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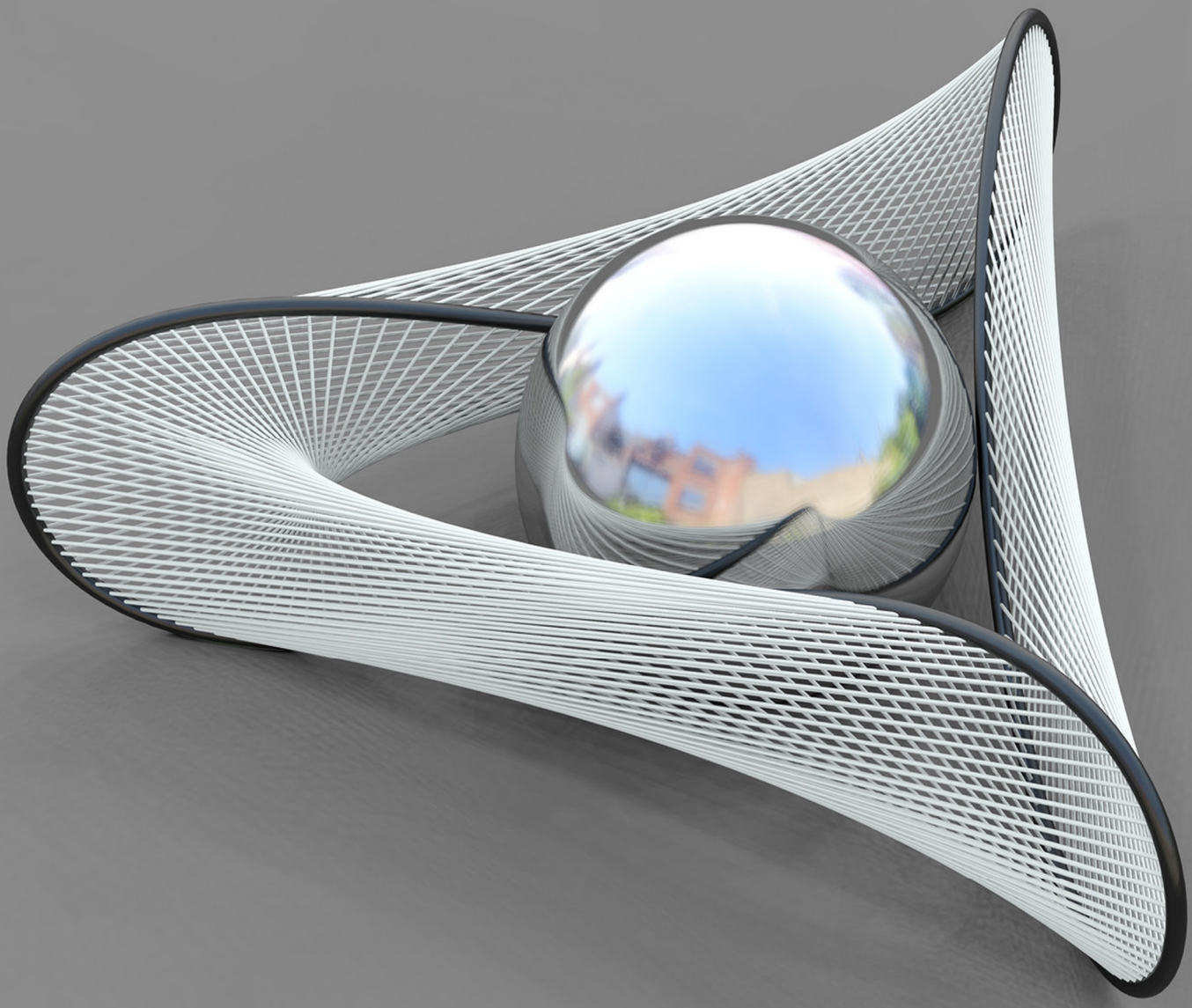

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'I Create Therefore I Virtually Exist': Digital Content Creation, Virtual Consumption, and Motivation in Second Life

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Abstract

User-generated content (UGC) has been receiving increasing attention given its spread throughout digital media platforms and applications. Previous research focusing on Web 2.0 based platforms highlighted linkages with personal characteristics, user attitudes, and social as well as individual motivators. Interestingly, UGC has not been addressed on other platforms such as 3D virtual worlds, and the purpose of the current study is to fill this gap in the literature. More specifically, we explore virtual content creation within the particular 3D virtual world of Second Life, via comparing key demographic, usage and motivational attributes of creator versus non-creator residents. Results revealed differential patterns as a function of age, gender and usage. Digital content creators were also more likely to purchase goods reflecting stability, expand greater financial resources on the Second Life Marketplace, and while acknowledging greater difficulty in ease of use, reported higher esteem and self-actualization. Implications for scholars and practitioners are discussed.

