



COLOR PERCEPTION AND BEHAVIOR OF THE CONSUMER: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

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Abstract:

Color has been for a long time, a crucial factor in influencing the consumer decision. Omnipresent in the natural landscape, it constitutes an essential attribute among the tools of Sensory Marketing. Indeed, the color of a packaging, an advertising poster, a sale place or even a website is not transparent to the consumer. It induced, by some of its aspects (hue, luminance, purity), specific behavioral responses which are the fruit of a deep cognitive and emotional process. In this context, this paper aims to highlight, through a literature review, the role of color seen from the marketing side as an explanatory variable of consumer behavior.

Keywords: color, consumer behavior, cognitive and affective processes

1. Introduction

Marketing techniques have always impacted the consumer's decision whose aspiration for aesthetics and pleasure is more and more pursued and required. Among these techniques, there is Sensory Marketing that relies heavily on visual elements, mainly the color.

Capturing the interest of marketing managers and experts (In points of sale, packaging, advertising or through websites), color emanates from an intuitive choice, a personal taste or a lived experience (Mayol and Gay, 2008) and embodies behind its aesthetic aspect, a cognitive and an emotional dimensions which represents the origin of behavioral reactions of consumers.

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Thus, this contribution will aim to set the main theoretical researches and studies based on color in marketing, through examining the impact caused by this variable on the consumer behavior.

To this end, first, we will give a definition of the notion of color from a marketing and an epistemological perspective, which will be followed by the presentation of the main characteristics of color, before addressing the different theories addressing the point of sale, the packaging, advertising and websites contexts. And finally, we will tend to highlight the relationship between the color stimulus and the others sensory stimuli.

2. The color perception from a marketing perspective

Because of its multiple perceptions, color is related to different fields. Whether it's in physics by studying the link between color and light, or in chemistry by looking at the reactions between the coloring substance and the object, or in the artistic field where the Greco-Roman world sees in the color an instrument of fascination and a tool of persuasion (Brusatin, 1996) or in psychology by studying the impact of color on the subconscious of the individual (Itten, 2004).

Therefore, the definition of "color" depends on the fields of analysis to which it refers. According to Déribéré (1964, 1968, 2000), color is the physiological effect, the impression or the sensation that the eye receives when a colored body is seen. Indeed, the realization of this sensation depends on the union of three elements: a colored body, a source of light which illuminates the body and the eye being the tool that receives the message (a chromatic stimulus) before transmitting it to the brain. Likewise, color is perceived as a sensation (Sève, 1996 and Déribéré, 2000). It is a psychological state that occurs as a result of emotional and physiological impressions.

The study of colors can't be dissociated from the cultural background and can not be separated either from time and place (Pastoureau, 2000). It is henceforth linked to concepts, feelings and signs: it is a whole language (Déribéré, 2000).

For Bernard Rouillet et al. (2003), the color is rather perceived as an environmental and contextual variable which impact the affective and cognitive dimensions of the consumer. In other words, it's strongly related to the environment or context in which it's located.

2.1 Color's definition according to the epistemological approaches

Defining the notion of color in marketing, from an epistemological perspective supposes to take into account the three epistemological approaches: positivism, interpretativism and constructivism.

According to Perret and Seville (2003), the interpretative approach is based on the fact that it is not the color that is taken into consideration but it's rather the interpretation and the explanation given by the individual to the meaning of color.

Regarding the constructivist approach, it considers color as a socially co-constructed concept, a notion formed and made by individuals. According to Pastoureau (2003), it is a cultural phenomenon, lived and defined depending on society and civilization.

As for the positivist approach, it is not interested in how people interpret the concept of color (Kacha, 2009). The meaning of the concept is far from being associated to individuals and is totally independent from them. Thus, the positivism attempts to elucidate the notion of color while relying on a reality quite objective and distinct from the one considered true according to individuals.

In sum, everything that has been presented above retraces the essence of the definition of the concept of "color".

