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Using colour semiotics to explore colour meanings

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Using colour semiotics to explore colour meanings

Abstract

Purpose

The impact of colour is acknowledged within the marketing field. However, research on colour communication is limited, with most prior studies focusing on pre-defined meanings or colour associations. The aim of this study is to reveal insights into colour meaning and propose an alternative view to understanding colour communication.

Design/methodology/approach

The study takes a conceptual approach and proposes Peircean semiotics to understand colour communication. The proposed framework is applied to analyse a set of colour meanings detected by prior colour research.

Findings

The study elucidates the underlying mechanism of how colour is read and interpreted in various marketing activities, and how meaning is conveyed. This study addresses this mechanism by identifying colour semantics and colour as a symbolic, iconic and indexical sign.

Originality/value

By elaborating on how colours convey meanings and the mechanism that explains such meanings, this study demonstrates that colour meaning is far more than mere association. The study contributes to the current knowledge of colour by facilitating a deeper understanding of how consumers interpret representations of single visual cues expressed in various contexts.

Keywords: Colour, Communication, Meaning, Semantics, Semiotics, Symbol

Using colour semiotics to explore colour meanings

Introduction

The fractured nature of consumption, in which an increasing number of entities compete for consumer attention, pose key challenges for consumers. To help with these challenges, consumers are known to rely on visual cues, which may serve as subliminal stimuli that influence their purchasing processes (e.g. Clement, 2007; van der Laan *et al.*, 2015; Orth *et al.*, 2010). While consumers also use the other senses of hearing, smell, touch and taste (Krishna, 2012), the centrality of sight has been made clear: it is “[t]he most active, the most varied, and the most useful of all the bodily senses” (Parker, 1836, p. 216).

The benefit of visual cues is that they can be processed quickly and that vision itself requires minimal mental effort, meaning that sight is the most important sensory channel (Kauppinen-Räsänen, 2014; Krishna, 2012). Once light enters the eye and forms an image on the retina, a sensation is formed and the brain analyses this information further to form perceptions, which “[g]ive a meaning by past experience” (Hergenhahn and Henley, 2013). Sensation refers to a largely passive process in which taking in aspects of the surrounding environment may occur unconsciously but still affect behaviour. A subsequent perception may even be incomplete. Yet as stored in memory, meanings are created through the lens of cognitive associative learning (Grossman and Wisenblit, 1999; Martindale, 1991). Fundamentally, visual cues evoke sensation before they affect perception, while perception captures consumers’ understanding of sensory information (Krishna, 2012). In doing so, past experiences facilitate the process of understanding and using to visual cues. Consumer research recognises this phenomenon and maintains that visual attention is a prerequisite for information processing, affecting emotional and/or cognitive perceptions (Kauppinen-Räsänen, 2014; Lévy-Leblond, 2010). Therefore, colour has been lauded for its ability not only to attract but

also retain attention (Schoormans and Robben, 1997), which enables further information processing.

Although scientific research has stressed the role of visual cues, it remains a neglected research area in marketing (Kauppinen-Räsänen, 2014; Orth *et al.*, 2010), although Krishna (2012) does note that a growing number of consumer studies pertain to behavioural interactions with sensations, including those derived from visual cues.

This study focuses on colour as a visual cue and more specifically a means of affecting cognitive representation. Although studies have acknowledged the impact of colour (Bottomley, 2006; Huang and Lu, 2015; Jauffret, 2015; Kauppinen-Räsänen, 2014; Lee *et al.*, 2014; Romanaiuk and Nenycz-Thiel, 2014), colour communication research in marketing remains scarce. Prior works have focused on colour as a means of association, arguing that different colours are associated with sets of meanings, either in the product context (Kauppinen-Räsänen and Luomala, 2010; Ko, 2011; Koch and Koch, 2003; Pantin-Sohier, 2009) or beyond that context (Grimes and Doole, 1998; Jacobs *et al.*, 1991; Madden *et al.*, 2000). Most of these studies have investigated pre-defined meanings associated with colour names (e.g. Amsteus *et al.*, 2015; Grimes and Doole, 1998; Jacobs *et al.*, 1991; Ko, 2010; Koch and Koch, 2003; Madden *et al.*, 2000; Pantin-Sohier, 2009) or conveyed by visual colour chips (e.g. Jacobs *et al.*, 1991), and these studies certainly do contribute to the field of colour communication within marketing. While colour association refers to an essentially cognitive connection based on similarity or a colour's links to pre-defined meanings, colour meaning more broadly expresses what the consumer infers from the colour, the content or the significance or interpretation of the colour. Hence, few studies have so far attempted to explore the meanings that colours convey in the context of true visual products expressed in true visual colour (e.g. Kauppinen-Räsänen and Luomala, 2010). Although the key result of past studies is that colour is a source of communication (Kauppinen-Räsänen, 2014), they still focus on

