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The Future of Fashion — Fashion vs. Machines

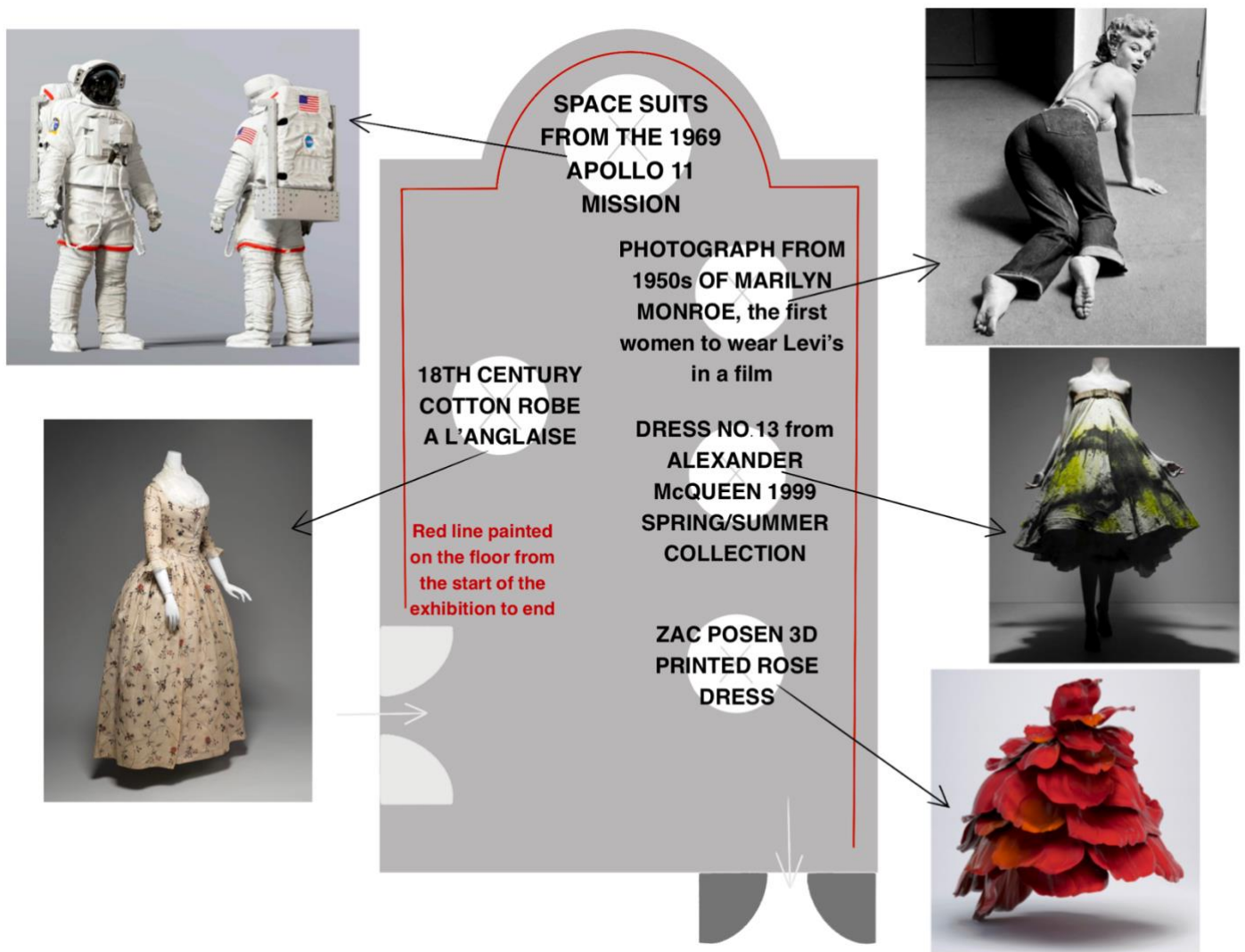


Figure 1. Photoshop layout of a fashion exhibition showing selected garments from variety of designers/artists.

Before the Industrial Revolution the production of clothing was complex and time consuming where each garment was individually made by hand 'textiles production existed on a small scale in home workshops, where production relied on self-pacing and included highly skilled workers,' (Monet, 2014) however developments in machinery and evolution in technology has enabled progression in the fashion industry to where manufacturing is now fully automated. What impact will this alternative labour source have on the future of the industry and our workforce? In *The Golden Thread How Fabric Changed History*, Kassia St. Clair introduces the readers to the significance of textiles and cloth 'Fabric and its component parts have long been a figurative stand-in for the very stuff of human life' (2018,

p. 1) insinuating the garments we wear are more than simple clothes or fashion pieces – they are a symbolism of a designers creativity, a display and expression of personal identity and a symbol of personal status in society. Henri Lefebvre, in his book *The Production of Space*, theorises that space is ‘not only to be ‘read’ but also to be constructed’ (1991, p. 7) following this notion I have created and filled a space with selected pieces. Figure 1 depicts the layout of a fashion exhibition showing garments from an 18th Century full length gown to a 3D printed resin dress, the exhibition can be described as a timeline of textiles showcasing the evolution of fashion as technology and textiles merge.



