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Abstract

As virtual worlds evolve, so does the visual complexity and customizability of the avatars inside the worlds. In virtual worlds such as Second Life, prospering virtual fashion industries have brought about, among other things, the formation of virtual fashion blogs. This paper presents a content analysis of major virtual fashion blogs with an emphasis on identifying emerging standards and strategies for virtual fashion commentary and criticism. Overall, this study discovered a somewhat unified voice among fashion blogs, revealing a significant blurring of real world and virtual boundaries when writing about virtual fashion. Additionally, the increasingly important role of the language of technology in virtual fashion writing is noted. The paper concludes with a discussion of the growing impact of virtual fashion on the design of avatar customization interfaces.

1. Introduction

The ability to choose and/or customize the appearance of one’s avatar has become increasingly available in video games over the last decade or more. In Second Life, a virtual world filled almost entirely with user-generated content and a set of accessible authoring tools to create it, avatar customization has progressed from a specialized hobby in the early days of the world (2004-5) to become a full-blown, for-profit, design industry in its own right, by early 2007. Today, one can buy clothes, accessories, hairstyles, and even bodies and skins in a wide range of styles, from gothic lolita to haute couture.

In research circles, fashion has a mixed reputation. Alternately celebrated and reviled, it is often dismissed as superficial and unimportant [4]. Yet the role of fashion in the construction of modern identity [1,5], as well as its roles in consumer culture and global commerce [11,14], has brought increased scholarly attention to fashion, especially within the field of cultural studies [6].

Fashion has now entered virtual worlds, and virtual fashion has not received the attention it probably deserves as a hotspot for identity, amateur multimedia, and the social construction of cultural values in virtual worlds. Indeed, in IBM’s 2007 “Virtual World Guidelines” the company spells out a code of ethics and behavior it expects of its employees, including the following statement about fashion: “Make the right impression. Your avatar’s appearance should be reasonable and fitting for the activities in which you engage (especially if conducting IBM business).” Though IBM is hardly offering a robust theory of professional fashion, it clearly considers appropriate fashion to be part of virtual world-based professionalism.

IBM’s paper raises the question about the relationships between virtual and real-life fashion, a distinction that hinges on the criterion of “appropriateness,” which presumably differs in real-life versus in-world. But Second Life fashion raises a number of fashion-identity possibilities that simply lack real-life counterparts. In Second Life, for example, gender is a check-box that can be edited at any time, and online genderbending is quite common. Likewise, other stable real-life features, such as racial characteristics and even species (i.e., non-human avatars), are quite malleable in Second Life. Whether or not such choices are appropriate for IBM employees, it is clear that fashion in Second Life includes much more than the arrangement of virtual clothing items on the avatar; it includes the complete multimedia design of the avatar.

Just as fashion itself differs in Second Life from its real-life counterpart, so do notions of appropriateness and quality. What do Second Life participants consider to be “good” fashion? What are the criteria by which fashion is judged? How can newcomers get up to speed and fashion aficionados stay informed? The answers to these questions are found, among other places, in Second Life’s fashion blogging community.

This paper, which focuses on an analysis of the thriving Second Life fashion blogging community, is
part of a larger project aimed at collecting data about fashion in virtual worlds. Our research team has also conducted a survey of regular Second Life users’ fashion habits. The results and findings of the survey are being written up elsewhere, but a few of the results shed light on the significance of virtual fashion and why it merits attention in HCI, science and technology studies, and cultural studies. As of this writing, 156 respondents took the survey, the majority (66%) of whom indicated that they spent over 6 hours a week in Second Life. Nearly 80% reported spending at least one hour a week shopping for virtual fashion, and nearly 40% indicate that they read Second Life fashion blogs. Perhaps most interesting of all, 44% of respondents have used Second Life’s authoring tools to create one or more items of fashion. Considering this data alongside other indicators, such as the dominance of fashion in the Second Life paid classifieds section, the presence of numerous blogs and virtual fashion magazines (Figure 1), and regular fashion shows in-world, there is no question that fashion is a major activity in-world.

![Second Style](image)

Figure 1: Second Style is an ad-supported virtual fashion magazine, with 19 issues to date.