1. Introduction

The emergence of Web 2.0 enabled individuals to interact with one another with a great deal of ease and flexibility (Szuprowicz, 1995; Tredinnick, 2006; Botella et al., 2012). Throughout the different platforms available, technology users can become members of virtual communities, sustain and expand their social networks in innovative ways, and take part in interactive online games. In addition to the obvious social aspects, digital environments allow information exchange via individually created *user-generated content* (UGC), offering users the opportunity to produce entirely online goods and materials (Shao, 2009). According to Daugherty, Eastin and Bright (2008), UGC can be defined as "*media content created or produced by the general public rather than by paid professionals and primarily distributed on the Internet*" (pp. 16). UGC tends to capture a wide array of products, ranging from blog entries and comments to pictures and videos. Having sparked the interest of academics and practitioners alike, a growing body of empirical work emerged to explore UGC from a variety of perspectives, including UGC diffusion (Liu-Thompkins & Rogerson, 2012); optimal platform characteristics (Kim, 2012; van Dijck, 2009); consumer-generated advertisement (Berthon et al., 2011); factors influencing product feedback (Thakur et al., 2013); and the motivational aspects underlying UGC (Daugherty, Eastin & Bright, 2008; Leung, 2009; Sirianni & Vishwanath, 2012; Shao, 2009).

Interestingly, prior research focused predominantly on UGC associated with forums, blogs and social networking sites, and only sporadically targeted the special Web 2.0 based 3D environments of *virtual worlds*. The current paper aims to address this gap in the literature, and explore the motivational elements associated with UGC in the particular virtual world of Second Life. Our work will proceed through several sections. First, in order to illustrate the general drivers underlying digital content creation, we discuss relevant motivations that may be of importance in general within Web 2.0 based platforms. Then, moving onto virtual worlds and more specifically to Second Life, we provide a review of certain fundamental attributes characterizing these settings, with particular attention to user motivation and the role of UGC within a virtual economy. Finally, after reviewing our results, we conclude the paper by discussing relevant implications for scholars and practitioners, highlighting certain limitations and providing recommendations and potential directions for future research.

2. Literature Review

2.1 2.1. The Motivational Drivers of UGC Creation

Blogs and social media sites provide unique platforms for generating, distributing and discussing UGC among users who in turn may share web links, web feeds and tweets with their peers (Zheng, Li & Hou, 2011; Cha, Pérez & Haddadi, 2011). In a way, UGC practices are closely related to the experiential aspects of producing online information and knowledge, enabling users to master skills and competencies through their active participation (Flanagin & Metzger, 2013). Given their complexities and innovative nature, UGC creation and consumption have been shown to serve various purposes in individuals' daily activities, including the fulfillment of social and individual needs (McKenzie et al., 2012; MacKenzie, Buckby & Irvine, 2009; Nardi et al., 2004). On a general level, content production on Internet-based platforms tends to be heavily influenced by user attitudes towards Web 2.0 applications, with more positive attitudes linked with a greater willingness to produce UGC, for instance via creating blog entries and forum posts (Thakur, Summey & John, 2013).

On a more specific level, a variety of individual and social factors were found important from the purposes of UGC creation practices (Yang & Lai, 2010; Antin, 2011). From an individual perspective,

acts of content generation have been linked to self-actualization, self-expression and psychological empowerment (Shao, 2009), in that they enable users to achieve gratification and recognition from other members (Leung, 2009); create new identities for themselves within the online community (van Dijck, 2009); and ultimately escape from their *offline* problems and realities (Courtois et al., 2009). From a social perspective, prior research emphasized the relevance of UGC creation in terms of fostering connectedness and instilling a sense of shared community (Daugherty, Eastin & Bright, 2008). For instance, a study exploring Wikipedia contributors found that beyond certain personal benefits, users valued their engagement in UGC creation as it gave them a way to help others, achieve status, and manage their social relationships (Velasquez et al., 2014). Interestingly, the primary drivers associated with individuals' willingness to create and share digital content tend to be mostly intrinsic in nature, with extrinsic and monetary incentives playing a less substantial role (Stoeckl et al., 2007).

As noted above, the majority of the available work on UGC practices tends to build on information derived from a particular set of Web 2.0 applications, composed predominantly of blogs and forums. Nonetheless, other media platforms, such as virtual worlds, which – particularly in comparison to blogs and forums – extend the ultimate user experience in meaningful ways, may hold relevant implications for UGC production practices. In the next section, we review certain fundamental aspects associated with virtual worlds and with Second Life in particular, highlighting hypothetical links between motivations and UGC creation. Second Life was chosen for this particular analysis given its vast user base; its continuous leadership amongst similar platforms (Linden Lab, 2013); its flexibility and reliance on user-generated input (Kaplan & Haenlein, 2009); and its sophisticated economic system fostering the creation as well as exchange of user-generated objects (Ondrejka, 2004).

2.2 Virtual Worlds and Second Life

Virtual worlds are unique environments with characteristics that reach beyond the more traditional 2D platforms in several ways. A comprehensive definition offered by Spence (2008) highlights certain fundamental aspects, describing virtual worlds as "*persistent, synthetic, three dimensional, non-game centric space*" (pp. 5). Via their virtual self-representations – also known as *avatars*, virtual world users are able to partake in various social activities (Kaplan & Haenlein, 2010), engage in role-playing games and economic transactions (Guo & Bernes, 2009), as well as easily create and customize virtual content (Messinger et al., 2009). The concept of virtual worlds is often viewed as an umbrella term that encapsulates a spectrum ranging from socially-oriented virtual worlds such as Second Life and Habbo Hotel, to game-oriented virtual worlds like World of Warcraft and EverQuest (Papagiannidis, Bourlakis & Li, 2008). Irrespective of their specific type or nature, virtual world users are able to actively contribute to the storyline and to the flow of events surrounding them, and in turn shape their virtual environment.