colour influences, which can be of innate origin as in “[h]umans’ biological predisposition to treat colour as a signal” (Humphrey, 1976, p. 98), instinctive origin (Grossman and Wisenblit, 1999) or origin learned from association (Adams, 1973, Hupka, 1997); it has been claimed that “[w]hat these scholars understood by representational or meaningful colour was essentially its capacity to imitate the object; that it had any intrinsic capacity to convey meaning they left entirely out of consideration” (Gage, 1999, p. 50).

The basic premise of this study is that colour communication is grounded in human communication but goes well beyond colour associations. The study’s aim is to reveal insights into colour meaning and provide an alternative view to understanding colour communication. This is executed by assessing the underlying mechanism by which consumers read and interpret colour as a visual cue for different marketing activities and how colour conveys meaning more broadly. To carry out its purpose, this study proposes a typology of semiotics as a means of gaining such understanding.

While this study is conceptual, it uses findings by Kauppinen-Räsänen and Luomala (2010) to exemplify how colour conveys meaning. The authors (p. 294) outline three functions of colour (attention, aesthetics and communication) and report that colours convey a set of meanings; these meanings are further analysed here by applying a semiotic approach. This study focuses on the visual sign of colour and provides a framework originating in Peircean semiotics that was developed further by Morris (1938). It thus enriches current colour knowledge in marketing so as to facilitate the understanding of how consumers interpret representations of single visual signs expressed in contexts like products, brands and brand packaging to make informed product decisions.

The remainder of this paper is organised as follows. First, the approaches to marketing issues by semiotics and related critical aspects are discussed. Second, semiotics and the related two schools of signs are presented, followed by colour semiotics and semantics, which are the

bases of semantic analysis of colours in a product context. Third, Kauppinen-Räsänen and Luomala's (2010) findings are further examined, before finally a figure is presented that strives to capture how colour conveys meanings. The study concludes with implications for the field of marketing and suggestions for future research.

Marketing issues approached using semiotics

Barthes (1964) introduced semiotics as a means to analyse advertising; it was later explicitly introduced to the field of marketing research by Mick (1986, 1997). Since then, marketing-related semiotic studies have contributed to some marketing research, but not a substantial amount. Most recent semiotic studies focus on branding, whether of a product (Canejo and Wooliscroft, 2015; Kessous and Roux, 2008; Kucuk, 2014; Lassus and Freire, 2014; Veg-Sala, 2014; Veg-Sala and Roux, 2014), a corporation (Christensen and Askegaard, 2001) or a place (Mueller and Shade, 2012). Marketing activities like advertising (Feire, 2014; Zhao and Wang, 2011), packaging design (Ares *et al.*, 2011; Kauppinen, 2004) and retailing (Lassus and Freire, 2014; Silhouette-Dercourt *et al.*, 2014) have also received semiotic attention. Notably, recent applications have also contributed to the field of tourism (Echtner, 2015; Haldrup, 2015). However, existing research focuses on specific constructs, from heritage and the past (e.g. Echtner, 2015) to contemporary luxury (e.g. Lassus and Freire, 2014), causing further fragmentation for the scholar who seeks a holistic understanding of semiotics and its relationship to marketing.