2.2 Color's characteristics

There is a three-dimensional vision of color. According to Trouvé (1991), the color has a three-dimensional character that highlights three parameters, also advanced by Munsell (1966) and Dérivé (1996): the hue, luminance and purity.

The hue or the tone also known as the wavelength: represents the location of the color in the chromatic circle. When we speak of "green", "red" or even "blue", we're speaking of hues;

Luminance: corresponds to the brightness. In other words, it is when a color is light or dark depending on the intensity of the reflected light. In another way, it is the proportion of the light directed towards the perceived object;

The saturation also called the purity: indicates the level of approximation between a color X and the closest pure color. This is understood by terms such as: weakly saturated or washed, saturated, pure or highly saturated. In other words, it refers to the intensity of a color. Therefore, low saturated colors have a small portion of colored pigment and vice versa.

2.3 The conceptual framework of color in marketing

Color has always been studied according to its environment (Itten, 2000).

In marketing, Magne (1997, 1998) has mentioned that aesthetic sensitivity was synonymous to the degree of sensitivity to the color stimulus.

Hence, the interest of reviewing the main theoretical approaches studying the color's effects in marketing in different contexts (point of sale, packaging, advertising and websites) while emphasizing the incidence of the color on the consumer's responses and during the presence of a sensory stimulus.

The following figure summarizes the main theoretical studies on the impact of color in Marketing.

