell; Automotive: Mercedes Benz; Consumer electronics: Sony BMG; Sporting goods: Nike; Diversified: Philips).

Sample description

Data collection resulted in a total of 717 responses, of which we deleted 65 records due to multiple submissions of the same respondents and 42 records due to drop-out before survey completion. Generally, various studies have shown that data collected through the Internet does not differ substantially from other data collection approaches (e.g., Birnbaum, 2004; Schillewaert and Meulemeester, 2005). Although web-based studies may suffer from higher noise due to technical variations, this bias is usually compensated by the larger sample sizes that can be achieved through this medium. To minimize any potential distortions in this respect, we deleted 30 records (5%) that showed particularly high or low survey response times. This resulted in a final sample of 580 respondents (80.9%).

Table 1 provides some basic descriptive information regarding our final sample. 28% of our respondents visited the Mercedes Benz Island, 26% the Sony BMG Island, 24% the Dell Island, 11% the Nike main store, and 10% the Philips Design Island. Survey participants are approximately equally split between men (56%) and women (44%). The majority (29%) is between 25 and 34 years old, with the remainder being approximately equally distributed in the 18-24 years (23%), 35-44 years (26%), and 45+ years (21%) age brackets. With respect to their country of origin, 26% stem from the USA, 17% from France, 8% from the UK and Brazil, 5% from Canada, 4% from the Netherlands and 32% from other countries. Comparing these characteristics with general Second Life user statistics based on total

Table 1. – Sample description

	Sample		Second Life population[3]	
	Absolute	**in %**	**% of total hours**	**% of avatar count**
Gender				
Male	322	55.5%	58.5%	67.2%
Female	258	44.5%	41.5%	32.8%
Age				
13-17 years	4	0.7%	0.4%	0.9%
18-24 years	135	23.3%	15.4%	22.8%
25-34 years	167	28.8%	34.8%	35.2%
35-44 years	153	26.4%	28.4%	24.1%
45 years and older	121	20.9%	20.6%	16.5%
Unknown	0	0.0%	0.4%	0.5%
Country of origin				
USA	148	25.5%	38.1%	36.7%
France	96	16.6%	5.5%	5.0%
UK	49	8.4%	7.2%	7.8%
Brazil	47	8.1%	3.4%	4.2%
Canada	28	4.8%	3.6%	3.3%
Netherlands	24	4.1%	4.0%	3.3%
Other	188	32.4%	38.2%	39.7%
Ethnicity				
Asian	30	5.2%		
Black/African American	13	2.2%		
Hispanic/ Latino	31	5.3%		
White	456	78.6%		
Mixed/ Multi-racial	31	5.3%		
Other	19	3.3%		
Occupation				
Student/in education	121	20.9%		
Worker	78	13.4%		
Employee	172	29.7%		
Civil servant	16	2.8%		
Self-employed	101	17.4%		
Homemaker	32	5.5%		
Pensioner	10	1.7%		
Other	50	8.6%		
Island visited				
Mercedes Benz Island	162	27.9%		
Sony BMG Island	152	26.2%		
Dell Island	142	24.5%		
Nike Main Store	65	11.2%		
Philips Design Island	59	10.2%		

3. Based on Second Life Virtual Economy Key Metrics (BETA) through April 2008 published by Linden Lab.

hours and avatar count at the time of our survey shows that respondents are similar to the overall Second Life population average.

In Table 2, we provide some details on Second Life usage and consumption characteristics within our sample. Most of our respondents joined Second Life 6-12 months (41%) or less than 6 months (38%) ago. The majority of users in our sample spend between 10 and 24 hours (38%) or more than 24 hours (34%) per week in Second Life, which is equivalent to 1-3 hours per day or more. Combined, this shows that Second Life represents a substantial part of the day-to-day activities of the respondents in our sample. In terms of consumption behavior, the majority of respondents report going shopping once or several times a week (50%) and making purchases between once a week and 2-3 times per month (46%). Product and service purchases are hence an important part of residents' Second Life experience. The total amount of money spent within Second Life remains, however, reasonably small, with a weighted average of roughly L$200, or less than US$1 per week.

