

REVIEW OF AVANT-GARDE CONCEPT IN FOOTWEAR RESEARCH AND DESIGN AND APPLICATION TRENDS

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ABSTRACT. Whether originating from a deliberate intention or emerging from subconscious, spontaneous doodling, design concepts perform the crucial role of demonstrating the vision of a final product. Even though academic discourse on design concepts is prevalent in all fields of design, the same cannot be said about footwear design. Academic discussion about footwear design concept is usually rooted in comfort and functionality. This paper aims to enhance the academic conversation on footwear design concepts by exploring the avant-garde concept in footwear design, its impact and significance. Avant-garde describes a French medieval military lexicon that literally translates to vanguard, or advanced guard, referring to the frontline of the army. However, the applicative meaning of the term is an intellectual, artistic and cultural movement characterized by experimental, radical and unorthodox approaches to the arts. Therefore, in actuality, for a product or idea to be considered avant-garde is to dwell outside of the established norms and confines of a discipline. Despite the widespread usage of the terminology in contemporary fashion circles, academic discourse on specifically named avant-garde footwear is rather sparse. This study thus sets out to fill out this academic gap by first discussing the concept of avant-garde in fashion generally, some notable avant-garde designers/artists and their contributions, important avant-garde concepts in footwear design and finally the areas of avant-garde footwear applications. The study contends that although avant-garde fashion and for that matter footwear is thought to satisfy a specific niche, its impact is significantly observable in the trends of mainstream fashion.

KEY WORDS: design concept, fashion design, co-branding, design innovation, brand perception

TRECERE ÎN REVISTĂ A CURENTULUI AVANGARDIST ÎN CERCETARE ȘI DESIGN ÎN DOMENIUL ÎNCĂLȚĂMINTEI ȘI TENDINȚE DE APLICARE

REZUMAT. Fie că provin dintr-o intenție deliberată, fie că provin din mângălierea spontană, subconștientă, conceptele de design îndeplinesc rolul crucial de a demonstra viziunea unui produs final. Chiar dacă discursul academic asupra conceptelor de design este predominant în toate domeniile designului, nu se poate spune același lucru despre designul încălțămintei. Discuția academică despre conceptul de design de încălțămintă se concentrează de obicei pe confort și funcționalitate. Această lucrare își propune să contribuie la conversația academică asupra conceptelor de design de încălțămintă prin explorarea curentului avangardist în designul încălțămintei, a impactului și semnificației acestuia. Termenul de „avangardă” provine din lexiconul militar francez medieval și se traduce literalmente prin „care merge în frunte”, referindu-se la prima linie a armatei. Cu toate acestea, sensul aplicativ al termenului este o mișcare intelectuală, artistică și culturală caracterizată prin abordări experimentale, radicale și neortodoxe ale artelor. Prin urmare, în realitate, ca un produs sau o idee să fie considerat de avangardă înseamnă să se situeze în afara normelor și limitelor stabilite ale unei discipline. În ciuda utilizării pe scară largă a terminologiei în cercurile modei contemporane, discursul academic despre încălțămintea de avangardă numită așa în mod specific este destul de rar. Acest studiu își propune astfel să completeze această lacună, discutând mai întâi despre conceptul de avangardă în modă în general, despre unii designeri/artiști avangardiști de seamă și contribuțiile acestora, despre conceptele avangardiste importante în designul încălțămintei și, în final, despre domeniile de aplicare a încălțămintei avangardiste. Studiul susține că, deși moda avangardistă și, de altfel, încălțămintea de acest tip este considerată a satisface o anumită nișă, impactul acesteia este observabil în mod semnificativ în tendințele modei mainstream.

CUVINTE CHEIE: concept de design, design de modă, co-branding, inovație în design, percepția mărcii

REVUE DU COURANT D'AVANT-GARDE DANS LA RECHERCHE ET LA CONCEPTION DE CHAUSSURES ET TENDANCES D'APPLICATION

RÉSUMÉ. Qu'ils proviennent d'une intention délibérée ou qu'ils émergent d'un grignotage subconscient et spontané, les concepts de design jouent le rôle crucial de démontrer la vision d'un produit final. Même si le discours académique sur les concepts de design est répandu dans tous les domaines du design, on ne peut pas en dire autant du design de chaussures. Les discussions académiques sur le concept de conception de chaussures sont généralement fondées sur le confort et la fonctionnalité. Cet article vise à enrichir la conversation académique sur les concepts de conception de chaussures en explorant le concept d'avant-garde dans la conception de chaussures, son impact et sa signification. Avant-garde décrit un terme militaire médiéval français qui se traduit littéralement par « ce qui est précurseur », faisant référence à la ligne de front de l'armée. Cependant, le sens applicatif du terme est un mouvement intellectuel, artistique et culturel caractérisé par des approches expérimentales, radicales et peu orthodoxes des arts. Par conséquent, en réalité, pour qu'un produit ou une idée soit considéré comme avant-gardiste, il faut vivre en dehors des normes et des limites établies d'une discipline. Malgré l'usage répandu de cette terminologie dans les cercles de la mode contemporaine, le discours académique sur les chaussures d'avant-garde spécifiquement nommées est plutôt rare. Cette étude vise donc à combler cette lacune académique en discutant d'abord du concept d'avant-garde dans la mode en général, de certains créateurs/artistes d'avant-garde notables et de leurs contributions, des concepts d'avant-garde importants dans la conception de chaussures et enfin des domaines d'applications de chaussures d'avant-garde. L'étude affirme que même si la mode d'avant-garde, et donc les chaussures, est censée satisfaire une niche spécifique, son impact est significativement observable dans les tendances de la mode grand public.