A particularly distinctive feature characterizing certain virtual worlds rests in their sophisticated economic systems, often equipped by their own marketplace and special currency (Harambam, Aupers & Houtman, 2011; Castronova, 2009; Shelton, 2010). The corresponding concept of *virtual economy* (or synthetic economy) captures the economic mechanisms of virtual worlds (Castronova, 2004), with meaningful implications for online consumption patterns. Virtual markets enable transactions associated with *virtual goods* or specific digital entities, which in turn have the ability to satisfy a wide range of user needs (Mitham, 2009). It is important to note that in contrast with offline consumption, virtual world inhabitants have no physical needs to satisfy, and thus virtual products tend to have predominantly recreational value (Guo & Gong, 2011; Lehdonvirta, 2009; Welch, 2009; Castronova et al., 2009). Nonetheless, beyond their immediate impact over the respective local markets, virtual economies can be

linked to offline economies, given that virtual currencies can be exchanged to real life currencies (Reynolds, Ishikawa & Macchiarella, 2010). Finally, many of the businesses run by avatars within a virtual market have been shown to have external associations to offline commerce and financial transactions (Messinger et al., 2009).

Second Life (SL) is a popular example for a socially-oriented three-dimensional virtual world, developed by Linden Research Inc. in 2003 (Rosadale & Ondrejka, 2003). By the end of 2008, Linden group accounted for a massive base of 13 million users (Hinsch & Bloch, 2009), with the vast majority from the US between the ages of 25 and 34 (Shelton, 2010). SL is a special environment that provides a great deal of freedom and flexibility for their users, imposing only a limited set of rules and restrictions, especially in comparison to some of its game-oriented counterparts (Spence, 2008). Furthermore, SL is unique in terms of its advanced market and economic system (Castronova, 2004; Castronova et al., 2009) that enable users to engage in monetary transactions and exchange virtual goods and services (Martin, 2008), via its virtual currency of Linden Dollars (L$). With an exchange rate of 270 L$ per 1 US$ in 2009 (Shelton, 2010), and with an extensive daily monetary circulation that reached 1.5 million USD in 2007 (WIPO, 2007), Second Life can be viewed as a successful endeavor, with an estimated revenue of around 100 million US$ as of 2011 (Mitchell, 2011). Although the total number of active users have decreased slightly since its peak, SL continues to be the biggest virtual world with users in 2015 cashing out 60 million US$ from business activities and content created and sold within their marketplace Charara, 2016).

In summary, based on their popularity and numerous innovative aspects, virtual worlds provide fruitful grounds to further explore from a variety of perspectives. On the academic side, virtual worlds can provide useful insights into the social sciences and humanities, offering opportunities to explore certain social and psychological processes that may influence human consumption and individual decision-making patterns in virtual space (Yee, 2006), particularly in comparison to those in offline settings (Lehdonvirta, 2010). On the practitioner side, these 3D platforms may enable organizations to host simulations that mirror real world markets (Chandra & Leenders, 2012), engage in novel conversations with consumers (Messinger et al., 2009), test products and advertisement practices (Spaulding, 2010), and set the ground for pioneering activities in virtual reality (O'Brien, 2016). Given the particular aims of the current research, in the next section, we turn to exploring the motivational basis of Second Life usage, highlighting the potential role of UGC creation and consumption.

2.3 Motivational Basis of Second Life Usage

A widely cited set of determinants associated with virtual world usage incorporates a range of *social* needs (Hassouneh & Brengman, 2014; Goel et al., 2012; Thomas, 2009; Eisenbeiss et al., 2012), many of which deemed relevant based on offline conditions (Baumeister & Leary, 1995). In fact, numerous characteristics of virtual worlds, including the complete elimination of geographic boundaries (Hinsch & Bloch, 2009), the highly immersive nature of virtual encounters (Mathwick & Rigdon, 2004; Nowak & Biocca, 2003), and the view of the virtual self and other community members as real entities (Lortie & Guitton, 2011) were shown to facilitate the fulfilment of meaningful desires and social motivations, in turn accentuating users' sense of belonging (Barnes & Pressey, 2011; Verhagen et al., 2012). Virtual platforms have also been linked with certain *functional* needs, including discovery, learning, achievement (Poels et al., 2012) and income generation (Zhou et al., 2011; Verhagen et al., 2011).

In addition to the social and functional drivers, *individualistic* needs have been identified in relation to virtual settings as well (Williams, 2008; Hussain & Griffiths, 2009), including *aesthetic* and

imaginative motivations (Thomas & Brown, 2007), need for *uniqueness* (Barnes & Pressey, 2011), self-related aspects such as *self-esteem* and *self-actualization*, and *escapism* (Mathwick & Rigdon, 2004; Poels et al., 2012). Previous research indicates that via their engagement in virtual worlds, users can either dispose of problems arising in their offline existence, or resolve them in a constructive and adaptive fashion, using their virtual self-representations (Castronova & Wagner, 2011; Jung & Kang, 2010). Throughout this process of problem management, users can find innovative and creative solutions that feed from their fantasies and imagination (Molesworth & Denegri-Knott, 2007), and can in turn, accelerate their sense of attachment to the given virtual setting (Turner & Turner, 2012).

