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Iszoro, E and Almond, K orcid.org/0000-0002-0311-106X (2023) Virtual reality as a new means of communication: A case study analysis of fashion brand, Accidental Cutting. Fashion, Style and Popular Culture. ISSN 2050-0726

https://doi.org/10.1386/fspc_00173_1

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Virtual Reality as a New Means of Communication: A Case Study Analysis of Fashion Brand, Accidental Cutting

Abstract

The research analyses the challenges and opportunities that virtual reality has initiated for the communication of fashion collections since the Covid 19 pandemic began in 2020. It focusses on a case study of the work of the *Accidental Cutting* fashion brand, who have pioneered the presentation of virtual fashion collections at *London Fashion Week*, since September 2020. The brand has explored new ways to promote and market their collections investigating a diverse use of virtual reality. The study also explores how this technology has subsequently become linked to different phases involved in the design and manufacture of the brand's clothes. The methodological approach is qualitative and focusses on the auto-ethnographic reflections of the Accidental Cutting designer. These consider the challenges, technical and material difficulties, as well as opportunities in the global context of fashion, which the brand had to face when showing their virtual collections amid the restrictions imposed by Covid 19. The research also considers the future direction for the use of virtual reality in global fashion communication within a post pandemic world.

Keywords: virtual fashion, promotion and communication of fashion, virtual fashion film, Covid 19, case study

Introduction

The global pandemic, created by the Covid 19 virus, has produced a paradigm global shift in the fashion industry. According to the report: *The State of Fashion 2021* made by Business of Fashion and the McKinsey & Company, fashion sales fell by around 90% from the beginning of the pandemic as the physical world slowed down (Amed, 2021, 10). In contrast, the virtual world speeded up exponentially, due to restrictions in physical contact, many aspects of life were experienced from an audiovisual medium, precipitating new communication systems through various diverse screen formats. This context offered virtual fashion the opportunity to permanently establish itself within the industry. An April 2019 article in *Vogue Business* considered virtual fashion to be in a very incipient phase that would take about ten years to fully implement (McDowell, 2019). The pandemic accelerated this metamorphosis and brands such as Accidental Cutting have led the way in developing virtual solutions for the communication of fashion. Communication is fundamental within the fashion industry because without promotion and dialogue with the potential user, fashion is meaningless. Virtual reality opens up new possibilities that can influence general marketing and sensory experience as well as other processes such as design and production. Here things can happen that would never be possible within the limitations of the physical world.

Throughout the pandemic virtual digitalisation became a highly relevant means for presenting fashion runway shows as well as for other fashion events such as exhibitions in global fashion weeks, in cities that include London, Paris, Milan and New York (Kapni, 2020; Vasile, 2022). New formats emerged that were closer to the concept of fashion film and explored innovative new ways to present collections. In this format, the show is transformed into a film whose script accompanies the concept of the collection. In addition, the viewer decides which outfit to select before it exists in a three dimensional form. The vast majority of brands have opted for the fashion film format with real models and clothes and many global fashion shows were broadcast in digital format. Several brands including, Accidental Cutting have explored the use of virtual reality and through their spring/summer 2021 collection, ‘Apocalypse the New Reality’ (referring to the Covid 19 pandemic) they were the only brand who opted to use this format at *London Fashion Week* in September 2020 (Accidental Cutting 2020 b). In the Accidental Cutting collection, ‘Konsum. Apocalypse the New Reality II’ autumn/winter 2021/22, the designer went further, participating in the virtual show through her own avatar (Accidental Cutting, 2021a, 2021b). Meanwhile, on the New York catwalk, Pizzaslime presented, *The Shows* a virtual proposal in the format of an advertising spot directed by Dan Streit and Cole Kush (Streit and Kush, 2021). Another brand who explored virtuality on that same New York catwalk was *OqLiq* for their autumn/winter 2021 collection (OqLiq, 2021). During the same season. *Philipp Plein* in Milan showed a totally, virtual fashion film, with recordings that tended to be spectacular, with phantom avatars (Phillipp Plein, 2021).

The paper is structured to introduce the aims of the research, which endeavor to explore developments in the use of virtual reality in the communication of global fashion throughout the Covid 19 pandemic. The research approach is qualitative and utilises a case study that considers the auto-ethnographic reflections of the Accidental Cutting designer. These relate to the virtual reality solutions adopted to create and promote her brand during the pandemic. An overview of current literature, film and websites related to the thinking and practice in the use of virtual reality in fashion communication is discussed to give an historical background and context to these developments. Examples from the case study are discussed in relation to the significance of virtual reality in global fashion communication and its future direction in a post pandemic world.

Aims

- To explore developments in the use of virtual reality as a means of fashion communication during the Covid 19 pandemic, utilising the work of the fashion brand, Accidental Cutting as a case study.
- To employ an auto-ethnographic methodology to reflect upon and record the virtual reality communication activities of the Accidental Cutting brand throughout the Covid 19 pandemic.

- To assess the significance of virtual reality in fashion communication and consider its future direction in the global fashion industry in a post pandemic world

Methodology

The research adopted a qualitative methodology. Qualitative study allows individuals to develop an understanding of the social reality of the situation that is examined. Methods can include, grounded theory, discourse analysis, ethnography or phenomenology. In general, data from this approach is collected through semi-structured interviews and questionnaires, participant observation, first hand observation of focus groups and case studies or the observation of artifacts. The data collected is non-numerical as described by the sociologist Yuniya Kawamura. ‘Fashion/dress-related analysis is frequently qualitative because research goals often involve the understanding of phenomena in ways that do not require quantification’ (2011, 39). The qualitative method was appropriate in this study because it centered on the case study examining the work of the international fashion brand, Accidental Cutting. Case studies involve the researcher in observing the subject in its natural and realistic setting and includes comprehensive and in-depth scrutiny of a particular case (Bromley, 1986). Qualitative researchers explore an understanding of their subject’s social reality and the experiences of the Accidental Cutting brand in their efforts to adopt digital platforms to promote their collections throughout the Covid 19 pandemic, formed the focal point of this understanding.