MOTS CLÉS : concept de design, design de mode, co-branding, innovation dans la conception, perception de la marque

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INTRODUCTION

Undoubtedly there has been consistent prevalence of avant-garde movements emergence within every field of creativity, ranging from the fine arts to music [1]. Contemporary utilization of the term “avant-garde” has been touted to have emanated from revolutionary France. Avant-garde originates from a medieval French military term that literally translates to “vanguard,” or “advanced guard [2]” and refers to the frontline of the army. 19th-century French strategist General Henri Bonnal is credited for the invention of the term. For over a century, the concept of “avant-garde” has possibly been the most significant and influential force in modern art and culture, dominating the critical appraisal of the significance of an artist or a work of art.

A host of stakeholders including, critics, journalists and academicians often utilize the term avant-garde when evaluating, interpreting, and scrutinizing art, architecture, film, and fashion. However, the meaning of the term avant-garde is often ambiguous [3]. Hence, the direct interpretation and application of the term avant-garde to mean “ahead of the guard” are somewhat misleading. In the realm of the arts, being avant-garde does not necessarily mean staying ahead of trends. Instead, it signifies existing beyond the established norms and boundaries of a particular discipline [1]. Avant-garde artists or practitioners are generally in opposition to dominant social values or established artistic conventions [4].

Be it apparel or footwear, the object of a designer is to create both aesthetically pleasing and comfortable fitting products for the end user by manipulating design elements based on design concepts and principles. Design elements and principles are fundamental guidelines for designers in all fields [5]. A design concept serves as the portrayal of a designer's abstract ideas for ultimate entities, such as garments in the context of apparel design [5]. A design concept thus performs the crucial role of demonstrating the vision of a final product [6]. Whether originating from a deliberate intention or emerging from subconscious,

spontaneous doodling, design concepts evolve through a process in which the designer navigates perception and concepts by assimilating information [7].

Even though the discourse on design concept is prevalent in all fields of design, ranging from fashion, architecture to user interface, the same cannot be said about footwear design. Academic discussion about footwear design concept is usually rooted on comfort and functionality [8-10]. This paper seeks to contribute to the discourse on footwear design concepts by discussing the avant-garde concept in footwear design and its significance.

Avant-garde footwear design has undergone a fascinating evolution, marked by its innovative and unconventional approach over the periods. Avant-garde footwear design finds roots in avant-garde art movements of the late 19th and early 20th centuries. In the Mid-20th century, Designers like Salvatore Ferragamo of Italy [11] and Roger Vivier of France introduced novel materials and shapes, pushing the boundaries of conventional shoe design [12]. The rise of pop art and youth culture in the 1960s further fueled experimentation in fashion, including footwear.

The punk movement in the 1970s-1980s and the Post-Punk Era had a significant impact on avant-garde design, with DIY aesthetics and rebellious themes influencing footwear. Designers like Vivienne Westwood and Malcolm McLaren played a key role in translating punk culture into avant-garde fashion, including shoes [13].

Advancements in materials and manufacturing technologies in the 1990s allowed designers to explore futuristic and unconventional designs [14]. Alexander McQueen, known for his intriguing and innovative designs, emerged as a prominent figure in avant-garde footwear during this era. In the 21st Century, collaboration between fashion designers and technology experts became more prevalent, leading to avant-garde designs that merge fashion with cutting-edge technology. High-profile collaborations showcase avant-garde elements in mainstream fashion [15].

In terms of cultural significance, avant-garde footwear has come to serve as a form of artistic expression, challenging societal norms

and pushing the boundaries of what is considered wearable [16]. Recent avant-garde designs increasingly incorporate sustainability principles and address social issues, reflecting a broader societal awareness in the fashion industry. Designers use avant-garde footwear as a platform for social commentary, addressing topics like gender, identity, and environmental impact [17].

The concept of avant-garde tends to play a significant role in the design of contemporary footwear and even though avant-garde footwear design is thought to remain in a niche market, its influences in mainstream footwear trends are very much evident. From oversized silhouettes to funky color schemes, massive soles, and elevated heels are now commonplace. This demonstrates that the avant-garde concept in footwear extends beyond advancing the frontiers of footwear design; however, it possesses the influence to shape the broader landscape. It continues to shape and be shaped by cultural, technological, and societal changes, offering a unique perspective on the intersection of art, fashion, and innovation.

Contributing to the literature of this concept relative to footwear design, this study discusses avant-garde concepts applied in footwear design. Also discussed are some

prominent avant-garde footwear designers and brands and their impact on the contemporary footwear design landscape, and the various areas in which avant-garde-concept-designed footwear are applied. The objectives of this study are as follows:

1. To investigate the concept of avant-garde as pertains to footwear design.
2. To investigate prominent avant-garde designers and brands and their impact on contemporary footwear design.
3. To investigate the areas of application of avant-garde-concept-designed footwear.

METHODOLOGY

The method adopted involves the selection of search criteria, selection of relevant databases and search engines, and manual sifting of collated data for analysis. The framework is shown in Figure 1. The following databases and search engines were used for the collection of data: Web of Science Core Collection, Google Scholar, and Bing academic. There was no period restriction for the documents consulted. The types of documents consulted in the study were research papers, conference papers and proceedings, books, and patents.