2.4 2.4. Consumption practices in Second Life

Given the complex economic system characterizing the Second Life marketplace, in which users can create as well as purchase virtual goods, Second Life residents have been able to establish a rich and sophisticated consumer culture (Kamel & Rigaux-Briemont, 2011). This virtual setting enables users to create a wide range of UGCs, incorporating 3D virtual objects (e.g. clothes, avatars, and even buildings), assumed avatar behaviors (e.g. dance movements), cyber arts (Amaral, 2010), and *machinima* or animated 3D movies produced and directed by avatars (Johnson & Pettit, 2012). Correspondingly, virtual consumption, referring to the purchase of virtual products in exchange for real life currencies (Lehdonvirta, 2009), has become an important building block of this virtual community. On the object level, despite the lack of physical reflections, virtual goods tend to be perceived as real entities (Lehdonvirta, 2010), to which individuals attach not only monetary but also visual value (Drennan & Keeffe, 2007). On the consumer level, the use of virtual goods enables residents to actualize their dreams, advance their online identities, and experiment with certain fantasies that extend the boundaries beyond potential offline limitations (Denegri-Knott & Molesworth, 2010; Lehdonvirta, 2009). On the community level, virtual consumption has been shown to facilitate social status, in turn enabling individuals to become an attractive, popular and powerful member of the given virtual society (Guo & Barnes, 2009). In summary, Second Life can be viewed as a specific digital platform that enables the recreation and re-crafting of consumption in a new and innovative fashion (Malaby, 2006), facilitated by the great spectrum of individual and social activities (Messinger et al., 2009).

The motivations underlying Second Life participation may also affect virtual consumer preferences, directly as well as indirectly. With respect to the more overt and direct impact, previous research indicates that users with high levels of escapism, as well as high social and achievement orientations tend to appreciate and pursue different product categories, as well as consume different types of clothing and accessories (Shelton, 2010). With respect to the more subtle and indirect impact, the roles and identities residents assume, may also influence their consumption patterns, particularly in those cases, where inhabitants choose to abandon their offline existence in a quest for new roles and experiences (Shin, 2008). For instance, some inhabitants may become extensive party-goers or respected art collectors, and as such may acquire certain possessions, such as clubs, galleries, and other items that are often unavailable under offline conditions (Koles & Nagy, 2012). The consumed goods, in turn, enable users to enhance their appearance, advance their social experiences (Messinger et al., 2009), and ultimately increase their self-confidence and achieve a sense of distinction (Drennan & Keeffe, 2007).

From the perspective of virtual product design, Lehdonvirta (2009) argues that the key drivers of virtual consumption are governed by three unique qualities associated with digital items; including functional (e.g. performance), hedonic (e.g. visual appearance) and social attributes (e.g. cultural references). Hence, in addition to the motivational aspects of virtual world usage, certain virtual world specific characteristics need to be considered in order to understand virtual consumption in a more

comprehensive manner. For instance, the use and availability of digital items, the economic aspects associated with Second Life, and the relative ease of use are likely to influence users' desire and willingness to create, as well as consume virtual products, and contribute to the perceived usefulness and entertainment value of virtual worlds (Verhagen et al., 2012).

3. The Current Study

The above review indicates that SL usage can be approached from a variety of perspectives, highlighting the role of different motivational factors that influence the overall user experience. Given the fundamental role of products and goods in virtual worlds (Landay, 2008), and the heavy reliance of virtual platforms on user-generated content in order to shape and sustain the virtual economy (Bruns, 2008; Ondrejka, 2004), an exploration of UGC creation and consumption may reveal interesting and important insights. Surprisingly, previous research has not been carried out to link the motivational aspects underlying users' virtual existence with UGC creation and consumption activities. The notion of virtual consumption has been explored more widely (Lehdonvirta, 2009; Drennan & Keeffe, 2007; Greengard, 2011), with some reference to UGC.

The current study aims to fill several gaps in the available literature. First, we explore UGC creation activities in Second Life, reaching beyond the 2D platforms of blogs and forums. Second, we undertake a systematic comparison between those residents who are object-creators as opposed to those who are non-creators, in order to understand some of the unique UGC-related attributes and behaviors, manifested on this particular virtual platform. Third, given the close relationship between object creation and consumption in virtual settings, we examine UGC in conjunction with virtual consumption. Finally, we explore the motivational basis underlying Second Life participation, within the comparative framework of UGC creation.

3.1 3.1. Hypotheses

In order to fulfil the aims of the current study, the focal interest areas were centered around three major themes. More specifically, we intended to explore UGC in association with (1) demographics and time-related usage patterns, (2) consumption practices, and (3) motivations. The following research hypotheses were formulated to guide our analyses:

3.1.1 Demographics and Usage Patterns – Hypothesis 1

H1a: The impact of age: Younger residents are more likely to create virtual content in Second Life, as well as do so in a wider range of categories, when compared with older residents.

A large body of the available literature concludes that members of the younger generation tend to be more active and productive on the Internet and related applications when compared with members of the older generation (Ho, Nelson & Müeller-Wittig, 2011; Luo, 2012; Coombes, 2009; Karahasanović et al., 2009). Hence, we anticipate that younger users may be more willing, as well as able, to create digital items, than older users.

H1b: The impact of gender: Female residents are more likely to create virtual content in Second Life, and do so in a wider range of categories, when compared with male residents.

Previous research emphasized the social aspects of UGC creation, by establishing associations with different communal activities and community-driven motivations (Shifman, 2012). In addition, female users have been shown to be more likely to engage in social activities than males in online

settings (Pfeil, Arjan & Zaphiris, 2009), as well as specifically in Second Life (Guadagno et al., 2011). Consequently, the social benefits associated with UGC may encourage female SL residents more so than males to engage themselves in UGC creation practices on this virtual platform.