Statistical analysis

In order to group respondents into different use gratification clusters, we first performed a two-step cluster analysis in SPSS 14.0.[4] For this, we used the twelve use gratification items as categorical indicators and determined clusters based on a log-likelihood distance measure and Schwarz's Bayesian Criterion (BIC) as the clustering criterion. This resulted in a three-cluster solution in which Cluster A accounted for 225 (39%), Cluster B for 249 (43%) and Cluster C for 106 (18%) respondents. To better understand the structure of these clusters, we subsequently computed use gratification scores by calculating the (unweighted) average of all items belonging to the same use gratification and subsequently determined the average score per gratification for each of the three clusters. The results of this analysis can be found in Table 7. As can be seen, Cluster C always scores higher than Cluster B which again scores higher than Cluster A for three of the four kinds of use gratification (diversion, personal relationships, personal identity; the difference between clusters is significant: based on F-test, p-value < 0.0005 in all cases). This can be seen as an indication that the amount of use gratification obtained through Second Life usage increases from Cluster A to B and C. We therefore refer to Cluster C as "heavy" users that rely on Second Life for various kinds of gratification, while Clusters B and A are referred to as "medium" and "light" users, respectively.

We subsequently estimated the structural equation model visualized in Figure 1 using the Mplus software tool (means, intercepts, and thresholds not included in the analysis model; information matrix estimated using second-order derivatives), Version 5 (Muthén and Muthén, 1998-2007).[5] To control for common method bias, we relied on an approach suggested by Podsakoff et al. (2003) and allowed all items to load on their theoretical constructs as well as on a latent common method variance factor, uncorrelated to all other model constructs. This resulted in baseline parameter estimates and standard errors visualized in Table 3. To test for a potential moderating impact of usage intensity, purchase experience, and use gratification, we followed a three-step approach used by MacKenzie and Spreng (1992). We first estimated group-specific models (covariances, variances, and residual variances assumed to be equal across groups) and compared the change in model chi-square between a model in which parameters were allowed to vary freely across groups and one where they were constrained to equality. If the constraint model proved to fit the data significantly worse than the free model, we considered this as an omnibus indication of moderation (See panel "omnibus test of

4. The SPSS two-step cluster method is a scalable cluster analysis algorithm designed to handle very large data sets. It can handle both continuous and categorical variables and consists of two steps: first, pre-clustering of all cases into many small sub-clusters; and second, clustering of these sub-clusters into the desired number of clusters. More details can be obtained from the first author on request.

5. Mplus is a software tool for the estimation of generalized latent variable models, which can be considered as an extension of traditional structural equation models. In the case of our relatively simple model, the use of Mplus leads to results that are identical to those that would have been obtained by using other software tools, such as AMOS or LISREL. Mplus provides, however, substantially more flexibility in other modeling situations. For more details on generalized latent variable modeling, see Muthén (2002) and for more details on Mplus, Muthén and Muthén (1998-2007).

Table 2. – Sample Second life usage and consumption characteristics

	Sample	
	Absolute	**in %**
When did you start using Second Life?		
Less than 1 week ago	18	3.1%
1-4 weeks ago	40	6.9%
1-3 months ago	73	12.6%
4-6 months ago	92	15.9%
6-12 months ago	235	40.5%
More than 1 year ago	122	21.0%
How many hours do you spend per week in Second Life?		
<5 hours	50	8.6%
5-9 hours	114	19.7%
10-14 hours	95	16.4%
15-24 hours	124	21.4%
25-44 hours	135	23.3%
>45 hours	62	10.7%
How often do you go shopping in Second Life?		
Never	23	4.0%
Less often	64	11.0%
2-3 times a month	92	15.9%
Once a week	119	20.5%
Several times a week	173	29.8%
Once a day	55	9.5%
Several times a day	54	9.3%
How often do you make a purchase in Second Life?		
Never	31	5.3%
Less often	117	20.2%
2-3 times a month	143	24.7%
Once a week	121	20.9%
Several times a week	107	18.4%
Once a day	37	6.4%
Several times a day	24	4.1%
How many Linden Dollars do you earn in Second Life per week?		
L$0	99	17.1%
L$1-100	108	18.6%
L$101-500	169	29.1%
L$501-1,000	74	12.8%
More than L$1,000	94	16.2%
No information	36	6.2%
How many Linden Dollars do you spend in Second Life per week?		
L$0	58	10.0%
L$1-100	134	23.1%
L$101-500	177	30.5%
L$501-1,000	86	14.8%
More than L$1,000	90	15.5%
No information	35	6.0%

moderation" in Tables 4-7). In case moderation was indicated on an overall level, we subsequently identified specific moderating effects by constraining individual paths to be equal across groups (while letting all other paths vary freely) and compared the change in model chi-square to a fully unconstrained model (See panel "test of individual paths" in Tables 4-7). In a last step, we determined path coefficient estimates and standard errors for a model in which we constrained all paths to be equal across groups unless a significant moderating effect had been observed.

