NARRATIVES OF NON-HUMAN OTHERS IN FASHION ECOSYSTEM: INCLUSION AND DIVERSITY

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ABSTRACT

This panel discusses how to address Non-Human Others in Fashion Ecosystem in the context of a larger community including the nature and the machine. In fashion industry, machines have liberated humans from repetitive labor but also alienated human beings from a tight-knit community of labor-intensive work environment. Anthropocene is a familiar subject in history and should be important in fashion education. Fashion industry has created environmental problems in water resources and changing rural landscapes. Nonetheless, the historiography of fashion and design history reveals the exclusivity of human actions in historical narratives.

This panel is composed of five panelists: Vincent Quan of business management, Rebecca Bauman of film criticism, Kyunghee Pyun of art history, Susanne Goetz of textile design, and Linda Kim of fashion design. Each paper reviews the historiography of a discipline to point out absence of non-human actors or components behind major events or movements in fashion history. Traditionally humanities have focused on human actions and their consequences on a larger society. In this sub-theme of “Beyond Growth to Introspection,” panelists discuss possibilities of addressing non-human components to expand discourses of fashion industry in each discipline or the intersectionality of two or more disciplines. Experimental in nature, papers in this panel throws provocative ideas to prompt future research efforts through collaboration among scholars of humanities, social sciences, natural sciences, business management, and engineering.

INTRODUCTION

This paper discusses how to address Non-Human Others in Fashion Ecosystem in the context of a larger community including the nature and the machine. In fashion industry, machines have liberated humans from repetitive labour but also alienated human beings from a tight-knit community of labour-intensive work environment. Anthropocene is a familiar subject in history and should be important in fashion education. Fashion industry has created environmental problems in water resources and changing rural landscapes. Nonetheless, the historiography of fashion and design history reveals the exclusivity of human actions in historical narratives.

This paper reviews the historiography of a discipline to point out absence of non-human actors or components behind major events or movements in fashion history. Traditionally humanities have focused on human actions and their consequences on a larger society. In this sub-theme of "Beyond Growth to Introspection," this paper discusses possibilities of addressing non-human components to expand discourses of fashion industry in each discipline or the intersectionality of two or more disciplines. This developmental paper presents provocative ideas to prompt future research efforts through collaboration among scholars of humanities, social sciences, natural sciences, business management, and engineering.

The paradigm of "Beyond Growth to Introspection" is the alternative to profit-driven success. We seek a way of co-existence and co-prosperity in fashion technology in terms of the relationship among individuals, individuals and communities, humans and viruses, humans and animals, humans and plants, humans and nature and humans and machines. To shift a historical narrative of fashion towards post-humanism from human-centred action to integrity of both human and non-human components, this panel will bring our attention to gaping holes in the existing scholarship of business history, labour history, and intellectual history for the education of fashion technology.

METHODOLOGY

This research article discusses the historiographical and pedagogical impact of inclusion of non-human factors in fashion ecosystem for students and colleagues enrolled at the institute of fashion-majoring programs in design and management. The pedagogical program run from 2018 to 2024 at the Fashion Institute of Technology provided prolonged and tailored support to faculty members in various disciplines via monthly faculty seminars that kept contact with instructors beyond their usual teaching materials based on each instructor's discipline such as fashion business management, fashion design, art history, and communication design. This is a summary of case studies that could be customized and refined for each instructor's discipline. This study is derived from participatory action research (PAR). As a pedagogical approach, this research prioritizes the value of experiential knowledge of instructors. The research team's members gathered on regular basis to discuss how to incorporate historical reflections of addressing non-human components in production of design and fine arts. Inclusion of ecosystem caused by human actions and non-human components was a priority in tackling problems caused by unequal and harmful social systems, and for envisioning and implementing alternatives.