H1c: The impact of usage time: Residents engaging in virtual content creation tend to spend more time on the Second Life platform when compared with non-creators.

User engagement and overall user experience on digital platforms have been associated with a variety of factors, including – but not limited to – general attitude towards the respective technology (Thakur, Summey & John, 2013), aptitude (Yang and Lai, 2010) and available time (Liu-Thompkins & Rogerson, 2012). Furthermore, engagement in a wider range of activities may help users to integrate themselves more fully into the virtual community (Daugherty, Eastin & Bright, 2008), in turn encouraging additional time and participation. While the directionality of this relationship may be hard to decipher, it may be interesting to examine whether – and if so to what extent – the activity of UGC creation may reveal an association with usage time.

3.1.2 Virtual Consumption Practices – Hypothesis 2

Second Life offers its residents with a wide range of creative and innovative solutions to engage in economic activities. Furthermore, the consumption of virtual goods is facilitated by the availability of virtual stores and by the ease with which users can spend money within this particular virtual setting (Messinger et al., 2009). As a result, virtual content creation and consumption together have been shown to play an important role in the overall user experience in Second Life (Landay, 2008). Building on these earlier findings, the following propositions will be explored in the current study:

H2a: Virtual content creators are more likely to purchase a greater variety of virtual goods in Second Life, when compared with non-creators.

H2b: Virtual content creators tend to visit more stores in Second Life when compared with non-creators.

H2c: Virtual content creators tend to spend more money on the Second Life platform, when compared with non-creators.

3.1.3 Motivations – Hypothesis 3

In the last set of hypotheses, we were interested in exploring the motivational basis underlying Second Life participation, with particular attention to examining the similarities and differences between UGC creators and non-creators. First, from a social perspective, prior work demonstrated a connection between UGC creation practices and various social outcomes, suggesting that those members, who engage in UGC production, may also have an increased sense of belonging and connectedness (Daugherty, Eastin & Bright, 2008). Second, from an individual standpoint, research exploring 2D platforms linked UGC creation practices with several individual motivations, including self-esteem, self-actualization, and escapism (Shao, 2009; Leung, 2009; Courtois et al., 2009). As these drivers themselves have been shown to be important for the user pool of Second Life (Barnes & Pressey, 2011), the motivational basis of residents, who engage in UGC creation practices, may correspondingly differ from those who do not share such interest. Finally, from a utilitarian perspective, several virtual world-specific motivations, including visual attractiveness, perceived ease of use and economic value, may be approached differently by those who create virtual content and those who do not (Verhagen et al., 2012). Building on these findings, the following propositions will be examined:

H3a: Virtual content creators in Second Life tend to score higher than non-creators on social motivations, associated with their sense of belonging.

H3b: Virtual content creators in Second Life tend to score higher than non-creators on the individual motivations, associated with self-esteem, self-actualization and escapism.

H3c: Virtual content creators tend to evaluate Second Life as a visually attractive setting more so than non-creators.

H3d: Virtual content creators tend to perceive Second Life as a more easily usable environment than non-creators.

H3e: Virtual content creators tend to perceive Second Life with more economic value than non-creators.

4. 4. Methodology

4.1 4. 1. Participants and Procedures

Data for the current study was obtained within the virtual world of Second Life, during the Spring of 2013. Residents were invited to participate in the study using the platform of a certain Second Life related blog, and were asked to complete an online survey. Respondents received 1,000 Linden Dollars (approximately 4 US Dollars) for their participation. All data were handled anonymously and confidentially. No partial responses were considered. The total sample consisted of 427 residents, between the ages of 17 and 69, with an average age of 37.2 years. Participants were predominantly from North America (57%) and Europe (31%), with a few representatives from Asia, Australia, and South America. 59% of the participants were female. Regarding level of education, 28% of the participants held high school diplomas, 32% held bachelors degrees, 22% achieved Masters or Doctoral degrees, and the remaining 18% completed special certificates.

4.2 Measures

Unless otherwise noted, the psychometric measures were rated on a 5-point Likert-type scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (5).

4.2.1 Motivations

Motivations associated with Second Life usage were measured through a combination of scales. On the one hand, building on Maslow's (1970) motivational theory, a scale, developed by Barnes & Pressey (2011), was utilized to capture different motivational aspects underlying Second Life usage. The 29-item scale incorporates three distinct dimensions; namely *belonging* (nine items, sample statement: *'Feeling someone cares for you'*); *self-esteem* (ten items, sample statement: *'Achieving something in Second Life'*); and *self-actualization* (ten items, sample statement: *'Doing and seeing new things in Second Life'*). In addition, the motivation of *escapism* was measured using the subscale adapted by Verhagen and his colleagues (2012), incorporating four items (sample statement: *Using Second Life does not make me feel like I am in another world*).

4.2.2 Utilitarian Attributes of Second Life

In order to gain a more comprehensive understanding of residents' perceptions of Second Life, certain utilitarian aspects were assessed, targeting the economic and aesthetic aspects of Second Life, as

well as those linked with accessibility. Relevant sub-scales, adapted by Verhagen and his associates (2012), encompassing three dimensions, were utilized; namely *economic value* (three items, sample statement: *'Overall, I am satisfied with the prices in Second Life'*), *perceived ease of use* (four items, sample statement: *'Learning how to use Second Life is easy'*) and *visual attractiveness* (four items, sample statement: '*The way things are displayed in Second Life is attractive'*).