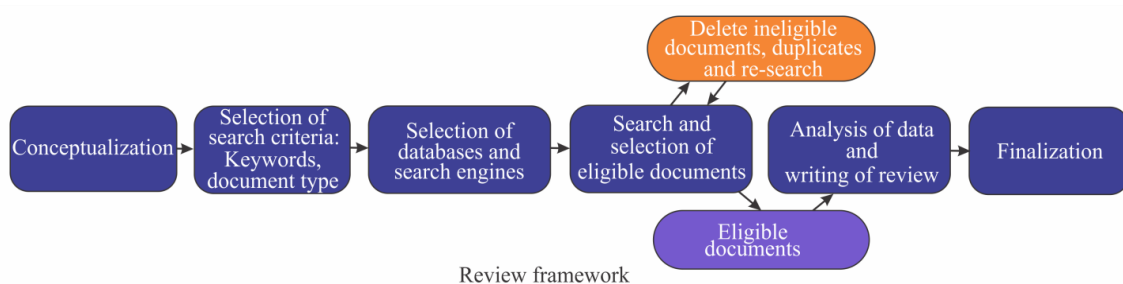


Figure 1. Framework of the research

FINDINGS AND DISCUSSIONS

The findings of this paper are partitioned as follows: a brief discussion on the avant-garde concept in fashion, deliberations on prominent avant-gardists and their contribution to footwear research and design, avant-garde footwear concepts and the areas of avant-garde footwear applications.

Concept of Avant-Garde in Fashion

Since the early 20th century, there has been ongoing debate among critics and scholars regarding the origins, definitions, and enduring relevance of the term avant-garde and its practices. Theoretical discussions have even suggested the demise of the avant-garde. However, according to Cardullo [18], the avant-garde has rather experienced significant changes in the latter part of the twentieth

century, and that continues to be a pertinent and practical concept as it exemplifies a pervasive drive to challenge aesthetic limits.

While everyday clothing typically serves utilitarian purposes, from the introduction of jeans to dual-sided zippers, avant-garde apparel leans more towards artistic expression, consistently aiming to challenge our conventional notions of what actually constitutes clothing. Avant-garde fashion has a rich history of pushing boundaries and challenging traditional norms in the industry.

The concept of avant-garde in fashion is not restricted to runway fashion only; however there exist other subsets such as street avant-garde, museum avant-garde and so on. Street style avant-garde fashion depicts the distinctive street-wear fashionable dresses that are extravagant and eye-catching and worn by a few people to make their presence known in public [19]. Museum avant-garde entails works of renowned avant-gardists.

Prominent Avant-Garde Footwear Designers and Brands

Inasmuch as the definition and attributes of the term avant-garde tend to be equivocal and diverged, a number of researchers have frequently studied artists and designers and described them as avant-garde [3]. Groundbreaking shoe designs have emerged continually but it has never been so exciting thanks to a number of audacious footwear designers' willingness to abolish the traditional archetype. In no special order, the succeeding discussion presents some prominent avant-garde footwear designers and brands of the 20th century and beyond.

Maison Margiela is an avant-garde fashion brand established in 1988 by Belgian designer Martin Margiela and creative partner Jenny Meirens [20]. The Paris-based luxury brand is famous for its experimental, deconstructive and unconventional designs.



Figure 2. (a) Tabi leather Mary Jane pumps [21]; (b) Yeezy Foam RNNR MX Sand Grey [22]; (c) Crocs Pollex Clog [23]

The split-toe Margiela tabi is a signature of Maison Margiela, featuring various versions every season since spring 1989 and beyond. The Margiela tabi was inspired by the Japanese 'jika-tabi', a functional shoe or boot which features a flexible rubber sole and an upper formed traditionally from a hard-wearing canvas textile from the late 19th century. Figure 2(a) shows Tabi leather Mary Jane pumps crafted from black calf leather and designed with the iconic Tabi toe – that features a split between the big toe and the rest of the toes to promote flexibility and provide extra security, comfort, and stability.

Kanye West introduced the world to some novel, extremely noticeable footwear. Yeezy has popularized the sort of pioneering and innovative design work that defines the

avant-garde. Kanye West's Yeezy brand portrayed obvious avant-garde elements in footwear design. His designs often incorporate minimalist aesthetics, unique silhouettes, and unconventional materials. The Yeezy Boost series, for example, featured distinctive shapes and a focus on comfort through innovative materials like Primeknit. Additionally, West has experimented with earthy tones and neutral colors, contributing to a distinct avant-garde style within the realm of sneaker design. Yeezy Season is a project of Kanye's collaboration with sportswear giant Adidas, releasing fashion collections since 2013 [24]. Figure 2(b) shows one of his iconic creations by way of the collaboration with footwear giant Adidas, the Yeezy Foam Runner. The Yeezy Foam Runner

is a one-piece sneaker with a porous EVA foam upper and a contoured outsole.

Salehe Bembury is an independent footwear designer whose futuristic design vision has achieved broad influence in the worlds of street-wear and high-end sneakers. Salehe Bembury is known for his work with major footwear brands like Yeezy, Versace, Crocs, New Balance and so on. He was an integral part of the men's footwear task force for Yeezy Season 3 and Season 4 [25]. Bembury is celebrated for his avant-garde designs, blending creativity with functionality in the realm of footwear fashion. His contributions to the footwear industry have garnered attention for shifting boundaries and redefining the aesthetics of contemporary shoe design. One of his impressive creations – Crocs Pollex Clog – is an exploration of form and function that balances Crocs' heritage and nostalgia. The model's curved ridges provide exceptional multi-directional grip while the iconic perforations work around the grooves to provide enhanced breathability [23]. A translucent rubber panel wraps around the front of the shoe for added protection. Figure 1(c) shows the Pollex Clog.