2. Research Objectives

Clothing in real-life ultimately has two functions: to protect the body from the elements and to communicate symbolically about the wearer [4]. In Second Life, the (avatar) body is indestructible, and clothing serves no protective purpose at all; all that remains is its symbolic role. Given the heightened importance of virtual fashion as a symbolic vehicle, we were interested in how the Second Life community understood, constructed, and/or promulgated its symbolic meanings and value. What, for example, is a good virtual shoe? How does one recognize quality? How does one know if she or he is dressing appropriately for an in-world occasion? If an outfit costs $250 Linden dollars (about 1 USD), is it a good value?

As we did the preliminary work of reading many blogs, shopping in Second Life stores, and dressing our avatars, we also formulated our research questions:

1. **How is virtual fashion interpreted and evaluated on major blogs?** This general question underlies the whole study. Above all, we wanted a high-level picture of the major concerns and critical categories driving the conversation among experts on Second Life fashion.

2. **How does RL versus SL shape the interpretation and evaluation of virtual fashion on fashion blogs?** Pushing against the popular concept that virtual worlds are “imaginary,” we wanted to understand how real-life values and expectations were shaping Second Life fashion reviews. This carries forward concepts generally explored in [15, 16, 19, 20].

3. **To what extent does computer technology shape the interpretation and evaluation of SL fashion on fashion blogs?** Prior work in HCI [3] has explored the relationships between authoring software and amateur multimedia, and we too were interested in the ways that technology enters fashion blogging.

4. **To what extent are fashion blogs univocal in their interpretation and evaluation of SL fashion?** Numerous blogs on Second Life fashion exist, and we wondered the extent to which different blogs shared critical and interpretive criteria, or whether Second Life fashion is in a “wild west” phase where its critical categories are still being negotiated.

After explaining our research methodology, we offer evidence in response to each of these questions.

3. Methodology

To study the fashion blogs systematically, we used an approach derived from content analysis [13, 18]. In this section, we describe how we selected our sample, how we developed our coding categories and rating system, as well as discuss intercoder reliability issues.

3.1. Population Selection

Once beyond the pilot stages of the study, we selected blogs based on a combination of the following criteria.
Diegetic aspects of an

... assigned to two members of the research team for coding. Each of the 165 blog posts were randomly chosen from the three candidate blogs (55 posts per blog). The timeframe was chosen both because it was the most recent period before this study began and because it contained two major holidays, Valentine’s Day and Easter, which are known to influence the Second Life fashion industry.

The total number of posts in the four month sample was 193. To achieve a 95% confidence level with a 3% confidence interval, we selected 165 blog posts for coding. Blog posts were evenly divided and randomly chosen from the three candidate blogs (55 posts per blog). Each of the 165 blog posts were randomly assigned to two members of the research team for coding.

After individually coding each blog post, the research team met first as a whole and later in pairs to reconcile disagreements in codings. A final “agreed” coding was recorded for each blog post to be used for final analysis. Additionally, if the two coders assigned to a post agreed that the substantive issue addressed in the post did not relate to fashion commentary it was removed from the sample. In total, 9.09% of the sample was identified for removal. Posts removed from the final sample commonly fell into one of the following categories: promotional notices and contest announcements.

### 3.2. Coding System

The coding system used in this study was developed over the course of six months beginning in November 2007 and finalized in April 2008. Members of the research team reviewed randomly selected posts from each of the identified blogs and developed categories based on the blog text itself. Additional categories were derived from relevant literature review of real-life fashion studies and video game studies as well as from the research questions driving this study. Two separate pilot tests with small post samples (n=5) were conducted to aid researchers in both refining the coding system categories as well as in developing group expertise in use of the coding system. All iterations of the coding system were refined in a shared