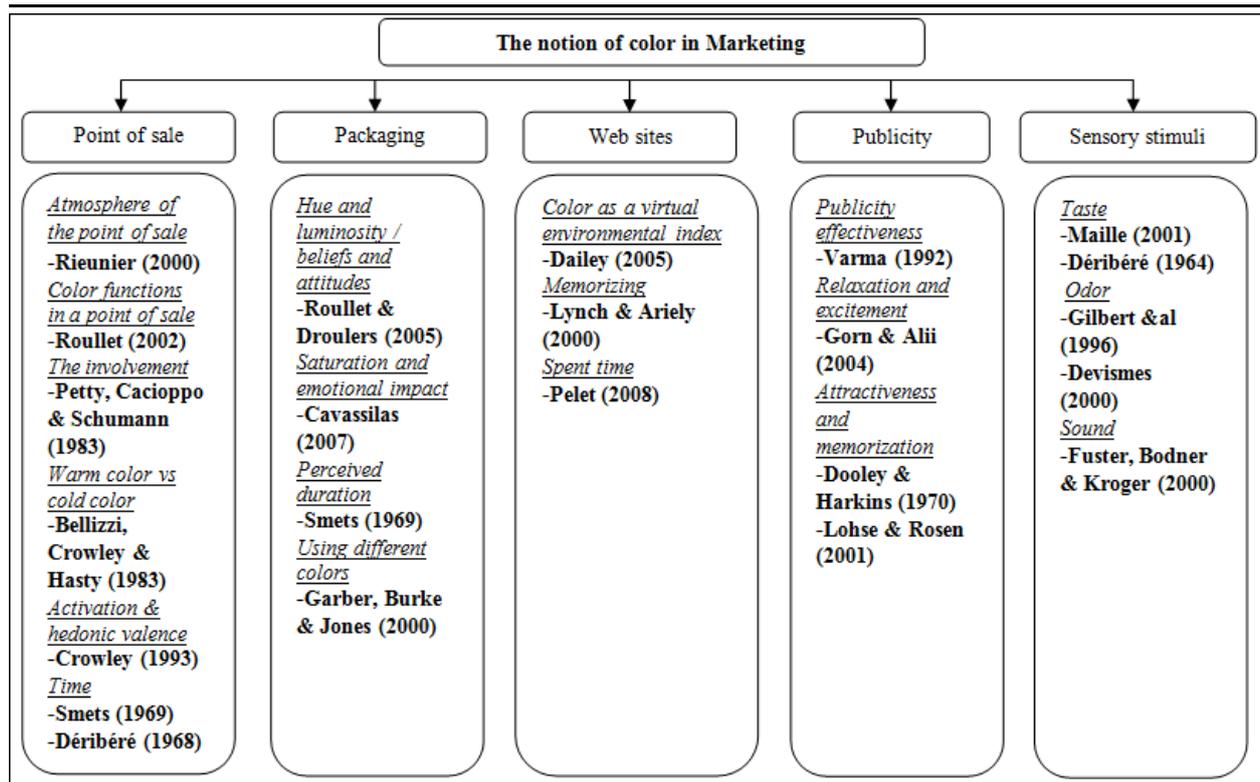


Figure 1: The summary of theoretical studies on the impact of the color in Marketing (Realized by the author)

2.4 Color and point of sale

According to Rieunier (2000), the point of sale atmosphere gathers all the elements of the store, controllable and likely to influence the cognitive, the affective and the behavioral reactions of both consumers and the sellers (shop assistants).

Among the components of this physical environment, there is music, smell and color.

Indeed, color is a significant component in the point of sale environment. It attracts the attention of the customer who stops to look at the storefront or is about to explore the colorful offer of the store.

Thus, according to Roulet (2002), color fulfills four main functions:

- The attention function also qualified as an alert function. Indeed, any point of sale must be remarkable and easily identifiable in the eyes of the customers;
- The attraction function: which not only consists in attracting the consumer but also aims arouse his interest so that he adopts an approaching behavior likely to trigger the purchase process for a given product;
- The well-being function which can be illustrated by the reflected mood or through the pleasure felt in the point of sale. This feeling of well-being helps to provide a conducive environment for research, selection and a possible purchase attempt to buy. The so-called sensation encourages the consumer to build a positive image of the point of sale and hence the brand. It also makes the time spent in the store more agreeable to incite him to make more purchases;
- The congruence function: consists in having coherence, reconciliation and convenience between the offer proposed by the brand in the place of sale and the

aspiration of the consumer. In the United States, for example, there is a dominance of warm colors such as red in some popular big stores.

Also, Bellizzi, Crowley & Hasty (1983) highlight the double role of color in the point of sale. According to them, a warm color, applied on the outside of the store, tends to exert a physical attraction on the consumer and encourages impulsive purchasing. As for the evaluationⁱⁱ of the Point of Sell environment, cold colors are highly favored inside the store and are recommended to help in making decisions.

Likewise, Crowley (1993) has showed that the effects of a color vary according to the hue. Indeed, red and blue are both placed at the limits of the visual spectrum. They are judged to be more activating compared to the median tones, located in the middle of the spectrum which includes yellow and green. Thus, the more the length of the wavelength increases, the less the hedonic valence is positive (less the pleasure is felt). Therefore, it's recommended to use blue in stores since it privileges hedonic impact and to resort to red when store activities require a significant level of activationⁱⁱⁱ.

On the same topic, Smets (1969) has concluded that the use of warm colors in the point-of-sale has the potential to reduce the perceived duration. Also, according to Dérivé's experience (1968), a restaurant decoration choice based on yellow and red increases the duration of time. It's what pushes and entices the consumer to rush. These findings correspond to the ones made by Macar et al., (1994), who concluded that when the level of stimulation is high, the perceived duration is reduced.

2.5 Color and packaging

It has been shown by Imram (1999) that the visual dimension of a product, which refers to the color, is able to exert an impact on the consumer perception of the product.

According to an experimental study established by Rouillet and Droulers (2005), about the influence of the packaging's color (pharmaceutical product) on the beliefs and attitudes of consumers, we may conclude that both the hue and brightness influence consumer attitudes.

Also, a packaging with a warm hue (red for example) is rather perceived as containing a more effective medicine in terms of healing than another packaging with a cool hue.