Rick Owens – No discussion of avant-garde footwear is complete without Rick Owens [26]. Rick Owens is an American

fashion designer based in Paris, well-known for avant-garde luxurious grunge fashion and interior pieces. Rick Owens is widely regarded as an avant-garde fashion designer known for his unconventional and distinctive approach. His work often features dark, dramatic aesthetics with oversized silhouettes and asymmetrical designs. Owens' avant-garde style challenges traditional fashion norms, making a significant impact on the industry. Figure 3(a) shows one of his signature avant-garde footwear models known as the quad sole pentagram jumbo lace boot.

Lee Alexander McQueen was born on March 17, 1969 in London, England. He dropped out of school at a young age to learn tailoring. In a bid to further his clothes-making career, McQueen departed London briefly and spent some time in Milan, serving as a design assistant to the Italian fashion designer Romeo Gigli. After coming back to London, McQueen joined Central Saint Martin's College of Art & Design, earning his M.A. in fashion design. Following that, he was appointed as the Chief Designer for Givenchy, a prestigious French haute couture fashion house owned by Louis Vuitton [27]. While known as Lee to friends and acquaintances, McQueen opted to exclude his first name and chose Alexander McQueen as the brand's title [28].

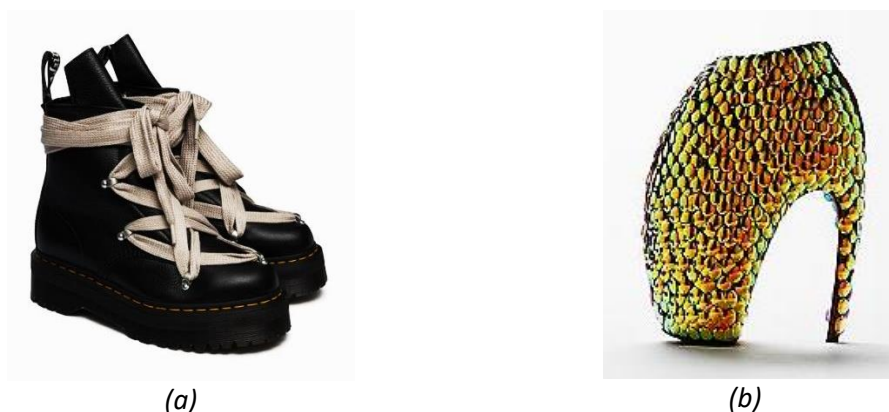


Figure 3. (a) Rick Owen's quad sole pentagram jumbo lace boots [29]; (b) A version of McQueen's armadillo boot [30]

According to Kwon and Keum [31], McQueen's designs are marked by unstructured expressive techniques that disrupt the fundamental principles of design, such as harmony and balance. His creations showcase disordered visuals, breaking away from traditional design forms. Recognized for his inventive and artistic shoe designs,

Alexander McQueen is famed for the avant-garde Armadillo boot, a truly iconic footwear creation. The eponym of the boot is due to its form and armour-like appearance, the boots transform from the leg to create the visual effect of a ballerina standing on pointe. Figure 3(b) shows a version of armadillo boot.

Nicholas Kirkwood is renowned for his sculptural and unconventional shoe creations. He became famous courtesy a collection made up of statement shoes which mix elements of architectural design, sex appeal and avant-garde fashion [32]. His designs, however, are perfect and very unique, beautiful, to the polished wood heel and platform he adds many other sophisticated elements. He focuses on the silhouette, works with negative spaces and abstract forms. Decorative elements, when used, are integrated into the architecture of the shoe, rather than just placed on the surface.

United Nude – Based in Amsterdam, United Nude is a luxury footwear brand renowned for its innovative designs, architecturally-inspired and cutting-edge style [33]. The brand was founded by Rem D. Koolhaas and Galahad Clark in 2003. United Nude is celebrated for its unconventional and avant-garde approach to footwear, often incorporating geometric shapes and unusual materials.

One of the brand's most iconic designs is the "Möbius" shoe shown in Figure 4(a), which features a single strip of material that forms both the sole and upper in a continuous loop, creating a visually striking and unconventional look. United Nude's shoes often blur the line between art and fashion,

and they have collaborated with various designers and artists to create unique and cutting-edge footwear collections. United Nude's commitment to pushing the boundaries of traditional shoe design has made it a distinctive and influential brand in the world of fashion and footwear.

Iris van Herpen is a Dutch fashion designer and couturier renowned for her futuristic, darkly fantastical aesthetic. As a fashion designer, she has collaborated with shoe designers to create unique and avant-garde footwear [34]. Embellished with stone spikes and 7.5-inch heels, the "Thorn" boots shown in Figure 4(b) are regarded as one of her great footwear creations.

Thom Browne – originally from Pennsylvania, initially explored a career in acting before finding his true calling in the field of design. Browne's creations are known for their unique proportions, precise tailoring, and a fusion of traditional menswear with surrealistic elements. Thom Browne crafts avant-garde footwear with a distinctive and playful flair. Undoubtedly, he is also a leading figure in avant-garde menswear, he established his self-named brand in 2001, swiftly gaining acclaim for his unique aesthetic [41].



Figure 4. (a) United Nude's "Möbius" shoe [36]; (b) Iris van Herpen's thorn boots [37]; (c) High-heel Nike sneakers [38]; (d) Play Comme des Garçons chuck Taylor [39]; (e) Warrior 2 sneaker by Ruthie Davies and Disney [40]; (f) Dolce & Gabbana's Keira Leaf Applique Bejewelled Sandals [41]

Comme des Garçons refers to a Japanese clothing outfit established by Rei Kawakubo in Tokyo in 1969 [42], now situated in Tokyo, Japan, and in Place Vendôme in Paris, France. The brand is famous for extending the limits of traditional shoe design. Famously known for its avant-garde aesthetic, Comme des Garçons introduced a collaboration with Nike featuring a sneaker/ankle boot hybrid with a high heel [37]. The footwear shown in Figure 4(c) looked like weirdly tall soccer shoes. Also in their collaborative work with converse, Comme des Garçons released a classic style of Converse with a modern twist as shown in Figure 4(d). The sneakers featured bold and playful patterns which made them the statement piece of any outfit.

