

Colour and Colorimetry Multidisciplinary Contributions

Vol. XVII A

Edited by Andrea Siniscalco



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Chromatic Vocabulary: the color design research according to Gianfranco Ferré

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Abstract

The study of color in the fashion design field has been much debated. From being a source of inspiration for designers, the use of color acquired an evident relevance as an element capable of defining the perceptive variations and intrinsic meanings established in the dialogic relationship between the material and its cultural dimension. Consequently, it becomes a communicative and visual vehicle of great impact, defining personal and social identities and conveying messages that address today to a larger audience.

In its relationship with matter, we can notice that color takes on a stronger semantic connotation. It is a linguistic element that, particularly in fashion, contributes to the overall narrative of creation that finds the codes of its language in the identity of the individual but also in the socio-cultural context in which it is immersed. Fashion and cultural studies have now shown that if fashion is an expression of the self, color is actually a tool for constructing a personal statement and expressing it. Therefore, color - as an expressive code and bearer of shared socio-cultural values - strongly influences the value, design and identity construction of fashion itself.

One fashion designer who has always distinguished himself for his rigorous and complex creative process in the use of color was Gianfranco Ferré. His teaching and design method was expressed through the contamination of three variables— color, shape and matter— declined in a plurality of models and formats that express desire, dream and luxury, without losing any connection with the real and material world.

For Ferré, the use of color plays a primary role, in realizing unique and irreproducible combinations of form and substance, for conveying precise feelings and emotions, enhancing the body of the wearer. For this reason, Ferré considers the choice of colors and their shades an “intentional” act born at the same time as the idea of the dress itself and that guarantees coherence and identity among seasons and collections. Due to the uniqueness of his creative process, which represents still nowadays a multifaceted material of study, this paper aims to analyze and investigate the role of color in Gianfranco Ferré’s method and how it became effectively part of his lexicon. Case studies, practical examples and lectures held by the designer will show the relevance of the color and its articulation in his production, from the influence of his sources of inspiration to his iconic “white shirt” whose color justifies the existence itself of the shirt as a universal piece where tradition and innovation meet.

Keywords: color design research, Gianfranco Ferré, fashion design

Introduction

Fashion, the sociology of dress, and the semiology of clothing and their relevance in the cultural system have been deeply analyzed by researchers and academics belonging to the field of fashion studies and theory, but - as a social phenomenon worthy of social scientific inquiry (Aspers and Godart, 2013) - also to philosophy, linguistic and sociological science. The development of scholarly literature on costume history and fashion theory is largely a product of research that began in earnest in the mid-to-late 1960s (NYPL.com, 2007), in the 1970s and 1980s, then fashion studies

really took off and were consolidated as a discrete field of inquiry (Mora, Rocamora and Volonté, 2014), derived from a combination of material culture studies and cultural studies (Smelik, 2017). Publications such as Dick Hebdige's *Subculture and the Meaning of Style* (1979), Elizabeth Wilson's *Adorned in Dreams: Fashion and Modernity* (1985) or Caroline Evans and Minna Thornton's *Women and Fashion: A New Look* (1989) (Mora, Rocamora and Volonté, 2014) supported the institutionalization of fashion studies. Since then, dedicated academic journals have been launched such as *Fashion Theory*, in 1997, and *Critical Studies in Fashion and Beauty*, in 2010, which represented an important moment in legitimizing the study of dress and fashion as an academic discipline (Smelik, 2017). Moreover, multi-disciplinary and interdisciplinary studies offer evaluations of dress in new contexts, such as economics, geography, cultural studies and social sciences, involving "not only economists and sociologists, social historians and cultural anthropologists, but also philosophers and moralists, poets, playwrights, and novelists" (Gregory, 1947).

