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Research on Optical Illusions and Their Application in Fashion Design

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ABSTRACT

Purpose – This study explores optical illusions and their application in fashion design, examining their role in manipulating visual perception, enhancing aesthetic appeal, and addressing functional and psychological aspects of clothing. Design/methodology/approach – The research synthesizes theoretical frameworks from Gestalt psychology, color theory, and line illusions, alongside case studies of avant-garde and ready-to-wear fashion. It analyzes historical and contemporary examples, including Op Art fashion, trompe-l'œil techniques, and technological integrations like smart textiles and AR/VR. While the theoretical framework is built upon rigorous academic literature, the analysis of contemporary fashion case studies necessarily incorporates non-scholarly sources (e.g., reputable fashion archives, museum collections, and professional press from Vogue, WWD, and Showstudio) strictly for the purpose of visual documentation and illustration of specific designer garments. Findings – Optical illusions in fashion serve two primary categories of outcomes: utilitarian (e.g., body contouring, proportional adjustments) and artistic-conceptual (e.g., surreal silhouettes, kinetic effects). Key techniques include geometric-optical illusions, colour contrast & irradiation illusions, and trompe-l'œil, as demonstrated by designers like Issey Miyake, Viktor & Rolf, and Yves Saint Laurent. However, cultural sensitivities, production complexities, and wearability challenges limit universal applicability. Originality/value – This paper provides a comprehensive integrative review of optical illusion techniques in fashion, bridging gaps between anecdotal design practices and academic research. It highlights the intersection of art, science, and technology while proposing future directions for sustainable and user-centric innovations.

KEYWORDS

visual illusion, clothing design, design concept, avant-garde, trompe-l'œil

INTRODUCTION

An optical illusion refers to a visual phenomenon where perceived images diverge from objective reality [1]. As powerful tools of visual perception, these illusions can transform the apparent body shape through deliberate arrangements of color, patterning, and structural elements. Contemporary fashion design has increasingly embraced this technique, particularly for its ability to create slimming effects, alter visual proportions, and serve as a medium for artistic innovation.

In everyday life, what most people consciously recognize as optical illusions are primarily the classic patterns designed by early illusion researchers throughout history. In design practice, visual illusion operates as a strategic artistic technique [2]. Ordinary aesthetics may often feel repetitive and tiresome, but conceptual experimentation—especially when combined with optical illusion patterns—always manages to captivate. Though not universally embraced, this bold, unconventional approach expands artistic horizons and injects a paradoxical visual effect into fashion.

Internationally renowned designers have increasingly incorporated optical illusion techniques into their creations, dazzling audiences with unprecedented visual experiences that redefine traditional fashion design [3]. These groundbreaking attempts have inspired more designers to explore innovative approaches, even sparking new design trends and pioneering fresh creative territories. By catering to diverse consumer preferences while achieving shared commercial objectives, this fusion of science and aesthetics represents a truly creative and inventive design philosophy.

Optical illusion provides a distinctive aesthetic experience, representing a synthesis of artistic expression and scientific principles. While optical illusions have been widely studied in psychology and visual arts, their systematic study in the context of clothing design remains sparse. Most existing applications are anecdotal or confined to trend reports and design showcases, lacking rigorous academic exploration of effectiveness, psychological impact, and design methodologies. This study examines key illusion techniques and their role in fashion design as well as some notable application areas.

The fashion industry continuously seeks innovative strategies to enhance aesthetics, functionality, and consumer appeal. Among these strategies, optical illusions represent a unique intersection of art, science, and technology, enabling designers to manipulate visual perception for both aesthetic and psychological

impact. This study proposes a framework for understanding these applications by distinguishing between the perceptual mechanisms of illusions and their resulting utilitarian or artistic-conceptual outcomes.

THEORETICAL FRAMEWORK OF OPTICAL ILLUSIONS

Definition of Key Terms

To ensure clarity for the following analysis, key terms are defined here within the specific context of fashion design application:

Perceptual manipulation: The foundational technique of exploiting known characteristics of the human visual system (e.g., lateral inhibition, Gestalt grouping principles) to cause a systematic discrepancy between the physical properties of a garment and the wearer's/viewer's conscious perception of it.

Utilitarian outcome: The application of perceptual manipulation to achieve a practical, problem-solving goal related to the body or garment function. Primary examples include: altering the perceived body shape (contouring), adjusting visual proportions, or enhancing the perceived kinematics (e.g., speed, agility) of the wearer.

Artistic-conceptual outcome: The application of perceptual manipulation primarily for aesthetic innovation, intellectual provocation, or the subversion of traditional fashion norms. The goal is expressive or conceptual, aiming to evoke surprise, challenge perceptions of reality, or explore the boundaries of the medium itself.

Synthesized taxonomy: A classification system developed for this analysis, derived not from a single universal theory but from the cross-referencing of established perceptual mechanisms with their documented and observable applications in fashion practice.

Technical precision: Refers to the degree of accuracy in execution required for an illusion to be perceptually effective.

Spatial/Pattern precision: denotes the exact alignment of patterns or seams critical for maintaining the continuity of a geometric or moiré illusion on a dynamic, three-dimensional form.

Conceptual experimentation: A design approach that employs perceptual manipulation to test ideas, explore visual paradoxes, or engage the viewer in cognitive interaction, prioritizing the investigation of an idea over conventional aesthetics or utility.

Surreal/Surrealist effect: A visual outcome that uses the realistic technique of perceptual manipulation to create impossible, dream-like, or deliberately paradoxical forms, invoking the principles of the Surrealist art movement to disrupt logical expectations.

Surreal silhouettes: describes silhouettes that subvert conventional body morphology through techniques of displacement, unexpected scale, or paradoxical construction, drawing inspiration from the Surrealist art movement's emphasis on the uncanny and dream-like.

Kinetic effects are is defined as the perceptual illusion of motion or dynamism in a static garment, achieved repetitive high-contrast patterns (e.g., Op Art) or moiré interference that exploit visual process mechanisms.

Geometric-Optical Illusions: Perceptual distortions of length, size, or orientation caused by the spatial interaction of lines and shapes (e.g., Müller-Lyer, Ponzo illusions). Fashion Application: Manipulating body proportions and contour through strategic seam lines, stripes, and pattern placement.

Color contrast & irradiation illusions: Size or depth misperceptions due to chromatic interaction and brightness contrast, where light areas on dark grounds appear to expand. Fashion Application: Creating slimming effects, defining silhouettes through color-blocking, and generating visual depth.

Trompe-l'œil ("Deceive the Eye"): Hyper-realistic imagery creating a false perception of three-dimensionality or alternative reality. Fashion Application: Printed or constructed simulations of depth, texture, garment layers, or exposed skin for surrealistic effect.

Moiré patterns: A perceived rippling interference pattern generated by superimposing regular, repetitive structures. Fashion Application: Dynamic, movement-sensitive textures achieved via layered fabrics, specific weaves, or printed patterns.

Figure-ground ambiguity: A bistable condition where the visual system cannot definitively separate foreground from background. Fashion Application:* Designs that intentionally blur the boundary between garment and body through tone matching or interlocking patterns.