RESULTS

Table 3 shows the estimation results (parameter estimates, standard errors, and associated p-values) as well as goodness-of-fit indices for the baseline model estimated using all 580 observations. With respect to model fit, the Comparative Fit Index (CFI) as well as the Tucker-Lewis Index (TLI) exceed 0.95 and the Root Mean Squared Error of Approximation (RMSEA) and Standardized Root Mean Squared Residual (SRMR) are both below the recommended thresholds of 0.06 and 0.08, respectively (Hu and Bentler, 1999). Combined, this indicates excellent model fit. Out of the six paths estimated, four are significant at the 5% level. Attitude toward the shopkeeper and mood positively and significantly influence a user's attitude toward a Second Life flagship store (parameter estimates of 0.651 and 0.159, respectively). Attitude toward a Second Life flagship store subsequently positively influences the attitude toward the real-life brand (parameter estimate: 0.392), which in turn positively impacts real-life purchase intent (parameter estimate: 0.571). Combined, this leads to confirmation of H_{1b}, H_{1d}, H_2 and H_3. There is, however, no significant influence of store credibility and attitude toward purchasing on Second Life on store attitudes. H_{1a} and H_{1c} are therefore rejected on an overall level. This result implies that exposure to a Second Life flagship store influences real-life brand attitudes and purchase intent and therefore provides an indication of the existence of spillover effects between Second Life and real life, consistent with our conceptual framework.

To test the robustness of these findings with respect to alternative model specifications, we also estimated a model that did not include mood as an antecedent of store attitudes. It might be conceivable that our respondents were not able to accurately recall the mood they were in when visiting the respective Second Life flagship store and that this lack of accuracy resulted in biased estimates.[6] Although such a reduced model fits the data slightly worse than our baseline model (CFI: 0.977, TLI: 0.970, RMSEA: 0.050, SRMR: 0.060), our main implications remain unchanged: Store credibility and attitude toward purchasing on Second Life do not show a significant impact on store attitudes, while attitude toward the shopkeeper influences store attitudes positively and significantly. More importantly, also in this model we observe a significant and positive relationship between store attitudes and brand attitudes (parameter estimate: 0.395) and between brand attitudes and real-life purchase intent (parameter estimate: 0.576). We therefore conclude that our findings remain robust to the exclusion of mood as a store attitude antecedent.

To test for a potential moderating impact of usage intensity, purchase experience and use gratification on these relationships, we proceeded as outlined above and first performed an omnibus test of moderation for each construct. For usage intensity, we analyzed two variables, usage duration and weekly usage, each measured by one question ("When did you start using Second Life?" and "How many hours do you spend per week on Second Life?", respectively).[7] The difference in model chi-square between a constraint and free model is 16.397 for usage duration and 16.744 for weekly usage, which turns out to be insignificant on 12 df (p-values of 0.1737 and 0.1595, respectively). Combined, this indicates that usage intensity does not exert a moderating impact on the relationships visualized in Figure 1, leading to rejection of H_{4a} and H_{4b}.

6. We thank an anonymous reviewer for bringing this point to our attention.

7. The distribution of respondents along these two variables were as follows: For usage duration: less than 6 months ago – 223 respondents; 6-12 months ago – 235 respondents; more than 12 months ago – 122 respondents. For weekly usage: less than 9 hours – 164 respondents; 10-24 hours – 219 respondents; more than 24 hours – 197 respondents.