One of the forerunners of research on fashion in the semiotic field is Roland Barthes that through his pioneer essay *The system of fashion* (1967) put the first step to an analysis of semiotics of fashion, which is determined by the relationship between the cultural and social uses of dress and its elements, such as matter, shape and color. Defined by Roland Barthes as an object of communication that possesses an everyday immediate existence and, on the other hand, an intellectual existence (Raymond and Barthes, 1980), fashion in addition to being real artifacts with a functional, protective purpose, is described by the French essayist as a proper language and system of signs imbued with meaning and a deeply symbolic character. Through a semiological approach that relates to the field of linguistics, Barthes describes fashion as a system of values and physical elements, a "true code" (Delyfer, 2019), characterized by the notion of the sign as a correlation between two terms, a signifier and a signified. According to Barthes, a signified is the idea or the concept that is attached to a particular thing, which is the signifier (the garment) which is discrete, material, numerable, and visible (Mikerina, 2016), and that has no intrinsic or essential meaning without the signifier. The signified is considered by Barthes an immaterial and external concept or idea (period, social class, country) which then is embodied in the dress, the signifier (Barthes, 1967). The **sign** is the combination of the signifier and the signified, and the **sign system** is the larger historical system that secures the meaning of the sign within a chain of signs, or in relation to other signs. Actually, in Barthes' conception of the system, singular elements have no meaning *per se*, but just if correlated to the collective dimension of the system.

This analysis of sign systems other than language described by Barthes is the first comprehensive study to show how structural linguistics and phonological analysis could be used as the basis of a sociological approach to clothing and its features.

Citing Ferdinand de Saussure's semiology (Barthes, 1967), Barthes proposes an analogy between language and clothing, proceedings also in a distinction of terms such as "dress" and "dressing". More precisely, for Saussure, *langue* is the organized system of signs, elements characterized by relations of equivalence and opposition, a sort of social convention that is opposed to words as an individual and unrepeatable linguistic act. In correspondence to Saussure's *langue*, Barthes proposes to distinguish the idea of "dress" from a second, individual reality, the very act of "getting dressed", in which the individual actualizes on their body the general inscription of dress, and which, corresponding to Saussure's *parole*, we will call "dressing". Dress and dressing form, then, a generic whole, for which we propose to retain the word "clothing" (this is *langage* for Saussure). Thanks to this reflection - which may also be considered today out of date (Mikerina, 2016) - Barthes associates fashion and dressing with an abstract lexical state of signs, asserting that a linguistic sign, again according to Saussure, is the resulting product when a concept and sound-image unite (Saussure, 1959).

Fashion as a social system

According to the dress historian Philippe Perrot, clothing represents a wide range of representations and meanings, like language. In particular, it contains “signs, attenuated markings or residual traces of struggles, cross-cultural contacts, borrowings, exchanges between economic regions or cultural areas as well as among groups within a single society” (Perrot, 1994).

Consequently, as Galimberti states, this conception of fashion becomes a rigorous and well-structured system of values that describes and identifies the social and cultural position of the body (Galimberti, 2009). A more concise definition has been given by German sociologist and philosopher Georg Simmel in his fundamental essay *Philosophie der Mode* (1905).

“Fashion represents nothing more than one of the many forms of life by the aid of which we seek to combine in uniform spheres of activity the tendency towards social equalization with the desire for individual differentiation and change.” (Simmel, 1905).

According to Simmel, fashion represents both an abstract concept that generates and influences cultural perception and a defining factor in social and interpersonal relations that derives from a basic tension specific to the social condition of the human being that has ever had a dualistic nature (Simmel, 1957). On one hand, each of us has the tendency to imitate others. On the other hand, we also have a tendency to distinguish ourselves from others, standing out from the rest. All people seek an identity and a sense of belongingness through conforming to a given set of norms, and yet at the same time they strive to achieve some distinction as individual human beings (Horn and Gurel, 1981). This phenomenon creates a sort of dualism that relates to the inner and outer struggles that people have. The first is “adaptation to the social group” and the second is its opposite, “individual elevation from it” (Carter, 2003). And Simmel sees clothing capable of inclining in both these directions (Carter, 2003). As Simmel explains, fashion is the effect of an always unstable balance between two opposite poles, that are integration and difference, social equality and individual separateness (Simmel, 1895). Each side of fashion represents a particular standardization of the opposite tendencies in our natures, which are satisfied, on the one hand, by the social form of fashion, and, on the other hand, by its content (Simmel, 1895).