Kinetic (Movement) illusions: The perception of motion in a static image, induced by high-contrast repetitive patterns. Fashion Application:* Op Art patterns that create vibrations or illusory motion to enhance garment dynamism.

Impossible figures & paradoxical space: Depictions of geometrically inconsistent structures (e.g., the Penrose triangle). Fashion Application:* Used in prints and logos to evoke cognitive intrigue and intellectual play.

Visual Perception and Gestalt Theory

Developed by German psychologists Max Wertheimer, Wolfgang Köhler, and Kurt Koffka [4], the Gestalt principles (or laws of perceptual organization) explain how humans intuitively organize visual information into unified wholes rather than isolated parts. These principles—including similarity, prägnanz (simplicity), proximity, continuity, closure, and common region—describe how we group elements based on shared attributes, spatial relationships, or implied connections [5]. Gestalt theory asserts that shape perception emerges from a dynamic cognitive system that actively organizes sensory inputs - partially or completely - through processes of elimination and augmentation, contingent upon the contextual framework surrounding the visual stimulus [6].

For example, the phi phenomenon (where alternating lights appear to move) demonstrates how our minds fill gaps to create coherent perceptions. Gestalt theory posits that the human brain perceives objects and experiences as integrated wholes, transcending the mere sum of their individual components [7]. These principles underpin everything from optical illusions to graphic design and film. During perception, the brain integrates both visual stimuli and expectations derived from prior experience, interpreting patterns—even those absent in reality—as if they were physically present.

The following analysis of fashion case studies will employ these principles—specifically figure-ground, closure, proximity, and continuity—as analytical lenses to decode the mechanics of specific illusions, moving from theoretical principle to applied design strategy.

Color Theory and Line Illusion

Color refers to an electromagnetic effect that results from the way light reflects off surfaces [8]. Objects absorb certain wavelengths of light and reflect others, which reach our eyes. According to the trichromatic theory, the human retina contains three types of cones sensitive to blue, green, and red light [9]. Ultimately, color is a kind of illusion—an experience created within our visual system when light activates the photoreceptors in our eyes, which act like antennas detecting light signals.

Line illusions exploit the brain's interpretation of linear patterns [10], angles, and orientations to create misperceptions of length, direction, or shape. Color theory and line illusions interact in optical illusions to manipulate perception, creating effects that challenge our understanding of visual reality. Contrasting colors

and specific line orientations (e.g., horizontal vs. vertical) impact how size and shape are perceived, influencing body silhouette interpretations.

The Hermann Grid illusion [11] reveals key visual processing mechanisms, where gray spots appear at white grid intersections due to retinal lateral inhibition. This edge-enhancement effect creates false boundaries through three integrated processes: (1) Retinal cells exaggerate contrast via lateral inhibition; (2) Gestalt principles (proximity, continuity) impose phantom structures (e.g., Ehrenstein illusion's nonexistent circle [12]); and (3) Top-down processing applies spatial expectations, distorting judgments in Ponzo (size) and Müller-Lyer (length) illusions.

Together, these demonstrate vision as active construction—combining sensory data with cognitive interpretation—rather than passive recording. Such systematic errors provide critical insights into perceptual architecture, showing how biological and cognitive mechanisms collaboratively (and sometimes misleadingly) reconstruct visual reality.

Color theory and line illusions converge in optical illusions to exploit the visual system's reliance on contrast, context, and Gestalt principles [13]. Colors enhance line-based distortions by manipulating depth and contrast, while lines provide structural cues that colors amplify. Together, they create compelling visual misperceptions, from false motion to distorted shapes, revealing the brain's complex and fallible processing of visual stimuli.

Types of Optical Illusions in Fashion Design

The wide variation in body shapes complicates clothing selection, especially given the common desire to use fashion as a tool for self-expression and transformation. This dynamic makes fit and psychological comfort central concerns in apparel design.

In clothing design, optical illusions are used to manipulate perception—altering how the human eye interprets shape, volume, height, or proportion. Designers use these illusions to flatter body types, create striking aesthetics, or challenge traditional silhouettes. The types of optical illusions are infinite; however, for the purpose of analyzing fashion design applications, we have synthesized a practical taxonomy organized by the primary perceptual mechanism employed. This classification is derived from a systematic analysis across three domains: (1) Perceptual Psychology, drawing from established illusion literature to identify

fundamental mechanisms (e.g., geometric-optical, color contrast); (2) Fashion History and Theory, identifying which mechanisms have been consistently operationalized in practice (e.g., trompe-l'œil in Schiaparelli, Op Art in the 1960s); and (3) Contemporary Design Analysis, reviewing collections from key designers (e.g., Issey Miyake, Viktor & Rolf) to identify recurrent techniques prevalent in the field (e.g., 'illusion panels,' 'mirroring and symmetry'). The following types represent the most prevalent and distinct categories observed in practice. Figure 1 shows a bubble diagram of some types of optical illusions applied in fashion design.

Numerous websites, such as Akiyoshi Kitaoka's 'Colloquium of Visual Illusions' and Michael Bach's page on 'Optical Illusions & Visual Phenomena,' host extensive collections of illusory figures [14]. Additionally, such phenomena are discussed in specialized works by Robinson [15] Coren and Girgus [16], Luckiesh [17], Tolanski [18], Wade [19], and Seckel [20]. Despite efforts to establish a definitive classification for optical illusions, no universal system exists. Hamburger's early framework included (a) 'Motion illusions,' (b) 'Geometric-optical illusions,' and (c) 'Illusory contours' [21], while Louisa et al. later introduced (d) 'Depth inversion illusions' and (e) 'Non-specific' categories [22].

As Ninio and Pinna note, even when illusions are categorized under different labels, they often share fundamental connections and represent a continuous phenomenon [23]. However the main types applied in clothing design can be classified into geometric illusions, color contrast illusions, trompe-l'œil (trick of the eye), illusion panels, perspective distortion, mirroring and symmetry, texture and fabric behavior, kinetic illusions (motion-based), moiré patterns and size scaling illusion.

