

Embodiment in 3D virtual retail environments

Exploring perceptions of the virtual shopping experience

Keywords: avatar / on-line fashion retailing / Second Life / 3D virtual environment

Abstract

The customer can now easily create, and customize, their own personal three dimensional (3D) virtual bodies in a variety of virtual environments; could you, by becoming a virtual body, actually enhance your online shopping and buying experiences or, would this potentially inhibit the pure visceral pleasure of retail therapy?

"Second Life allows you to be a celebrity in your own lunchtime,you can design the body you've always wanted, and indulge your fashionista fetish for very little money. You can be the most attractive, best-dressed version of yourself you can imagine."¹

This paper investigates online shopping in 'Second Life', through the experience of being avatars.² We will discuss the possibilities of using avatars as brand new consumer identities for personalised and customised fashion shopping within the 3D multi user virtual environment, and question the influences and effects of these developments on the traditional high street shopping trip.

The hyper un-realistic and non-sensory interface of online shopping for clothes has been hotly debated over the last decade; through the media, the industry and most importantly by the buying public. The customer's inability to try on and experience the product has been the main inhibitor to shopping on-line, and the high levels of product returns in home shopping dramatically reflect this reality. Faster broadband connections and improved 2D web sites are making clothes shopping on the web more accessible, and for important customer groups, such as young professional females, and plus-size teenagers, virtual 3D technologies offer freedom of choice in any location.

Retailers are now confidently providing different shopping experiences by combining 2D and 3D interactive visualisation technologies with advanced marketing techniques, to create virtual retail environments that attempt to actualise the true essence of shopping; by browsing, socialising, trying-on before buying and, in a new twist, leaving the store proudly wearing the item just purchased. American Apparel,

Bershka, L'Oreal, Calvin Klein, Reebok, Sears, Nike and Adidas are pioneering virtual mega stores, and all offer newly innovative, and alternative shopping experiences inside 3D multi user virtual environments.

An experiential and exploratory approach will be used to investigate fashion brands, and their virtual 3D stores in Second Life. As 3D avatars, we will record a range of customer perceptions and attempt to map their shopping patterns in this massively popular virtual world. The qualitative data gathered will inform discussions about the value of the virtual shopping experience for the customer and the retailer. Conclusions will also question the possibility of using avatars in a virtual shopping environment to acquire accurate body specifications for better fit and the collection of personal details for use in the future development of alternative shopping experiences.

¹ http://domainsmagazine.com/Domains_1/Domain_7474.shtml

² www.pcmag.com/encyclopedia_term/0,2542,t=avatar&i=38293,00.asp

Introduction

This paper reports on an exploratory research project that has grown out of a rare collaboration between a design academic and a business-orientated academic in the Design Business subject area of the School of Art, Design & Architecture at the University of Huddersfield. The current focus of this collaboration is an investigative study of fashion brands in the online 3D virtual environment Second Life.

The Design Business subject area provides a suite of courses providing business orientated courses within the School: BA (Hons) Fashion & Textiles Buying/ Management/Retailing; BA (Hons) Fashion, Media and Promotion and BA (Hons) Advertising Media Design Management. Earlier research papers on 3D virtual environments (Taylor and Unver 2007, Unver and Taylor 2007) had been presented to the Design Business subject academic team resulting in a fruitful discussion of the potential value of using this environment for teaching and learning in Fashion & Textiles Buying, Management, Retail and Fashion Media and Promotion. The research collaboration began because we believed there was in particular, a need to investigate the phenomenon of increasing retail presence of fashion brands in Second Life, both for teaching and learning input and design business pedagogic development.

The focus of this paper is an evaluation of using an avatar, as a virtual customer to experience shopping in mainstream fashion brands within the online 3D virtual environment Second Life. Recent research into virtual fashion design and online retail presence compelled us to immerse our physical selves and investigate online shopping in Second Life, through the experience of being avatars. Adopting an experiential, exploratory and fun attitude to our research, we undertook window shopping and browsing at the virtual 3D stores of fashion brands in Second Life during UK prime time Saturday afternoon shopping hours.