Ruthie Davis is an American female shoe designer with a penchant for the empowering bodycon style, seamlessly blends sensuality and strength in her innovative silhouettes. She combines high fashion with futuristic elements in her shoe designs. Sky-high heels and platforms, super structural features and bright pops of color are signature details of the brand. Notable avant-garde pieces are in the collaboration with Disney to create a line of seven shoes inspired by Mulan (movie). Figure 4(e) shows one of the seven “warrior” branded heels [39].

Dolce & Gabbana is a famous fashion house in Milan, Italy. The company was founded in the year 1985 by two designers, Domenico Dolce and Stefano Gabbana. Domenico Dolce and Stefano Gabbana are known for their unique style and look. They are known for incorporating avant-garde elements into their footwear collections. Figure 4(f) shows one of the brand’s footwear – Keira Leaf Applique Bejewelled Sandals, featured in New York Fashion Week (NYFW spring ’20) 2020.

Issey Miyake was born Kazunaru Miyake 1938 in Hiroshima. After completing his education at Tama Art University in Tokyo, Miyake relocated to Paris in 1965 and pursued studies at the prestigious Ecole de la Chambre Syndicale de la Couture Parisienne. During his early career as a designer, he gained experience under Guy Laroche and Givenchy.

Additionally, his perspective was shaped by the significant student-led uprising of May 1968.

In 1970, he founded the Miyake Design Studio in Tokyo and shortly thereafter opened his maiden boutique in Paris. During the 1980s, his career reached its zenith as he explored various materials, ranging from plastic and metal wire to traditional Japanese paper [43]. Typically avant-gardist, Issey Miyake rather desired neither to be referred to as an artist nor to be labeled a ‘Japanese’ fashion designer [44]. Issey Miyake has consistently shown a keen interest in environmental concerns and is recognized as a designer who prioritizes practicality and universality in his clothing designs [45]. At the beginning of the century, he stepped back from creating his Paris collections and has since provided numerous talented young designers with significant opportunities.

Renowned for his minimalist approach to footwear design, Issey Miyake’s shoes embody a Japanese design aesthetic characterized by simplicity. They skillfully blend Eastern and Western influences, resulting in a remarkably modern and international style. Just like most prominent avant-garde footwear designers, Miyake had a number of collaborations with brands such as New Balance.

Yohji Yamamoto – born in Tokyo in 1943, started his career by studying English and law at Keio University before ultimately obtaining a fashion degree from Bunka Fashion College in 1969 [46]. Yamamoto’s creations defy straightforward associations with gender, nationality, or artistic categorizations. He dismantled and challenged clothing norms, reconsidering established notions of beauty, age, gender, and the human body [47]. The blended nature of his creations, along with abundant references to both Japanese tradition and Western culture, can be characterized as an avant-garde manifestation of postmodernism that resonates with a worldwide audience [46].

In addition to his work as a designer for his own fashion house, Yamamoto collaborated with other outfits. One of such notable collaborations is the one with Adidas which began on October 7, 2002 [48]. Adidas and Yohji Yamamoto continue their industry

defining partnership with a triumphant offering of audacious sportswear, reimagined through a distinctly avant-garde lens. Yamamoto and Adidas took their collaboration to new heights with the launch of Y-3. Symbolizing the union of Yamamoto (“Y”) and the Three Stripes (“3”), Y-3 is a

designer sportswear line that has been walked at Paris Fashion Week since 2003. Notable sneaker models of this collaboration include Qasa High, Super Zip, Pro Zip, Stan Zip, Noci High, and Noci Low, there are also new Ryo High and Ayero sneakers.