HISTORIOGRAPHY OF FASHION AND DESIGN HISTORY FOR NON-HUMAN COMPONENTS

With the popularity of Anthropocene in post-climate crisis in the 2000s, scholars talked about elements other than human actions in history making. However, historians created narratives of human-driven innovations although art production depended a lot on non-human components. Since the Middle Ages in Eurasia and the Americas, production of "art" involved volatility, unpredictability, and speculation in economic terms. To protect a commission-based, unstable labour market, artists had created a guild—a precedent for professional organizations. Trade of precious materials was tied to artistic labour to enhance the function and value of rare gemstones, seashells, or metals. Artistic labour was sometimes praised, as can be seen in extant written documents. However, the rarity and the value of raw materials were more often recognized and commemorated in religious art or diplomatic gifts.

More emphasis on educating a skilled labor force emerged in the fifteenth and the sixteenth century. Specialization, division of labor, productivity, and monopoly power grew within the guild system for merchants and craftsmen. Due to monopoly, extensive competition was avoided and prices for products were also regulated. Guild members sought high social standing in regional and local politics to maintain their privileges.

In pre-capitalist society, a safe choice among art-industry careers would have been to have stable employment during a peaceful time. What is not stable, though, was the supply of rare materials from overseas or the fluctuation of raw ingredients due to natural disasters or wars. Most artists from this era whose works are taught in art history classes worked in this way for royal patrons. Velazquez, for example, was a court painter in the Spanish Habsburg Empire, as was Rubens in the Dutch region. Many Chinese or Korean artists were mentioned in historical documents as they served the royal academy of painting at the court—for example, from the fifteenth century to the seventeenth centuries, respectively for the Ming China and the Joseon Korea. Nonetheless, many artists depended on the supply of mineral pigments from overseas. For example, lapis lazuli or cobalt ores were precious ingredient to create deep blue pigments. In Western Europe, oil painters needed it; in East Asia, fine porcelain in white clay was decorated with cobalt. Sar-e-Sang is a region of Kokcha River Valley in the Hindu Kush mountains of the Badakshan province in northeastern Afghanistan. The region provided most of lapis lazuli to other parts of the world. Some parts in the Andes Mountains in Chile and the west of Lake Baikal in Russia also have lapis lazuli mines. But historically artists and craftsmen depended a lot on the region of West Asia. Whether the valley was accessible or whether the area was stricken by a natural disaster influenced the supply of lapis lazuli around the globe; and influenced the type and the pace of art production in Western Europe or in East Asia.

The First Industrial Revolution began in the late eighteenth century and brought many changes to lives of artists and designers. Mechanical production emerged in agrarian and manufacturing fields. Coal-based engines brought heavy equipment and expedited transportation of steel and iron. Trains and ships were operated on steam power. Thus, long-distance travel became more reliable and frequent. However, mechanical production was not as refined as expected. Thus, hand-made luxury items still carried glamour and prestige. The World Expositions presented a mixture of crude machine-made products and high-quality hand-made luxury goods of each country.

British designer Josiah Wedgwood (1730-1795) embraced invention and put printed designs on his porcelain. His company porcelain often combined a printed scene with hand-painted patterns. American silversmith Paul Revere (1735-1815) introduced technical innovations in iron casting in New England in the semi-industrialized practice. His company also encouraged entrepreneurs to work together in related fields to create standardized products in copper and iron, essential for churches, buildings, and ship construction. Duncan Phyfe (1768-1854) immigrated to the United States from Scotland in 1784 and produced neoclassical furniture as a leading cabinetmaker in New York. His revival style furniture was sold at a relatively low price because his workshop was efficiently managed.