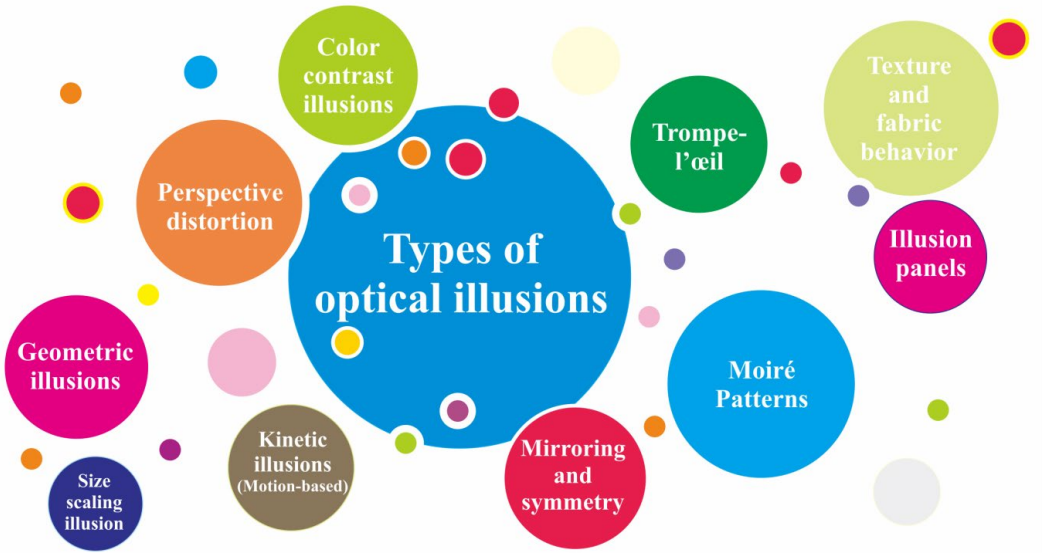

Figure 1. Examples of optical illusion types applied in fashion design

Geometrical-optical illusions represent a class of visual phenomena wherein perceived spatial properties systematically diverge from the physical characteristics of stimuli in the visual field. Multiple researchers independently identified these phenomena during the same brief period in the 1850s [24]. These illusions of extent demonstrate that the perceptual metric governing visual space differs fundamentally from the objective metric of retinal stimulation [25]. Examples of geometric optical illusions include Goering's illusion, Wundt illusion, Müller-Lyer illusion, Helmholtz illusion and Oppel-Kundt illusions.

Perspective optical illusions are visual tricks that occur when our brains misinterpret depth, size, or distance based on visual cues, leading us to perceive a scene differently than it actually is. These illusions fall into a distinct category that includes perspective-based images crafted through geometric techniques to produce deceptive spatial and dimensional perceptions [26]. Examples include ponzo illusion, Penrose triangle and so on.

Color contrast & irradiation illusions arise from perceptual phenomena where light-colored objects against dark backgrounds appear perceptually enlarged, while dark objects on light backgrounds appear diminished. This effect stems from irradiation - the optical phenomenon where we interpret surface brightness based on the intensity of reflected light rays, causing systematic distortions in size perception [1]. Color-induced visual illusions can dramatically change how the proportions of the human body are perceived [27].

Trompe-l'œil (trick of the eye) is a French term that refers to hyper-realistic designs that simulate three-dimensional effects. A form of optical trickery, trompe l'oeil (literally 'fool the eye') has been utilized by designers across eras [28]. Designers such as Schiaparelli in the early 20th century and today's brands, use this technique to create whimsical garments.

Texture and fabric behavior in optical illusion refers to how the surface qualities of a fabric (its texture - smooth, rough, shiny, matte, bumpy, etc.) and its physical behavior (how it drapes, stretches, folds, or moves) are used—intentionally or unintentionally—to create visual effects that deceive or alter human perception. These illusions can make the wearer appear thinner, taller, curvier, or even make movement look different.

Illusion panels are a clever and widely used fashion design technique that creates visual illusions—typically to slim, elongate, or reshape the body—by incorporating contrasting colors, sheer fabrics, or specific panel shapes into the garment. Illusion panels are strategically placed sections of a garment that differ in color,

texture, transparency, or pattern from the rest of the outfit to manipulate perception of body shape or movement. Examples include darker side panels to create a slimming effect, nude or sheer mesh panels that mimic exposed skin. There are also contrasting colors or prints to emphasize or downplay areas and curved seams or color blocks that sculpt the silhouette. Figure 2 displays Viktor and Rolf's illusionary ensemble, crafted to achieve a striking trompe-l'œil effect. The design incorporated lightweight latex, intricately adorned with faux ruffles, bows, and swallows in a tattoo-like style. Rendered in calibrated nudes and beige tones, the latex achieved a high-fidelity simulation of skin, visually dissolving the boundary between garment and body [29]. In essence, Fig. 2 exemplifies figure-ground ambiguity of in Gestalt theory, where skin-toned material blurs the boundary between body and garment.

Figure 2. Viktor and Rolf, Couture, trompe-l'œil effect Credit: thecuttingclass.com

Moiré patterns are a fascinating optical illusion caused by the interference of two sets of repetitive patterns, such as lines, grids, or waves. In textiles and fashion, moiré patterns appear as wavy, rippled, or shimmering effects that can move or change as the fabric shifts. Moiré effects can be woven, printed, or finished onto textiles. They can also be created using ribbed, corded, or watered textures. The effect is often seen in fabrics like taffeta, silk, or polyester. Issey Miyake – known for textile innovation, used layered mesh for moiré effects. Figure 3 shows Issey Miyake's A-POC (A Piece of Cloth) featuring precision knit designs where layered

textures create moiré-like illusions [30]. Figure 4 also shows moiré pattern as a subtle of optical illusions clothing designed by Elaheh Safi [31].

Mirroring and symmetry illusions in fashion and textile design refer to visual effects that use repetition, reflection, and symmetry to manipulate how the eye perceives body shape, proportions, and movement. These illusions take advantage of the brain's natural tendency to seek order and balance—often enhancing beauty, distorting dimensions, or creating visual intrigue. Mirroring concept involves the exact duplication of shapes, prints, patterns, or details across a central axis (usually vertical), like a reflection while symmetry concept refers to the balanced arrangement where one side mirrors or balances the other, either exactly (perfect symmetry) or approximately (asymmetrical balance).

Figure 3. A-POC ABLE Issey Miyake Credit: wallpaper.com

Mary Katrantzou's 2011 Fall line featured trompe-l'œil techniques through architectural symmetry and object-based motifs [32]. The use of digitally mirrored patterns and balanced prints generated optical depth and a lengthening effect on the body (Figure 5).

Kinetic illusion also referred to as geometrical illusion of motion [33] is an optical effect where static images or objects appear to move, often due to visual tricks involving contrast, pattern, and viewer movement. These illusions exploit how the human brain interprets visual stimuli, especially repetitive patterns, contrasting colors, and shapes, to create the perception of motion.

Figure 4. moire pattern as a subtle of optical illusions Credit: tuvie.com

Figure 5. Mary Katrantzou Fall Winter 2011 collection Credit: couturetroopers.com

Kinetic illusions arise from perceptual mechanisms including microsaccades (fixational eye movements that shift retinal input [34]), pattern interference (repetitive geometries disrupting motion processing), and figure-ground ambiguity (unstable depth interpretation). These generate illusory motion in static stimuli, exemplified by Op art's virtual movement, the rotating snakes' illusion's apparent rotation, motion aftereffects from neural adaptation, and moiré interference patterns. Such phenomena demonstrate how visual processing characteristics can be exploited to create motion perception without physical displacement. A size scaling illusion is a type of optical illusion in which identical objects appear to be different in size due to their position, context, or surroundings. These illusions trick the brain's depth perception and spatial reasoning, making something seem larger or smaller than it truly is. Our perception of size is so fundamentally

comparative that identical objects can appear different when placed beside much larger or smaller reference items [35]. When those cues are manipulated, we misjudge the actual size of the object. Examples include Ebbinghaus illusion, Ames room illusion and depth and size constancy illusion etc.