Data Collection Techniques

Much of the data was collected through auto-ethnographic reflection (Chang, 2008; Reed-Danahay, 1997). This is a qualitative approach because the researcher considers their own personal experience and unites this to the aims and objectives of the research to develop understanding and meaning. It is defined as, ‘A research and writing method that uses autobiographical personal narrative that explores the writer’s life experience, reflective of a cultural accounting through employing features such as concrete action, emotion, embodiment, self-consciousness, and introspection’ (Denzin, 2006, 419). The study focusses on the Accidental Cutting designer’s auto-ethnographic reflections related to how her brand developed the presentation of virtual fashion collections during the Covid 19 crisis. It considers the challenges, technical and material difficulties, as well as opportunities in the global context of fashion, which the brand had to face when showing their virtual collections at London Fashion Week in the UK.

The two methods utilised for data collection were practice and object based research (Vear, 2021; Mida and Kim, 2018). These activities enabled a meticulous review of the production of the collections and the challenges involved in promoting fashion virtually during the pandemic. This was reflected in the media, brand and international fashion week websites, commercial platforms as well as social networks discussed in the overview of virtual reality

in fashion communication section. The activities of practice-based research involve a creative artefact such as a painting or an item of fashionable clothing forming the basis of knowledge contribution. This can lead to new understandings about the nature of the practice. The researcher David Gauntlett said, ‘Practice-based research is work where, in order to explore their *research question*, the researcher needs to *make* things as part of the process. The research is *exploratory* and is embedded in a *creative practice*’ (2021, n.pag). In this study, the practice involved the activities in the production of the Accidental Cutting collections and the virtual presentation of the collections at London Fashion Week. Object-based study is a type of research that involves the close-scrutiny and critical analysis of artworks, artifacts (such as fashionable clothing) or the digital representation of objects. The dress historians, Mida and Kim advocated it as a ‘Slow approach to seeing’ (2016, 33). In the Accidental Cutting collections, the designer needed to work methodically and thoughtfully with the objects, which consisted of the garments in the Accidental Cutting collections, to understand and identify the most appropriate and exciting ways they could be promoted within a virtual showcase.

Data Analysis

The Accidental Cutting designer recorded her recollections of the practice and object based research in audio recordings and text. This helped to coordinate the global challenges, and opportunities, which the brand had to face when developing and promoting virtual fashion collections. Content analysis was employed to examine this data and the patterns and systems in communication that emerged (Mayering, 2021; Neuendorf, 2016). This is a qualitative methodology used to analyse images, film and audio and was considered a valid method because it was vital to scrutinise the way the brand used virtual showcases and how these were developed as well as observations of how buyers and customers reacted to this. Thematic analysis was adopted to identify patterns and themes within the data in relation to their relevance to the research aims and the future direction for virtual technologies in the promotion of fashion. This is a commonly used method of analysis in qualitative research as it can assist in identifying themes that are significant to represent, interpret and analyse (Clarke, Braun and Hayfield, 2015). This assisted in identifying how the use of virtual technology in the digital communication of Accidental Cutting collections has evolved since 2020. The methodological integrity of this analysis was credible and authentic because the auto-ethnographic reflections of the Accidental Cutting designer were evidenced in the results of the recorded virtual presentations of her collections.

An Overview of Virtual Reality in Fashion Communication (Including Reference to Accidental Cutting as a Case Study)

This section gives an overview of current thinking and practice related to the use of virtual reality in fashion communication. It also explores developments in the use of virtual reality during the Covid 19 pandemic and describes examples from the case study exploring the

work of the fashion brand, Accidental Cutting. Current literature in books, websites and blogs are examined as well as film and YouTube documentation of fashion collections. The overview considers developments related to commercial communication and virtuality, new virtual relationships between designers, buyers and consumers as well as considering virtual presentations of collections at international fashion weeks during the pandemic.

Hyperrealism and Cinematographic Commercial Communication in Fashion

In the communication of fashion, the concept of e-commerce or the online store is not new, but the utilization of virtual garments and other fashion objects within it is. The massive confinements experienced at global level throughout the pandemic have led to its rise in popularity and adoption in record time. Real storefronts were replaced by hyper-realistic virtual formats that had to find innovative ways to connect with the consumer through images and videos (Boardman, 2020; Clo, 2021; The Digital Fashion Group, 2021; FlexPLM (2021; Future Fashion Factory 2021; Leprovost and King, 2021). The coordination between virtual space and the use of avatars offers possibilities that favour a more flexible consumer/user experience. This can define and alter shape, background, movement, transparency, scale, detail and point of view through new ways of merchandising within virtual dressing rooms where garments can be tried on virtually.

Traditional manufacturing and production models for fashion have therefore changed. The promotion of a virtual pre-order concept allows for variations to the customer's order between creation and commercialisation, through a diversity of garments with chromatic alternatives, textures, applications, etc. This aspect of virtual reality has been sought by brands who have previously benefitted from the sale of physical products. An example of this kind of representation can be found in the Swedish brand, *Atacac* (Atacac, 2022). Co-founded in 2016 by Rickard Lindqvist and Jimmy Herdberg, it stands as a paradigm of this type of commercialization and production as it states on their website, 'Our vision is to reinvent fashion by combining new technology with art and craftsmanship' (Atacac 2022, n.pag). *Atacac* is a consultancy dedicated to the production of garments with cutting-edge digital production systems. As part of their aim to rethink ways of designing, presenting, producing and selling garments an in-house micro factory was established. Garments were designed, visualised and sold on pre-order, then produced in the same building within a short time frame. As the micro factory opened up for external production and design consultancies the *Atacac* project transformed into being both a fashion brand and a fashion studio.