The unstable tension of fashion as a process makes its transitory nature the ideal medium for the study of the definition of norms, that are intrinsically present in all kinds of society. For this reason, Simmel strongly underlines the sociological identity of fashion, stating that fashion is not to be just equated with changes in dress styles over time, fashion is a set of relations, not a set of contents (Carter, 2003). The theory of Simmel is also summarized by Patrizia Cafelato that defines fashion “as a system of social cohesion that allows the dialectical reconciliation of the individual's enclosure within a group and his relative independence in the territory of the spirit” (Fashion Theory, 2022). Due to this strong relationship with society and the individuals, we can consider clothing as a tool that unifies and conciliates two opposite sides of the human being: the human relation with the other and the group and the definition of the self, which derives from the confrontation with the external factors and personalities within a normative system which represents a vehicle of signification.

Color as a signifier

Starting from the conception of clothing as a complex tool for the expression of the self within a structured social system, color, with the shape and the matter, definitely plays a key role in the communication of the message the garment wants to convey.

Although the color is perceived through the sense of sight to give the viewer information about the nature of objects (Da Pos and Green-Armytage, 2006), it combines with social system custom and ideology to bear meanings (Kwon, 2002). Color is an expressive component of the object and its communicative possibility (Vandi, 2019), since, as Tadini says, “Colors, of course, are also words” (Tadini, 1993). In Barthes' example “Blue is in fashion this year”, color is presented as a type of signifier (Mikerina, 2016), one of the main vestimentary values (Barthes, 1967), one of the single units for those aspects whose opposition helps create meanings (Barthes, 1967), that can vary from culture to culture with a uniquely defined symbolism (Faerm, 2017) and defined cultural meanings. Color bears meaning in many ways including natural meanings, commercial significance, informational signals, or emotional connections (Bradfield, 2014). More specifically, color has always been considered a specific code of social, economic, and emotional values that evolved during the centuries and that changed along with different societies. As Falcinelli states in his book *Cromorama*: “The whole history of colors can only be a social history. It is the society that makes color, that gives it definition and meaning, that constitutes its codes and values, that establishes its uses and the scope of its applications” (Falcinelli, 2017). About this matter, we can also refer to the studies of Michel Pastoureau and his definition of the role of color in visual cultures and, most in general, in our society: “Any history of color is above all, a social history. Indeed, for the historian – as for the sociologist and the anthropologist – color is a social phenomenon” (Pastoureau, 2001).

The color developed deep symbolic meaning indicating individuals' cultural learning, place in the social hierarchy and economic status (Brannon, 2010). Clothing color conveys attitudes, personalities, and tendencies towards conformity and individuality (Wolfe, 2012) and it becomes a culture through repetitive and customary uses in a certain region and then in a system of signs (Kwon, 2002). Color as such is the only design element that can be studied from a (natural) science point of view and the social science (e.g.: psychology, anthropology, cultural and art/aesthetics) perspectives and each of these perspectives contributes to a wider understanding of this particular phenomenon (Botha, 2006). Perceived as a quality that exists both as an object attribute and as a mental entity (Roberts, Owen, and Havlicek, 2010), Color can also affect attractiveness judgments (Roberts, Owen, and Havlicek, 2010), in particular in the context of an institutional image (Caivano and López, 2006) for fashion brands. As Caivano and Lopez state, color works as a fundamental factor of identification for a company, and in turn, as a factor of differentiation from its competitors (Caivano and López, 2006). Its visual impact, pregnancy, memorability and its faster perception make it an even more transparent factor for defining design and fashion identity than written words and symbols (Caivano and López, 2006).