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
<th>Example(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fit on body</td>
<td>How an item/outfit relates to the body of the avatar.</td>
<td>Too big, wrong shape—the avatar needs to lose weight, or get taller, have smaller feet, or have a longer neck, etc.</td>
</tr>
<tr>
<td>Second Life trends</td>
<td>Clothing trends in-world, whether or not they have any relationship to real life.</td>
<td>In-world fads, usually technology induced; the sudden rise of bling, flexi-prim hair and skirts, etc.</td>
</tr>
<tr>
<td>Second Life setting</td>
<td>In-world events and locations that have no specific real life counterpart.</td>
<td>Fashion shows, In-world themed dance parties, etc.</td>
</tr>
<tr>
<td>Fashion item type</td>
<td>Describes the type of item as a whole.</td>
<td>Pantsuit, slitted skirt, female skin, male body, etc.</td>
</tr>
<tr>
<td>Product features</td>
<td>Describes specific, individuating diegetic aspects of an item. These are parts of the whole that an avatar could “see.”</td>
<td>Embroidered logo, V-neck collar, eye shadow (on a skin), broad shoulders (on a body), etc.</td>
</tr>
<tr>
<td>Diegetic craftsmanship</td>
<td>Diegetic descriptions of how the clothes appear to have been crafted as if they were made in-world. Items in this category are always pure fiction.</td>
<td>“Notice the careful stitching around the waist”</td>
</tr>
<tr>
<td>Vacuous assertions</td>
<td>Any claim that something is the best or worst that is unsubstantiated.</td>
<td>“The shoes are awesome.”</td>
</tr>
<tr>
<td>Designer</td>
<td>Any claim about the designer as an avatar and her or his personal reputation as an individual.</td>
<td>“Designer ABC always throws the best parties.”</td>
</tr>
<tr>
<td>Brand</td>
<td>Value of in-world brand and its reputation only coded if the blogger writes that the brand itself brings some additional value (good or bad) to the item.</td>
<td>“I’ve never been a fan of XYZ, but this time they really outdid themselves.”</td>
</tr>
<tr>
<td>Second Life memories and associations</td>
<td>Memories of Second Life events, relationships or subjectively-defined “eras” in-world that have no specific real life counterpart.</td>
<td>“When my SL partner and I were courting each other…”</td>
</tr>
</tbody>
</table>

Table 1: Diegetic coding categories.
document which detailed all categories, code criteria, and offered examples.

The final coding system (Tables 1 and 2) contained 17 categories divided at the highest level into diegetic (11 categories) and non-diegetic (6 categories) groupings. The term “diegetic” is derived originally from literary theory, though it has been used in film as well as game studies, and it refers to any information that comes strictly within a fictional world, in this case Second Life, as if the real world does not exist and as if the fictional world were truly a world and not a virtual world in a film, novel, or computer program. Accordingly, “non-diegetic” refers to anything external to the world of Second Life.

For example, imagine a virtual dress (Figure 2), with realistic folds and shadowing. One can talk about this dress diegetically and/or non-diegetically. Referring to an item of virtual clothing as “beautifully draped” is diegetic, because the explanation of how the clothes came to be the way they are is offered as if the clothes had actually been produced in Second Life using traditional clothing construction techniques. Conversely, a non-diegetic example would include referring to the folds of a dress as the result of “skillful texture baking,” which suggests how the illusion of a fold was created—in 3D software such as Lightwave, exported to a 2D bitmap (a “texture”) and imported onto a 3D shape in Second Life. Distinguishing between diegetic and non-diegetic references in interpreting fashion is a primary mechanism by which we can distinguish between real life-based versus Second Life-based associations and critical categories in the bloggers’ interpretations and reviews of the fashions, which is one of our research questions.

Table 1 provides category names, definitions and examples for the diegetic grouping. Non-diegetic categories are outlined in Table 2.

### Table 2: Non-diegetic coding categories.

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
<th>Example(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bugs</td>
<td>Any bug in the Second Life system—the client, on the server, over the network, etc.</td>
<td>“Hairline break between skirt and shirt.”</td>
</tr>
<tr>
<td>Non-diegetic craftsmanship</td>
<td>Comments about the quality of the actual construction in Photoshop or other tools/software.</td>
<td>Texture baking, layering, sculpties, prim count, etc.</td>
</tr>
<tr>
<td>Technical features</td>
<td>Outfits whose function or behavior is controlled by non-diegetic means.</td>
<td>HUDs and script-enabled outfits add power and convenience, item permissions, etc.</td>
</tr>
<tr>
<td>Real life expectations</td>
<td>Real life uses and expectations of items imposed on Second Life uses of same items. These expectations are not personal but rather general; many/most in the same culture will share these expectations.</td>
<td>“The handbag is extra roomy.” “Here is a red, white, and blue outfit just in time for the Fourth of July”</td>
</tr>
<tr>
<td>Historical/cultural styles</td>
<td>Indicates that the style is part of a stylistic category. All such categories are non-diegetic, because every one of them exists outside of Second Life and are merely referenced in-world.</td>
<td>Goth, fetish, hip-hop, punk, Lolita, suit-and-tie, business casual, etc.</td>
</tr>
<tr>
<td>Real life memories and associations</td>
<td>Author’s personal experiences and history influencing judgment. These are personal and specific to the individual blogger.</td>
<td>“Reminds me of Christmas at my parents’ house when I was growing up.” “This is like a frat party I went to in the 80s.”</td>
</tr>
</tbody>
</table>