Table 3. – Model estimation results – Baseline model

Model fit indices	
Model Chi^2	542.554
Model df	238
CFI	0.976
TLI	0.970
RMSEA	0.047
SRMR	0.055

			Baseline model			
			Estimate	**Standard Error**	**p-value**	
Att. (Shopkeeper)	→	Att. (SLFS)	0.651	0.059	0.0000	
Att. (SL purchasing)	→	Att. (SLFS)	– 0.073	0.041	0.0750	
Store credibility	→	Att. (SLFS)	0.021	0.048	0.6617	
Mood	→	Att. (SLFS)	0.159	0.036	0.0000	
Att. (SLFS)	→	Att. (RL Brand)	0.392	0.055	0.0000	
Att. (RL Brand)	→	RL PI	0.571	0.051	0.0000	
			Overview of moderating effects (p-value)			
			Shopping frequency	**Purchase frequency**	**Spent per purchase**	**Use gratification**
Att. (Shopkeeper)	→	Att. (SLFS)	0.0585	0.0001	0.2527	0.0010
Att. (SL purchasing)	→	Att. (SLFS)	0.5758	0.0083	0.1505	0.2080
Store credibility	→	Att. (SLFS)	0.2169	0.0127	0.1476	0.0080
Mood	→	Att. (SLFS)	0.0381	0.0956	0.0994	0.0005
Att. (SLFS)	→	Att. (RL Brand)	0.0547	0.2257	0.0011	0.2153
Att. (RL Brand)	→	RL PI	0.4500	0.4251	0.9738	0.6275

For purchase experience, we analyzed three variables, shopping frequency, purchase frequency, and spending per purchase, each measured by one question ("How often do you go shopping/make a purchase on Second Life?" and "How many Linden Dollars do you spend on average when you make a purchase on Second Life?"). As can be seen in Tables 4, 5, and 6, the omnibus test provides a significant indication of moderation effect in all three cases (p-values above or equal to 0.0317). Looking at the specific paths moderated by these variables, it can be seen that shopping frequency moderates the impact of mood on store attitude (p-value: 0.0381), purchase frequency the impact of attitude toward the shopkeeper, attitude toward purchasing on Second Life, and store credibility on store attitude (p-values above or equal to 0.0127), and spending per purchase the relationship between store and brand attitude (p-value: 0.0011). Combined, these findings support H_{5a} and H_{5b}. For use gratification, Table 7 shows that the omnibus test indicates significant moderation (p-value: 0.0002) and the analysis of individual paths reveals that the impact of attitude toward the shopkeeper, store credibility, and mood on store attitudes differ significantly across use gratification clusters (p-values above or equal to 0.0080). This confirms H_{6a} and leads to rejection of H_{6b}.

To better understand the nature of these moderating effects, we determined group-specific parameter estimates for each path where significant moderation had been detected. The results of this analysis can be found in Tables 4-7. For ease of interpretation, we present our findings by type of relationship moderated rather than type of moderating variable. The impact of *attitude toward the shopkeeper* on store attitude follows an inverse U-shaped relationship for purchase frequency. While path coefficients are relatively low for low and high levels of purchase frequency (0.291 and 0.264, respectively), they increase for medium levels (0.549). An opposite pattern emerges for use gratification, where the relationship between attitude toward the shopkeeper and store attitudes is stronger for light and heavy users (0.741 and 1.009, respectively) than for medium ones (0.524). *Attitude toward purchasing on Second Life*, which was insignificant on the overall level, turns out to significantly influence store attitudes for high levels of purchase frequency. However, different to what might be expected, the relationship between the two variables is a negative one (path coefficient: –0.151), implying that more favorable attitudes toward purchasing on Second Life lead to less favorable store attitudes. *Store credibility*, which was also insignificant in the baseline model, has a significant and positive relationship to store attitudes for high levels of purchase frequency (0.116) and for medium levels of use gratification (0.248). *Mood* exerts a significant influence on store attitudes only for medium levels of shopping frequency (0.220) and light/medium use gratification clusters (0.208 and 0.253). For all other groups (low and high levels of shopping frequency as well as heavy use gratification users), the relationship, which received significant support in the baseline model, becomes insignificant. Finally, the relationship between *store attitudes* and brand attitudes becomes insignificant for medium levels of purchase spending (p-value 0.1323), but remains significant and positive for low and high levels (path coefficients of 0.622 and 0.322, respectively).

DISCUSSION AND MANAGERIAL IMPLICATIONS

To sum up, our analysis results in the following three findings: First, our study provides a contribution to developing a better understanding of the new consumer. Over the past decade, the widespread use of the Internet has resulted in a new range of contact channels and it has been stated that new models might be needed to explain consumer behavior within such an environment. Our study provides two types of insight with respect to this question: First, we confirm a statement that has previously been made in a different setting, namely that consumers do not separate their online from their offline activities but instead consider both as forms of self-expression. Consistent with consumer culture theory (Arnould and Thompson, 2005), consumers use the Internet to develop virtual self-presentations (Schau and Gilly, 2003). Experiences made online are subsequently transferred offline and *vice versa*, as can be seen, among others, in our study. From a company pers-

Table 4. – Test of moderating effects – Shopping frequency

Shopping frequency:
How often do you go shopping in Second Life?