Gianfranco Ferré design methodology

“And it was here, in New York, on the facade of the Chinese Consulate, that I discovered color. Against the background of a perfect bright blue sky, a red flag stood out, dense with color. This red flag waved as in a dream. More precisely, as in a fantasy Orient, I could imagine a Chinese dragon”. (Ferré, 1995, p.11)

Raised and educated as an architect, since the 80s Gianfranco Ferré turn out as one of the most relevant fashion designers of the Italian panorama. Anticipated by his university dissertation, *Methodology of the approach to Composition*, Ferré establishes an approach to fashion conceived as an extremely precise model composed of elementary forms and enriched by his personal and refined sensibility, aiming at a simplicity that would leave women and men free to interpret the style and add decoration on the nature of the moment (Ferré and Frisa, 2009). His rational approach to the construction of a garment is based on a three-dimensional perspective through three main complementary values: matter, form, and color. For him, the color becomes an important factor to

express his sources of inspiration and exploit the potential of design applied to fashion production. In this context, color has multiple meanings in shaping and communicating Ferré's design which embodies both a narrative and a projecting role in making Ferré's creations so unique and still today a precious material of study.

Gianfranco Ferré's Chromatic Code: signified and signifier

Color is a fundamental tool for Ferré to connect not only different cultures but every kind of expression of life and humanity. Through color, Ferré builds his social system made indeed of signified and signifiers that evokes notions and images but also emotions and, in particular feelings. Through the code and the categories of colors and shades (such as "the glow of metals, flashes of energetic hues, and the delicacy of the tints of dawn and flowers" (Ferré and Frisa, 2009)) Ferré explains and illustrates the meaning behind the garments and, most importantly, the reason that leads him to the realization of the collection. Every color (signifier) refers to a deeper meaning (signified) that can be a city, a culture, or a historical moment. His tones and nuances form, in turn, a more multifaceted language, variously expressing energy, poetry, magic, seduction, purity, opulence (Ferré, no date). The Japan of the courtly dress, the China of simple and elementary forms; Eastern teachings and zen, decoration from baroque to romanticism (Ferré and Frisa, 2009). These are traces that Ferré calls "signs", parts of an ample vocabulary based on culture and human society, referring specifically to Roland Barthes's book *Empire of Signs* (1970).

"It is only without any pretense of analyzing reality that one can take from that part of the world down there a certain number of passages and with these deliberately create a system" (Barthes, 1970, p. 3).

This precious remark that Ferré cites in the press release of the presentation of the collection Pret-à-porter Spring-Summer 1986 connects the designer to the semiology of the French essayist, opening his fashion production to a wider cultural world, the so-called social system that fashion needs to express itself. For Ferré, the study and the cultural exchanges through different cultures, the revisiting of periods and places, the mixing of past and future, of East and West, is a key component of a real social net, a cultural hummus that Ferré defines as the "global intelligence" of fashion (Ferré and Frisa, 2009). The need for contamination that ignores any spatial boundaries is definitely part of fashion's genetic makeup for centuries, as Ferré explains. All inspirations that are to be found in Ferré's collections can be related to an all-embracing project that includes different cultures and traditions and that is expressed through the use of colors.

The use of color is so important in Ferré's creations that his homage to foreign cultures is always expressed by a choice of colors based on his favorite ones: white, black, red, blue, gold (Ferré, no date). Then, new tones enrich Ferré's palette, coming from a series of extraordinary travel experiences.

He describes in detail the chromatic impressions of Eastern, South American and other foreign cultures in their everyday life, enlightening the differences and the common points with his culture and provenance: the ocher walls of Bombay's buildings, the light gray linen sari of a woman at the Taj Mahal (Maddaluno, 2014), the contrasts of blue and yellow, of green and red of the buildings of St. Petersburg, the sumptuous coral red of Chinese imperial silk (Ferré, 1995).