Luddites in England smashed weaving machines as mechanized production eliminated their jobs (1811-1816). Cheap imports from the colonies further demolished workers' lives. Fortunes made in the international trade of mass-market products in the early nineteenth century enriched a few industrialists, but left artists and workers further deprived. Samuel Courtauld (1793-1881) in England, for example, transformed his family's silversmith business in the eighteenth century to textile mills operated by steam engine and power looms by 1820. A lot of silversmith workers had to find new jobs. As skillful craftsmen were forced out of business as industries were restructured, people like Owen Jones (1809-1974) complained that "the architect, the upholsterer, the wallpaper-stainer, the weaver, the calico-printer, and the potter" produced "novelty without beauty, or beauty without intelligence." Manufactured products shown at the 1851 Great Exhibition in London varied in quality and aesthetics. Daguerrotypes, stereotypes, and other printed images were displayed along firearms and revolvers by Samuel Colt of the United States of America. In 1815, Paul Moody produced the first power loom for North America while the Capron Mill at Uxbridge, Massachusetts used the first power looms for woolens around 1820 and produced US military uniforms from the Civil War until WWII. The system of for a mass-producing wood type was invented by Darius Wells in New York in 1827. In 1828, Wells went on to produce the first known wood type catalog. The transition from handmade to mechanically produced was irreversible.

NARRATIVES OF FASHION FROM HUMAN-CENTRED ACTION TO INTEGRATION OF HUMAN AND NON-HUMAN

In fashion production, the first industrial revolution brought mechanical production of textiles in Western Europe. Cotton mills introduced a mechanized production line. Not only machines were replacing human labour but also the scientific system of division of labour brought higher productivity. Around 1760, there were only a few home-based factories in Manchester, UK. By 1835, more than 1000 cotton mills were operated like a factory and John Kay's flying shuttle loom was used. The 1733 invention of "wheeled shuttle" was revolutionary and thus granted a patent. Then in 1785, Edmund Cartwright invented the power loom. Around 1850, more than 260,000 power looms were manufactured and distributed. Then it was followed by the Lancashire loom (semi-automatic) and then the Northrop loom (fully automatic). Manufacturing and selling the Northrop loom was an American enterprise by George Draper and Sons in Hopedale, Massachusetts. By 1900, Draper was distributing 1500 looms a month with 2500 employees in his factory.

In this accelerated production, there is little room for human-centred action in the narrative of fashion industry. Numerous workers—thousands and thousands—would remain anonymous. Non-human players such as wheeled shuttles or automatic looms would occupy the main storytelling. There were a few inventors or capitalists in those "success" stories. However, many of them have been forgotten or underestimated in the narrative of non-human components.

[1] Owen Jones, The Grammar of Ornament: A Visual Reference of Form and Colour in Architecture and Decorative Arts (Princeton: Princeton University Press, 2016; originally published in 1856), 14.

Most art productions involved manual labor in metalwork, woodwork, or textiles with hand tools. A workshop structure was prevalent because most work processes required procurement of raw ingredients from nature. A family-based workshop or a community-based workshop was a necessity as the profession of art and design handed down skills and techniques from one generation to the next within the extended family. Governments and courts did not provide much support in areas beyond public projects, although they controlled or monopolized the trade of rare materials or works made of them and recognized the legitimacy of the guild system. It was also during this period of mercantile capitalism that governments strengthened the legal system to protect property rights of citizens and companies.

Art activist and writer Gregory Sholette has argued that "ultra-luxury" art in global cosmopolitan centers exploits migrant workers of the global south by paying "ultra-low" wages and limiting freedom of mobility and well-being (Sholette, 2017, p. 5-7). Brand-name art museums such as Louvre Abu Dhabi or Guggenheim Bilbao are prominent in new tourist hubs as cultural capital attractions. In the biennial-saturated art markets, cosmopolitan artists travel the work as the "salesforce" of contemporary art, accompanied by gallerists, collectors, art advisors, private equity managers, and journalists. "Entrepreneurship" is encouraged (Sholette, 2010, p. 3).