The main functionality of virtual fashion is to make hyper-realistic reproductions, supplanting physical garments and deceiving the human eye to generate garments in the pre-order or direct sale mode (McDowell, 2019; McDowell, 2021). With new virtual software, it is easier to produce images than clothes on a real mannequin, which in the

physical world can mean extra production time as there is often a need to remake garments. In this sense software such as Clo 3D or Marvelous Designer are able to take several photographs from different angles automatically and to animate photographs in a rotated video format as emphasised in the Clo 3D website, ‘With 100% accurate digital samples, you can explore every idea and inspiration freely in the most sustainable way - at no cost’ (Clo, 2021a, n.pag). This makes it possible to view the product from all angles before purchasing it. It is also possible to do this with other virtual reality programs such as Blender, Maya, Cinema 4d, 3d Studio Max, Unreal Engine or Unity Engine (Clo, 2021a; Clo, 2021b). It is also possible to mix virtual reality with real images. This is called augmented reality and was used within the presentation of the Accidental Cutting collection, ‘Konsum. The New Reality II’ (Accidental Cutting, 2021a, 2021b). The virtual images were attached to other images with real backgrounds of photographs taken during the *Filomena* snowstorm that occurred in Madrid, as seen in figure 1. This happened a month before the presentation in London in January 2021, however the photographs that corresponded to the models and clothes were virtual.



Figure 1. ‘Konsum. Apocalypse the New Reality II’ autumn/winter 2021/2022, presented at London Fashion Week in February 2021. Augmented reality image, virtual model and garments with backgrounds of the city of Madrid during the *Filomena* snow storm, January 2021.

Professional Film Shoots

With new developments in virtual reality software, it is possible to create true cinematic framing, narration quality, complex camera movement and animations without using real

models and clothes. Juan Manuel Escobar from *Just an Idea Studio*, points out that it is already possible to achieve all the aforementioned in real time as recorded with professional cameras (Escobar, 2021). This can be done with video games engines such as Unreal Engine, without the need for the computer to make complex calculations of meshes in the animations or lights as happens with other 3D programs such as Maya, 3D Studio Max, Blender or Cinema 4D. There are no longer any budget limitations for expensive cameras or the need to hire the human teams typical of physical film shoots. It is also not possible to distinguish between the real and the virtual, as seen in the short film, *Irradiation* by Sava Zikovic (Escobar, 2021). After working for thirteen years with traditional 3D animation, the director switched to using Unreal Engine technology to make this film (Jorge, 2021).

Some brands have already exploited the possibilities of complex environments such as *Oqliq* in its virtual show at *New York Fashion Week* for their autumn/winter 2021/22 collection (Oqliq, 2021). In the presentation, a huge spaceship appeared floating in the air and virtual models walked on it. In the same season the brands, C+ Series and Balmain opted for futuristic settings alien to planet earth, with real clothes and models (C + Series, 2021; Balmain, 2021). In this sense, the Accidental Cutting brand has made the first approaches to this type of spectacular film shooting in the, ‘Konsum. Apocalypse The New Reality II’ collection, in which cameras were used by drones with recordings from space in a very simple way, as seen in figure 2 (Accidental Cutting, 2021b).



Figure 2. Film frame from, ‘Konsum. Apocalypse the New Reality II’, Autumn/Winter 2021/2022, presented at London Fashion Week in February 2021.

Virtual Efficiency in Fashion Creation and Production

The conventional process of fashion design follows a path that involves: design, pattern cutting, materialization and communication (Hopkins, 2021; Jenkyn Jones, 2011). In some

experimental approaches to design this order can be altered but regardless of the creative process followed, communication is always the final phase. This does not happen with virtual fashion and the process of ideation and construction of the garment run in parallel before the physical garment exists (Harris, 2016; Wilcox, 2021). It is even possible to eliminate or skip the physical realization of garments to work on the realization in parallel with the design process and introduce variations of garments such as chromatic change of fabric, print, length of garment etc. Virtuality is extremely efficient, since it is possible to carry out many tests much faster, analyzing different garments before manufacturing them. For example, Accidental Cutting utilises an experimental pattern cutting method, which is time consuming in the physical world however, multiple virtual models can be produced quickly (Iszoro, 2022). This represents an enormous saving of resources and time and is cost effective. It is also possible to test garments in different fabrics with different stiffness, thickness and drop weight before testing them on any real fabric. This is sustainable as it eliminates the need to run many physical tests.

Virtual Sustainability in Fashion

Sustainability in the virtual fashion world is understood in a different way to the physical world. The concept of material waste does not exist in virtual fashion, the only thing that can be assessed is the consumption of time. In general, virtual processes are faster than physical ones and it is possible to generate more designs in a shorter time, check the behavior of different fabrics and generate more volumetric and toile approximations (Clo, 2021a; The Digital Fashion Group, 2022; Kapfunde, 2020; McDowell, 2019; McInnis, 2020; Maguire, 2021b). In the digital creation of clothes, the fact that a garment is salable or wearable in real life is not necessarily important, this depends largely on its end use. In the virtual world, comfort and style can be totally different from real life, nor is it important to use exaggerated amounts of fabric or very expensive, novel or imaginary materials. As an example, the Accidental Cutting garment in figure 3 is a red silk taffeta dress from the 'Apocalypse the New Reality' collection, spring/summer 2021 (Accidental Cutting, 2020a; 2020b). In the physical world, it needs to be worn by two people, one visible and another hidden inside to move the back of the dress with sticks two meters long. This type of garment is intended to generate a visual spectacle to promote the brand but is not for sale. In addition, the dress was made with sixteen meters of silk taffeta using a zero waste pattern cutting approach and patterns of three 150 cm wide rectangles. Due to its functionality and execution, it is not possible to classify it as a sustainable garment however this disappears in the virtual world, where the use of two models and large volumes of fabric are not an issue.