These experiences and the contact with other fascinating cultures not only strongly influenced the production of Gianfranco Ferré, but they definitely became part of his style and his lexicon – "I wonder which features I have taken over while proceeding on a journey toward eastern cultures" (Ferré, 1986, p.1) - shaping a new sensibility that is then translated in a color lexicon where every meaning is embodied in a color. Therefore, it is evident the relevance of the chromatic code of every collection, as the result of a deeper study and elaboration that includes the history of cultures and his inspiration – "the lands of the rising sun and China seen from a European observatory"

(Ferré, 1990). Every color has a specific meaning - “energy therefore red, purity therefore white, balance, therefore red and blue...” (Ferré, 1986) -, and it is related to an image or real-life experiences. As a consequence, color is a code that helps Ferré to deconstruct the features of the foreign cultures to reset them through his personal taste and sensibility: “I mixed feelings, images, and cultures to get to this oriental softness” (Ferré, 1990). Paying homage to these cultures for Ferré is a symbol of friendship and appreciation which brings enrichment and uniqueness. The mix of colors and materials allows to go his any difference and discrimination to represent through the pieces of the collection an ideal dialogue between cultures and people “in devotion to quality and beauty, in love of harmony and equilibrium” (Ferré, no date). In this case, the color is a true expression of joy that impress the man and became a form of culture (Maddaluno, 2014), applied to fashion.

The projecting role of color

The approach of Gianfranco Ferré to the use of color in his creative and project process aligns with the common spirit of fashion in the 80s. According to Gillo Dorfles, the main values of fashion at that time were structure and color (Dorfles, 1999). If the structure allows establishing a clear and recognizable design to the dress, color enriches the form, it gives flavor and taste.

In what we call Ferré’s creative process, Ferré himself underlines the strong importance colors have for him and his working method: “My imagination always operates in technicolor” (Ferré, no date). The choice of colors is completed by shape and matter, realizing unique and irreproducible combinations of form and substance for expressing and conveying emotions, enhancing the body of the wearer. For this reason, the selection of the shades of color is always considered by Ferré an “intentional” act that demonstrates that the color is already a part of the idea of the dress at the moment in which it starts to take shape (Ferré and Frisa, 2009).

Moreover, for Ferré, color is a tool to enhance and highlight the projecting process of forms and volumes, helping the designer to imagine the final result: “I envision the dress as a splotch of color, a flash of light” (Ferré, no date). In a second moment, the first impression that prefigured the dress is translated into a technical drawing, according to the principles of geometry (Ferré and Frisa, 2009). The immediate shapes designed by Ferré on the white page integrate directly with a lively and lighting palette that also follows categories such as order and geometry, to create coexistences between heterogeneous elements (Maddaluno, 2014).

The realization of the garment as the final result of Ferré’s methodology confirms that color has the power to complete shapes and forms, and enhance them, according to the aim of the designer. For Ferré it is possible to discern “absolute colors” and “non-colors” (Ferré and Frisa, 2009, p. 53). They are two complementary aspects of the creative process of Gianfranco Ferré that used them depending on the stories and atmospheres he wanted to tell. Strong colors are for Ferré red, blue, gold but also green, bronze and yellow. Rich in history and significance, these colors are fundamental to understand the references and the sources of a piece, since they convey meanings through a sophisticated level of interpretation. For example, what Ferré defines as “energetic colors” or the “colors of the signage” (Ferré, no date) are strong and lively tones and shades that underline the beauty of the materials. This is mainly the case of red, “the color of life” (Ferré, no date), but also of Imperial China, Titian’s paintings and African tribalism. Thanks to its sensual spirit, red conveys passion and a feeling of fullness, “like a tattoo, magical symbol on a woman’s skin” (Lucio del Pezzo, 1993). Also gold and metal colors have an important physical and semiological relevance for Ferré. As he says, “gold is the reflection of a metal [...] with thousand souls and meanings, an emblem of power and wealth, that lights up garments” (Ferré, no date).

On the other hand, Ferré appreciated also neutral colors, which are always synonymous with simplicity and cleanness, values that are dear to the Lombard designer: “Basic colors thus join more

delicate and more nuanced natural tones in an infinite series of shades and shadings, enhanced and completed by some concessions to the imagination and the themes of the collection” (Ferré, 1995, p. 13). In particular, in the case of the distinctive series of white shirts, white color gives the garment a universal identity and a special appeal, an expression of natural elegant femininity. White is a transforming design tool that can highlight an ensemble or be a discreet complement to it. Its uniqueness and the metaphorical negation of the tints allow to underline the forms and exalt the matter. Among other neutral colors, for Ferré, colonial beige leads to a colorless abstraction, grey makes the dress “evanescent”, while black is the most versatile of non-colors, rigorous and sensual at the same time, able to enhance everyone, since it is seasonless (Ferré, no date).