		N	N	in %
	Never	23		
Group A	Less often	64	**179**	**31%**
	2-3 times a month	92		
Group B	Once a week	119	**292**	**50%**
	Several times a week	173		
Group C	Once a day	55	**109**	**19%**
	Several times a day	54		
		580	**580**	**100%**

Omnibus test of moderation	**Chi²**	**df**	**Δ Chi²**	**Δ df**	**p-value**
Constrained (all paths)	1,592.358	888			
Free	1,569.800	876	22.558	12	0.0317

Test of individual paths	**Chi²**	**df**	**Δ Chi²**	**Δ df**	**p-value**	**Group-specific parameter estimates**		
						Group A (Low)	**Group B (Medium)**	**Group C (High)**
Att. (Shopkeeper) → Att. (SLFS)	1,575.479	878	5.679	2	0.0585	0.660**	0.660**	0.660**
Att. (SL purchasing) → Att. (SLFS)	1,570.904	878	1.104	2	0.5758	– 0.068	– 0.068	– 0.068
Store credibility → Att. (SLFS)	1,572.857	878	3.057	2	0.2169	0.024	0.024	0.024
Mood → Att. (SLFS)	1,576.333	878	6.533	2	0.0381	0.101	0.220**	0.122
Att. (SLFS) → Att. (RL Brand)	1,575.611	878	5.811	2	0.0547	0.391**	0.391**	0.391**
Att. (RL Brand) → RL PI	1,571.397	878	1.597	2	0.4500	0.572**	0.572**	0.572**

**: $p < 0.01$ *: $p < 0.05$

Table 5. – Test of moderating effects – Purchase frequency

Purchase frequency:
How often do you make a purchase in Second Life?

		N	N	in %
Group A	Never	31		
	Less often	117	**148**	**26%**
Group B	2-3 times a month	143		
	Once a week	121	**264**	**46%**
	Several times a week	107		
Group C	Once a day	37		
	Several times a day	24	**168**	**29%**
		580	**580**	**100%**

Omnibus test of moderation	**Chi²**	**df**	**Δ Chi²**	**Δ df**	**p-value**
Constrained (all paths)	1,654.454	888			
Free	1,621.358	876	33.096	12	0.0009

Test of individual paths	**Chi²**	**df**	**Δ Chi²**	**Δ df**	**p-value**	**Group-specific parameter estimates**		
						Group A (Low)	**Group B (Medium)**	**Group C (High)**
Att. (Shopkeeper) → Att. (SLFS)	1,639.673	878	18.315	2	0.0001	0.291**	0.549**	0.264**
Att. (SL purchasing) → Att. (SLFS)	1,630.930	878	9.572	2	0.0083	– 0.024	0.006	– 0.151**
Store credibility → Att. (SLFS)	1,630.092	878	8.734	2	0.0127	0.024	– 0.068	0.016*
Mood → Att. (SLFS)	1,626.054	878	4.696	2	0.0956	0.072**	0.072**	0.072**
Att. (SLFS) → Att. (RL Brand)	1,624.335	878	2.977	2	0.2257	0.374**	0.374**	0.374**
Att. (RL Brand) → RL PI	1,623.069	878	1.711	2	0.4251	0.581**	0.581**	0.581**

**: $p < 0.01$ *: $p < 0.05$

Table 6. – Test of moderating effects – Spending per purchase

Spent per purchase:
How many Linden Dollars do you spend on average when you make a purchase on Second Life?