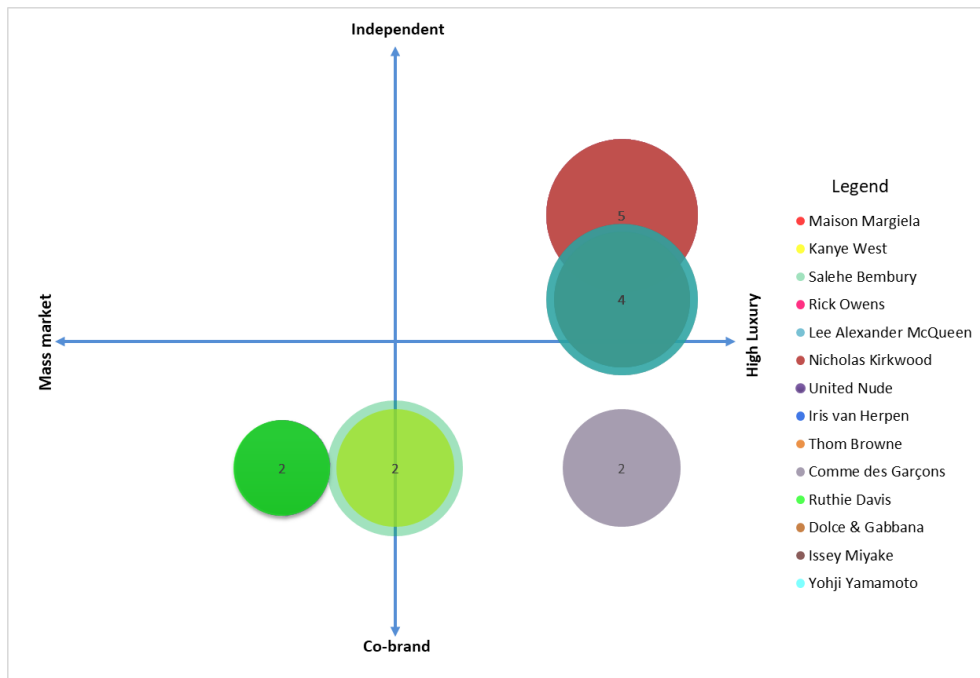


Figure 5. Brand positioning of the 14 brands discussed

A brand market position analysis was carried out on the fourteen brands and designers presented and shown in Figure 5. The chosen parameters are luxury against mass market, independent against co-brand. Luxury pertains to whether the brand is significantly a luxury brand or mass market brand. Independent brand in the sense as to whether the brand largely operates on its own, or predominantly engages in co-branding or other collaborative arrangements. The perceptual mapping constructed suggests that most of the brands are luxury brands. Therefore, none of the brands is effectively a mass market brand; therefore, the first quadrant of the map is empty. Potential mixes of mass market and luxury offerings only pertain to Yeezy, United Nude and Ruthie Davies and also with Salehe Bembury depending on the collaboration. Due to the similarities of the brands, there are overlaps in the positions shown on the maps.

The authors thus contend that this presents an opportunity for further studies to ascertain the feasibility of mass market footwear brands' ability to tap into this luxury market by adopting avant-garde design concepts. It is however instructive to note that co-branding has been prescribed as one of the effective means to achieve this end as captured under the section of avant-garde footwear applications areas.

Avant-Garde Footwear Design Concepts

The avant-garde concept in footwear design represents a departure from traditional or conventional shoe styles, pushing the boundaries of creativity, innovation, and artistic expression. Avant-garde footwear designers and brands explore new materials, shapes, and technologies to create shoes that are often regarded as wearable art. Figure 6 presents some key aspects and applications of the avant-garde concept in footwear design.

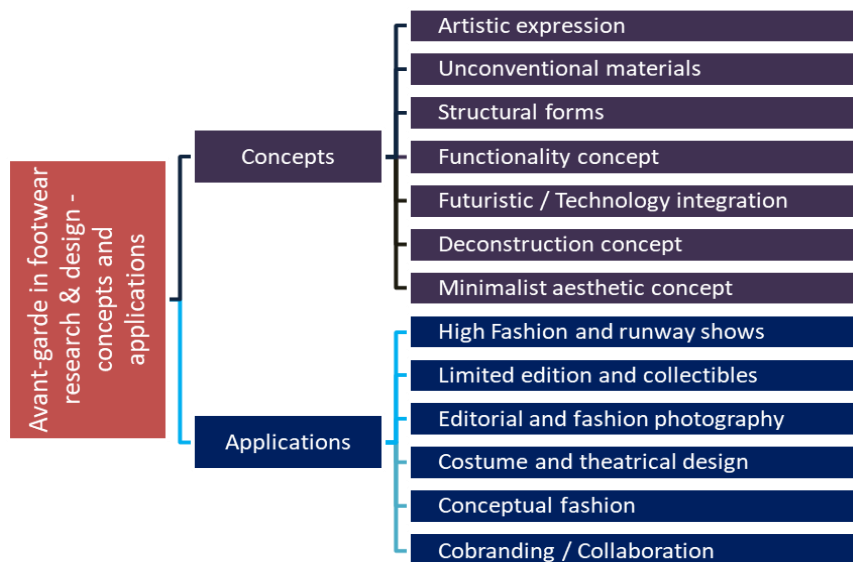


Figure 6. Overview of Avant-garde in footwear design, research and applications

Artistic Expression

Artistic expression describes the utilization of art and artistic methods to explore, communicate, and express the psychic content of an individual [49]. Usually, products of avant-garde are seen as obstinate, nonfunctional and awkward pieces of art. However, some avant-garde footwear is not necessarily constrained by functionality. Avant-garde footwear is a form of artistic expression conveying creativity by experimenting with materials, techniques and the form a shoe can take [50].

Some avant-garde creations take inspiration from everyday objects and combine it with pure imagination. Others seem to find inspiration within, creating pieces unlike anything we could have imagined. Designers use shoes as a canvas to convey unique and thought-provoking ideas. These creations often blur the lines between fashion and art. A typical example is McQueen's armadillo boot shown in Figure 3(b), the side view showing the use of iridescent paillettes to imitate the scales of the armadillo.

Unconventional Materials

Avant-garde footwear designers experiment with unconventional materials such as plastics, metals, glass, and even organic materials like wood and flowers. They may also experiment with texture by incorporating ruffles, frills, or other structural elements. Avant-garde fashion also often plays with proportions and shapes, using voluminous or oversized silhouettes to create dramatic effects [51].

These materials challenge traditional perceptions of what shoes can be made of. Manila-based designer Kermit Tesoro have demonstrated that horns, tentacles, hooves, skulls are materials capable of being formed into footwear. Figure 7(a) shows Kermit Tesoro's famous Polypodis footwear made up of bones. Kermit Tesoro is noted to have used various mediums in his shoes such as wood, plaster, steel, leather, industrial resin, coral, and human bones and teeth, all of which have been inspired from natural environs and things found in specific environments.