This fragmentation involves not only the topic but also the fact that the studies vary from interpreting verbal transcripts, comments and stories (Kessous and Roux, 2008; Lassus and Freire, 2014) to explaining visual images and representations (Ares *et al.*, 2011). In addition, it includes the fact that the study of signs itself has two main schools of thought: semiology and semiotics. While some studies use conceptual frameworks originating in

Saussurean semiology (Veg-Sala and Roux, 2014) or with Barthes (Freire, 2014) or Greimas (Veg-Sala and Roux, 2014), others apply Peircean semiotics (Christensen and Askegaard, 2001). This is an essential issue because, although the two schools engage in the study of signs, their fundamental outlook differs. However, this distinction is not explicit in all marketing-related semiotic studies. The present study, by contrast, is based on the premise that the approach of semiotics must be explicit, as is true of any research approach. Some basic insights are provided into the two schools of semiotics; they also serve as the bases for the conceptual framework for the interpretation and experience of colour.

Semiotics as a means to study meanings and signs

Semiology is rooted in the works of Ferdinand de Saussure (1857–1913), a Swiss linguist whose research defined language as a system of signs: “[f]rom the very outset we must put both feet on the ground of language and use language as the norm of all other manifestations of speech” (Saussure, 1915, p. 9). The core of semiology is to provide an understanding of such signs and their roles and establish how the meaning of signs is produced and how signs communicate significance (Saussure, 1915). Saussure (1915, p. 16) stressed that semiology “[w]ould show what constitutes signs [and] what laws govern them”.

Semiotics was introduced by Charles Peirce (1839–1914), an American philosopher who was trained in chemistry and philosophy. He based his general theory of signs on logical and philosophical grounds (Mick, 1986), maintaining that logic is not an invention of science, but the grounds for human thought, with thought being the action of signs. A basic assumption in semiotics is that everything communicates and/or sends a message as long as somebody receives it and creates a meaning from it. As a result, communication always involves meanings that are created and exchanged either intentionally or unintentionally (Duncan and Moriarty, 1998). During the communications process, signs are exchanged, and therefore, signs evoke

meanings because they are consciously and unconsciously interpreted as signs (Ares *et al.*, 2011, p. 690). Thus, any marketing activity— product, packaging, advertising or retailing— comprises a set of signs and can be considered a sign system that underlies meanings (Sebeok, 1997).

As Fiske (1990, p. 41) argues, signs have several meanings, but they all share three elements: the sign itself, the object it refers to and users. According to Peircean semiotics, the basic elements of meaning are the sign, the interpretant and the object (Nöth, 1990; Peirce, 1998a). These elements work in interaction, known as semiosis, and constitute a triadic entity (Figure 1). The challenging multi-view of signs and meanings stems from communication's being a process, with signs interacting in relation to other signs (Greimas, 1970). This view may have caused Nöth (1990) to suggest that referring to semiotics as a study of semiosis is more adequate. Peirce (1998b) discusses the continuous process of semiosis in which the interpretant of a sign creates the representamen of a second sign, so that there is an unlimited amount of semiosis. The sign for Peirce is a superordinate concept of a triangle, indicating that the triangle also characterises a sign (Peirce, 1998b). This triangular rather than linear status means that a message is not always interpreted by the recipient as intended by the sender (McQuail, 1975), which is the essence of gaining consumer insights into effective marketing activities like that of packaging.

Insert Figure 1 here

The focus is the sign itself; because everything communicates, a sign is anything that conveys a meaning. The elements in Figure 1 are closely related, and a sign can only be understood when all three elements are present. Peirce (1998b, p. 272) explains the triadic relations as follows:

A Sign, or representamen, is a First which stands in such genuine triadic relation to a Second, called its Object, as to be capable of determining a Third, called its Interpretant, to assume the same triadic relation to its Object in which it stands itself to the same Object. The triadic relation is genuine, that is, its three members are bound together by it in a way that does not consist in any complexus of dyadic relations.

Peirce (1998a, p. 225) stresses the core of the triadic relation by stating that “a sign is in a conjoint relation to the thing denoted and to the mind”. Figure 1 illustrates the idea that the observable sign represents the object; in other words, the sign stands for something other than itself. Peirce also emphasises the object or the external reality—something to which the sign refers. The object can be defined as something tangible and real, as in a product, or intangible and solely mental, possibly on the basis of imagination (Dingena, 1994; Nöth, 1990). The outcome of interpreting a sign is a meaning that is called the interpretant. However, it is noteworthy that Peirce did not intend for the interpretant to be a person interpreting the sign (Dingena, 1994; Fiske, 1990), although it is often referred to in just that way. Dingena (1994) clarifies that the interpretant is a mental concept, or what she calls the “receiver’s reaction” to the sign.