		N	N	in %
Group A	$L0-25	104		
	$L25-100	117	**221**	**38%**
Group B	$L100-300	176	**176**	**30%**
Group C	$L300-500	104		
	More than $L500	79	**183**	**32%**
		580	**580**	**100%**

Omnibus test of moderation	**Chi²**	**df**	**Δ Chi²**	**Δ df**	**p-value**
Constrained (all paths)	1,538.483	888			
Free	1,512.832	876	25.651	12	0.0120

Test of individual paths	**Chi²**	**df**	**Δ Chi²**	**Δ df**	**p-value**	**Group-specific parameter estimates**		
						Group A (Low)	**Group B (Medium)**	**Group C (High)**
Att. (Shopkeeper) → Att. (SLFS)	1,515.583	878	2.751	2	0.2527	0.639**	0.639**	0.639**
Att. (SL purchasing) → Att. (SLFS)	1,516.619	878	3.787	2	0.1505	– 0.074	– 0.074	– 0.074
Store credibility → Att. (SLFS)	1,516.659	878	3.827	2	0.1476	0.017	0.017	0.017
Mood → Att. (SLFS)	1,517.450	878	4.618	2	0.0994	0.155**	0.155**	0.155**
Att. (SLFS) → Att. (RL Brand)	1,526.446	878	13.614	2	0.0011	0.622**	0.149	0.322**
Att. (RL Brand) → RL PI	1,512.885	878	0.053	2	0.9738	0.572**	0.572**	0.572**

**: $p < 0.01$ *: $p < 0.05$

Table 7. – Test of moderating effects – Use gratification

Use gratification:

	Group A	Group B	Group C	
N	225	249	106	**580**
in %	39%	43%	18%	**100%**
	Group A	**Group B**	**Group C**	**Total**
Diversion	– 0.34	1.03	1.81	0.64
Personal relationships	0.19	1.42	2.23	1.09
Personal identity	– 0.61	0.75	1.31	0.33
Earning money	– 1.24	– 0.82	– 0.93	– 1.00

Omnibus test of moderation	**Chi²**	**df**	**Δ Chi²**	**Δ df**	**p-value**
Constrained (all paths)	1,776.750	888			
Free	1,739.911	876	36.839	12	0.0002

Test of individual paths	**Chi²**	**df**	**Δ Chi²**	**Δ df**	**p-value**	**Group-specific parameter estimates**		
						Group A (Low)	**Group B (Medium)**	**Group C (High)**
Att. (Shopkeeper) → Att. (SLFS)	1,753.668	878	13.757	2	0.0010	0.741**	0.524**	1.009**
Att. (SL purchasing) → Att. (SLFS)	1,743.051	878	3.140	2	0.2080	– 0.097	– 0.097	– 0.097
Store credibility → Att. (SLFS)	1,749.575	878	9.664	2	0.0080	– 0.011	0.248**	– 0.093
Mood → Att. (SLFS)	1,755.317	878	15.406	2	0.0005	0.208**	0.253**	– 0.154
Att. (SLFS) → Att. (RL Brand)	1,742.982	878	3.071	2	0.2153	0.381**	0.381**	0.381**
Att. (RL Brand) → RL PI	1,740.843	878	0.932	2	0.6275	0.571**	0.571**	0.571**

**: $p < 0.01$ *: $p < 0.05$

pective, this tight integration in the mind of the consumer implies that traditional communication strategies need to be closely aligned with activities within virtual worlds or other online channels to avoid conflicting messages and inconsistencies. This is especially important as the time that users spend within Second Life can be substantial (i.e., more than 10 hours per week for 70% of our respondents and more than 24 hours per week for 33%). Second, we provide an indication that traditional models of consumer behavior prove highly robust when being applied to a new setting. The $A_{Ad} - A_{Brand}$ relationship which underlies our conceptual framework has first been proposed more than 25 years ago (Shimp, 1981) and proves to be accurate even in the setting of virtual worlds. The four different store attitude antecedents, which we derived based on literature in traditional advertising research, explain 62.2% of the variance in the store attitude variable. Combined, this leads to the assumption that consumer behavior within the "new" environment consumers are facing today may not be fundamentally different from behavior observed in traditional settings and that well-established models might still turn out to be highly useful, even when applied outside their traditional scope. While this finding may be surprising, and even unintuitive, as it indicates that users behave the same way in virtual and real worlds, it can be seen as an indication of the strong future business potential of virtual environments for conducting marketing research and virtual commerce.