Figure 7. (a) Kermit Tesoro's Polypodis [50]; (b) Minimalist slippers [52]; (c) Rem D. Koolhaas architectural shoes designed for United Nude [53]; (d) Energy harvesting sneaker for mobile device charging [54]; (e) Yeezy 450 [62]; (f) The bat [36]

Minimalist and Maximalist Aesthetics

The minimalist aesthetic focuses on the principle that less is more. As a design style, it involves simple design formats, scarcity and visual peace [52]. In terms of footwear design, there seem to be two schools of thought on the definition of minimalist footwear. One school of thought which seems the most popular describe it as, basically, footwear designed to replicate the sensation of being barefoot while offering a sufficient level of insulation and protection, typically in the soles, can be categorized as "minimalist". Figure 7(b) shows an example of a minimalist slipper. Contrarily, there is also the concept of maximalist footwear. This type of footwear is characterized by an enlarged midsole and is intended to offer extra cushioning and shock absorption compared to typical running shoes [53].

Other description of minimalist footwear design is that it focuses on simplicity, emphasizing clean lines, a limited color palette, and a reduction of unnecessary elements. It often involves using basic shapes and high-quality materials to create a streamlined and functional look. This class of minimalist shoes aims to provide essential features without excessive ornamentation, offering a design that

is both aesthetically pleasing and practical. This style is characterized by a less-is-more philosophy, promoting simplicity and elegance in shoe design.

Structural Form Concepts

Avant-garde shoes often feature sculptural and architectural elements. They may have exaggerated shapes, intricate structures, or asymmetrical designs that defy conventional shoe forms. Rem D. Koolhaas teamed up with British shoemaker Galahad Clark to create a line of architectural shoes for their brand United Nude. United Nude designs have also been inspired by other art forms, like furniture [57]. Figure 7(c) shows Rem D. Koolhaas architectural shoes designed for United Nude. Other notable examples featured famous architect Zaha Hadid's works with Brazilian brand Melissa, Adidas, Pharrell Williams and United Nude and Lacoste [58]. Issey Miyake and United Nude's 'rock' and 'wrap' shoes and so on [59].

Technology Integration / Futuristic Concept

For a long time, the craft of creating footwear has been predominantly done by hand. Increasingly technology has seen

pervasive application in the creative and experimental environment of the avant-garde fashion runway, particularly in relation to its garments [60] and to a much lesser degree, footwear. Technology is an essential element of futuristic design. Futuristic design aims to craft a visually impactful and distinctive setting that captures the sensation of being in a future era. Integration of smart fabrics, 3D printing, and wearable technology opens up new avenues for experimentation and innovation. Figure 7(d) shows Energy harvesting sneaker for mobile device charging [56].

3D printing is being incorporated into more and more industries, and footwear design and manufacture is no exception to this. Avant-garde footwear often incorporates advanced technologies, such as 3D printing, to achieve complex and innovative designs. These technologies expand the possibilities of shoe design. Even though complete shoes have been produced using 3D printing technology, the majority of the applications are for prototyping.

Shih-Hung Cheng also investigated the impact of Generative artificial intelligence (GAI) on footwear design creativity and feasibility [61]. Using a text-to-image GAI tool called Midjourney, 17 prompts were tested to generate footwear concepts. Interesting avant-garde effect footwear designs such as what they described as kimono-style high heeled shoes, lady running shoes with futuristic style and football shoes with mutation style were generated.

Functionality Concept

Functionality pertains to the effectiveness of a design in assisting users in achieving their objectives and fulfilling their needs. When creating high-end fashion footwear, the focus typically revolves around innovating and introducing novel shapes for the shoes, unique sole and heel designs, fresh cuts, material combinations, variations, as well as distinctive trimmings and decorations [62]. However, some avant-garde footwear also has functionality as part of the objective. This may include fit, ample protection and comfort, ease of wear, materials with functional qualities such as anti-microbial

properties. Proper fit of footwear stands as a crucial factor for the wearer, impacting comfort, and its absence can result in foot injuries [63]. Figure 7(e) shows an image of the Yeezy 450. The elaborate web-like pattern on the upper not only functions as a design element but also guarantees a secure and supportive fit. Footwear made of antimicrobial treated materials tends to improve sanitary properties as well as protecting the wearer from detrimental impact of the environment, actions of microorganisms [62]. The use of high-quality materials enhances the durability and, for that matter, the functionality of the footwear.

Deconstruction Concept

Deconstruction is part of modern philosophy that regards the process of understanding as a breakdown of stereotypes and the creation of a new context [64]. Mainly, it emphasizes the stereotypical thinking that provides standardized explanations and meanings for the context. Applied to the fashion phenomenon, the deconstructivist method creates new fashion representations and interpretations, overcomes fashion stereotypes and fashion attitudes, and crosses typical borders. Japanese designers like Rei Kawakubo, Issey Miyake, and Yohji Yamamoto innovatively applied the deconstructivist method to their fashion collections [64]. Martin Margiela is also categorized under the avant-gardists whose works showed significant deconstructivist tendencies [65].

Areas of Avant-Garde Footwear Applications

Apart from the special group of people who gravitate towards avant-garde fashion as a means of expressing their unique personal style. Avant-garde footwear has seen application in a number of areas including but not limited to high Fashion and Runway Shows, limited edition collectibles, museum displays and so on. The succeeding discussions take a close look at some of these areas.