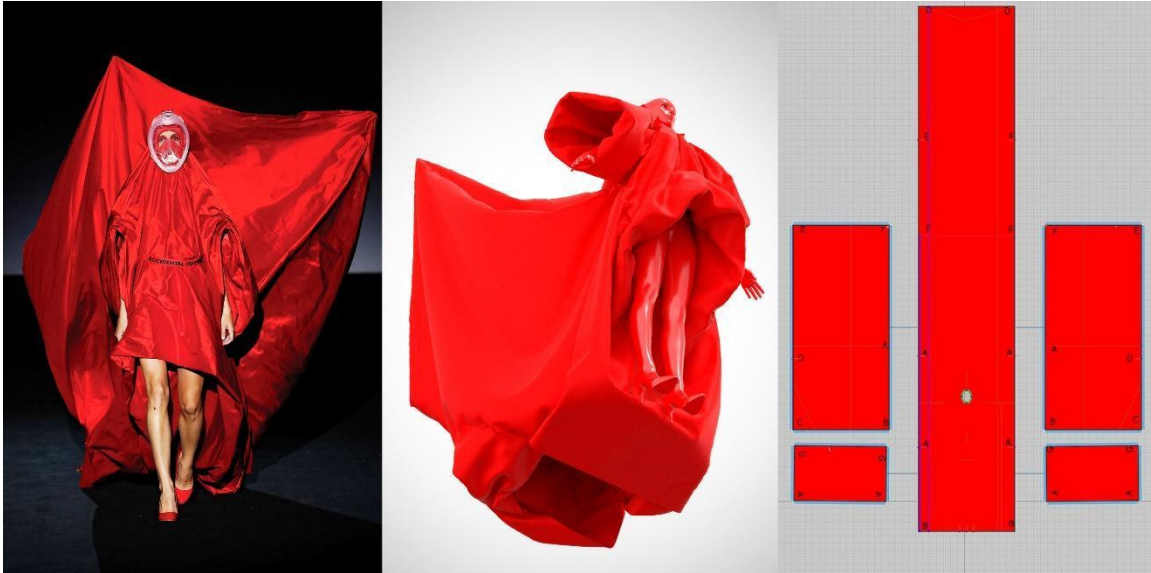


Figure 3. Physical and virtual images of dress made with sixteen meters of silk fabric, ‘Apocalypse the New Reality’ spring/summer 2021. First left is the red silk dress shown at, Samsung EGO Mercedes Benz Fashion Week Madrid, 13th September 2020. In the middle is the virtual dress and on the right are its pattern pieces.

New Relationships: Author/ Viewer/ Consumer

In fashion shows within virtual reality the relationship with the viewer can involve people in different ways, portraying them virtually and incorporating them into the show or in other forms of brand communication and marketing. The promotion of a brand can encounter legal obstacles in many countries, where regulations can be different. This is why the Accidental Cutting brand has never used the faces of known people. With the current technology, it is relatively easy to regenerate people's faces, for example with a Blender plug-in denominated Face Builder that enables the creation of faces from a pre-designed polygonal mesh. This adapts to images of the face of the person, being able to adjust the angles in which photographs of people have been taken and transferring them to the mesh. So far, the Accidental Cutting designer has only has used her face in the ‘Konsum. The New Reality II’ collection of autumn/winter 2021/2022, presented at London Fashion Week (Accidental Cutting, 2021a, 2021b). Figure 4, shows the designer’s face attached to the body of a 180 cm model wearing a dress from this collection. Although the promotion of a commercial fashion brand through images of other people without their explicit approval can be a risk, the same does not happen in art. This can be seen in the artwork of Beeple, the brand name of Mike Winkelmann a digital artist of encrypted art who uses faces of internationally known people such as Donald Trump, Jeff Beznos and Joe Biden, in his artistic works (Beetle-crap, 2022).



Figure 4. Eva Iszoro’s face attached to the body of virtual model, ‘Konsum’. The New Reality I’ collection of Autumn/Winter 2021-2022, presented at London Fashion Week in February 2021.

Virtual Reality as a New Means of Creation and Communication: A Case Study Analysis of Fashion Brand, Accidental Cutting

The Virtual Progress of Accidental Cutting Since 2020

This section explores the virtual progress of the Accidental Cutting brand since 2020 as a case study, drawing on the auto-ethnographic reflections of its designer, Eva Iszoro. The Accidental Cutting brand was founded in 2019. The brand name is derived from the experimental pattern cutting method the designer invented. The most distinctive aspect of the brand has always been their use of the experimental pattern-making method, which is the intellectual property of the designer. The collections focus on discovering original and non-existent volumes through abstract, random and accidental flat patterns. Since 2020, Accidental Cutting has been forced to seek new solutions to the problems created by the pandemic, particularly in its promotion. Virtualization turned out to be the most optimal medium as a solution.

At the beginning of the pandemic, Accidental Cutting presented a physical collection on February 4, 2020 at, *080 Barcelona Fashion*, through a conventional runway presentation. However, after the first lockdown, in addition to facing sales problems the main issue was production and the difficulty in accessing fabrics, sewing workshops and physical models. Changing the means of creation and manufacturing arose out of necessity and the brand

began to explore the use of virtual reality. Firstly, it was decided to transfer the physical garments from the latest collection into virtual garments (figure 5).