A definition of the virtual body: avatar

The word avatar has several meanings which require clarification; originally, it is an ancient Sanskrit word *Avatara* meaning "the descent of God" or simply "incarnation." In English language, the word has come to mean "an embodiment, a bodily manifestation of the Divine." However, in 1985 on the computer game series *Ultima VI* the term "Avatar" was introduced as the player's visual on-screen in-game persona which could also be customized in appearance. (Wikipedia, 2008)

Humans living, working, playing and shopping in Second Life interact with each other through fully three dimensional motional avatars, although in second life are often referred to as "residents". Residents or avatars can explore, meet other residents, socialize, participate in individual and group activities, create and trade items such as virtual property or services from one another. Users can thoroughly customize their avatars with Second Life design tools, and avatars clothing and accessories also be created offline and uploaded into the world. Avatars can be infused with the user's own images as well as given unique skills using programming code in the Linden Scripting Language.

Background

In the expanding, and increasingly competitive metaverse of 3D online virtual worlds Second life.com is no longer the big name on the style conscious avatar's virtual lips. Brave new and no-so-new virtual worlds such as Activeworlds.com, There.com, Sony Playstation's Home.com, Kaneva.com, and MTV's Virtual Laguna Beach, are now attracting the dispersed loyalties of millions of new customers looking for out-of-body lifestyle experiences that can only be bought through virtual retail.

'Virtual retailing' is a buzz-word of the moment. But what exactly is it describing? In basic introductory terms, KZero (2007) define virtual retailing as "using a digital virtual environment to facilitate and create a purchase". There is, however, clearly far more to the evolving virtual retail phenomenon than meets the eye, as we found out by immersing our real selves into a Saturday afternoon virtual shopping research strategy. We chose Second Life because ongoing online and journal research led us to believe that fashion brands were developing new approaches to merchandising, and we felt much pedagogic value could be derived from documenting how physical human experiences are being simulated by fashion retailers setting out their virtual stalls.

Physical or virtual: blurred boundaries between worlds

The alchemic mix of the anticipation, the magazine flicking, the window shopping beforehand, the journey into the city, on arrival the atmospherics within and around stores, interacting with other customers / retail personnel, trying on and sampling products have always been the narcotic that fuelled the shopping addiction for the physical retail environment.

The communication and interaction between retailer and consumer in both virtual and physical worlds are changing and becoming more flexible; merging through the promise of wider, faster bandwidths, Web 2.0 and 3.0, integrated 2D and 3D technologies and increased public fluency in programming language.

How you look and what you wear is essential to every fashion conscious person and your avatar is no exception, in whatever your choice of virtual worlds you immerse yourself into. Fashion brands are making the transition from the real world to simulated environment as consumer interest in dressing and styling their avatar becomes more frantic in online 3D virtual worlds. It is Second Life however, that has the widest and most diverse range of fashion brands at the moment.

The presence of high profile brands is an indication that retailers consider branded virtual space as a strategic option worth exploring, as the investment of resources to set up the land and buildings in Second Life is not inconsiderable. This development is interesting from a number of viewpoints, but the research question we found most compelling and relevant to the conference theme is the one concerning the direct relationship between the fashion company, representing their physically present and omnipotent brand image and product range in virtual space,

together with the human consumer embodied as the avatar. We felt it was important to access that interaction personally by moving within the virtual retail spaces and encountering any programmed activity within it, and evaluating the physical autonomy and functions of the virtual body.

There is no doubt that the internet is the fastest growing retail format, with estimates of total sales currently being around 8% for the US and 5% in the UK (Mintel 2007, theretailbulletin.com 2006, Seock and Norton, 2007). What these estimates fail to reveal, however, is the widely acknowledged use of websites during the consumer purchasing process, where the final transaction may take place through more traditional formats. Broadband access, better product visualisation and retailers' experience in website design have greatly improved the online shopping experience but consumer expectations are growing in line with technical developments and retailers need to continuously push the boundaries in order to offer *"the experience of a store environment when shopping online, and the efficiency and ease of on-line shopping on the high street"* (Rayman, 2007:134). Experiencing atmospherics within stores, interacting with other customers and retail personnel, trying on and sampling products have always been attractions of the 'real' retail environment, and these experiences have not yet been truly replicated in the virtual retail outlet. This paper proposes that advancements in 3D interactive visualisation technologies will offer retailers the opportunity to change the online shopping experience from a two dimensional 'click and order' process to a fully actualised three-dimensional interactive social process.