3.3. Rating Scale

Each category was coded on a scale of 0, 1 or 2. A three-tiered rating system was employed to indicate the absence (0) or presence (1) of the category as well as permit the flexibility to distinguish between presence (1) and emphasis (2).

Admittedly, evaluating for emphasis cannot be done in an objective, universal way so borderline disagreement cases between presence (1) and emphasis (2) occurred among coders. After the pilot uses of the coding system, the research team developed nine different criteria for mitigating between 0, 1 and 2 ratings. For the sake of brevity, those criteria are not covered in this paper.
3.4. Intercoder Agreement

Intercoder agreement was calculated as a percent agreement measure for each blog and for the entire population. Overall, 78% agreement was achieved with the coding system. While it is understood that percent agreement is a liberal measure and does not account for chance agreement [7, 13], multiple factors were put in place to mitigate the limitations of the measure. The primary means to mitigate an artificially high agreement percent are the number of categories in the system (reducing the likelihood of chance agreements), the random assignment of posts to a team of six coders and the early development of team consensus through the pilot tests of the coding system.

It is important to note that the nature of intercoder disagreements in this study was largely one of correcting coder errors and oversight. The core distinction in our coding system is a check for simple absence (0) or presence (1-2) of blogger discussion pertaining to one of the 17 system categories. In most cases, intercoder disagreement was a result of coder oversight (i.e., skipping a sentence of the blog post that contained a pertinent comment.).

Finally, it is worth noting that the very subject of our coding system, fashion and fashion commentary, is highly subjective by nature and cannot be treated in an overly reductivist manner without severely limiting the researcher’s ability to answer the broader research questions set forth in this project. Some amount of interpretation is required and the coding system left room for such interpretation while still controlling for the consensus required to analyze our codes.

4. Results

The content analysis offered evidence that suggest answers to our research questions. In this section, we present this data alongside of our interpretations.

4.1. Characteristics of Fashion Criticism (RQ1)

As described in our Methodology section, our coding system was derived from months of reading fashion blogs and discussions about ways that we saw bloggers explaining fashion. We categorized these ways into diegetic and non-diegetic categories, and then coded for the critical categories available to a blogger, to see which ones they actually used.

To understand how different possible contexts were used in interpreting and evaluating fashions, we combined different categories. The purpose of combining individual coding categories was to identify a collection of contexts (Table 3) that are commonly used in design criticism to interpret and evaluate artifacts. For example, a work of criticism might consider a design as an example of work by a particular designer, at a particular stage of her or his life, or while working for a different designer; such a critique uses the designer’s biography as a context for interpreting the work. Other possible contexts include production techniques, commercial contexts, socio-cultural movements and events, and the biography of the critic her- or himself.

<table>
<thead>
<tr>
<th>Context</th>
<th>Diegetic Categories</th>
<th>Non-Diegetic Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Fit on Body</td>
<td>Bugs, Non-diegetic Craftsmanship, Technical Features</td>
</tr>
<tr>
<td>Commercial</td>
<td>Brand, Cost</td>
<td></td>
</tr>
<tr>
<td>Designer</td>
<td>Individual Designer, Brand</td>
<td></td>
</tr>
<tr>
<td>Artifact</td>
<td>Item Type, Product Features</td>
<td>Technical Features</td>
</tr>
<tr>
<td>Production</td>
<td>Diegetic Craftsmanship, Non-Diegetic Craftsmanship</td>
<td></td>
</tr>
<tr>
<td>Individual Blogger</td>
<td>SL Memories, RL Memories</td>
<td></td>
</tr>
<tr>
<td>Real Life</td>
<td></td>
<td>RL Expectations, Historical Cultural Styles</td>
</tr>
<tr>
<td>Second Life</td>
<td>SL Trends, SL Setting, Bugs</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Breakdown of contexts into their diegetic and non-diegetic categories.