A reversible perception illusion, also known as a reversible figure, ambiguous or bistable image, is an optical illusion in which the brain switches between two or more different interpretations of the same visual input. Even though the image itself doesn't change, viewing an ambiguous figure causes perceptual bistability – where the interpretation randomly shifts between two possible alternatives [36].

These illusions occur because the visual system struggles to assign a single, stable interpretation to the image. The ambiguity arises from unclear figure-ground separation, conflicting depth or direction cues, or shapes that support more than one interpretation. As a result, the brain flips between multiple possibilities in an attempt to resolve the visual conflict. Ambiguous images like the Necker cube, Rubin's vase, and Boring's old woman/young girl illusion allow for multiple, strikingly different visual interpretations [37].

Case Study of Optical Illusions in Fashion - Op Art Fashion (1960s)

Op art is a visual technique that explores the dynamic interplay between illusion and the two-dimensional picture plane—challenging the boundaries of perception and sight [27]. Op Art applies gestalt theory by using patterns induce illusory motion through continuity and proximity, leveraging the brain’s grouping of aligned elements. The fashion industry has utilized the artistic potential of linear optical illusions in garment and accessory design since the mid-20th century [38]. From the 1960s onward Op Art (short for Optical Art) emerged as a popular visual art movement and was one of the first to incorporate optical illusions into fashion, forming a distinct artistic style.

This art form created striking visual effects that made objects appear more vibrant and dynamic than they actually were. Through carefully arranged wave patterns or geometric designs, it produced a sense of movement, flickering, and even dizziness as the viewer's optic nerves interacted with the patterns—resulting in mesmerizing light effects and visual illusions (Figure 6) [39].

Figure 6. Op Art (patterns) Credit: artsper.com

Op Art holds a highly regarded place in art history and remains timeless even today. A key reason for its enduring appeal is its ability to bring unparalleled visual impact to fashion. Even with the same garment patterns and cuts, designs incorporating Op Art consistently appear more dazzling and eye-catching than conventional ones.

It's no surprise that Op Art has frequently appeared on the runways of internationally renowned designers. A pivotal moment came when legendary French designer Yves Saint Laurent unveiled his iconic Mondrian dress (Figure 7) [40] inspired by the De Stijl Dutch painter, Piet Mondrian - a sartorial tribute to Op Art. Though Mondrian's work wasn't technically Op Art, YSL's adaptation mirrored Op Art's ethos: using bold, graphic lines to create visual movement and perceptual play. The dress's blocks of color appeared to "vibrate" against the body, much like Op Art's optical effects. More than just a striking fashion statement, the dress sparked a cultural shift. It didn't merely introduce a new artistic sensibility to fashion; it empowered a generation to embrace self-expression through a bold, graphic visual language that asserted individuality and modernity.

Figure 7. YSL's Mondrian Dress credit: showstudio.com

APPLICATION OF OPTICAL ILLUSION IN FASHION

Body Contouring and Fit

Optical illusion garments have long been used to enhance appearance—from waist-defining A-line dresses to elongating striped trousers that create a more dynamic stride [41]. Fashion guidance for women has historically included recommendations about employing linear design elements in garments to create optical illusions that alter the perception of body proportions [42].

Strategic placement of dark and light shades can accentuate or minimize body features. A study by Ridgway et al. examined how women perceive their body shape when wearing optical illusion garments. The findings revealed that such garments alter visual perception, often creating the illusion of a more idealized body shape [43].

Performance and Sportswear

Optical illusions may create impressions of speed, agility, or strength, enhancing athletic aesthetics or intimidating competitors. Strategic placement of lines and patterns can create slimming or muscle-enhancing

visual effects in sportswear. Also dynamic patterns may amplify or streamline the perception of athletic movement. Certain illusions may influence both the wearer's confidence and opponents' perceptions.

Haute Couture and Avant-Garde:

In haute couture and avant-garde fashion, optical illusions are employed as deliberate perceptual manipulations, crafting designs that are both visually arresting and conceptually provocative [44]. Through strategic use of form, chromatic contrast, and repetitive motifs, these techniques distort bodily proportions, challenge structural expectations, and conjure surreal, oneiric aesthetic experiences.

The renowned Japanese fashion designer Issey Miyake has gained international acclaim for his innovative garment designs and exhibitions. A close examination of his body of work reveals his masterful application of optical illusions in three-dimensional fashion. While optical illusion artists excel at creating two-dimensional patterns that seemingly leap off the page, Miyake treats sculptural clothing as if it were a flat canvas. His distinctive genius lies in his ability to craft cohesive optical effects that maintain their illusory impact from every viewing angle - a remarkable achievement that has become his signature design philosophy.

Issey Miyake’s groundbreaking pleated fabric—an airy, featherweight polyester capable of holding sculptural forms—transformed wearers with its dynamic, shape-shifting properties. Each garment seemed to redefine the body’s silhouette as it moved [45]. Through systematically interwoven pleating techniques, he creates new dimensions and possibilities on the human form, achieving remarkable dimensional optical illusions (Figure 8(a)) [46]. Issey Miyake’s pleated constructions demonstrate prägnanz, their rhythmic folds forming a unified perceptual whole that transforms dynamically with movement.

Issey Miyake’s innovative approach to textile design includes subtle yet striking trompe-l’œil effects, particularly his "nude illusion" techniques. Miyake’s illusions prioritize minimalism and organic fluidity, creating garments that appear to merge with the wearer’s body as shown in Figure 8(b) (Women's black shadow study midi dress) [47].

(a) (b) (c)

Figure 8. (a) Issey Miyake's pleated designs effects Credit: perfold.com; (b) Issey Miyake's nude illusion effect Credit: lyst.co.uk; (c) Issey Miyake's double-sided print Credit:showstudio.com

At the Spring/Summer 2013 Women's Fashion Week, designers deployed striking optical illusions [48], most notably Issey Miyake's 'double-sided printing' (Fig. 8(c)) [49]. This innovative technique—which precisely aligned patterns on reversible fabrics to produce chromatic vibration—resulted in dynamic, youth-oriented designs grounded in perceptual play. Miyake's collection demonstrates how optical principles can bridge technical precision and artistic experimentation, offering a paradigm of methodical yet boundary-pushing illusionary fashion.

Luxury houses like Christian Dior have adapted these visual strategies to heritage contexts. At Christian Dior's Haute Couture 2018 show, designers directly employed Op Art-inspired black-and-white geometric patterns that respected the brand's heritage while delivering striking contemporary visuals as shown in Figure 9(a) [50].