4.2.3 Object Creation and Consumption

To ensure clarity and transparency of definitions associated with object creation on the Second Life platform, it is essential to make two clarifications at this stage. First, it becomes important to establish what is meant by object creation within a virtual world setting. Despite potential expectations, participants do not necessarily need to engage in the act of object creation in order to establish their avatars and correspondingly their virtual selves. In fact, when a new member joins Second Life, he or she is capable of selecting a starting character along with certain possessions from a great variety of pre-generated avatars and objects. As a result, in the current paper, we consider object creation as an activity that goes beyond the mere assumption of an avatar in its preliminary form, entailing deliberate and voluntary creation behaviors, aimed at enhancing one's avatar and/or virtual environment. Along the same lines, in the present work we also go beyond the more traditional approach to user generated content, which tends to be linked directly with object creation (Ondrejka, 2004). Given the setting of 3D social environments, where the majority of digitally purchased items are 'recycled' to further enhance one's avatar and virtual existence, it becomes important to explore digital purchase behaviors, incorporating purchase categories, store visits and spending habits. In order to assess user-generated content, respondents were asked whether or not they had ever created a virtual object in Second Life, and if so to select all applicable categories. For the purposes of later analysis, the choices were grouped into three clusters; incorporating 1) those items directly related to one's avatar (body, hair, skin); 2) those related to living within the virtual setting (house, land); and finally 3) those associated with one's virtual appearance (clothing, accessories). Categories of purchase followed the same method, resulting in the same three sub-categories. Virtual consumption was further approximated by inquiring about the number of stores participants visited on an average week, as well as by their monthly spending on the Second Life marketplace (in Linden dollars).

4.2.4 Demographics and Time

In addition to obtaining basic demographics of age and gender, participants were asked to indicate the total duration of their membership in Second Life, as well as the amount of time they spend each week on this virtual platform.

5. Results

5.1 General Tendencies and Patterns

The vast majority of respondents (83%) have been active on the Second Life platform for at least two years, with 16% spending less than 4 hours, 25% between 4 and 10 hours, 39% between 10 and 30 hours, and 20% spending over 30 hours per week, within this virtual community. Table 1 provides the descriptive statistics and bivariate correlations for the main target variables of general motivations, escapism and visual attractiveness, with internal reliabilities for each scale presented in parentheses.

Table 1. Descriptive Statistics, Correlations and Reliabilities*

Variables	Mean	s.d.	1	2	3	4	5	6	7
1. Belonging	3.37	.99	(.91)						
2. Esteem	3.63	.89	.67**	(.92)					
3. Self Actualization	3.75	.73	.60**	.77**	(.85)				
4. Escapism	3.35	.83	.30**	.24**	.21**	(.74)			
5. Economic value	3.29	.83	.11**	.14**	.14**	.22**	(.76)		
6. Perceived Ease of Use	3.09	.98	.11**	.01	.14**	.02	.01	(.88)	
7. Visual attractiveness	3.71	.68	.24**	.22**	.35**	.37**	.30**	.24**	(.83)

*~ p ≤ .1 * p ≤ .05 ** ≤ .01*
**n = 427. Internal reliabilities (α coefficients) for the overall dimensions are given in parentheses on the diagonal.*

The general motivational composites were fairly high along all four dimensions; averages were above the midpoint of the overall range, with relatively low variation. Users reported self-actualization being the most dominant motivator, followed by esteem, belonging, and finally escapism. Visual attractiveness appeared to be rated as an important feature of Second Life. The economic value of this virtual setting was viewed with average importance, with similar mid-range reports concerning the perceived ease of use. No variation was found across the motivations as a function of gender. Age appeared to have a significant impact on various utilitarian motivations. First, older individuals reported greater difficulty in terms of their technological use of the Second Life platform, when compared with their younger counterparts ($t(425) = -2.12$, $p < .05$). Second, users above 35 appeared to appreciate the visual attractiveness of this digital environment more so than did younger individuals ($t(425) = 1.83$, $p < .1$). Finally, older residents attributed, on average, more economic value to Second Life than younger residents.

While the length of Second Life membership did not seem to make a difference in terms of the motivations underlying users' virtual existence, the weekly usage patterns did appear to matter. More specifically, significant differences were observed across the different motivational dimensions between heavier users (i.e. those spending over an average of 10 hours per week on the Second Life platform), as opposed to lighter ones (i.e. those spending up to 10 hours per week, on average, in Second Life). In fact, heavier users reported higher levels of belonging ($t(425) = -5.59$, $p < .001$); esteem ($t(425) = -3.72$, $p < .001$); self-actualization ($t(425) = -2.64$, $p < .01$); escapism ($t(425) = -4.32$, $p < .01$); as well as visual attractiveness ($t(425) = -2.07$, $p < .05$).

5.2 Object Creation as a Function of Demographics and Usage Time – Hypothesis 1

The impact of demographics and general Second Life usage patterns on object creation behaviors were evaluated using independent samples t-tests and bivariate correlation analyses, respectively. Regarding age, contrary to our first hypothesis (H1a), the results revealed that older individuals tended to create digital items more so and in a wider range of categories than did younger individuals ($t(436) = 1.91$, $p<.05$). Further evidence was found to support the relationship between object creation and gender ($t(436) = 2.09$, $p<.05$; H1b), suggesting that males are significantly more likely to engage in digital

production activities than females. With respect to usage time, not surprisingly, participants with longer membership in Second Life (r = .32, p<.001) as well as those with greater amounts of weekly usage (r = .13, p< .01) were more likely to create a greater variety of virtual objects, in parallel with our respective proposition (H1c).