Methodology

The methodology used for the research in this study is best described as descriptive observation (Robson, 2002). The study of a new phenomenon in a new medium requires flexibility and creativity in research design, and so the research for this paper resulted in the compilation of narrative accounts of experiences within virtual retail space as an avatar. This approach allowed the unexpected to be recorded and eventualities to be pursued in a situation that was truly exploratory. For the purposes of this stage of the research we did not feel it was necessary to find and specifically interact with other visitors to the store we were visiting in Second Life; we were recording and observing the virtual experience as we encountered it. We therefore did not need to deal with the issues of validity and reliability of data being generated through carrying out research with avatars (World Advertising Research Centre WRAC, 2007).

Likewise, no ethical issues were presented because our experiences were as ourselves, albeit as avatars.

New experience and a new avatar

Rosemary Varley had made a request to the University computing services team to install the Second Life software. She created her avatar called Rosina Iwish and completed the basic tasks on Orientation island. The following Saturday afternoon both authors met in the University, sat in our separate offices and both struggled with the reality of the steep learning curve that stood in the way of our virtual shopping research. Immersion in the Second Life environment requires the user to have a level of skills/experience to navigate the interface and the avatar effectively. We had not anticipated the difficulties that we would encounter, both being relatively new to being inside virtual worlds. Limitations to be considered when approaching future research are:

- Limited gaming/virtual world skills put new avatars at a disadvantage
- Interface user know-how must be acquired through regular 'in world' activity.
- Sharing/networking of avatar location information through inventory
- Practice navigation tools for moving avatars
- Practice camera tools for viewing the avatars surroundings

Progress was slow and we were limited in the time available. We made the decision to work together on one PC using Andrew Taylor's Ay Taov avatar; Andrew operated the avatar and Rosemary recorded the sequences, steps, and processes of finding and accessing the stores, and documented our initial customer perceptions. Andrew used the Second Life camera in the user interface to take snapshots of the locations, events and products. We used online blogs, and google searches to locate the SLURLs, which are Second Life location addresses, because Second Life does not publish brands in the search menu. Online brand specific websites were also useful for linking into Second Life locations.

Our approach to shopping in Second Life

Having been used for half a century in the context of the store as physical space, the concept of image is an important one for evaluating the branded retail environment by consumers (Varley 2005). We have applied the recommendation of McGoldrick, who in 2002 suggested that researchers may need to elaborate and sharpen their tools of image research for the digital store, and have based our assessment of the Second Life fashion stores around key store image components (McGoldrick 2002:188). McGoldrick grouped image components into

eighteen general areas, of which we felt the following thirteen were the most applicable: merchandise price, quality, and range; sales personnel; clientele; services provided; promotional activity; store atmosphere, layout and personality; institutional image; visual imagery and associations. Using these constructs to provide a loose framework for our narrative we use case studies to describe the shopping/brand experiences in Second Life.

Retailer profile outline

The companies included in the study are all mainstream fashion organisations, who have a retail presence, both in the 'real world' and in Second Life. YSL and Armani need little introduction as major players within the luxury fashion market while Adidas and Reebok are high profile representatives from the sports fashion sector, both as producer-retailers. Bershka is the 'little sister' of Zara, being part of the Inditex group, with a younger, and more casual product offering from 487 stores in 33 countries (Inditex.com, 2007). American Apparel is a successful, global, vertically integrated 'sweatshop free' casual clothing company, based in Los Angeles, USA.

Second Life case studies

Yves Saint Laurent

We had located the YSL Island SLURL from a Google search on the web, and teleported directly from this page (which is no longer available), into the ostentatious pink palatial grounds of the iconic fashion French house's virtual launch of the new Elle perfume. A towering pink monolith, a simulation of the YSL Elle perfume bottle rose into the clouds in front of our tiny avatar. Ay Taov looked very small as he walked up the grand walkway lined with neat rows of daisies and entered the pink temple of Yves Saint Laurent.



The immediate impression inside was of a heavily branded, rather empty but overpowering bright fuchsia pink space. The main colour theme was different shades of fuchsia contrasted with grey and trimmed with white and gold. Placed in the entrance was a large gold YSL brand statue and in the centre of what turned out to be the 'ground floor' a square structure was signposted as an elevator. A discreet sign invited the customer to take a seat although we found it hard to climb onto the elevator; several attempts later, the avatar was correctly seated on one of the pink cushions which activated a three level floor choice and we were transported in an instant to level 1.