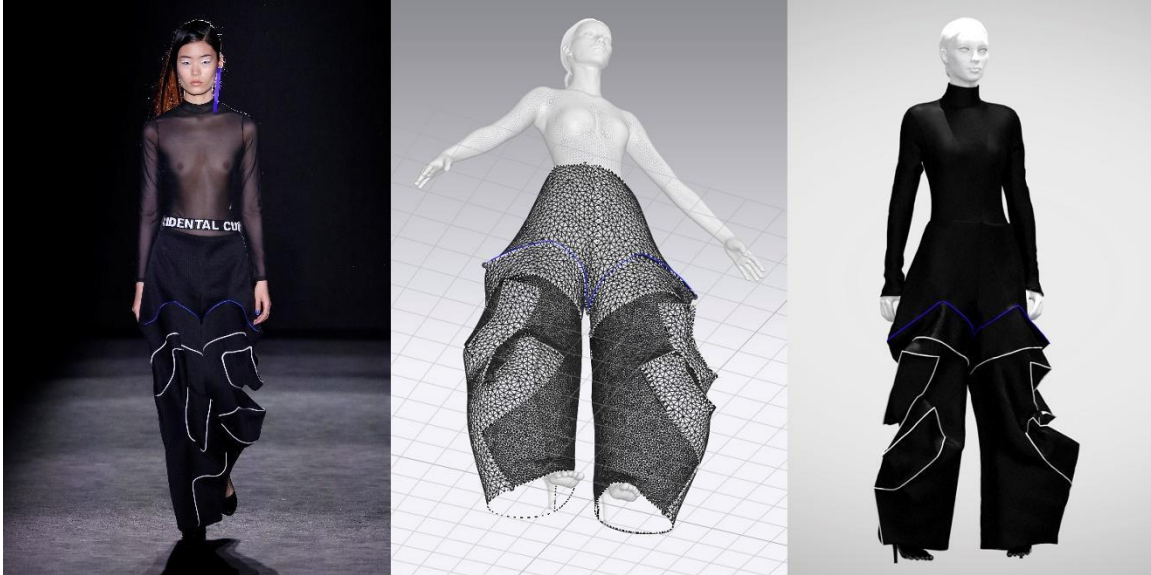


Figure 5. Accidental Cutting trousers on the physical catwalk at 080 Barcelona Fashion presented in February 2020 before the first lockdown, photography courtesy of ESMA Events. The same trousers presented on virtual models, March 2020.

The first virtual collection, ‘Apocalypse. The New Reality’ spring/summer 2021, was presented at *London Fashion Week* in September 2020 in parallel to a conventional physical show with real models at, *Mercedes Benz Fashion Week*, Madrid. The London event was much more open to digital and virtual formats than the Spanish catwalks in Madrid and Barcelona, which opted for physical shows with or without an audience (figure 6). Some of the garments in the collection were not for sale and used to promote the collection through their visual spectacle and provocation. For instance, the range included symbolic capsule dresses that were transparent and the models paraded almost naked on the physical catwalk. Throughout the pandemic, when physical sales became very scarce, a different and less sales-oriented presentation was sought. With the development of the brand’s virtual catwalk presentation, very different possibilities arose for the presentation of the garments. These included the fall of a model to the ground during a symbolic escape from the persecution of the virus, or a model in a red dress making a final jump into the void. Therefore, unimaginable possibilities appeared in the virtual world that were far removed from the physical presentations of fashion design to interpret the concept of the catwalk presentation. Similarly, in using virtual reality as a design tool, the creative approach is both a substitute for and complements the use of the traditional pen and pencil and 20th century vector design programs with specific software for virtual garment design. The concepts associated with pattern making, in the fashion industry, are maintained and

amplified in a single digital platform. The mannequin is replaced by the avatar, whose measurements and appearance are customized to adapt it to the body needs of the design.



Figure 6. Accidental Cutting fashion brand white dress, Apocalypse the new Reality spring/summer 2021. Physical version presented in September 2020, at Mercedes Benz Fashion Week Madrid, and the virtual version of the same look presented at London Fashion Week. Animation, lighting and camera by Helmut Breineder.

In the first virtual fashion show in September 2020, Accidental Cutting focused its efforts on mastering specific virtual reality software, which supported the construction of garments and objects. For the garments, the Clo 3D software was chosen as the brand considered it to be intuitive, economical and more accessible than other programs such as the Gerber and Lectra packages. Both the garments and other 3D objects such as footwear and masks, were created by the designer of the brand in Clo 3D. In order to complete the overall fashion film format, external help was sought in animation, lighting and filming, for which the software of Cinema 4D and Mixamo from Adobe were used.

In the collection which followed, ‘Konsum. The New Reality II’ autumn/winter 2021/22, shown at London Fashion Week in February 2021, the designer sought independence from other people at a technological level in order to better control the creative process. This helped to exploit the possibilities of virtual reality as a means of artistic creation and promotion. Here the clothes had the leading role but the film is in itself was a work of animated art in motion, where fashion was the main impetus but not the only one. This show was created using Clo 3D and Blender, which is open source, 3D computer graphics software that does not need other external render engines. This allowed complete autonomy at a creative level without having to depend directly on other collaborators. The brand learnt how to use new software and discover its possibilities whilst controlling the creative process and delegating certain tasks to other people. Some issues arose such as the

animation of the triangulated meshes of clothing, which is a process that slows down the performance of the computer in programs such as Blender. On the contrary, with animation and camera movement, this does not happen and it was possible to make a complex film. This is why in this show, the cameras moved more than the models with the clothes themselves.

In the ‘Accidental Cut’ collection for spring/summer 2022, a new approach to clothing animation was made using Clo 3D and Blender, in an unconventional way (Accidental Cutting, 2021c). This generated a type of audiovisual communication material that would have been impossible in the real world. During the presentation, there were problems with the final rendering of the film frames. These were costly in terms of time and money as the film is obtained through a separate rendering of each frame that makes up the video. In this case, each second of the film was made up of thirty frames and the shot was over three minutes long. This issue persisted in the brand’s following collection, ‘UPSIDE DOWN - Our Word our Time’ autumn/winter 2022/23, presented in February 2022 at *London Fashion Week (London Fashion Week, 2022)*. Finally in the collection, ‘Emptiness’ for spring/summer 2023, the video game software, Epic Games Unreal Engine was used to save rendering times and make the previews in real time. This company also collaborated with Balenciaga in *Fortnite*, an online video game with 400 million users (Maguire 2021a).