After creating these clusters, we then identified all the non-zero ratings for each category, and divided that number by the total possible rating for that cluster. For example, if a given blog had a 0 in item type, a 1 in product features, and a 2 in technical features, then its Artifact cluster percent would be 66.67%, because two of the three scores were non-zero.

Figure 3 shows the results for all context clusters across all three blogs. It offers a high-level glimpse of the sense-making contexts bloggers use to interpret and review fashion.

Though clustering the data and averaging it obscures some nuance, the numbers do provide a high-level overview of how Second Life fashion bloggers are interpreting the in-world fashions. Only two contexts were coded at least one standard deviation (19.24%) about the average for all contexts: Artifact (69.02%) and Real Life (62.62%). Likewise, only two contexts were coded at least one standard deviation below average: Second Life (17.14%) and Individual Writer (20.91%).

Overall, these results suggest that Second Life fashion bloggers focus largely on the fashion items and
their features themselves, and where context is offered to provide meaning it largely derives from the real world. It also suggests that Second Life itself—as both a software client and a full-blown simulated world—is not used to explain or review fashion; we discuss the significance of this finding, alongside more data, in the following section.

4.2. Real-Life-Based vs. Second Life-Based Critical Categories (RQ2)

Contrary to the popular belief that virtual worlds are self-contained imaginary worlds with limited influence on or from the real world, Second Life fashion commentary is in fact largely based upon and significantly shaped by real world values, expectations and standards. The real life context is the second highest coded context bested only by discussion about the fashion artifact itself (which should be expected in writing about fashion items). 62.62% of blogs have a non-zero rating for real life context which, as mentioned earlier, is at least one standard deviation (19.24%) above the average rating (42.87%) for all contexts. Additionally, the real life context can be further broken down into real life expectations (61.33%) and historical/cultural styles (63.91%) which are the two single highest rated non-diegetic categories. Second Life fashion commentary as it stands is largely impossible to create without significant reference to our knowledge and expectations of real world fashion.

In opposition to the reliance on real world fashion reference is the surprisingly minimal reliance on the Second Life fashion context. Only 17.14% of posts exhibited a non-zero rating for the Second Life context which, as discussed, is one of two contexts to fall at least one standard deviation (19.24%) below the average non-zero rating for all contexts (42.87%). Additionally, constituent components of the Second Life context, Second Life trends and bugs, are the lowest rated categories in the diegetic and non-diegetic categories respectively. Second Life fashion commentary largely avoids references to Second Life as technology or as its own world, instead commentary is embedded in our understanding of the real world.

As previously mentioned, the fashion blogs tend to suppress the context of the individual writer, but when the writer permits their personal experiences to permeate their fashion commentary it is real world memories and associations which are most often referenced. Real world memories and associations were coded in 27.93% of posts whereas Second Life memories and associations are only found in 13.89% of posts. Furthermore, Second Life memories and Second Life trends (10.49%) are the only diegetic categories to fall at least one standard deviation (26.81%) below the average (44.33%) for all diegetic categories. Even when describing virtual items worn by their virtual selves, authors prefer to relate to their memories of the real world.

The production context, which is the fourth most prevalent context overall, is measured in terms of diegetic and non-diegetic craftsmanship. Discussion of diegetic craftsmanship was found in 37.67% of blogs while discussion of non-diegetic, real world craftsmanship (using Photoshop, Maya, etc.) was coded in 58.22% of blogs. Fashion commentary preferences the discussion of real world tools and techniques for creating virtual items as opposed to discussing the qualities of the items as if they existed inside a separate and entirely imaginary world.

It is no surprise that the dominant context identified in the fashion blogs is the discussion of fashion
artifacts themselves. However, the nature of the artifact discussion borrows most heavily from real world fashion language. Fashion item type and product features, constituent categories of the artifact context, are by far and away the highest rated categories. Fashion item types are discussed in 94.86% of posts and product features are found in 77.02% of posts. Both ratings are at least one standard deviation (26.81%) above the average (44.33%) for all diegetic codings. In other words, the language used to describe virtual fashion as it exists in world is (currently) imported largely from real world fashion terminology, with the exception of Second Life- and/or virtual fashion-specific technologies, such as “layers,” “prims,” and “scultpies.”