Figure 2. *Robe à l'Anglaise*, MetMuseum, 2022

Until synthetic materials become favoured in clothing production in the late 1970s cotton was the most common fibre used globally. Cotton was ‘a medium through which identities were crafted and asserted’ (St. Claire, 2018, p. 161) stating the material was used to recognise a person of high status in society. Figure 2, the first artefact shown in the exhibition, depicts a close-bodied gown or Robe à l'Anglaise, worn in the late 18th Century made from cotton. The silhouette worn even by English royalty, composed of a fitted bodice and wide skirts which required vast amounts of textiles that allowed the hand dyed and painted design to be on display. French diplomat Alexis de Tocqueville who visited England in 1835, reported in his book *Journeys to England and Ireland*, the correlation between wealth and the supply of raw cotton ‘pure gold flows’ (1958, p. 107) outlining Europe’s and

America's view towards the importance of the material. This gown displayed in the exhibition reflects how textiles were handcrafted during this period of time when clothing was cut, dyed, sewn by tailors and dressmakers using traditional textile techniques.



Figure 3. *Facts About Spacesuits and Spacewalking*, NASA, 2014

The president of the Blue Jeans Corporation, William J Bank quoted in *The New York Times* 'We would land a man on the moon sooner than achieving full automation in fashion' (Koshetz, 1970) expressing his opinion on early automation being unlikely. Figure 3 depicts a space suit from the 1969 Apollo 11 mission, the second garment selected for the exhibition. In space astronauts are deprived of breathable oxygen, gravity and protection against ultraviolet radiation from the sun. Temperatures in the upper atmosphere could fluctuate between -88 to 58 degrees Celsius. The spacesuits, also referred to as pressure suits, were made to protect astronauts against these hazards. St Claire describes in her book how the pressure suits made of spandex fibres, nylon, latex and liquid cooling cubes were created with the help of an x-ray and sewing machines that were specifically modified to staple seams securely together. 'To meet NASA's exacting standards, seams could deviate no more than one-sixty-fourth of an inch, handling the latex and gluing the layers together also required previously unheard-of levels of skill,' (2018, p. 235) this combination of rigorous innovative engineering and a skilled workforce was critical to the success of the mission and the astronauts survival in space.



Figure 4. *Can Better Denim Change the world? Levi's is Betting on it, 2022*

For decades the fashion industry relied on cheap manual labour in mass production, however developments in technology now enable large brands to reduce costs and cut their production time. 'Though ready- to-water apparel has been available for a long time the ability to walk into a store or order it online is a relatively new concept' (Monet, 2014) with the rise of e-commerce and social media, fashion brands struggle to manufacture products that match the changing trends and consumer demands. Levi's, an American company founded in 1853, known for their cotton denim jeans, use large lasers to dramatically cut months off the manufacturing time. 'Today we bring you future finish – an all new way to customise denim jeans using groundbreaking laser-powered technology' (Levi's, 2019) the brand outlines on their website how the lasers are essential in production, taking only 90 seconds to add the final steps of creating rips, frayed edges and tears on the jeans whereas manual labour would take more than 30 minutes to complete the same physically intensive job. An article from the Wall Street Journal states 'Jobs that robots replace are not good jobs in the first place – to jobs that use what got us to the top of the food chain, our brains.' (Kessler, 2016) As technology and automation become increasingly proficient, these industrial innovations of alternative labour source will effect future of jobs in the workforce, specific jobs may be eliminated however creating opportunities in the process.



Figure 5. *Show to Know: When Alexander McQueen's Robots Spray-painted Shalom Harlow, Allure, 2016.*

In *The End of Fashion*, Teri Agins outlines the connection between social class and fashion 'fashion belonged exclusively to the elite.' (2006, p. 47) highlighting the notion of the lower classes adopting to the trends that the wealthy create. 'Clothing was another landscape which the dynamics of power were played out' (St.Claire, 2018, p 163) further agreeing to the idea that the concept of owning something exclusive from a luxury brand such as Gucci, Hermes or Alexander McQueen, distinguishes from the lower classes and is a clear symbol of prestige. Figure 5 shows a garment from Alexander McQueen's spring/summer 1999 collection, depicting a knee length tutu-like white dress with colours splattered and streaked across the skirts and flowing ruffles. Focusing on the theme of craft and technology the designer created couture garments that was considered revolutionary in the fashion industry. McQueens 13th show was described in Allure magazine as 'the designer's most emotional and moving collection' (Bateman, 2016) with robotic arms spray painting dress number 13 on the runway in front of the audience. McQueen was one of the first designers to explore the use of technology along with fashion, his shows served as sociological documents about humanity's coexisting relationship with machines, as well as used for performance art.



Figure 6. Zac Posen 3D prints rose petal dress for Met Gala, Dezeen, 2019.