Artistic and Unconventional Approaches

With virtual reality, the door has opened to new approaches that cannot occur in the physical world. Within the Accidental Cutting collection, ‘Konsum. The New Reality II’ in figure 7, the virtual presentation sank the models under the ice, symbolizing the drop in consumption in the pandemic (Accidental Cutting, 2021a). A model dressed in Accidental Cutting clothes fell from the sky perforating the ground with the head, which is an inconceivable pose in the real world. This image was selected as the press release to announce the event on the official website of London Fashion Week. It personified the impact and drama of the fall in consumption and consequently great losses and even bankruptcy for many fashion companies.



Figure 7. 'Konsum. Apocalypse the New Reality II', Autumn/Winter 2021/2022, presented at London Fashion Week in February 2021. Announcement and press release.

In the presentation of the spring/summer 2022 collection, 'Accidental Cut' another concept of animation was explored, not only from the movement of the clothes on avatars but from the animation of the cut and fabrics in general (Accidental Cutting, 2021c). The narrative discourse intended to create a dramatic tension, a script without words. This film has a relaxing, pleasant beginning but is preceded by the title of the collection at the beginning accompanied by a cutting sound that hints something bad is going to happen. This is followed by the violent noise of an invisible knife, which transforms into abstract patterns that symbolise the experimental pattern design method, which is distinctive to the brand. Within the film, two unusual events take place, firstly, the transformation of a simple rectangle of fabric hung like a sheet into a rope fluttering in the wind. This is converted by means of violent cuts, and is transformed first into a pattern and later a garment. Secondly, the garment arranged on an invisible mannequin, is observed by a camera that gets inside it, going through and coming out through the neck, strategically showing the brand's label (figure 8).

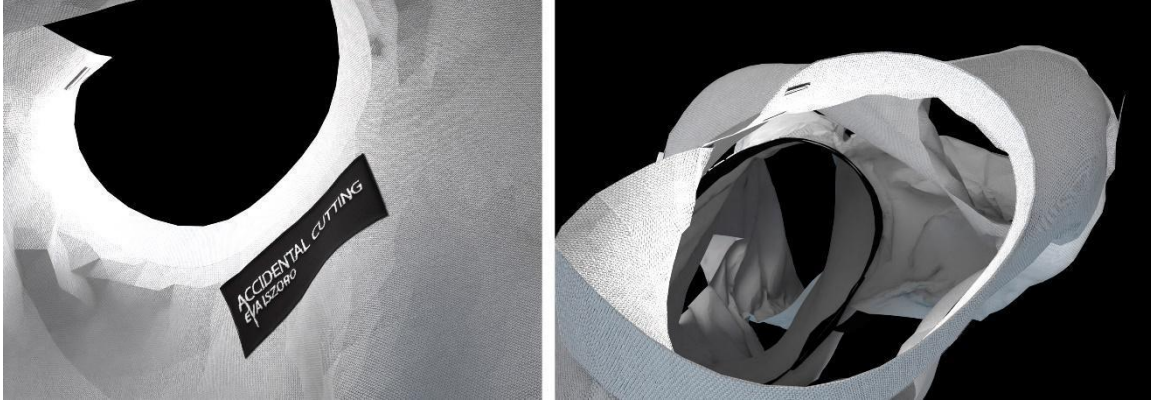


Figure 8. Video frames of ‘Accidental Cut’ spring/summer 2022. Accidental Cutting collection presented at London Fashion Week in September 2021. Transformation of a pattern into a dress with the camera inside the garment.

Clothing and Accessories for the Digital Age

Throughout the pandemic the Accidental Cutting brand discovered that virtual reality can not only replace what exists, but becomes a means to discover the impossible, achieving inconceivable realities from those in the physical world through immersive and interactive sensory experiences. This example empowers future fashion brands to design, produce, represent and communicate in a virtual way, no longer impeded by the limitations of the physical world. For emerging fashion brands such as Accidental Cutting, virtual reality has become a tool through which they can discover and express things they had not previously imagined. Therefore, virtual reality allows fashion designers to propose unusual, uncommon and extraordinary scenes through their promotion and communication, generating new environmental possibilities at the meeting point between the brand and the consumer.

As emphasised in the overview of virtual reality in fashion communication, the Covid 19 pandemic created new opportunities for fashion communication and consumption, which included, virtually selling physical products. In turn it created, market diversification and new business possibilities related to fashion. One development included virtual fashion not produced for use in physical life but remaining in a parallel, virtual life. Currently there are different platforms that sell exclusively virtual garments such as DressX or XR Couture. There is also the possibility of dressing video game characters (McDowell, 2021). Dimension Studio used volumetric 360° scanning techniques of real clothes and models to produce *Afterworld* Autumn/Winter Balenciaga 2021 and introduced them into a gaming experience (Maguire 2021b). The Covid 19 pandemic therefore accelerated life-oriented processes and experiences in a parallel virtual reality where both real and virtual are mixed or events only happen in the metaverse. (Farra, 2021).

Conclusion

The possibilities for working in digital volumes have been accelerated through developments in the use of virtual reality as a means of both fashion creation and its communication during the Covid 19 pandemic. The research has utilised the work of the fashion brand, Accidental Cutting as a case study to describe these developments through the auto-ethnographic reflections of their designer. In the creation of fashion, virtual reality has proved to be cost effective. Working in 3D from the beginning of the design process, (rather than physically, as is still often the case in academia and in industry), can initiate the full progression of creation from garment ideas; to viewing the sample on an avatar; to finalising the pattern and visualising the whole collection in a virtual presentation. Being able to define body movement and the 3D simulation of clothes through virtual fashion presentations offers huge opportunities for the collection to be shown quickly to a wide variety of global clients, subsequently generating greater sales. In addition, there are possibilities to unify the digital and physical processes and work in parallel on the design, pattern cutting and final communication of garments. With new video game engines such as Unreal Engine or Unity Engine, there is the possibility of filming live, which saves enormous time in professional cinematographic quality productions. The camera can film from any angle and allows the analysis of the garment from the fibre to its cut. This approach should challenge the integrity of global, physical fashion as it becomes a more sustainable system from all points of view.