(a) (b) (c)

Figure 9. (a) Christian Dior Haute Couture 2018 Credit:wwd.com; (b) Viktor & Rolf's optical illusion effect dress Credit: Getty, Dominique Charriau; (c) Jean Paul Gaultier trompe-l'œil maxi dress Credit: mytheresa.com

Renowned for their conceptual avant-garde designs, Viktor & Rolf frequently employ optical illusions to challenge traditional fashion norms. Their work merges surrealism with craftsmanship, creating garments that distort reality, Figure 9(b) shows Viktor & Rolf's optical illusion dresses at Paris fashion week [51]. Jean Paul Gaultier, known for his avant-garde designs, frequently employs trompe-l'œil ("deceive the eye") to subvert expectations. His work transforms flat surfaces into perceived dimensionality—for example shown in Figure 9(c) is trompe l'œil maxi dress.

The selected designers (e.g., Issey Miyake, Viktor & Rolf, Yves Saint Laurent) were chosen based on their established recognition in fashion history as pioneers of illusion techniques, the scholarly attention their illusion-based work has garnered, and their representation of distinct conceptual approaches (e.g., technological, surrealist, Op Art) to ensure analytical diversity.

Ready-to-Wear and Mass Fashion

In ready-to-wear (RTW) and mass fashion, these techniques are used to enhance aesthetic appeal, flatter body shapes, and create visually striking designs that are accessible to a broad market.

Lines are a fundamental tool for creating optical illusions in RTW and mass fashion. The debate over whether vertical or horizontal stripes create a slimming or widening effect has yielded conflicting conclusions in

numerous studies [52]. This widespread belief persists in public perception despite contradicting the Helmholtz illusion, creating an intriguing paradox that has drawn significant attention from perceptual researchers. While empirical studies remain divided on the phenomenon, it continues to enjoy strong popular endorsement [53].

Thus, in fashion choices, people often opt for full horizontal stripes to create the optical illusion of appearing taller and slimmer than they actually are. While this holds true in theory, as previously mentioned, individual body proportions vary significantly.

Retailers like Zara, H&M, and Uniqlo adopt their own adaptations for mass appeal. Balmain sometimes incorporates vertical or diagonal stripes in dresses and shirts to create flattering silhouettes. For instance, a black dress with white vertical stripes along the sides can draw the eye inward, creating a slimming effect (Figure 10(a)).

(a) (b) (c)

Figure 10. (a) Balmain striped minidress Credit: mytheresa.com; (b) Di petsa wet look wedding dress Credit: thecoolhour.com; (c) Palace logo utilizing Penrose impossible space motif Credit:1000 logos.net/palace-logo/

The trompe l'œil technique has evolved in modern RTW with designers like Di Petsa introducing the "Wet Look" aesthetic (Figure 10(b)). Established by Dimitra Di Petsa, the brand aimed to craft the illusion of a completely drenched woman [54]. This uses sheer and thick fabrics to mimic the appearance of wet clothing, creating a bold, body-embracing statement.

Once seen as a niche trend, street fashion has now gained widespread appeal, attracting a more diverse audience and reshaping how people view streetwear [55]. The British streetwear brand Palace [56] known for its skateboards and apparel, has gained a cult following through its minimalist yet rebellious designs.

What truly sets it apart is its iconic Penrose triangle logo (Figure 10(c)), an optical illusion that embodies paradoxical geometry. Beyond the Penrose motif, figure-ground illusion patterns are also frequently incorporated into Palace's designs, showcasing the versatility of optical art in fashion [57]. These designs play with perception, where foreground and background dynamically shift, creating visually engaging and thought-provoking garments. By continuously reinventing this "impossible shape" with fresh, contemporary twists, Palace maintains its appeal among youth culture, blending humor, individuality, and avant-garde style [17].

Technological Integration

Technological integration is expanding the possibilities of these illusions, allowing for intricate and customizable designs that were previously impossible. This combination of artistic concept and technological innovation is leading to a new era of fashion where clothing can transform the wearer's silhouette and engage viewers in unexpected ways. Digital printing has made the implantation of optical illusion in mass fashion possible where for example affordable T-shirt parts are printed with optical illusion patterns effects, cut and subsequently sewn.

Virtual reality technology has revolutionized diverse industries, with especially transformative applications in art and design—reshaping creative processes and expanding aesthetic possibilities [58]. AR and VR technologies are inherently illusory, as they function by constructing carefully engineered perceptual simulations for the user. AR/VR allows real-time illusions to be projected onto garments.

Smart textiles—incorporating fiber optics, e-textiles, and responsive materials—are transforming fashion by enabling dynamic visual effects and optical illusions. These advanced fabrics can shift color, emit light, or even produce three-dimensional illusions through embedded electronics, redefining wearability and spectacle.

Pioneering this intersection of technology and design, Hussein Chalayan has consistently explored conceptual, tech-driven fashion. His experiments with light-reactive fabrics and layered textiles create shifting moiré

patterns that evolve under changing light conditions. In his groundbreaking Spring/Summer 2007 show, Chalayan reimagined the catwalk by presenting garments that mechanically morphed into new silhouettes. One standout piece—a high-neck Victorian-style dress—unfolded like a blooming flower, its motion blurring the line between garment and performance art [59].

Further pushing boundaries, Chalayan's 2017 airborne collection (Figure 11(a)) paid homage to materiality itself. By scanning and digitally manipulating the raw fabrics used in his ready-to-wear line, he transformed them into intricate prints, creating a meta-commentary on fashion's physical and digital layers [60].

Democratizing Optical Illusions: Pathways for Accessibility and Sustainability.

(a) (b) (c)

Figure 11. (a) Chalayan's 2017 airborne collection Credit: Ceri Isaac; (b) Eye dazzler Navajo rug Credit: tribalexpressions.com; (c) Viktor & Rolf's wearable sculptures Credit: yellowtrace.com

While optical illusions in fashion have historically been associated with exclusive haute couture and high-cost production, contemporary advancements in textile technology and digital tools present unprecedented opportunities to democratize these effects. The integration of Artificial Intelligence (AI) and generative design can facilitate the creation of customizable, size-inclusive optical patterns, enabling personalized perceptual design at scale and reducing the barrier to bespoke illusion effects.

Concurrently, innovations in smart and technical textiles—such as affordable lenticular weaves, durable thermo-chromic inks, and high-resolution digital printing—are lowering production costs and improving the durability and wearability of illusion-based garments for ready-to-wear and mass-market applications.

Furthermore, the rise of digital fashion platforms (e.g., DressX) and AR/VR applications represents a sustainable, on-demand avenue for public engagement with high-illusion fashion, entirely eliminating material waste while expanding access.

LIMITATIONS AND CHALLENGES OF OPTICAL ILLUSIONS APPLICATION IN FASHION DESIGN

After examining numerous optical illusions, it becomes evident that they are not universally applicable in design. While designers often perceive their work as flawless, true perfection remains unattainable—even the most meticulous execution falls short of fully realizing the original vision. This underscores why a competent designer must also master technical execution; without this balance, they risk pursuing unrealistic, impractical concepts. Ultimately, design requires compromise with real-world limitations. Excessive reliance on illusions, for instance, can result in visually jarring or functionally unworkable outcomes.