Floor 1 of YSL was the perfume department, which struck us as superbly ironic as virtual worlds are obviously scentless. However, as he moved amongst the virtual plinths over which bottles of the new Elle perfume were hovering in suspended animation, Ay Taov was engulfed in cascading, misted sparkles and the scentless scent was almost virtually evoked. Strangely the immersive brand experience was having an effect as our curiosity to smell the scent was activated.



We noticed two smartly dressed avatars. The male was behaving rather in a very erratic way and didn't respond to our greeting (both can be aspects of typical behaviour in Second life and real life!) The female avatar approached and greeted us in French. We had just met our first virtual shop assistant, and she asked Ay Taov if he had been in YSL before and if he would like to be shown around the gallery. Our avatar followed her into a long, dark tunnel that, once the avatars were inside, activated psychedelic disco effects and simulated sensation of being transported into a different part of the building. We followed the avatar into a spacious pink room with a series of large format photographic fashion 'boudoir' images displayed around the walls. The YSL assistant explained this was an exhibition of the photographic artist Minah Pessoa. There was no other information available, so we attempted further interaction with the YSL assistant, but no further communication was offered. Perhaps this was because the avatar had

'done their job' by directing us to the gallery or perhaps explanations of brand promotion were reserved for the media and an approved audience. We returned to the research exploration of YSL, and jumped on the central elevator up to floor two, which arrived at another gallery housing a variety of untitled and unremarkable paintings and photographs.

Feeling slightly deflated, and just about to teleport out of the YSL space, when we noticed the most interesting artefact installed on floor 2, which turned out to be a scaled down 3D model with accompanying hand drawn idea sketches of the YSL island and building development. The model of the building enabled us to share in the vision of developing YSL island and how the brand spaces were designed. We flew into the centre of the room and landed on floor three which was empty and had no opportunity for interaction. The general impression of floor 3 was of irrelevant and unnecessary use of unused space, with a few rows of pink seats, and a few photographic 2D Elle promotional posters.

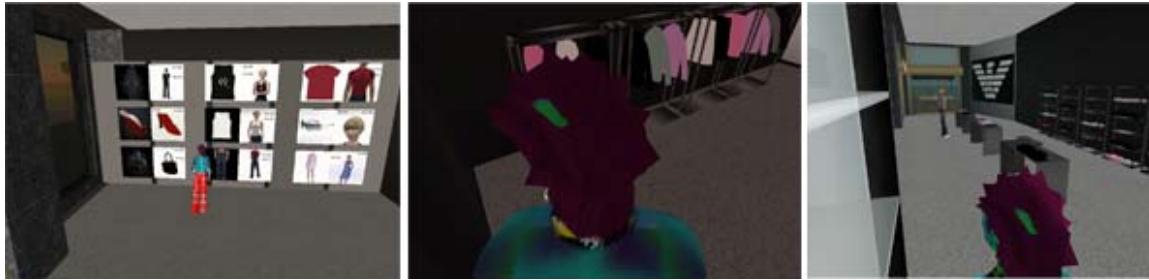
Armani

The location where the Armani store has been established appears extremely bleak and unfriendly. The store looms darkly out of the Second Life haze, imposing, dark and austere and placed on a straight street, lined with trees. From a distance, the Armani shop appeared rather like a 1970's style low level urban development, but on close inspection the store was made of a virtual marble or granite, with gold door handles and canopies on the windows, just as one might expect to see in Milan. As we approached the store, high resolution photographs of models wearing this season's collection appeared on billboards along the sidewalk on the opposite side of the road.



The entrance to the store was relatively small and therefore difficult to navigate, and the light level inside was very low, so the general feeling was that it was difficult to find your way around. The store design was, in our opinion un-inspiring and like shopping in a maze, being

constructed of straight lines, with too many walls and blocks. This feeling was exacerbated by a tight structure of square black pillars throughout, bare black partitioning walls and other box-like structures that appeared to have no purpose for merchandising in store. The product presentation was limited and sparsely laid out on shelves and rails. On closer inspection of each garment detail, we found the image quality to be very low, and no obvious construction detail was added to the product images.