The research has demonstrated that virtual reality can explore the commercial communication of fashion and generate powerful brand images for different campaigns that are not possible in the physical world. It can even diversify the global market place with new ways to generate income through selling virtual only garments as well as physical. Further developments in the use of virtual reality by Accidental Cutting could consider garments conceived as digital pieces of art using the material of previous virtual collections, in the form of static images and animations. These could be encrypted with codes, capable of being signed and sold to art collectors. Computer science and programming therefore make it possible to occupy new market niches. Although the communication of commercial fashion brands is subject to legal limits, such as the use of virtual reproductions of well-known people, this does not happen with artworks therefore the artistic aspects of fashion can be explored.

Before the pandemic, fashion shows were mostly exclusive events attended by strict invitation, although their filmed recordings became democratic events, accessible to anyone who wanted to see them. With digital fashion and virtual reality this can happen the other way around. In the first phases, fashion shows are public and are usually streamed during the official runway schedule, but they can also become exclusive and inclusive

events when the possibilities of total immersion that virtual reality offers mean they become interactive events. Here each user could have a different visual and sensory experience by responding to specific sensors incorporated in the artifacts. The Accidental Cutting brand intend to explore this in future presentations through a virtual fashion film prepared with Unreal Engine. As the Covid 19 pandemic has begun to subside, Accidental Cutting has no plans to abandon virtual reality as a means of communication in fashion. The brand recognises that it offers very different possibilities than those that can be developed in the real world. The significance of the brand's virtual presentations has been recognised by the influential Berlin Fashion Film Festival. Two of their films were shortlisted at the film festival in the categories, Best Digital Film, Best Experimental Film and Best Script/ Idea: 'Accidental Cut' spring/summer 2022 and 'UPSIDE DOWN our World our Time' autumn/winter 2022/2023. The overriding conclusion, drawn from the research is that the use of virtual reality in the creation and communication of brand collections is a definitive paradigm shift. Despite being in an incipient phase, where evolution is still uncertain, it has enormous possibilities that become far-reaching and transcendental and an important reference point for the development and progression of the international fashion industry.

References

- Accidental Cutting (2020a), 'Apocalypse. The New Reality' spring/summer 2021, <https://accidentalcutting.com/03-apocalypse-the-new-reality-ss21/>. Accessed 14 June 2022.
- Accidental Cutting (2020b), 'Apocalypse. The New Reality' spring/summer 2021, YouTube, https://youtu.be/_-ewlDm1Y20/. Accessed 14 June 2022.
- Accidental Cutting (2021a), 'Konsum. The New Reality II', autumn/winter 2021/22, <https://accidentalcutting.com/04-konsum-aw-21-22-apocalypse-the-new-reality-ii/>. Accessed 14 June 2022.
- Accidental Cutting (2021b), 'Konsum. The New Reality II', autumn/winter 2021/22 YouTube, https://youtu.be/XnLDy_pWT1k. Accessed 14 June 2022.
- Accidental Cutting (2021c), 'Accidental Cut' spring/summer 2022, YouTube, <https://youtu.be/I8WEnDd3kFw>. Accessed 20 June 2022.
- Accidental Cutting (2022), 'UPSIDE DOWN our World our Time' autumn/winter 2022/23, YouTube, <https://youtu.be/s9mOh7z5iT0>. Accessed 20 June 2022.
- Amed, Imran; Berg, Achim; Balchandani, Anita; Hedrich, Saskia; Rölkens, Felix and Ekeløf Jensen, Jakob (2021). 'The State of Fashion Report 2021 by McKinsey & Co', <https://www.sign2act.eu/post/the-state-of-fashion-report-2021-by-mckinsey-co>. Accessed 20 June 2022.
- Atacac (2022), 'Atacac', <https://atacac.co>. Accessed 14 June 2022.
- Balmain (2021), 'Fall/Winter 2021 Women's & Men's Show', YouTube, 08 March, https://www.youtube.com/watch?v=GqNWMuY_Wmo. Accessed 14/06/22.