Optical illusions, such as the well-known Müller-Lyer illusion, have traditionally been regarded in psychological literature as evidence of universal human perceptual tendencies. However, extensive cross-cultural research has revealed significant variations in how different populations experience this phenomenon [61]. Studies comparing diverse groups - including Murray Islanders in Melanesia, the Toda tribe in India, African hunter-gatherers, Australian Aboriginals, and North Americans - demonstrate that susceptibility to the illusion varies substantially across cultures [62].

Cultural sensitivities to body manipulation in fashion design are crucial to consider, as fashion intersects with identity, tradition, ethics, and social norms. The application of optical illusion in fashion design—such as trompe l'oeil prints, distortive patterns, or silhouette-altering cuts—can creatively manipulate perceptions of the body. However, this technique must be approached with cultural sensitivity, as it may unintentionally clash with societal norms, religious values, or historical taboos.

Optical illusions that simulate nudity (e.g., sheer fabric prints mimicking bare skin (Fig. 2) [29]) may offend cultures with strict modesty standards (e.g., Islamic, Orthodox Jewish, or conservative Christian communities). Patterns that unintentionally resemble sacred symbols (e.g., optical grids evoking Hindu mandalas or Islamic geometric art) might be seen as disrespectful if commercialized without context.

It would be more appropriate to research symbolic meanings and avoid sacred motifs unless collaborating with cultural experts. Illusions that exaggerate or minimize body parts (e.g., horizontal stripes to widen hips,

vertical lines to elongate legs) might reinforce harmful beauty standards. Slimming" effects are often marketed positively, but this can alienate body-positive movements. It will therefore be more appropriate to frame illusions as playful self-expression rather than "corrective" tools.

Illusions that blur gender (e.g., padded shoulders on a dress, or prints that obscure the waistline) may challenge conservative gender roles. Illusions that play with skin tone (e.g., metallic fabrics that "change" color under light) might unintentionally evoke colorist stereotypes. High-contrast optical illusions (e.g., stark checkerboards) can trigger dizziness or seizures in people with photosensitive epilepsy or vestibular disorders. (e.g., Navajo eye-dazzling designs (Fig. 10) [63] are sacred, not decorative).

Silhouettes that mimic oppressive historical styles (e.g., corsets evoking waist restriction, or hoop skirts recalling colonial eras) may evoke pain for marginalized groups. In China, designs resembling foot-binding shoes would be deeply offensive.

Production complexity of optical illusion fashion designs can significantly increase costs due to specialized materials, labor-intensive techniques, and precision-dependent manufacturing. Metallic foils, lenticular prints, or thermo-chromatic textiles (e.g., fabrics that change color with heat) are more expensive than conventional materials.

The creation of trompe l'œil effects in fashion—such as Jean Paul Gaultier's iconic nude torso prints—frequently relies on skilled hand-painting techniques. This practice sparked controversy when the Uffizi Galleries in Florence pursued legal action against Gaultier's fashion house. The institution accused the brand of reproducing Botticelli's The Birth of Venus on clothing items including t-shirts, trousers, and wraps without proper authorization or licensing [64].

Designs with built-in optical distortions (e.g., Viktor & Rolf’s "wearable sculptures” Figure 11(c) [65]) need advanced pattern-cutting. High-resolution, illusions requiring meticulous pattern alignment to maintain perceptual continuity (like Diesel’s warped prints) demand precision digital printing, which raises costs. Pre-production prototyping with CAD software adds R&D expenses. A misaligned seam or print can ruin the illusion, requiring rigorous inspections.

Some designs prioritize whimsy and subversion over wearability, deliberately defying conventional fashion tastes to cater to the modern fascination with satire and absurdity. An example is Viktor & Rolf’s wearable sculptures [66].

Cost-saving strategies could integrate high-value elements (e.g., hand-painted embellishments) with cost-efficient foundations (e.g., standardized bodysuits). Focusing on illusionary accessories (e.g., transformative scarves, trompe-l'œil bags) rather than complete garments minimizes material waste. Implementing on-demand production models—such as DressX's digital fashion approach [67] — can further prevent overstock and align with sustainable practices.

Furthermore, it is critical to recognize that the use of perceptual manipulation in fashion is a global, culturally-contingent phenomenon. While this paper focuses primarily on Western fashion lineages, optical principles and illusionary effects manifest diversely across traditional and indigenous textile traditions. For example the complex geometric patterns in Islamic art and architecture are designed to induce perceptual vibration and spiritual reflection, principles that could inform contemporary pattern design [68].

CONCLUSION

The study demonstrates that optical illusions in fashion design serve as a powerful tool for reshaping perception, enhancing aesthetics, and addressing functional needs. By leveraging principles from Gestalt psychology, color theory, and line illusions, designers can manipulate visual cues to create garments that alter body perception, evoke movement, or challenge traditional silhouettes. Historical movements like Op Art and contemporary innovations in trompe-l'œil, kinetic illusions, and smart textiles illustrate the dynamic interplay between art, science, and technology in fashion.

However, the application of optical illusions is not without limitations. Cultural sensitivities, production complexities, and wearability constraints pose significant challenges. While illusions can enhance visual appeal, their effectiveness varies across demographics, and ethical considerations—such as reinforcing unrealistic beauty standards—must be addressed. Additionally, the high cost of specialized materials and labor-intensive techniques restricts accessibility, particularly in mass-market fashion.

Despite these challenges, optical illusions remain a compelling avenue for creative exploration. As digital technologies (e.g., AR/VR, smart fabrics) evolve, new possibilities emerge for adaptive, interactive, and sustainable illusion-based designs. Future research should focus on user experience, cultural inclusivity, and the environmental impact of such innovations to ensure their responsible integration into fashion.

RECOMMENDATIONS

Future studies should investigate how wearers perceive themselves in illusion-based garments and how these designs influence confidence, body image, and social interactions.

Designers should collaborate with cultural experts to avoid appropriating sacred symbols or reinforcing harmful stereotypes, ensuring designs respect diverse traditions and values.

Digital fashion (e.g., DressX's virtual garments) and on-demand production can reduce material waste and costs, making illusion-based designs more sustainable and scalable.

Explore whether optical illusion techniques (e.g., prints that replace structural tailoring) can reduce fabric waste, energy use, and carbon footprints in fashion production.

Partnerships between neuroscientists, textile engineers, and fashion designers could yield breakthroughs in adaptive illusions, responsive fabrics, and perceptual customization.

To realize this democratization, concrete research is needed in several key areas:

Durability and care studies: Systematic testing of illusion-producing textiles under everyday wear conditions to assess longevity, maintenance, and practical viability.

Life-Cycle Assessment (LCA): Empirical studies to quantify the potential environmental benefits of illusion techniques, such as comparing the carbon footprint and resource use of printed trompe-l'œil effects versus constructed three-dimensional embellishments.

Perceptual Efficacy and Inclusivity: User-centered studies to evaluate how illusion effects perform across diverse body types and cultural contexts, ensuring that democratization also equates to broad perceptual effectiveness and inclusivity."

By addressing these areas, the fashion industry can harness optical illusions not just as a fleeting trend but as a transformative force in design—one that merges innovation, inclusivity, and sustainability.