We spent more time in Armani than in any other store, and did not find anything that we could interact with or purchase for our avatar. A very select number of large, high quality photographic in-store images on posters were hidden behind pillars and walls, and their relationship to any product could not easily be determined. Eventually, after bumping in a frustrated fashion around the store, we found some signage that was difficult to view, which listed the sub-brands available on the ground floor, but there was no signage around the layout to indicate different areas might relate to different sub-brands. We did encounter one male shopper who looked like he was experiencing the same navigation problems with the Armani store layout, and asked if he would like to talk and he instantly teleported into space.

After a number of attempts we managed to navigate the staircase to the first floor, where we found a bold logo for Armani Red emblazoned on the wall leading to the Armani Red boutique. Also, on this level we found a book department selling books about Armani, but not much else, and due to the frustrations experienced with the navigation around all the screens and columns that were in the virtual customer's way, we were disinclined to continue the Armani shopping experience.

Reebok

Ay Taov teleported onto '50 Cent Lane'. The approach to the Reebok building appeared to be designed to be urban, tough and cool, with quirky New York style buildings. The Reebok store is

completely made from glass panels and has an entrance made from a concrete archway. The entrance was clear and wide and easy to navigate; Ay Taov walked up wide shallow steps that led through the glass doors and was immediately met by a central product fixture of white Reebok trainers on shoe boxes and a sign informing customers to; “Get your blank shoes here”. Using avatar interactivity Ay Taov opened a notice of the price, (L\$50) and a pair of customizable trainers could be purchased. The action of potentially purchasing the blank trainers automatically triggered a link directly to the Reebok website (www.rbk.com) where the real you can locate the nearest store and design and buy (real-life) personalised trainers. At this point we didn’t buy the trainers, but did experiment with the customisation process. In four corners of the Reebok space trainer customization and visualisation booths allowed those who had purchased the blank trainers to select from a palette to add colour in sections of the shoe. The booths also allowed a 360 degree view of the design.



Exploring further into the store with Ay Taov we found the women’s sportswear section and encountered a ‘free goody bag’ of lots of complimentary products. Floating hearts attracted the customer, inviting them to interact with this female-focused product promotion. If activated the free items were imported into the avatars inventory file to remind them of the experience. Ay Taov is now wearing the free ‘bling’-style heart shaped diamond earrings!

The Reebok store visual displays were very similar to other virtual stores, showing an image of the product being worn by a model above the merchandise stacked on shelving. The figure below demonstrates a unique and interesting additional interactive feature, where the garment the model is wearing changes colour according to the product touched by the avatar-shopper. The point of sale posters included technical product detail and a recommended retail price in L\$. Photographic lifestyle posters around the store supplemented the images specific to the limited number of women-only products on display.



We made our way up some reasonably easy to navigate stairs (passing an interactive can of paint – that appeared to spray but didn't mark!). Level one had little to show, apart from a row of seats on a square structure reminiscent of YSL's elevator (possibly one in the making for Reebok), and some fashion model photo promotional posters. Overall, the experience in Reebok was very interesting and relatively easy to navigate. The interaction was at a high level, but was quite restricted in terms of product variety.

Adidas

Ay Taov, the avatar had previously visited Adidas, and Andrew had evaluated the store and purchased a pair of 'A3 microride' trainers for the avatar; however, unfortunately at the time of writing this research the store location was not available for teleportation.

The Adidas store is built in a rocky moon-scaped area. The building is very striking, large, spacious and highly styled around space travel and space futures. Glass predominates around a white and black spacey open structure. Adidas have one clear aim for this virtual store, to market a training shoe called the A3 Microride. The trainers are available in black and red, and white and silver and are positioned front facing on black boxes. The trainer is the product with the highest quality 3D model from all the stores we evaluated. The A3 Microride product is embedded with a jump, bounce and land programming script, and the Adidas store provides a testing launch space where you can test the bounce and landing properties before making a purchase, although this is not easily signed and located in store. The shoes are a good, fun translation of a real-world product into the virtual realm, and at L\$50 (about US\$0.20), they're easily affordable for all avatars!