The collaborative project at the Fashion Institute of Technology was to address the system beyond human actions. During a three-year long faculty seminar series hosted by the Fashion Institute of Technology in New York City, participating faculty agreed that this knowledge would empower our students to imagine and create better, more profitable, and more equitable ways to structure their careers and industries if we teach them how art and design adapted or transformed operations in different eras. This project of educational initiatives was called "Teaching Business and Labor History to Art and Design Students." The first three years were so successful that the faculty received a second grant to build upon the first from the National Endowment for the Humanities, a federal organization that grants funding to promote humanities-centered educational programs. The second project was entitled Shop Girls to Show Girls: Teaching Resources on New York's Working Class for Community College Students. This is currently running until June 2024.

Instructors from different disciplines (fashion business management, textile and surface design, fashion design,

art history, US history, and so on) brought forth the relationship between capitalism and its impact on livelihood of contemporary artists and designers. Some authors share their own journeys of survival or failure in the brutal market economy of art and design careers, both in fine arts and commercial sectors. All authors show how they teach these issues to their students. This volume does not present a comprehensive pedagogy for teaching the history of capitalism to future artists and designers—every school program will have to decide for itself how to integrate these subjects into its curriculum. Instead, it offers a variety of approaches to help inspire approaches to the capitalism and the history of capitalism for teachers of artists and designers (and, in some cases, teachers of future business executives in art and design fields).

I cannot summarize the entire lesson plans developed by participating faculty members. But the basic storyline was summarized above. Students think of themselves as unique, individual designers. They do not perceive the impact of outside factors like political system, economic system, or mechanized production system. Students who have taken classes with the participating faculty in the project

NON-HUMAN COMPONENTS IN RAW INGREDIENTS FOR NARRATIVES OF FASHION: BEYOND ANTHROPOCENE

At FIT, professors focus on human actions' impact on climate change and subsequent disappearance of natural resource. Ramie (from plants), silk (from worms), and wool (from goats or sheep) are highly sensitive to the amount of pasture, rain, and temperature. In the late nineteenth century, human beings invented synthetic or alternative fibers.

To make expensive linen collars and shirts more affordable for a mass, clothes manufacturers searched for new materials: plastic-like substance. Collodion created in 1848 and used as a wound dressing and an emulsion for photographic plates, is dried to a celluloid like film. In Birmingham, England, Alexander Parkes invented the first celluloid as a bulk material for forming objects was made in 1855. In the 1860s, American businessman John Welsey Hyatt acquired Parkes's patent and manufactured billiard balls. John and Isaiah Hyatt, brothers and business partners "discovered" the value of camphor and its use as a plasticizer for cellulose nitrate. Their first factory, Albany Billiard Ball Company, founded in 1868, was in operation until 1986. It ran more than 100 years.

Their second factory, Celluloid Manufacturing Company was founded in 1876 in Newark, New Jersey. They patented their invention and called the substance "celluloid." Soon, they saw an opportunity to create stiff collars and cuffs to be sold to a mass at a cheap price. Its raw ingredient is camphor, waxy, colourless solid with a strong aroma. A Celluloid collar advertising card shows the illustration of a small Asian woman in Japanese attire, but also wearing the advertised celluloid collar and cuffs, and carrying an umbrella charmingly fashioned from a large celluloid cuff and walking on platform sandals also made of cuffs. Images like this were effective in demonstrating key strengths: waterproof; stiff yet malleable or curved; and easy to clean.

In the1920s and 1930s, celluloid began to be replaced in most of its applications by more versatile materials such as cellulose acetate, Bakelite, and the new vinyl polymers. By the end of the 20th century, its only unique application of note was in table-tennis balls. These days, celluloid is still used to make guitar picks or fountain pen bodies. The deterioration of celluloid is generally known as "celluloid rot." The chemical processes involved are not perfectly understood, but it is widely believed that the gases released by a piece undergoing celluloid rot can trigger celluloid rot in nearby articles of celluloid which were previously intact. Celluloid as a new material was quite in high demand for 30 years.