Author Contributions

Conceptualization, methodology, resources and writing-original draft were undertaken by WANG Siyi. RAJI Rafiu King was responsible for translation, data curation, writing-review and editing, supervision and visualization. All authors have read and agreed to the final version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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REFERENCES

[1] Qurashi W. Fabric manipulation techniques with optical illusion as design solutions for different woman's body types. International Design Journal. 2021; 11:411-421. doi:10.21608/idj.2021.164304

[2] Yang Y. Analysis of the application of optical illusion in the field of art and design. Applied Mathematics and Nonlinear Sciences. 2024;9(1):1-18. doi:10.2478/amns-2024-0890

[3] Bakr AO. Utilization of the art of optical illusion in the design of Egyptian glass architecture. Journal of Art and Design. 2024;2(2):138-158. doi:10.21608/ifca.2023.332822

[4] Dominowski RL, Bourne LE. History of research on thinking and problem solving. In: Sternberg RJ, editor. Thinking and Problem Solving. San Diego: Academic Press; 1994. p.1-35. doi:10.1016/B978-0-08-057299-4.50007-4

[5] Bustamante N. What is Gestalt psychology? Theory, principles, and examples. Available from: https://www.simplypsychology.org/what-is-gestalt-psychology.html

[6] Mahmood S. Techniques of optical illusion and their effect on visual dazzling in contemporary interior design. International Design Journal. 2021;11:291-298. doi:10.21608/idj.2021.152372

[7] Khatun T. Exploring the fundamentals of Gestalt theory in visual perception. Available from: https://www.researchgate.net/publication/378366820

[8] Klinker GJ, Shafer SA, Kanade T. Using a color reflection model to separate highlights from object color. In: Proceedings of the Image Understanding Workshop; 23-25 Feb 1987; Los Angeles, CA. San Mateo: Morgan Kaufmann Publishers; 1987.

[9] Nassau K. Color. In: Kirk-Othmer Encyclopedia of Chemical Technology. Hoboken: John Wiley & Sons; 2000. doi:10.1002/0471238961.0315121514011919.a01

[10] Nieder A. Seeing more than meets the eye: processing of illusory contours in animals. Journal of Comparative Physiology A. 2002;188(4):249-260. doi:10.1007/s00359-002-0306-x

[11] Wolfe JM. Global factors in the Hermann grid illusion. Perception. 1984;13(1):33-40. doi:10.1068/P130033

[12] Hamada J. The Ehrenstein illusion: effects of contrast polarity, gap size, and line orientation. Japanese Psychological Research. 1995;37(3):117-124. doi: 10.4992/psycholres1954.37.117

[13] O'Connor Z. Colour, contrast and gestalt theories of perception: the impact in contemporary visual communications design. Color Research & Application. 2015;40(1):85-92. doi:10.1002/col.21858

[14] Ninio J. Geometrical illusions are not always where you think they are: a review of some classical and less classical illusions and ways to describe them. Frontiers in Human Neuroscience. 2014;8:856. doi:10.3389/fnhum.2014.00856

[15] Robinson JO. The psychology of visual illusion. New York: Courier Corporation; 2013.

[16] Coren S, Girgus J. Seeing is deceiving: the psychology of visual illusions. London: Routledge; 2020. doi:10.4324/9781003050681

[17] Luckiesh M. Visual illusions: their causes, characteristics and applications. New York: D. Van Nostrand Company; 1992.

[18]Tolanski S. Optical illusions. Oxford: Pergamon Press; 1964.

[19]Wade NJ. The art and science of visual illusions. London: Routledge & Kegan Paul; 1982.

[20]Seckel A. The ultimate book of optical illusions. New York: Union Square & Co; 2006.

[21]Hamburger K. Visual illusions based on processes: New classification system needed. Perception. 2016;45(5):588-595. doi:10.1177/0301006616629038

[22]Costa ALL, Costa DL, Pessoa VF, Caixeta FV, Maior RS. Systematic review of visual illusions in schizophrenia. Schizophrenia Research. 2023; 252:13-22. doi: 10.1016/j.schres.2022.12.030

[23]Ninio J, Pinna B. Orthogonal expansion: A neglected factor in tilt illusions. Psychologia. 2006;49(1):23-37. doi:10.3389/fnhum.2014.00856

[24]Westheimer G. Illusions in the spatial sense of the eye: Geometrical–optical illusions and the neural representation of space. Vision Research. 2008;48(20):2128-2142. doi:10.1016/j.visres.2008.05.016

[25]Bulatov A, Bertulis A, Mickienė L. Geometrical illusions: study and modelling. Biological Cybernetics. 1997;77(6):395-406. doi:10.1007/s004220050399

[26]Pagliano A. Optical and perspective illusion. In: Geometries of Anamorphic Illusions: Landscape, Architecture, Contemporary Art and Design. Cham: Springer; 2024. p.23-41. doi:10.1007/978-3-031-47246-6

[27]Kiknavelidze L. Visual, optical art and illusions in costume. In: Proceedings of the 10th International Scientific Conference “Modern Scientific Method”; 12-13 Jun 2025; Vienna, Austria. Vienna: University of Leoben; 2025. 185 p. doi:10.46471/msm.2025.10.139.08

[28]Gero C. Trompe l’oeil in fashion. In: Petican L, et al., editors. Trending Now: New Developments in Fashion Studies. Leiden: Brill; 2019. p.143-153. doi:10.1163/9781848882119_015

[29]Thecuttingclass.com. Trompe-l’oeil latex at Viktor and Rolf. 2014. Available from: https://www.thecuttingclass.com/trompe-loeil-latex-at-viktor-and-rolf/

[30]Moss J. Get to know Issey Miyake’s innovative A-POC ABLE line as it arrives in the UK. 2024. Available from: https://www.wallpaper.com/fashion-beauty/issey-miyake-apoc-able-arrives-in-london

[31]Safi E. SS17 fashion design uses optical illusion to create motion illusion for viewers. 2025. Available from: https://www.tuvie.com/ss17-fashion-design-uses-optical-illusion-to-create-motion-illusion-for-viewers/

[32]Ye J. Mary Katrantzou fall winter 2011 – fashion is art. 2011. Available from: https://couturetroopers.com/2011/07/14/mary-katrantzou-fall-winter-2011-fashion-is-art/

[33]Nihei Y. A preliminary study on the geometrical illusion of motion path: the kinetic illusion. Tohoku Psychologica Folia. 1974; 32:108-114. Available from: http://hdl.handle.net/10097/00120666

[34]Engbert R, Kliegl R. Microsaccades uncover the orientation of covert attention. Vision Research. 2003;43(9):1035-1045. doi:10.1016/S0042-6989(03)00084-1

[35]Aglioti S, Desouza JFX, Goodale MA. Size-contrast illusions deceive the eye but not the hand. Current Biology. 1995;5(6):679-685. doi:10.1016/S0960-9822(95)00133-3

[36]Meilikov E, Farzetdinova R. Bistable perception of ambiguous images – analytical model. In: Advances in Neural Computation, Machine Learning, and Cognitive Research III. Cham: Springer; 2020. doi:10.1007/978-3-030-30425-6_10