This study challenges the notion that virtual worlds like Second Life are distinctly separate from the real world. Our analysis of fashion blogs shows a clear preference towards using real world fashion language to describe virtual items, associating virtual clothing with real world memories, setting expectations for virtual clothes based on expectations for real world clothes and discussing the creation of clothes in terms of the real world technologies used to create them.

4.3. Technology and Virtual Fashion Criticism (RQ3)

One aspect of Second Life fashion blogs that we noticed at the earliest stages of our study was the extent to which computer technology comes up as a critical category when describing fashion. The presence of technology in virtual fashion writing was noteworthy both because technology comes up far less in fashion writing in traditional fashion magazines, such as Vogue and Marie Claire, and also because in our prior research in amateur multimedia, technology is also a conspicuous category.

In our coding system, four categories captured aspects of computer technology: the diegetic category of fit on body and the three non-diegetic categories of bugs, non-diegetic craftsmanship, and technical features. (We consider fit on body as a technology category, because fit in the blogs usually refers to the way that the clothing attaches to different 3D body shapes, and technology is offered both as an explanation of the problem as well as offering solutions to it; in other words, fit on body was often as not a diegetic way to talk about software bugs.) These four coding categories were combined to create the Technology context, described earlier. In that finding, the Technology context was one of the weaker contexts, with non-zero codings in only 34% of the entries. However, this number—an average of four categories across three blogs—masks an unusually unstable critical category. In this section, we take a closer look at the numbers and offer a more nuanced view of the role of technology in virtual fashion criticism.

The four technology related categories showed quite a bit of variance. For example, the bugs category was coded with a non-zero less than 10% of the time, which was at least one standard deviation below the average for all the non-diegetic categories. At the opposite extreme, non-diegetic craftsmanship was coded with a non-zero 58% of the time. In between were fit on body (33% non-zero) and technical features (35% non-zero).

This spread reveals that non-diegetic craftsmanship alone was actually a fairly important criterion (indeed, it was coded overall 3rd out of the 17 categories in our study). This is more remarkable because one of the three blogs, Second Style Fashionista, used this criterion infrequently (non-zero scores only 30% of the time), which means that it was a key criterion in the other two blogs (non-zero scores were recorded a full 72% of the time at both Linden Lifestyles and SLMen).

There are two trends in the data that we need to account for: the strong variance across the four categories that make up this context, and the strong variance across blogs about how technology is coded.

The variance across the four categories appears to be related to other trends in fashion blogging. Bugs, for example, are also a part of the Second Life context, and all categories in that context were quite low (17% non-zero). Non-diegetic craftsmanship was also a part of the production context, which had non-zero scores 48% of the time, 5 points above average.

The variance across blogs is unusually high in some of the technology categories. The average scores across all blogs for non-diegetic craftsmanship (58% non-zero) and technical features (35% non-zero) had the two of the three highest standard deviations of any of the 17 categories we coded (24% and 29%, respectively). At SLMen, technical features had a non-zero score in 69% of the posts, while in the other two blogs technical features were discussed much less often (24% non-zero at Linden Lifestyles, and 13% non-zero at Second Style Fashionista).

All of this variance across technology categories and across blogs suggests that the context of technology is unstable overall as a critical category for virtual fashion. For two blogs, aspects of computer technology, in particular as they relate to craftsmanship or final product features, are central to their evaluation, while for the other blog, Second Style Fashionista, computer technology barely registers.

Treatment of technology as a reference for fashion criticism is but one way the blogs distinguish themselves.
4.4. Consistency of Critical Categories across Blogs (RQ4)

Analysis of this study’s data provides insight into the extent to which Second Life fashion blogs share critical and interpretive criteria when engaged in fashion commentary. Overall, we can see that fashion commentary in Second Life achieves diversity within a general consensus. In section 4.1, we outlined the blog wide trends related to virtual fashion commentary (focus on artifact and real life context, avoidance of Second Life as an environment and the writer as an individual). This section presents the unique focus of each blog and their contributions to Second Life’s growing realm of fashion commentary.

Second Style Fashionista is primarily a consumer-diegetic blog. The percentage of posts with non-zero scores in diegetic craftsmanship (28.26%, SD 10.96%) and non-diegetic craftsmanship (30.43%, SD 24.06%) are the lowest among the blogs by at least 1 standard deviation in the respective categories. Low craftsmanship scores suggest that Second Style Fashionista is not as concerned about how clothes are made, only how they are as completed artifacts. A diegetic preference at Second Style Fashionista is evidenced by the fact that the blog has the lowest non-zero rated categories for five of the six non-diegetic categories (bugs 4.35%, non-diegetic craftsmanship 30.42%, technical features 13.04%, real life expectations 60.87% and historical/cultural styles 52.17%).