Viscose is the oldest manufactured fibre, first being produced in 1883 as a cheap alternative to silk. The name "viscose" derived from the way this fibre is manufactured; a viscous organic liquid used to make both rayon and cellophane. Viscose is made from wood pulp, making it a cellulosic fibre, like cotton or linen. It is often regarded as only partially manmade. Viscose production generally begins with wood pulp, and there are several chemical and manufacturing techniques to make it. The American Viscose Company was established in 1909 as the American wing of the Courtaulds, a British textile company specializing in silk. The American Viscose Plant was an industrial park in

Roanoke, Virginia. The plant's construction began in 1916 with the building of the first of what became three large processing plants of two spinning units each; the second began construction in 1921 and the third in 1925. once employed over 5,000. These days, Viscose is not environmentally friendly. Like paper, viscose fibre is based on tree pulp. Viscose rayon is known to many as a "green" material, but the secret of its manufacturing process is far more insidious. Viscose rayon is based on cellulose. That part may be 'green,' but the chemical used to make the viscose isn't. It's a toxic chemical called carbon disulphide. Carbon disulphide, the toxic agent prerequisite to the making of viscose, is an unknown entity to most people. This substance makes workers suffer and the surrounding environment ruined.

Polyester is more moisture-wicking while viscose is more absorbent. Polyester dries faster and does not wrinkle as easily as viscose. Polyester is stronger and does not shrink. When washed in hot water, viscose can shrink. It also gets wrinkled easily. When exposed to heat and light, the fabrics fade and deteriorate. It is prone to mildew, and when wet, the fibres become weak. Originally known as artificial silk, in the late 19th century, the term "rayon" came into effect in 1924 (Blanc, 2017).

Overall, the above stories tell us that business history should be taught along with the rise and fall of fashion industry. When one gets excited by an invention, one also suffers from side effects or long-term usage unknown at the time. Materials can "dominate" human actions. The characteristics of polyester being resistant to moisture and shrinkage made it ideal choice for mass-produced school uniforms or military uniforms (Pyun, 2023).

RESULTS AND DISCUSSION

These days, polyester is recycled from used polyester clothes. Most consumers are buying clothes made of some recycled materials, if not all. And many of them think of decreasing carbon footprint by purchasing an electric car or by avoiding long-distance flights. As consumer advocacy came to rise, many companies created a marketing strategy to satisfy diverse demands. Consumer ethnocentrism has created another advocacy to limit purchase intention for foreign goods. Consumer ethnocentrism is defined as "the beliefs held by consumers about the appropriateness, indeed morality of purchasing foreign-made products" (Shimp & Sharma, 1987, p. 280).

Scholars have agreed that consumer ethnocentrism impacts negatively on consumers' purchase intention toward foreign products. When synthetic materials for clothing have been predominantly produced outside the United States or a developed country in the Global North, many consumers forget human players behind non-human components. After all, there are people who act as agency in operation. In social science, agency is the capacity of individuals to have the power and resources to fulfil their potential.

CONCLUSION: HOW TO DECOLONIZE THE EDUCATIONAL CURRICULUM OF FASHION TECHNOLOGY

This research showed a pedagogical collective of tackling "Why do we have to teach business history, labour history, and intellectual history for the education of fashion technology?" with participator action research method. Shop Girls to Show Girls: Teaching Resources on New York's Working Class for Community College Students was an interdisciplinary project intended to improve student understanding of the historical contexts for the professional fields they are pursuing. The initiative was being developed to address needs initially identified by faculty during a pilot project at FIT. The pilot revealed that the inclusion of robust labour history in pre-professional course curricula can have broad value for a diversity of disciplines at community colleges. The project entitled "Shop Girls to Show Girls" is grounded on the premise that the humanities bring essential context and a deeper subject understanding to pre-professional studies. By learning about the historical influences that have shaped the professions they will enter, community college students will be better-prepared for the demands of the 21st-century workplace. This knowledge will enhance their own careers and potentially empower them to improve the industries in which they are working. The potential implications include how students will empower their new communities with concerns of non-human components in fashion ecosystem by including human actions and apparatus including the living and natural environment.

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