5.3 Object Creation as a Function of Virtual Consumption – Hypothesis 2

Given our interest in linking digital creation with consumption activities, we explored the consumption practices of digital object creators as opposed to non-creators. As mentioned above, we measured consumption by the act of purchasing digital items in total terms, as well as in terms of the categories related to avatars, living and accessories; by user reports of store visits; and by the average monthly spending. With respect to virtual consumption patterns, females reported to visit a greater number of stores (t(436) = -5.30, p<.001) as well as purchase a larger range of items when compared to males (t(436) = -2.15, p<.05). The results associated with object creation patterns can be found in Table 2.

Table 2. A comparative assessment between digital item creators and non-creators in terms of their overt consumption practices, as measured by their virtual purchase, store visits, and monthly spending.

Table 2: A comparative assessment: Consumption practices

	Non-Creators (n = 80)	**Creators (n = 348)**	**t-test**			
	Mean	S.E.	Mean	S.E.	t-value	Df
Virtual purchase						
Total (0 –7)	3.98	.24	4.37	.12	-1.47	436
Avatar (0 – 3)	1.86	.12	1.80	.06	.49	436
Living (0 – 2)	0.41	.08	0.65	.04	-2.53*	124
Appearance (0 – 2)	1.50	.08	1.64	.03	-1.6~	357
Store visits	3.01	.10	3.00	.05	.13	436
Monthly Spending (Linden $)	4,466	1,005	7,318	759	-2.27*	182
~ p ≤ .1 ** p ≤ .05* *** ≤ .01*						

In general, we did not find evidence to support the proposition concerning the composite of all item types (H2a), as overall purchase across all categories was consistent for object creators, as well as non-creators. However, those users who have created digital objects in the past were significantly more likely to purchase virtual items that were associated with their living environment, including land and housing, as well as were somewhat more likely to purchase a wider range of virtual accessories. While the number of stores visited appeared similar for the two groups of interest (H2b), object creators spent a significantly higher monthly sum on the Second Life Marketplace when compared with their non-creator counterparts (H2c); even when controlling for weekly usage time. In fact, when regressing weekly usage time on monthly spending using simple regression analysis, weekly usage time showed no significant association with monthly spending for non-creators ($F(1, 78) = 1.58$, $p > .1$), while indicated a significant association for object creators ($F(1, 356) = 16.29$, $p < .001$).

5.4 Object Creation as a Function of Motivation – Hypothesis 3

In the final set of hypotheses, we explored the impact of object creation on various social, psychological and utilitarian motivators underlying the Second Life usage of participants. The respective results can be found in Table 3.

Table 3. A comparative assessment between digital item creators and non-creators in terms of the motivational basis underlying their virtual existence and participation in Second Life, as well as certain perceived utilitarian attributes.

Table 3: A comparative analysis - motivation

	Non-Creators (n = 79)	Creators (n = 348)	t-test			
	Mean	S.E.	Mean	S.E.	t-value	Df
Motivation						
Belonging	3.36	.11	3.37	.05	-.12	425
Esteem	3.33	.11	3.70	.05	-3.33**	425
Self-Actualization	3.60	.09	3.78	.04	-1.96*	425
Escapism	3.32	.10	3.36	.04	-.39	426
Utilitarian Aspects						
Economic Value	3.16	.10	3.32	.04	.24	425
Perceived Ease of Use	3.45	.09	3.00	.05	4.42**	146
Visual Attractiveness	3.78	.08	3.69	.04	1.11	425
~ p ≤ .1 ** p ≤ .05* *** ≤ .01*						

Regarding the social and psychological motivators (H3a and H3b), significant differences were found between the groups of digital object creators and non-creators with respect to esteem and self-actualization. More specifically, inhabitants who created virtual objects in the past were significantly more likely to report that many of their esteem related needs, including confidence, respect, and a sense of accomplishment, were met by being in Second Life. Similarly, object creators were significantly more likely to indicate a sense of autonomy, freedom, and new opportunities, as measured by the self-actualization composite. From the utilitarian motivations, a significant difference was observed in the perceived ease of use dimension, yet the direction of the effect was the opposite of our expectation (H3d). In fact, those users who had created digital objects tended to report lower average ease of use scores when compared with non-creators.

6. Conclusions

The purpose of the current study was to assess potential similarities and differences between those Second Life residents who create virtual content, and those who do not engage in such endeavors, with respect to their background, usage, consumption practices, and motivations. In terms of consistency, we found the general user characteristics and their motivational drivers in the current Second Life sample, to be comparable with those reports that focus on 2D platforms (Shao, 2009; Daugherty, Eastin & Bright, 2008), as well as with research exploring creativity, and the act of production in offline settings (Ward, 2004). Nonetheless, our study revealed certain interesting discrepancies. For instance, contrary to expectations, male Second Life residents participating in our study were more likely to engage in UGC practices than female residents. Previous studies exploring the impact of gender on online behavioral patterns suggest that males are more likely to work, acquire meaningful possessions, and focus on masculine activities, while female users are more likely to purchase smaller goods, socialize with others, and focus on their avatars' appearance (Guadagno et al., 2011). Although more research in this area is necessary to draw definite conclusions, our own results indicate that UGC creation may be portrayed more as a masculine activity and less so as a social one.