With a strong consumer-diegetic focus, Second Style Fashionista perpetuates the fantasy of Second Life as a magic circle [10, 17], relishing in Second Life’s consumer culture. In fact, Second Style has the highest non-zero rating in the real life memories/associations category (39.13%). This is the only non-diegetic category in which Second Style Fashionista had the highest number of non-zero rated posts, suggesting that Second Style Fashionista presents fashion in a more vogue-like fashion-centric way, by connecting intangible virtual fashion to real world memories. Largely, Second Style Fashionista is a celebratory blog, in that it offers the least critical commentary about artifacts; it aims above all to enjoy fashion with its readers.

Explicitly improving the craft of Second Life fashion design is (generally) not the concern of Second Style Fashionista. Its celebratory stance is further evidenced by its Uncritical Contribution score. We created this score by combining the overall number of entries thrown out as irrelevant to virtual fashion with the percent of entries where the coding category of vacuous assertions was coded as a 2, that is, with emphasis. Second Style Fashionista had the highest score among the blogs, surpassing 50%, meaning that just over half of its posts were either irrelevant to virtual fashion or contained vacuous assertions.

SL Men is the most technical of the blogs, with a strong emphasis on clothing, construction, and technology. Of the three blogs, SL Men ranks the lowest in the individual writer context with 15.74% of posts coded with non-zero ratings (Avg 20.91%, SD 4.72%). Additionally, SL Men ranks the highest in the Artifact context with 80.86% of posts receiving a non-zero score (Avg across all three blogs 69.02%, SD 10.5%). Finally, SL Men ranks the highest in both the commercial (68.52%) context and technology (49.07%) contexts.

A purposeful distance between author and commentary combined with a focus on the artifact, commercial value and technology context position SL Men as the most critically substantive of the blogs. SLMen's Uncritical Contribution score stands in stark contrast to that of Second Style Fashionista: at 10.91%, the overwhelming majority of SL Men posts were neither thrown out nor were coded with a 2 in vacuous assertions (Avg 63.03%, SD 22.59%). Given its substance, and in particular its strong focus on non-diegetic craftsmanship and technical features, SL Men orients itself towards fashion designers interested in both serious critique of fashion artifacts as well as in improving fashion design (especially along non-diegetic lines). It lacks the celebratory language of Second Style Fashionista, and thus seems comparatively less consumer-oriented.

Linden Lifestyles, the other blog in our sample, blends the fashion celebration of Second Style Fashionista with the critical commentary of SL Men. The connection between Second Life and real life fashion is more frequently discussed at Linden Lifestyles than the other blogs. 73% of Linden Lifestyle posts have a non-zero rating in the Real Life context cluster (Avg 62.62%, SD 9.04%). Production qualities are also most frequently discussed at Linden Lifestyles, with 58% of posts receiving a non-zero rating. The Designer context, which addresses the creative agents behind fashion design, is also most frequently reported by Linden Lifestyles with 49.07% contexts. Additionally, more so than any other blog Linden Lifestyles orients itself toward the discussion of fashion in terms of the brands that produce it. 60% of Linden Lifestyles posts have a non-zero rating for the brand category (Avg 48.07%, 10.42%). Finally, the connection between real world fashion and Second Life fashion is strong at Linden Lifestyles. References to real world historical/cultural styles are found in 84% of Linden Lifestyles posts (Avg 63.91%, SD 17.48%).
In spite of all this evidence of substance, Linden Lifestyles displayed considerable celebratory content as well. 58% of its posts had a non-zero code for vacuous assertions, while five of its posts were thrown out of the study as irrelevant. Its resulting Uncritical Contribution score was 49.09%, essentially the same as Second Style Fashionista’s. This combination of both substance and celebration led us to conclude that Linden Lifestyles is oriented towards Second Life designers and fashion aficionados with an emphasis on appreciating good fashion design. By “appreciation” we are suggesting something more inclusive and relaxed than critique, yet more critically substantive than pure celebration.