Second, we show that there is a significant and positive relationship between a user's attitude toward a Second Life flagship store and the user's attitude toward the real-life brand. This implies that virtual flagship brand stores can be expected to fulfill functions similar to (online) advertising, besides their potential role as distribution hubs for virtual products and services. Our work therefore confirms the common belief that activities within virtual worlds such as Second Life can be used to support an overall branding strategy (Enright, 2007). This finding is of managerial relevance for two reasons: First, many firms entering Second Life have realized that the revenue that can be achieved by selling virtual products and services does not compensate for the cost of setting up a virtual flagship store. A private region within Second Life of 65,536 m^2 is, for example, sold for US$1,000 plus US$295 monthly maintenance fee and the cost of designing a flagship store can range from several hundred dollars up to U$200,000 (Kaplan and Haenlein, 2009c). This investment is difficult to recover through the sales of digital products alone as the willingness-to-pay of Second Life residents remains limited (e.g., approximately L$300 or US$1.20 for a digital suit). Our analysis provides an indication that entering Second Life may nevertheless be a profitable strategy when taking the potential advertising and spill-over effects to real life into account. Second, our study is one of the first that empirically investigates the efficacy of corporate activities within the larger group of social media (Kaplan and Haenlein, 2010). Social media are a domain of increasing importance for many firms nowadays but not much is known about their efficacy and return-on-investment. Our analysis can be seen as the first step to develop a better understanding of these new contact channels.

Finally, we provide an indication that the advertising impact of Second Life flagship stores is not the same for all users but instead varies with increasing levels of purchase frequency or use gratification sought from Second Life usage. Some of the effects we observe, such as the significant impact of store credibility or attitude toward purchasing on Second Life on store attitude at high levels of purchase frequency, are consistent with a notion of learning in which meta-knowledge is created only after sufficient experience. Other results, such as the (inverse) U-shaped relationship of attitude toward the shopkeeper on store attitude with increasing levels of purchase frequency/use gratification or the varying impact of mood can be explained with the assumption that Second Life residents evolve during their Second Life usage and therefore allocate different decision weights to the same variables depending on their degree of exposure to the medium. Potentially, such an evolution takes place because for experienced users Second Life is not considered as a mere computer game anymore but as an extension of the user's real life, in line with the results obtained by Kaplan and Haenlein (2009a). However, the lack of longitudinal design within our data collection does not allow the testing of such a hypothesis in more detail. From a managerial perspective, this implies that companies may need to target Second Life residents differently, depending on their purchase frequency/use gratification. Hence, Second Life flag-

ship stores that are located in areas with a disproportionate share of experienced residents (e.g., residential areas in which most residents own real estate) may need to be designed differently from presences in areas that mainly attract new users (e.g., shopping malls) in order to be effective. Also, flagship stores whose primary intention is to serve as advertising media should be targeted toward a different group of Second Life residents than those who are mainly designed to sell virtual products and services. The fact that the relationship between store attitude and brand attitude becomes insignificant for medium levels of purchase spending shows that the advertising effectiveness of Second Life may disappear for some user groups.

LIMITATIONS AND AREAS OF FUTURE RESEARCH

Obviously, our analysis can only be seen as a first step to better understand the consumer use and business potential of virtual social worlds in general and Second Life in particular. Future research could, for example, address some of the limitations in our approach and extend our study by an analysis of the impact of Second Life flagship stores on actual consumer behavior (*vs*. behavioral intentions) or a longitudinal investigation of the impact of multiple exposures to the same flagship stores. Also, the fact that the survey participants in our study were able to choose the Second Life flagship store to visit themselves may have introduced a bias in our analysis as residents who are more or less involved with Second Life may use different choice criteria to decide which store to visit. Addressing these points would strengthen our key finding that exposure to Second Life flagship stores can spill over into real life and provide further insight into the advertising efficacy of this new medium.

Another interesting question that merits future research is whether the creation of Second Life flagship stores, and especially the distribution of virtual equivalents of real life products within Second Life, could also have *negative* consequences in terms of real-life purchase intentions and sales. If companies use their flagship stores to distribute virtual products that are similar to their real-life offerings, but differ in certain features, it might be possible that users form unrealistic expectations for real-life products based on their Second Life experience. Technically, it is for example not difficult to offer fashion items in a very large variety of colors within Second Life (much larger than would be feasible in real life) or with functionalities that could not exist in real life (e.g., flying shoes or invisibility cloaks). However, by doing so, companies could artificially raise expectations with respect to the real-life products offered by the company that are impossible to fulfill. In the context of the expectancy confirmation framework (Oliver, 1980), such unfulfilled expectations could lead to feelings of dissatisfaction, deception, and ultimately lower real-life purchase intention and sales. On the other hand, simply replicating a company's real-life offering within Second Life might be perceived as uninventive and boring by Second Life residents, potentially leading to negative (real-life) brand associations. Current managerial belief appears to be that entering Second Life is a low-risk strategy as doing so either has a positive or neutral impact on real-life sales. However, a better understanding of the likely risks associated with such a strategy is needed in order to determine the optimal use of Second Life in a given situation.