High Fashion and Runway Shows

A number of high-end brands utilize fashion shows as a platform to unveil their interpretations and presentations of new

collections for both clothing and accessories. High-fashion shows therefore tend to serve as conduits for high fashion or established designers conveying new fashion design ideas, while the mass market and fast fashion subsequently adopt and adapt these trends [66]. The contention therefore is that, Runway fashion should be considered as an art gallery where most items are not ready to wear. Instead, their purpose lies in showcasing creativity and imagination, conveying an underlying statement or message that spearheads a specific design campaign for the brand [67]. Avant-garde footwear is frequently showcased in high-fashion runway shows. It is an integral part of avant-garde fashion presentations and couture collections. Haute couture involves meticulous handmade craftsmanship and is conceived by highly skilled designers and artists. Practicality is not the primary objective; many runway looks are worn in their most artistic forms during their debut to accentuate the designer's vision. Today, fashion shows frequently, but not always, are held in the context of fashion weeks in cities like Paris, Milan, London, New York, and an increasing array of other fashion hubs [68].

Limited Edition and Collectibles

Many avant-garde shoe designs are produced in limited quantities and are considered collectibles. They can be highly sought after by collectors and enthusiasts. Figure 5(f) shows limited edition footwear dubbed The Bat created by two companies, Suicoke and Vibram. The footwear is an integration of faux-fur lining and bat-eared toe design elements cratering for a visually striking aesthetic product. Vibram is a company named after its founder, Vitale Bramani, who is credited with inventing the first rubber lug soles, while Suicoke is a Japanese footwear brand founded in 2006. Suicoke specializes in functional, yet casual outdoor footwear. Works such as McQueen's armadillo boots are all limited-edition collectibles.

Editorial and Fashion Photography

A fashion editorial is a photographic collection that tells the story of a clothing collection, including its references and

inspirations. The purpose of editorials is to literally create the most artistic fashion visuals humanly possible with photographic techniques, weird models, and a mixture of clothing. Avant-garde footwear is often featured in editorial spreads and fashion photography. These shoes can serve as focal points in fashion campaigns, creating striking and memorable imagery.

Costume and Theatrical Design

The realm of theatrical costume design relies not just on the need to physically dress performers but also on recognizing the communicative power of clothing [69]. Certainly, it has been observed that theatrical costumes are likely the most overt utilization of clothing for communication [70]. Costumes usually afford viewers an idea of the story unfolding before them, offering them a way to get into the story. Avant-garde shoes are used in costume and theatrical design to create unique and otherworldly looks for performances, films, and artistic productions. Even though some theoretical arguments have and continue to speculate that avant-garde is dead, Cardullo [18], contends that the avant-garde has just undergone radical changes in the second half of the twentieth century, and for that matter it still remains a viable, practical concept in theater as it demonstrates an unhindered impetus to extend aesthetic limits.

Conceptual Fashion

Across a broad spectrum of relevant literature, clear definition as to what constitutes conceptual fashion is lacking [71]. In certain quarters, it has been described to feature exploration of innovative and abstract ideas, pushing the boundaries of traditional design to create garments that often prioritize artistic expression and storytelling over conventional wearability. Jackie Mallon suggests that it is synonymous with Avant-garde and describes garments that raise eyebrows and questions, and expand our perception of clothing [72].

The designers of such works are often perceived as disinterested in mass production, scalability, traditional beauty norms, directing their attention toward deconstruction,

unconventional materials, technology, and the liberation of creative expression. Avant-garde footwear thus may be thought to imbibe or feature a broader conceptual fashion movement as designers use shoes to explore social, cultural, or political themes, making statements and challenging norms.

Gordana Vrencoska cites an example of works by greats such as Alexander McQueen and Hussein Chalayan of exemplifying conceptual fashion due to the use of their personal histories, cultural identities and political concerns as a self-referent standing point for the conceptual frame of their seasonal fashion collections [73]. The significance of conceptual fashion has gained recognition primarily through the evolution of fashion studies in recent times. This has introduced a more varied array of perspectives on fashion compared to the conventional linear narratives of the past [74].

Cobranding / Collaboration

Co-branding is a form of cooperation between two brands with significant consumer recognition that results in the creation and introduction of a new product on which both brands are visible [75]. Designers often collaborate with artists, architects, and other creative professionals to bring avant-garde footwear concepts to life. These collaborations result in truly unique and boundary-pushing designs. Avant-garde designers are able to fuse their unconventional ideas into mainstream fashion. Many success stories in the footwear industry include the collaboration between Adidas and Yohji Yamamoto (Y-3) [48]. The collaboration enabled the fusion of sports and avant-garde designs. Martin Margiela and Comme des Garçons have both designed for H&M [76]. Also, Rick Owens and Raf Simons have created successive shoe collections for Adidas, and Kris Van Assche has likewise collaborated repetitiously with brands such as Lee and Eastpak.

CONCLUSIONS

In conclusion, we contend that the incorporation of avant-garde elements into footwear design symbolizes a bold exploration of creativity and artistic expression. While

certain designs might not be suitable for daily use, they stimulate our understanding of what footwear can be while at the same time inspiring innovation within the fashion industry. Avant-garde footwear serves as a testament that fashion extends beyond mere clothing; it serves as a potent form of communication and artistic expression.

Considering the numerous successes attained by major brands in terms of collaborations with avant-garde artists or designers, it will suffice to state that the application of avant-garde art in the field of footwear has become a marketing strategy for many fashion brands to enhance their popularity. The outlook for avant-garde fashion appears promising, as anticipation grows for more designers to persist in pushing limits and erasing the distinction between fashion and art.

The brand perception analysis of the fourteen designers and brands studied, however, points to domination by the luxury market. Nevertheless, potential mixes of mass market and luxury only pertain to Yeezy, United Nude, and Ruthie Davies and also with Salehe Bembury depending on the collaboration.

It is undoubtedly clear that the various avant-garde concepts outlined feature predominantly in even the mass footwear market, especially with regards to sneakers. We thus opined that avant-garde footwear is gradually becoming mainstream if not already.

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