The systematical combinations of connotations and meanings, through color, material, and shape, emerge in Ferré’s fashion production as an infinity of variants that comes from a technical and rational process that collects all the signs of Gianfranco Ferré through rather an impactful pictorial expression.

Conclusion

The particular methodology of Ferré is defined as a real “lexicon” – as he said – a kind of alphabet concretely applied to the material and the design form in a wider global project of style moved by rational interpretation of the process and an emotional journey through growth and maturing. According to his extremely rational creative process, Ferré affirms that color must take its place in fashion creation, and most of all it has to justify its presence and existence on that specific garment. Intentional and necessary, Ferré’s colors display a character that remains coherent and faithful over time, even though capable of infinite modulations, season after season. Related to emotions and feelings, color is the perfect joint point that unifies the romantic and extremely rational view of Ferré about fashion, to give concrete expression to his imagination. As a tool to remind of feelings, experiences, the color gives Ferré’s creations a real substance and a narrative that enhances the structure of the garments and gives sense to all.

References

- Aspers, P. and Godart, F. (2013) ‘Sociology of Fashion: Order and Change’, *Annual Review of Sociology*, 39(1), pp. 171-192. doi: 10.1146/annurev-soc-071811-145526.
- Barthes, R., Howard, R. and Ward, M. (2010) *The fashion system*. London, UK: Vintage.
- Barthes, R. (1970) *L'empire des signes*. Genève, CH: Albert Skira Editeur.
- Bellour, R. and Barthes, R. (1980) ‘Interview with Roland Barthes’, *Discourse*, 2, pp. 03-17. Available at: <https://www.jstor.org/stable/41389050> [Accessed: 6 Jul. 2022].
- Botha, P. (2006) ‘Colour Knowledge And Its Application As A Reflection Of One’s Culture’. In: *Colour in Fashion and Colour in Culture. Proceedings of the Interim Meeting. of the International Colour Association*. [online] AIC South Africa 2006. International Colour Association, pp.122–126. Available at: <https://aic-color.org/resources/Documents/aic2006.pdf> [Accessed: 25 Jul. 2022].
- Bradfield, Erica L. (2014) ‘The Diversity of Color: an Analysis of Cross-cultural Color Symbolism’, Honors Theses Andrews University. Available at: <https://digitalcommons.andrews.edu/honors/90> [Accessed: 25 Jul. 2022].
- Brannon, E. (2010) *Fashion forecasting*. New York, US: Fairchild Books.
- Caivano, J.L. and López, M.A. (2006) ‘Can color be an antiglobalization factor? Analysis of colors in branding’. In: *Colour in Fashion and Colour in Culture. Proceedings of the Interim Meeting*.