Finally, future studies could also take the company (*vs*. consumer) perspective and analyze how firms in different industries currently use virtual social worlds. In a first step, it might, for example, be interesting to investigate for what types of activities companies are relying on these new media, and what objectives they plan to achieve with their usage. In a next step, it would then be worthwhile to investigate how the market reacts to the decision to open a corporate presence in any of these virtual social worlds. In a similar context, Geyskens, Gielens and Dekimpe (2002) applied an event-study methodology to investigate the stock market reaction to the introduction of e-Commerce sites. Studies in that spirit could be undertaken to determine the ultimate value creation potential of performing corporate activities within Second Life.

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Appendix. – Measurement scales

All measures employ 7-point scales with "strongly disagree/agree" as anchors, except where noted otherwise.

Store credibility (Erdem and Swait, 2004, Cronbach's *Alpha*: 0.856)

- The SL presence of BRAND reminds me of someone who is competent and knows what s/he is doing
- The SL flagship store of BRAND delivers what it promises
- The claims made by the SL flagship store of BRAND are believable
- Over time, my experiences with the SL flagship store of BRAND have led me to expect it to keep its promises, no more and no less
- The SL flagship store of BRAND doesn't pretend to be something it isn't

Attitude toward purchasing on Second Life (Iyer and Eastman, 2006, Cronbach's *Alpha*: 0.671)

- Buying on SL is more fun than traditional buying
- I enjoy buying on SL
- Buying on SL is no riskier than traditional buying
- I am confident in my ability to buy successfully on SL

Attitude toward the shopkeeper (MacKenzie and Lutz, 1989, Cronbach's *Alpha*: 0.951)

- How would you evaluate the company that owns the SL flagship store of BRAND?
  - Bad/good
  - Unpleasant/pleasant
  - Unfavorable/favorable

Mood (Swinyard, 1993, Cronbach's *Alpha*: 0.929)

- Indicate to what extent you have felt this way while you were visiting the SL flagship store of BRAND
  - Sad/happy
  - Bad mood/good mood
  - Irritable/pleased
  - Depressed/cheerful

Attitude toward the Second Life flagship store (MacKenzie and Lutz, 1989, Cronbach's *Alpha*: 0.963)

- Below you will find three pairs of adjectives. Indicate how well one or other adjective in each pair describes how you perceived the SL flagship store of BRAND
  - Bad/good
  - Unpleasant/pleasant
  - Unfavorable/favorable

Attitude toward the Real Life brand (Gardner 1985a, Cronbach's *Alpha*: 0.963)

- Below you will find three pairs of adjectives. Indicate how well one or other adjective in each pair describes your overall feeling toward BRAND
  - Bad/good
  - Unpleasant/pleasant
  - Dislike/like

Real Life purchase intent (Baker and Churchill, 1977, Cronbach's *Alpha*: 0.875)

- How likely would you be to try BRAND in Real Life?
- How likely would you be to buy BRAND if you happened to see it in a real-life store?
- How likely would you be to actively seek out BRAND in a real-life store in order to purchase it?

Use gratification (McQuail et al., 1972)

• Diversion (Cronbach's *Alpha*: 0.710)

– Being in Second Life helps me to escape from the boredom of everyday live
– Being in Second Life takes me out of myself
– Being in Second Life helps me to get away from my problems

• Personal relationships (Cronbach's *Alpha*: 0.694)

– The people in Second Life have become like close friends to me
– Being in Second Life is good company when you're alone
– After having been in Second Life, I look forward to talking about it with others
– After having been in Second Life, it is a topic of conversation

• Personal identity (Cronbach's *Alpha*: 0.725)

– Being in Second Life reminds me of things that have happened in my own life
– Being in Second Life sometimes brings back memories of certain people I used to know
– Being in Second Life sometimes helps me to understand my own life
– Being in Second Life provides food for thought

• Being in Second Life helps me to earn Real Life money