5. Discussion

Virtual fashion design is intrinsically a mixed reality design practice. In the vast majority of instances, fashion simply cannot be designed within Second Life. Outside software—Photoshop, Lightwave, and even Maya—is used to create the elements residents use to design their avatars and online identities. Yet fashion needs to be uploaded and assembled on an avatar in-world to be seen and evaluated, even during the iterative process of design. By the same token, though radical avatar design—design that has never been seen in or would be impossible in real life—is possible in Second Life, (and in fact, thousands of its residents have non-human and even inorganic shapes as avatars), the fact remains that the vast majority of Second Life resident avatars appear as humans in clothing whose main features we recognize from real life. As discussed in 4.2, our data also supports the claim that real life fashion is profoundly, and not incidentally, implicated in Second Life fashion, and avatar/fashion interfaces should be designed accordingly. Though virtual fashion is intrinsically a mixed reality practice, it can be treated critically as if it is all in-world (a direction toward which Second Style Fashionista gravitates), or it can be treated frankly as a mixed reality practice (a direction seen in the other two blogs).

These insights have implications for the design of next-generation virtual worlds. Above all, recognizing the fundamental importance of fashion in the presentation of the online self is key; avatar customization interfaces that merely allow one to choose from a combination of parts need to be put into the past. Users will demand the ability to manage their appearances in robust and nuanced ways, often reflecting their real-life fashion sensibilities, or they may not be able to invest as much in their avatars as they could in more fashion-responsive avatars (in fact, 84% of the respondents on our survey said that their Second Life fashion reflected their real-life fashion at least sometimes).

Additionally, virtual world toolset designers need to distinguish between consumer participation in and consumption of fashion—a diegetic activity that is fundamentally oriented toward the virtual world itself, and the designer’s craft of creating fashions, which for the foreseeable future will surely continue to include the likes of Photoshop in the design of virtual fashion.

On the consumer side, while it may be great that tools enable designers to build anything they can dream, we know from Second Life that most of their dreams are shaped by real life couture, and our blog data lends more empirical evidence to this claim. Thus, toolsets should accommodate consumers’ desires to replicate and play with real life fashion, and in particular its visual elements, including and especially the nature of fabric—its folds, fading, stretching, and distinctive play of light and shadows. Likewise, avatar dressing interfaces should be easy and bug-free, so that fit on body, as a description of how fashion elements often unpredictably attach to the body, should not be an issue.

For designers, toolsets should have clothing objects that reflect real-life variations and uses of different clothing types. If, as SLMen tirelessly complains, real-life sleeves come in a variety of widths, then digital shirtsleeves should be easily editable in this area. Likewise, if real-life clothes are flexible enough to accommodate a number of different layering regimes, then digital clothes should share that flexibility. And if, as both Linden Lifestyles and Second Style Fashionista complain, there really is an “exposed midriff syndrome” in-world, where an unusual percentage of outfits reveal their avatars’ navels, then that needs to be treated as a bug, because the authoring tool, rather than designers or consumers, is effectively driving a fashion trend. Finally, matching the seams where textures come together on the body is a crucial issue in real life fashion; virtual fashion design toolsets should have features that help designers create fashionable seams, whatever that may mean to them.

6. Conclusion

Aspects of the critical language of virtual fashion may remain in flux for the foreseeable future, but overall, the picture is consistent. Our data shows that regardless of a blog’s orientation, people are looking very closely at their online fashions. They respond to the visual language of fashion much like they do in the real world: they notice individuating features of a design, signs of craftsmanship—be they real or simulated, and imperfections.
The role of technology in the critical language of fashion is, and is likely to remain, especially dynamic. First, technology calls attention to itself in both positive and negative ways. Negatively, people notice bugs, ways that the interface conflicts with their mental models about clothes, and generally struggle with clunky user interfaces. Positively, people appreciate good texturing and modeling when they see it, and they treat technical features (such as generous permission settings) much like they treat diegetic features (such as the simulated material of a button). Second, different virtual fashion stakeholders—consumers, designers, and critics—have differing perspectives on the relevance of technology in fashion. As virtual fashion technologies and practices evolve, we also expect the critical vocabularies to evolve with them. Regardless of how exactly technologies, fashion, and fashion criticism evolve, one thing is without a doubt, and that is that virtual fashion will continue to be a major part of virtual worlds in the foreseeable future.

7. References