[37]Toppino TC. Reversible-figure perception: mechanisms of intentional control. Perception & Psychophysics. 2003;65(8):1285-1295. doi:10.3758/bf03194852

[38]Zou Y, Wang Y, Luh DB. Application and parametric design of line visual illusion graphics in clothing. Fibres & Textiles in Eastern Europe. 2023;31:65-74. doi:10.2478/ftee-2023-0017

[39]Lansroth B. 10 op art artists whose work you have to follow. 2025. Available from: https://blog.artsper.com/en/a-closer-look/art-movements-en/op-art-artists/

[40]Norris L. Part of: Tumblr takeover: Lucy Norris. 2015. Available from: https://www.showstudio.com/projects/tumblr-takeover-lucy-norris/day-4

[41]McCune L. Optical illusion garments can create desired effect if chosen correctly. 2017. University of Missouri. Available from: https://munewsarchives.missouri.edu/news-releases/2017/0808-optical-illusion-garments-can-create-desired-effect-if-chosen-correctly/index.html

[42]Ridgway JL. The “use of lines in your clothing will work magic”: advice to women from 1914 to 1961 on using line to design an ideal body type. Clothing and Textiles Research Journal. 2020;38:270-284. doi:10.1177/0887302X20905358

[43]Ridgway J, Parsons J, Sohn M. Creating a more ideal self through the use of clothing: an exploratory study of women’s perceptions of optical illusion garments. Clothing and Textiles Research Journal. 2016;35:1-17. doi:10.1177/0887302X16678335

[44]Gero C. Trompe l’oeil in fashion: a clever and subversive technique. Catwalk: The Journal of Fashion, Beauty and Style. 2013;2(2):21-40. doi:10.1163/9781848882126_008

[45]Gervais E. Optical illusions are fashion’s latest trend. 2023. Available from: https://www.ellecanada.com/fashion/trends/optical-illusions-fashion-trend

[46]Morgado C. Curved pleats for Issey Miyake spring 2016 collection. 2016. Available from: https://www.perfold.com/blog/curved-pleats-for-issey-miyake-spring-2016-collection

[47]Fashion B. Issey Miyake women’s black shadow study midi dress. 2025. Available from: https://www.lyst.co.uk/shop/issey-miyake-casual-dresses/

[48]Vogue.com. Spring 2013 ready-to-wear. 2013. Available from: https://www.vogue.com/fashion-shows/spring-2013-ready-to-wear

[49]Lacava S. Issey Miyake S/S 13 womenswear. 2013. Available from: https://www.showstudio.com/collections/spring-summer-2013/issey_miyake_paris_womenswear_s_s_2013?gallery=false&look=1

[50]Giannoni G. Christian Dior couture spring 2018. 2018. Available from: https://wwd.com/fashion-news/shows-reviews/gallery/christian-dior-couture-spring-11120125/christian-dior-show-runway-spring-summer-2018-haute-couture-fashion-week-paris-france-22-jan-2018-12/

[51]Vargas C. Viktor & Rolf’s optical illusion dresses defy gravity at Paris fashion week. 2023. Available from: https://www.popsugar.com/fashion/viktor-rolf-spring-2023-couture-collection-49071174

[52]Thompson P, Mikellidou K. Applying the Helmholtz illusion to fashion: horizontal stripes won’t make you look fatter. i-Perception. 2011;2:69-76. doi:10.1068/i0405

[53]Miyazaki Y, Ishibashi K. Descriptions of a common belief in an 1813 Japanese beauty handbook regarding the influence of striped clothing on perceived body shape. i-Perception. 2022;13. doi:10.1177/20416695221130779

[54]Urban M. The wetter the better: reclaim your wetness this summer with Di Petsa. 2021. Available from: https://thenextcartel.com/observatory/di-petsa-wet-look/

[55]Roman K. Streetwear: what is the hype about. Leiden: Leiden University; 2020. 33 p. Available from: https://theses.liacs.nl/pdf/2022-2023-RomanK.pdf

[56]MacKenzie Wright DW. The future of fashion hype and drops: collaboration, events, and destination experiences. In: Fashion and Tourism: Parallel Stories. Bingley: Emerald Publishing Limited; 2023. p.261-266. doi:10.1108/S1571-504320230000026015

[57]Wright J. From underground to icon: Palace's journey to streetwear royalty. 2024. Available from: https://snobhop.substack.com/p/the-rise-of-palace-the-british-answer

[58]Huang X. Virtual reality-based visualization of optical illusion in the art and design field. Applied Mathematics and Nonlinear Sciences. 2024;9. doi:10.2478/amns-2024-0766

[59]Fleckenstien L. Hussein Chalayan: celebrating 25 years of fashion's 'big thinker'. 2020. Available from: https://www.voirfashion.co.uk/post/hussein-chalayan-celebrating-25-years-of-fashions-big-thinker/

[60]Isaac C. The cat walk as spectacle: Hussein Chalayan spring 2007 a magician of technology. London: University of the Arts London; 2007. p.1-10. Available from: http://iffti.org/downloads/junior-faculty/2007/Chalayan_ci.pdf

[61]Phillips WL. Cross-cultural differences in visual perception of color, illusions, depth, and pictures. In: Cross-cultural psychology: contemporary themes and perspectives. Hoboken, NJ: Wiley Blackwell; 2019. p.287-308. doi:10.1002/9781119519348.ch13

[62]Masuda T. Cultural effects on visual perception. In: Goldstein EB, editor. Sage encyclopedia of perception. Vol.1. Thousand Oaks: Sage Publications; 2009. p.339-343. Available from: https://www.researchgate.net/publication/299611215_Cultural_Effects_on_Visual_Perception

[63]Tribalexpressions.com. Eye dazzler Navajo rug. 2024. Available from: https://www.tribalexpressions.com/product/eye-dazzler-navajo-rug/

[64]Squires N. Jean Paul Gaultier facing legal action over use of 'illicit' nudes. 2022. Available from: https://www.telegraph.co.uk/world-news/2022/10/10/jean-paul-gaultier-facing-legal-action-use-illicit-nudes/

[65]Hughes DT. Viktor & Rolf dress models in wearable paintings at couture show in Paris. 2015. Available from: https://www.yellowtrace.com.au/viktor-rolf-dress-models-in-wearable-paintings/

[66]Howarth D. Viktor & Rolf dresses models in wearable paintings during Paris couture show. 2015. Available from: https://www.dezeen.com/2015/07/09/viktor-rolf-haute-couture-autumn-winter-2015-wearable-art-dresses-paintings-fashion-show-paris/

[67]Stevenson T. Virtual fashion: digital representations of materiality and time [MA thesis]. Wellington: Te Herenga Waka–Victoria University of Wellington; 2023. doi:10.26686/wgtn.21837039

[68]Gonzalez V. Beauty and Islam: aesthetics in Islamic art and architecture. London: I.B. Tauris; 2001. doi:10.5040/9780755699353