A specific feature of semiotics is that it views the process of communication as determined by the interrelationship between a message and its recipient. Since interpretation is determined by the interplay between the message and recipient, the sender, or the company representing the marketing activity, ceases to have any significance after the message is sent.

Colour semiotics: Meanings conveyed by colour as a sign

This study’s framework is based on Morris’ (1938, 1946) pioneering model of semiotics. Morris followed Peirce’s (1998a, b) conceptualisations; building on the semiotic triangle (Figure 1), Morris defined the three fields of semiotic research. He maintained that by focusing on dyadic relationships, the relationships referred to as syntactics, pragmatics and semantics

could be studied: sign-sign (syntactics), sign-interpretant (pragmatics) and sign-object (semantics).

Syntactics focuses on the formal relationship and organisation of signs to other signs. Pragmatics deals with the relationship between a sign and the interpretant, specifically “the origin, the uses and effects of sign” (Morris, 1938, p. 30). Semantics focuses on the sign-object relationship or the “signification of signs” (Morris, 1946, p. 366). Accordingly, syntactics research could pertain to colour systems, such as that from Munsell (munsell.com), or colour relationships in terms of harmony, which can be detected, for example, among neighbouring or opposite colours on the colour wheel (Danger, 1987). Caivano (1998) notes that colours can also be organised according to the logical rules of expression and content. Expression is the visual aspect of colours; colour wheels visualise colours organised by their visual relationships, such as primary and secondary colours. However, while content reflects the meaning a colour sign conveys, Caivano suggests that colours can be organised by their content or semantic level and thus that similar expressions tend to convey similar content. For example, yellow, orange and red convey warmth, while blue, turquoise and green represent coldness (Caivano, 1998). The two colour groups have comparable visual expressions and meanings due to their wavelengths. Research on colour pragmatics shows how colour works in relation to the interpretant. Caivano (1988) illustrates how colours function in a natural and cultural environment, how they are identified for survival and the physiological and psychological effects of colour on behaviour. For instance, blue food can suppress appetite, while warm colours like yellow and red attract attention and can thus physically entice consumers to enter a particular store or even influence their buying behaviour (Bellizzi and Hite, 1992).

To provide an understanding of *how* colours convey meaning in a marketing context, this study focuses on semantics and the sign-object relationship. It discusses three types of

signs (icon, index and symbol) in relation to the object and the two levels of meaning on which this relationship rests (denotative and connotative).

Colour meanings in relation to its object

Semantics focuses on the sign-object and is defined as “[t]he study of the relation of signs to the object to which the signs are applicable” (Morris, 1946, p. 217). Morris broadened his original definition of semantics from 1938 to deal “[w]ith the signification of signs in all modes of signifying” (1946, p. 219). According to Nöth (1990), this suggests that the definition includes the meaning created by the sign-object relationship; however, it also implies a broad view of the concept of sign. Morris (1938) claims that sign theory is the study of any sign and thus encompasses everything from human language to animal communication. Furthermore, the concept of semantics is open to more than one interpretation. On the one hand, semantics includes Saussurean semiology and linguistics with regard to the relationship between the signifiers (words, signs and phrases) and signified (mental concepts and meanings), which focuses on the study of language (Eco, 1977; Nöth, 1990). On the other hand, it refers to the study of semiotic sign systems (Nöth, 1990).

If this study followed Saussurean semiology, colour semantics would mean “[t]he means by which languages communicate the types of visual impression” (Biggam, 2012, p. 9). However, the study’s framework adopts Peircean semiotics, so colour semantics has a broader meaning. The basic premise of colour semantics is that colour is any sign, verbal or visual, that signifies something other than itself. Caivano (1998) stresses the concept of substitution by maintaining that the sign, in this case a visual colour, possesses the ability to substitute for different things. As a result, colour semantics constitutes a platform to understand and explain colour meanings and relations with the object or context as a form of not only linguistics but also of visual communication.