- Beetle_crap (2022), 'Beetle_crap', https://www.instagram.com/beeple_crap/?hl=es. Accessed 14 June 2022.
- Boardmand, Rosy (2020), *Fashion Buying and Merchandising: The Fashion Buyer in a Digital Society*, London: Routledge.
- Bromley, Dennis B (1986), *The Case Study Method in Psychology and Related Disciplines*, New York: Wiley.
- C + Series (2021), 'Fall/Winter 2021', YouTube, 03 March, <https://www.youtube.com/watch?v=685aEOR7VwE>. Accessed 14 June 2022.
- Chang, Heewon (2008), *Autoethnography as Method: 01*, London: Routledge.
- Clarke, Victoria, Braun, Virginia and Hayfield, Nikki (2015), *Thematic Analysis*. In: Smith, Jonathan A, Ed. *Qualitative Psychology: A Practical Guide to Research Methods*, SAGE Publications: London, 222-248.
- Clo (2021a), 'What Makes Clo Different', <https://www.clo3d.com/explore/whyclo>. Accessed 16 February 2021.
- Clo (2021b), 'Design Smarter', <https://clo3d.com>. Accessed 20 August 2021.
- The Digital Fashion Group (2021), 'Revolution: The Digital Fashion Group', YouTube, 5 May, <https://www.youtube.com/watch?v=1DVcD4ErHPk>. Accessed 16 February 2021.
- Escobar, JM. (2021), 'Unreal Engine changes EVERYTHING', YouTube 05 December, <https://www.youtube.com/watch?v=vyjsWm9YA18>, Accessed 20 June 2022.
- Farra, Emily (2021), 'How Will Fashion Shows Evolve? Are Virtual Clothes the Next Frontier? Designers, Tech Leaders, and CEOs Discussed What's Next at Vogue's CES Panel', <https://www.vogue.com/article/ces-panel-future-of-fashion-shows-video-games-technology-social-media>. Accessed 20 June 2022.
- FlexPLM (2021), 'FlexPLM V12 Retail PLM Solution', <https://www.ptc.com/en/industries/retail/flexplm>. Accessed 24 May 2021.
- Future Fashion Factory (2021), '*Supporting Innovation in the UK Fashion and Textile Industry*', <https://futurefashionfactory.org>. Accessed 16 February 2021.
- Gauntlett, David (2021), 'What is Practice Based Research', <https://davidgauntlett.com/research-practice/what-is-practice-based-research>. Accessed 20 June 2022.
- Harris, Clare (2016), *The Fundamentals of Digital Fashion Marketing*, London: Bloomsbury.
- Hopkins, John (2021), *Fashion Design: The Complete Guide, Bloomsbury Visual Guide*, London: Bloomsbury.
- Iszoro, Eva (2022), 'Accidental Cutting', www.https://accidentalcutting.com. Accessed 14 June 2022.
- IvyPanda. (2020), '*Autoethnography*', <https://ivypanda.com/essays/autoethnography/>. Accessed 20 June 2022.
- Jenkyn Jones, Sue (2011), *Fashion Design*, London Laurence King.

- Jorge, Miguel (2021), ‘Irradiation, el Espectacular Corto que Parece un Rodaje Real, Ero es Unreal Engine’, <https://es.gizmodo.com/irradiation-el-espectacular-corto-que-parece-un-rodaj-1848142042>. Accessed 20 June 2020.
- Kapfunde, Muchaneta (2020), ‘Amsterdam Innovation Spotlight: Merging Tech with Sustainability’, <https://www.voguebusiness.com/technology/amsterdam-innovation-spotlight-merging-tech-with-sustainability>. Accessed 20 June 2022.
- Kapni, Puneet (2020), ‘Virtual Meets Reality: The Future of Fashion Shows’, <https://www.entrepreneur.com/article/357898>. Accessed 20 June 2022.
- Kawamura, Yuni (2011), *Doing Research in Fashion and Dress*, Oxford: Berg.
- Leprovost, J. C and King, Mike (2021), ‘About Us: Numerion Software’, <https://www.numerion-software.com/index.php/aboutus>. Accessed 16 February 2021.
- London Fashion Week (2022) ‘Accidental Cutting presents: Upside Down – Our World our Time autumn/Winter 2022/2023’. <https://londonfashionweek.co.uk/schedule/677/accidental-cutting-presents-upside-down-our-world-our-time-aw-2223>. Accessed 20 June 2022.
- McDowell, Maghan (2019), ‘Designers Explore the Future of Digital Clothing’, <https://www.voguebusiness.com/technology/digital-fashion-virtual-clothing-3d-design>. Accessed 20 June 2022.
- McDowell, Maghan (2021), ‘Startup Spotlight: How Digital Fashion Brand Auroboros is Breaking Through’, <https://www.voguebusiness.com/companies/startup-spotlight-how-digital-fashion-brand-auroboros-is-breaking-through>. Accessed 20 June 2022.
- McDowell, Maghan and Benissan, Ezreen (2021), ‘Mapping the Net-a-Porter of NFT Marketplaces’, <https://www.voguebusiness.com/technology/mapping-the-net-a-porters-of-nfts>. Accessed 20 June 2022.
- McInnis, David (2020), *A Practical Guide to Sustainable Fashion*, London: Bloomsbury.
- Maguire, Lucy (2021a), ‘Balenciaga launches on Fortnite: What it means for luxury’, <https://www.voguebusiness.com/technology/balenciaga-launches-on-fortnite-what-it-means-for-luxury>. Accessed 20 June 2022.
- Maguire, Lucy, (2021b), ‘Dimension Studio: How Fashion is Being Brought to the Metaverse’, <https://www.voguebusiness.com/technology/dimension-studio-how-fashion-is-being-brought-to-the-metaverse>. Accessed 20 June 2022.
- Mayering, Phillip (2021), *Qualitative Content Analysis: A Step-by-Step Guide Thousand Oaks*: Sage Publications.
- Mida, Ingrid and Kim, Alexandra (2018), *The Dress Detective: A Practical Guide to Object-Based Research in Fashion*, London: Bloomsbury.
- Neuendorf, Kimberley A (2016), *The Content Analysis Guidebook*, Thousand Oaks: Sage Publications.
- OqLiq (2021), ‘New York Man FW 21/22’, YouTube, 18 February. <https://www.youtube.com/watch?v=esbCNIVWu3g>. Accessed 14/06/22.
- Phillipp Plein (2021) ‘Phillipp Plein’, <https://www.plein.com/gb/home>. Accessed 14/06/22.

- Reed-Danahay, Deborah E (1997), *Auto/ethnography: Rewriting the Self and the Social*, London: Routledge.
- Streit, Dan and Kush, Cole (2021) 'Pizzaslime + NYFW 2021', <https://vimeo.com/513609405> Accessed 14/06/22.
- Vasile, Stefano (2022), *Virtual Fashion Show*, Italy: Kindle Edition.
- Vear, Craig (2021), *The Routledge International Handbook of Practice-Based Research*, London: Routledge.
- Wilcox, Mark (2021), *The Digital Fashion Revolution: Save the Environment While Looking Amazing With NFT and 3D Modeling!*, Independently Published.