Bershka

We immediately felt happy on arriving on Bershka Island. Bershka's interactive media specialists Mosi-Mosi have developed a southern European holiday paradise island within their virtual space. The Bershka store is surrounded by palm trees, an inviting azure, Mediterranean sea, that laps against secluded islands each with their own shady beach hut. A billboard explains the brand structure; here are three spaces; a party space, the Bershka store and relaxing.



A wide opening, under the large yellow Bershka sign, made the entrance easy to navigate, and the feeling of space inside immediately reflected the retail image and style of the brand. The floor is a dark wood, the in-store promotional posters are funky, 60's style technicolor and highly illustrative.



The clothing on the rails is simulated using detailed texture mapped 2D images to suggest a 3D garment effect. A combination of flat (2D) 'snapshot' images of male and female avatars modelling a selection of the garments on the rails are displayed on the walls in each store section and impressive large format photo shoots of models are positioned around the store showing young male and female models wearing the latest funkiest selections from the summer season ranges.

As we browsed the store with Ay Taov, we checked different garments and found that everything could be easily bought by pointing the mouse to the garment. The avatar's hand then shoots a beam in the direction of the item and an on screen window is activated that gives a price and the model name of the item. The price for a sweatshirt was L\$25. We found the two changing rooms, with more large, magazine/billboard style model photo shoots. A pay desk with a cash machine and in-store promotional leaflets on the desk added to the surreal and perhaps unnecessary but intriguing attention to in-store detail.

Overall the store felt inviting and spacious, but, sadly empty as there were no other shoppers in Bershka during the time we were investigating. The visual impression was stunning and captivating making us feel happy, sociable and inclined to buy. On leaving the shop we investigated the relaxing spaces, which were designed with decking, sun shades, beach towels, beach huts, and mini islands affording the opportunity for some private space maybe to 'de-stress' the virtual shopper. Not far from Bershka we also found a 'Sloogi' booth designed also by Mosi-mosi, offering navigational help, which we thought would come in very handy for future research!!

American Apparel

We were aware that American Apparel had closed however we decided to investigate the store to experience the result of the closure. American Apparel was the first fashion brand to open in Second Life. The LA based company opened its virtual doors on Saturday, 17 June 2006 and closed them a year later. The store was designed by Aimee Webber, a Second Life resident and designer, in conjunction with the American Apparel architects (Springwise.com, 2006).



Our avatar teleported into a dreamlike, almost surreal LA style oasis of palm-trees, flowers, waterfalls, rock and streams; and set off walking on a winding path through the sunny haze to the square glass fronted building with a huge American Apparel sign emblazoned on the store front. As our avatar approached the store, the area looked abandoned, and fallen-down palm-trees were scattered alongside the path. Ay Taov walked to the main entrance and looked through the padlocked glass doors into the empty store. The grey store interior was had been stripped of all promotional images, apparel products and retail furnishings and appeared to have ripped wall-paper hanging from the interior walls. The green sign on the doors relays an apology to their virtual customers: "Sorry We're Closed. Learn More Here. American Apparel". A web link on the sign connects the avatar to a page on their online web page: <http://americanapparel.net/presscenter/secondlife/>. The official statement from the online American Apparel press office (Americanapparel.net, 2007) reads:

Last summer we opened up our Second Life American Apparel store with a grand opening party with tacos, a few cases of beer, and a piñata. We didn't know what to expect or if anybody would even show up. Needless to say, it's been quite a year. We've had thousands of visitors from all over the world and made a ton of new friends, seen some interesting things from furry folks to virtual terrorism, caused a bit of a clamor, and sold some virtual t-shirts and it's been great. But we feel like our time is up here. So we're closing our doors on Lerappa Island for now. This doesn't mean we're finished with the virtual world. Stay tuned to see what we do next.

Discussion and Conclusions

Our embodiment as avatars in the virtual retail environments allowed us to experience virtual shopping in an entirely new way. Recording our experience allowed us to analyse this new experience from the perspective of informed academic researchers from two different disciplines. The technical learning curve we encountered constrained our research progress, but

added an experiential dimension to our work. This new type of retail space and its access via the avatar, presents some interesting suppositions about the purpose of Second Life retail presence, which seem to fall into a number of discussion themes.