In addition, it has also been shown that a dark packaging was synonymous with a more efficacious medicine compared to a clear color packaging.

Besides and based on Cavassilas (2007), a color with a high saturation level has an emotional impact on the individual. Furthermore, any saturated color in the packaging is generally more visible for consumers.

ⁱⁱ The parameter called "evaluation" includes the items: negative / positive, repulsive / attractive, tense / relaxed, uncomfortable / comfortable, bad / good, pleasant / unpleasant.

ⁱⁱⁱ The "activation" parameter includes variables: motivating / demotivating, old-fashioned / modern, dull / colorful, boring / challenging, depressing / cheerful, and dull / brilliant.

Furthermore, Smets (1969) evokes the notion of distortion of time and distance perception. Indeed, a packaging with a warm color such as red, the perceived distance (separating the stimulus and the observer) and the time spent are short and reduced.

In addition, it is clear that color plays a crucial role in the packaging because of two main characteristics:

- The first one is the ability to capture attention, the color in this case is dominant (Devismes, 2000);
- The second one is the capacity to evaluate the product. When it comes to the color of the packaging, we also evaluate the price and intrinsic product attributes (Droulers, Rouillet, Ben Dahmane Mouelhi, 2003, Pantin-Sohier, Bree 2004, Magne 2004).

According to Garber, Burke and Jones (2000), and based on a study conducted with 128 people on the packets colors of different products such as flour, raisins, spaghetti and cornflakes, (with colors more or less different but coherent with the original), it has been shown that a dissimilar color compared to the original one is more captivating. It generates more purchase than a non-different color.

Therefore, the use of a different color from the original increases the time spent and the amount of handling.

Moreover, speaking of the time spent on shopping, it was judged that among two different colors, the one that is the most coherent will have more chances to be purchased.

2.6 Color and website

In the light of the revolutionary development of the Internet, the panorama of virtual shopping and online sales has also been modified. Thus, the conquest of an online consumer (consumer) remains dependent on the integration of atmospheric factors in which the color plays a major communicative and emotional role.

By transposing Kotler's (1973, 1974) definition of the concept of the atmosphere, (Dailey, 2000) sees it as: "*the voluntary design of Internet environments to create positive effects (for example, affect or positive cognitions); on the Internet user, in order to increase his favorable responses of frequentation (revisits, browsing, etc.)*".

It is via this vision that Dailey (2000) proposes a definition of a virtual environmental index which designates "*any element of web interface contained in the perceptual field of the individual, which stimulates his senses, as suggested by Milliman & Fugate (1993)*".

Color in the context of websites is therefore considered as a virtual environmental index and plays a crucial role in creating a favorable and conducive virtual climate that can influence the behavior of Internet users.

In the same context, Lynch and Ariely (2000) affirmed that in situation of ease (comfort of purchase), the individual memorizes more the Internet site as well as all the elements which are related to it: colors, music, animations, textures and photos. Hence,

the need to control any element inherent to the website in order to exert good influence on the emotional, cognitive and behavioral reactions of Internet users.

Therefore, it seems that even the choice of the websites colors is decisive. According to Pelet (2008), the use of soothing colors in the interfaces of commercial web sites influences the time spent in front of it and makes it even more pleasant.

2.7 Color and advertising

Whether it's about newspapers or magazines, the color has largely contributed to highlight the advertising effectiveness. Indeed, the effect of color on advertising has been proven through numerous research studies, the most prominent of which are presented below.

For Varma (1992), the color of an advertisement influences positively and favorably on the attractiveness of attention, the impact exerted and the degree of preference.

Also, and based on the components of color, it has been shown that in terms of advertising effectiveness, it would seem that not only the hue has an impact but also the brightness and the saturation. On the first hand, the brightness has the power to increase the sensation of relaxation which allows the appreciation of the advertisement. On the other hand, the saturation of the color in an advertisement would lead to the excitation or to the activation which will strengthen the advertising appreciation.