- [online] AIC South Africa 2006. International Colour Association, pp.13–19. Available at: <https://aic-color.org/resources/Documents/aic2006.pdf> [Accessed: 25 Jul. 2022].
- Carter, M. (2003) *Fashion Classics from Carlyle to Barthes*. Oxford, UK: Berg Publishers.
- Costume and Fashion History: A Guide to Resources* (2022). Available at: <https://www.nypl.org/node/5652> [Accessed: 21 Jul. 2022].
- Da Pos, O. and Green-Armytage P. (2006) ‘Colours and basic emotions’. In: *Colour in Fashion and Colour in Culture*. [online] AIC South Africa 2006. International Colour Association, pp.13–19. Available at: <https://aic-color.org/resources/Documents/aic2006.pdf> [Accessed: 25 Jul. 2022].
- Del Pezzo, L. (1993) ‘Red’, *Ferré - Extra edition Vogue Italia*, p. 21.
- Delyfer, C. (2019) ‘Introduction. Playing with Dress: Norms, Bodies, Identities’, *E-rea*, 16(2). doi: 10.4000/erea.7512.
- Dorfles, G. (1999) *La moda della moda*. Genova: Costa & Nolan, pp 22-23.
- Faerm, S. (2017) *The Fashion Design Course: Principles, practice and techniques*. London, UK: Thames and Hudson.
- Falcinelli, R. (2017) *Cromorama: Come il colore ha cambiato il nostro sguardo*. Torino: Einaudi.
- Fashion Theory* (2022). Available at: http://www.studiculturali.it/dizionario/pdf/fashion_theory.pdf [Accessed: 21 Jul. 2022].
- Ferré, G. (no date) ‘Creating a style: logic, means, intentions’. Milano.
- Ferré, G. (no date) ‘Colors and feelings – The colors of feelings’. Milano.
- Ferré, G. (1986) *Women's collection pret-à-porter S/S 1986*.
- Ferré, G. (1990) *Women's collection pret-à-porter F/W 1990/1991*.
- Ferré, G. (1995) *Lettres à un jeune couturier*. Paris, FR: Editions Balland.
- Ferré, G. and Frisa, M. (2009) *Lessons in fashion*. Venezia: Marsilio.
- Fiorani, E. and Conti, G. M. (2017) *Oltre l'abito*. Monza: Deleyva.
- Galimberti, U. (2009) *I miti del nostro tempo*. Milano: Feltrinelli.
- Gregory, P. M. (1947) ‘An economic interpretation of women's fashion’, *Southern Economic Journal*, 14(148), pp. 148-162. doi: 10.2307/1052931.
- Horn, M. (1968) *The second skin: An Interdisciplinary Study of Clothing*. Boston, US: Houghton Mifflin.
- Kwon, Y. G. (2002) ‘The signs and symbols of red color in East Asian countries’, *Colour in Fashion and Colour in Culture. Proceedings of the Interim Meeting of the International Colour Association*. [online] 291-295 AIC Maribor, Slovenia 2002. International Colour Association, pp.122–126.
- Lurie, A. (2000) *The Language of Clothes*. New York, US: Henry Holt.
- Maddaluno, P. (2014) *Gianfranco Ferré. Progettazione continua*. Firenze: Alinea.
- Mikerina, D. (2016) *Semiotics and Fashion Studies: limits and possibilities of a systemic approach to contemporary fashion*. Graduate student dissertation. Charles University of Prague.
- Mora, E., Rocamora, A. and Volonté, P. (2014) ‘The internationalization of fashion studies: Rethinking the peer-reviewing process’, *International Journal of Fashion Studies* 1(1), pp. 03–17, doi: 10.1386/inf.1.1.3_2.

- Pastoreau, M. (2001) *Blue: The history of a color*. Princeton, US: Princeton University Press.
- Perrot, F. (1994) *Fashioning the Bourgeoisie: A History of Clothing in the Nineteenth Century*. Princeton, US: Princeton University Press.
- Roberts, S.C., Owen, R.C. and Havlicek, J. (2010) 'Distinguishing between Perceiver and Wearer Effects in Clothing Color-Associated Attributions', *Evolutionary Psychology*, 8(3), pp. 350-364. doi:10.1177/147470491000800304.
- Saussure, F. D. (1959) *Course in general linguistics*. New York, US: Philosophical Library.
- Simmel, G. (1905) *Philosophie der Mode*. Berlin, DE: Pan Verl.
- Simmel, G. (1957). 'Fashion', *American Journal of Sociology*, 62(6), pp. 541–558. Available at: <http://www.jstor.org/stable/2773129> [Accessed: 25 Jul. 2022].
- Smelik, A. (2017) 'Review of: Fashion Studies. Research Methods, Sites and Practices', *Fashion Theory*, 21(5), pp. 617-620. doi: 10.1080/1362704x.2017.1310436.
- Tadini, E. (1993) 'Blue', *Ferré - Extra edition Vogue Italia*, p. 19.
- Vandi, A. (2019) *Trends in the cyberg-physical era. La ricerca progettuale sul colore: radici storiche ed evoluzioni future*. Graduate student dissertation. Politecnico di Milano.
- Wolfe, M. G. (2012) *Fashion*. Tinley Park, US: Goodheart-Willcox Co.