We suggest that one reason fashion brands have built virtual 3D space is to gain a better understanding of the technological opportunities and constraints associated with the creation of a retail environment. The different styles, atmospheres, layouts and exteriors suggest that the brands are finding out how to create interesting and inspiring virtual space. The variation in the extent of interaction within the retail outlets suggests that some brands are focused on encouraging purchasing behaviour (Bershka and Reebok) albeit virtual transactions, while others are experimenting with space as an experience (YSL and Armani). Our narrative suggests that there is significant variation in this aspect, with some of our perceptions of the retail brands being positive, while others were distinctly negative. It has been suggested that telepresence has a positive influence on the online shopping experience (Song et al. 2007), and the 3D environment undoubtedly has the potential to augment the sensory and interactive elements of the virtual retail experience.

By shopping as an avatar we became very aware of the challenges associated with navigating the virtual sites. Some were much easier to gain orientation and manoeuvre within than others and we suggest that the fashion brands must be exploring the relationship between their designed space and the medium of a virtual persona within their space. Mastering the programming that controls this navigation aspect will allow the fashion brands to improve the experience of browsing and exploring the retail environment. Ease of navigation was identified early as a success factor in 2D on-line retail outlets, with usability difficulties being a major source of frustration (Bowman et al, 2002, Dennis et al, 2004, Seock and Norton, 2007) therefore, the mastery of movement in the new 3D virtual environment must be a priority for the retailers, if they want customers to spend time in their virtual space. We felt that the inclusion of changing rooms at Bershka demonstrated consideration for the development of dressing and undressing in future virtual shops through improved 3D technologies. According to Rayman (2007), an exciting opportunity for the online world is the creation of avatars with the exact dimensions of 'players', enabling a customised try-on facility for either on-line or in-store shopping.

There was clear evidence that the brands saw opportunities to integrate their 2D and 3D virtual operations, with interactive links between Second Life retail locations and company websites. For example, in Reebok the invitation to customise trainers (in real life) invites the shopper out of Second Life and onto the webpage for these products; Adidas provided a link to the company website and at the closed American Apparel store, a link took the customer to the website for an explanation of their closure.

Our investigations led us to aspects of virtual activity on the part of the fashion brands that were not directly associated with shopping processes but more about brand image, association and reinforcement. Bershka's association with parties and music events suggests that the company has seen the opportunity to provide arenas for social interaction that positively associates with the retail brand. The company website suggests the shopping experience at Bershka is a, *"socio-cultural immersion into the youth aesthetics of the new century"* (inditex.com 2007). We feel Bershka is demonstrating through their association with the Second Life virtual world, that they are in touch with their young customers and their interests; that they are trend aware and able and willing to be involved with cool, cutting edge and happening places and events. Second Life and other virtual worlds are currently receiving large amounts of coverage in popular, trade and educational news media, and so the potential for public relations spin-offs is high. American Apparel received much sought after media footage as the first retail in Second Life (americanapparel.net 2007), and more recently Armani's opening fired considerable media debate (Kzero.co.uk, 2007; Style.com 2007).

Whilst positive press coverage is a valuable commodity for any brand, the dangers of a negative reaction means that any high profile promotional activity is risky. We feel that all the retail brands are taking considerable risks in the launch of Second Life branded space; in the same way that consumers were unforgiving of retailers moving through the learning curve of 2D on-line presence (theretailbulletin.com, 2007, Varley, 2006) the problems of navigation, the challenges associated with avatar manoeuvrability and the need for familiarity with the mechanisms of Second Life are likely to be inhibitors to consumer adoption.

Another risk for the brands is the environment of Second Life itself. Unlike real-life, this virtual world does not abide by the rules and structures of the real world. Real-life brands, their products and their places and spaces are controlled by the brand owners. Second Life is free of these constraints and therefore the brands have little influence on who enters their space and

how avatars behave within it,(ranging from lack of interest to sabotage) and the resulting lack of control over brand image (Mitham, 2007).

Our evaluation of Second Life as a desirable retail location remains cautious, however we are confident that the 3D virtual environment, and the avatar-persona will emerge as valuable tools for on-line fashion retailing. Building a 3D virtual customer according to their own, rather than imaginary size specification, that can then try on customised clothes instantaneously and in the privacy of an environment designed to provide the atmospheric essence of the retail brand is, we feel, an opportunity that is far from the imaginary world. Certainly, from our two different yet connected academic perspectives, we have a clear understanding of its significance for curriculum and pedagogic development.

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