Those findings are opposed to Lichtlé (2000) who showed that the appreciation of an ad is dependent on the fact that it is dark and not very saturated.

In addition, the experience of Gorn et al. (2004) revealed that bright or light shades promote relaxation and increase the attitude towards the ad and the brand. However, brightness does not affect the excitement. Saturated hues are the ones that stimulate the excitement and attitude toward the ad, but without impacting the attitude toward the brand.

Although on the cognitive level, these same authors has showed that the excitation as well as the relaxation did not have any effect whatsoever on the attitude towards the advertisement or the brand.

For Dooley and Harkins (1970), the use of color in an advertisement certainly attracts and captures attention but does not allow long-term memorization of content. A statement that was confirmed by Ray (1973): *"using colors in an advertisement draws attention, but presenting the same black and white advertisement has led to better memorization of verbal content."*

On the same line of reflection, Lohse and Rosen (2001) confirmed the findings of Dooley and Harlins, saying that the color allows a significant gain in terms of attractiveness, positive attitude and especially memorization.

In sum, the question of the influence of color in advertising is viewed from two different persuasive angles (Petty and Cacioppo, 1981, 1986):

- From a central angle: which relies on the process of information processing (cognitive aspect); and

- From a peripheral angle: which is based rather on the affective responses (affective and emotional aspects).

2.8 Color and other sensory stimuli

Numerous studies have been conducted on the relationship between color and other sensory sensations, mainly taste sensation, olfactory sensation and sound sensation. According to Maille (2001) and Dérivé (1964), color is likely to influence the perception of other senses or sensory stimuli. Which is the case with the colorful interpretation attributed to the tastes of salty, sweet or sour (d'Hauteville, 2003). Pink, for example, is synonymous with sweetness, yellow reflects acidity and red conveys a strong taste (Dichter 1964, Devismes 1994, Cavassilas 2007).

Besides, Gilbert et al. (1996) show the existence of a cognitive relationship between colors and smells; a congruence relationship likely to influence not only the cognitive responses of the consumer but also the affective and conative ones.

Regarding the olfactory stimulus, Devismes (2000) states that any pleasant scent corresponds to a light color. Just as the use of certain colors could change the perception of a given smell.

There are also associations between colors and scents. Indeed, a mint smell corresponds to a blue-green. However, associating a vanilla scent with a blue-green could only seem non-congruent (Rouillet, 2002).

Also, regarding sound stimulus, Fuster, Bodner and Kroger (2000) have shown that even sounds are associated with colors and are therefore processed and analyzed by the brain.

In noisy environments, dark colors are preferred. In other words, when it comes to calm and peaceful environment, it is the light colors that are present (Rouillet, 2002).

It should be noted that this congruence relationship between the senses, called synesthesia^{iv}, takes three forms according to Sohier (2004):

- Bimodal synesthesia, which refers to the meeting and crossing of two senses;
- Multimodal synesthesia, which refers to the association of several senses;
- Categorical synesthesia (Also known as cognitive synesthesia) represents the association of a secondary meaning (color in particular) with systems of cultural categorizations (just like numbers, letters and names).

3. Conclusion

The purpose of this article is to discuss the question of color in marketing and its effects on consumer behavior, through a synthesis of the main theoretical approaches applied to different marketing contexts.

^{iv} Synesthesia illustrates a subjective experience in which a sensory perception (relative to one of the senses) is combined with a sensation coming from another modality, even if the latter has no element of excitation (Besançon, 1994).

From the different theories above, we can highlight five recurring fields, which seem to structure our reasoning about color. These fields are essentially related to:

- The color and the point of sale;
- The color and packaging;
- The color and publicity;
- The color and websites;
- The color and the other sensory stimuli.

Therefore, we have attempted to provide via this research a conceptual model that highlights the impact of the color as a website atmospheric variable and emphasize its impact cognitively, emotionally and conatively.

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