Technology today has aided growth in the fashion industry with faster production of clothing, many hand techniques have been replaced. Dana Thomas writes in *Fashionopolis: The Price of Fast Fashion & The Future of Clothes*, 'our technology has evolved; our ethos has not,' (2020, p.40) indicating the financial motivations of many clothing suppliers despite the environmental and social impact. Through texture and image manipulation, digitally printed textiles have altered the way fabrics can be perceived. Figure 6 shows the exhibitions final garment, a Zac Posen 3D printed dress. The bespoke gown formed from durable white plastic featured 3D printed overlapping petals sprayed with colour shifting paint and gloss. Both fashion and technology are evolving at a faster rate than ever before, reducing creative constraints and limitations. This has had an impact on the industry in such a way that digital designs can now be combined with textile and fabric through the use of computer design programs such as Photoshop. The dress made entirely using precision stereolithography machine, specialised 3D printers and electron beam melting technology, combines art textiles with science and technology.

The fashion industry is one of the largest in the world, from hand stitching to the sewing machine and the rise of e-commerce, it is a product of the modern era and at the forefront of innovation. The use of technology to reduce waste has far reaching consequences in making the industry more sustainable by limiting unnecessary manufacturing.

Fashion companies are merging with technology corporations, acquiring and developing new machinery to increase their revenue streams and expand businesses models.

Machines that cut and sew fabric replace manual labour workforce, allowing for cheaper and faster production of clothes. This fast fashion has made it more challenging for designers to express creativity and originality as the industry becomes more competitive. 'A confluence of phenomena arising from retailing and marketing began transforming the way of fashion forever.' (Agin, 2006, p.33) With machines that can print new materials, advancements in AI algorithms that can forecast trends and cognitive computing predicting styles these technical revolutions are transforming the art into a science. These developments demonstrate how technology is altering the way our clothes are designed, manufactured and marketed.

BIBLIOGRAPHY —

Agin, T. (2006). *The end of fashion : how marketing changed the clothing business forever*. New York.: Harpercollins

Bain, M. (2018)The High-Tech Future of Fashion.[video] Available at: <https://youtu.be/hMnf5caYmcQ> (Accessed 15 Apr. 2022).

Bateman, K. (2016). Show to Know: When Alexander McQueen's Robots Spray-Painted Shalom Harlow. Allure. Available at: <https://www.allure.com/story/alexander-mcqueen-shalom-harlow-runway-show>. (Accessed 23 Apr. 2022)

De Tocqueville, A. (1958) *Journeys to England and Ireland*. New Haven, CT: Yale Press.

Dezeen. (2019). Zac Posen designs 3D-printed rose petal dress for Met Gala. [online] Available at: <https://www.dezeen.com/2019/05/09/zac-posen-3d-printed-rose-dress-met-gala/>. (Accessed 22 Apr. 2022)

Kessler, A. (2016). 'The Robots Are Coming. Welcome Them'. *Wall Street Journal*, 22 Aug. Available at: <https://www.wsj.com/articles/the-robots-are-coming-welcome-them-1471907751> (Accessed 16 Nov. 2020)

Koshetz, H. (1970). 'Apparel Makers Awaiting Automation.' *The New York Times*, 14 Mar. Available at: <https://www.nytimes.com/1970/03/14/archives/apparel-makers-awaiting-automation-automation-is-still-far-away-for.html> (Accessed 15 Apr. 2022).

Lefebvre, H. (1991). *The production of Space*. Oxford: Blackwell.

Levi (2019). *The First of its Kind Levis Presents Future Finish*, Available at: https://www.levi.com/US/en_US/blog/article/levi-presents-future-finish/. (Accessed 27 Apr. 2022)

McClelland, C. (2020). *The Impact of Artificial Intelligence - Widespread Job Losses*. Available at: <https://www.iotforall.com/impact-of-artificial-intelligence-job-losses>. (Accessed 15 Apr. 2022)

McDowall, C. (n.d.). *World Textile Trade 1500 -1800 – Pre-Industrial Revolution*. The Culture Concept Circle. Available at: <https://www.thecultureconcept.com/world-textile-trade-1500-1800-pre-industrial-revolution> (Accessed 12 Apr. 2022).

Metmuseum.org. (2022). Available at: <https://www.metmuseum.org/art/collection/search/159201>. (Accessed 12 April 2022)

Monet, D. (2014). *Ready-to-Wear: A Short History of the Garment Industry*. Bellatory. Available at: <https://bellatory.com/fashion-industry/Ready-to-Wear-A-Short-History-of-the-Garment-Industry>. (Accessed 11 April 2022)

Mower, S. (2018). *Remembering the Potent Performance Art of Alexander McQueen's Collection No. 13—20 Years Later*. Vogue. Available at: <https://www.vogue.com/article/alexander-mcqueen-no-13>. (Accessed 23 Apr. 2022)

St. Claire, K (2018). *The Golden Thread, How Fabric Chnaged History*, 1st edn. New York: Liveright Publishing Corporation.

Thomas, D. (2020). *FASHIONOPOLIS : the price of fast fashion - and the future of clothes*. S.L.: Head Of Zeus.

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<https://www.allure.com/story/alexander-mcqueen-shalom-harlow-runway-show>
<https://www.renderhub.com/albin/emu-nasa-space-suit>
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