Another interesting finding concerned age, such that older residents appeared to experience their encounters and overall existence in Second Life in a different fashion when compared with younger residents. More specifically, despite potential technical difficulties, older residents appeared to find this virtual environment more visually attractive, and reported to engage in digital content creation more widely. This perceived age effect is particularly interesting, in that it goes contrary to some earlier work based on Web 2.0 blogs and forums, according to which younger individuals tend to be more likely to create digital content (Pfeil, Arjan & Zaphiris, 2009). Along the same lines, the '*digital natives'* concept, often used in reference to the population whose members were born into the digital era (Prensky, 2001), tends to inadvertently assume an active and technologically educated pool of young users (Coombes, 2009). Apparently, however, the situation may be different in more complex and comprehensive platforms, such as in Second Life. Based on the current study, members of the older – i.e. over 35 – group were more likely to become content creators, moving beyond the more simplistic and transient aspects of virtual presence, and in turn were able to contribute directly to their virtual community and environment. While younger individuals may be more at ease in terms of navigating various Internet-based platforms and of handling the complexities of 3D virtual worlds on a superficial level, they may choose to refrain themselves from those activities that require deeper and more intense engagements, and understanding.

In addition to the effect of demographics, a particularly interesting set of findings derived from this study, concern the differential trends corresponding to the consumption practices and motivations exhibited by virtual object creators. In comparison to non-creators, residents producing digital content seemed to portray a virtual existence that is more intense, more complex, and one that requires greater dedication. On the input side, these residents place more emphasis on achieving greater refinement, being more settled, and are even willing to expand more resources to fulfill various goals. On the output side, they enjoy higher esteem, accomplishment, autonomy, and self-actualization in virtual space. They understand the complexities and demands of their virtual platform, but are also able to benefit in a number of ways. In this sense, UGC creators appear to compose an essential core within their community, producing, as well as consuming a wide range of goods. Consequently, the notion of *prosumption* – a term coined to capture the simultaneous act of production and consumption (Ritzer & Jurgenson, 2010) is commonplace for content creators in Second Life, enabling them to experience this virtual community in a unique and compelling way.

The current work has several implications for academics as well as practitioners. First, the importance of usage, time and overall membership are likely to entail certain consequences for the purposes of user segmentation, given their associations with various activities, behavioral patterns, and motivations. Therefore, both professionals and practitioners, need to consider usage time and overall participation in order to understand important expectations, and tendencies. Second, when considering overall user preferences and behaviors in online settings, the concept of age needs to be explored with care, taking into account the particularities, level of complexity and task-intensity, characterizing the particular platform of interest (Page & Uncles, 2004). While research tends to focus more heavily on the younger user pool of online environments (Barnes & Pressey, 2011), in line with the work of Verhagen and his colleagues (2012), our study emphasizes that older users are not necessarily at a disadvantage when it comes to general usage aptitude and behaviors, and in fact, at times, may even *outperform* their younger counterparts with respect to certain creative and economic endeavors.

Third, the current study demonstrated that UGC creators play a central role within virtual communities, and as such, a better understanding of the preferences, usage patterns, and general behaviors of this particular group, may reveal valuable insights for those organizations who intend to

establish themselves in Second Life, and use this medium to explore different market segments. Finally, it is essential to understand the continuum between superficial and deep engagements that tend to characterize virtual exposure and existence, and align one's target and interest accordingly. The fact that object creators report more difficulty in their navigation of Second Life, suggests that this group also has a more detailed understanding of the complex mechanics associated with this virtual platform, and in turn, may be able to assist professionals in their communication to and approach with individuals with different levels of aptitude, training and preparation.

In summary, given the increasing digitalization of everyday life, virtual worlds are able to provide researchers and practitioners with an interesting laboratory to explore the extent of congruence between user behaviors on 2D platforms, as well as in offline settings. In the current study, we began to disentangle some of the underlying characteristics and patterns associated with UGC creation in Second Life. Nonetheless, based on the relative novelty of this line of work, numerous follow-up opportunities and expansions are available, with some of these noted in the upcoming section.

7. 7. Limitations and Future Directions

The aim of the current study was to begin to assess UGC creation on the Second Life platform. Given the lack of prior extensive work in this area, the study was an exploratory one in nature, with certain obvious limitations. First, in terms of sampling, while the overall sample size in the study was adequate, there was a relatively large discrepancy between content creators and non-creators. Furthermore, the sample was obtained based on availability and convenience, as opposed to being derived using a structured selection method. Second, in terms of approximating virtual content creation activities, only quantitative metrics were used. Given the complexity of UGC creation, future studies may undertake a mixed methods approach and utilize quantitative as well as qualitative interview data, in order to understand the role of UGC in the lives of residents to a greater extent. Third, given the primary focus of the current study in content creation and consumption, we have not considered the economical aspects associated with virtual goods, regardless of their potential relevance. Expanding on the current research, future work may examine the purposes underlying virtual content creation, with particular attention to economical gains. Finally, the age-based usage discrepancy identified in the current study is an interesting one to investigate further, using more comprehensive and elaborate analyses, in order to understand certain differential patterns characterizing members of various age groups.

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