Colour meanings as icon, index and symbol

Semantics focuses on the second trichotomy (sign-object relationship), with three types of signs resulting from this relationship: icon, index and symbol (Morris, 1938; 1946). Nöth (1990, p. 44) states that Peirce's trichotomy is "[t]he most fundamental division of signs." In general, an iconic sign indicates similarity and resemblance. It refers to signs that "serve to convey ideas of the things they represent by imitating them" (Peirce, 1998b, p. 5) and stands "[f]or something merely because it resembles it" (Peirce, 1998b, p. 226). Furthermore, "[i]cons share characteristics in common with their designatum" (Hoolbrook, 1987, p. 84). Dingena (1994) states that icons are concrete, but Peirce (1998b) argues that because algebraic formulae and diagrams are iconic, iconicity means that the sign-object relationship is abstract as well. The resemblance in abstract relationships is not so much in visual appearance as it is in the "[r]elations of their parts that their likeness consists of" (Nöth, 1990, p. 122). Commonly acknowledged items that are iconic signs include photographs, drawings, statues, paintings and maps. Iconic signs can also be perceived by senses other than the eye, such as smell and sound with perfume or music (Fiske, 1990). In addition to non-verbal signs, an iconic sign may be expressed as a verbal sign in such onomatopoeic words as "cuckoo", "meow" and "sssh" (Dingena, 1994). Iconic colour signs are those directly denoting the colour of the object; for example, red or blue on a flavoured mineral water bottle could mean strawberry or blueberry respectively.

An index is a sign directly related to its object. Peirce (1998b, p. 461) defines indices as representing "their objects independently of any resemblance to them, only by virtue of real connections with them". According to Dingena (1994), an indexical sign indicates that the sign is related to the object, for example, through association. Research also suggests that an indexical relationship occurs when there is a belief that a real sign-object relationship exists. Fiske (1990) depicts the indexical relationship by denoting smoke as an index of fire and

sneezing as an index of having a cold. Indexical signs are commonly used in advertising and brand packaging. Images portraying happiness and good health imply that by using a product, consumers will stay or become happy and healthy. White on detergent packaging is a typical indexical sign that conveys the associative meaning of purity and cleanliness, while yellow on packaging containing vitamin C suggests the indexical meanings of energy through its resemblance with the sun, the main source of energy.

A symbol is perhaps the most obvious type of sign. Although the common use of the concept remains rather undefined, semiotics defines a symbol as a sign that has no logical relationship with its object. By contrast, the link is learned and artificial. Peirce (1998b, p. 461) defines symbols as representing “[t]heir objects, independently alike of any resemblance or any real connection, because dispositions or factitious habits of their interpreters insure their being so understood”. Fiske (1990) specifies that in a symbolic relationship, the sign-object relationship is based on convention, agreement or rule. The meaning of a symbolic sign is based on a “tacit agreement” between the sender and receiver. Words as verbal signs are one of the most obvious types of symbolic signs because they are generally understood through mutual agreement or are culturally learnt (Fiske, 1990). Although colours are commonly referred to as symbols, they only become symbols when a link between the sign and its object is established; in some countries, for example, mourning is conveyed by black and in some other countries by white. Obvious marketing-related colour symbols are expressed through brand logos, trademarks and flags (Dingena, 1994).

Two levels of colour meaning

The sign-object relationship results in different types of signs and levels of meaning. Thus, a sign can convey different meanings depending on the relationship with its object and can be distinguished by the level of meaning it conveys. The idea that a sign conveys meaning on

multiple levels originates from Hjelmslev (1970; see also Fiske, 1990; Nöth, 1990). The semantic of the dichotomy of connotation and denotation was further developed by semioticians such as Barthes (1964), who uses the conceptualisation of Saussurean semiology (Fiske, 1990; Nöth, 1990) (Figure 2).

Insert Figure 2 here

A sign can consist of an expression (signifier) in relation to the content (signified). This relationship constitutes a primary sign and can become an expression of a secondary sign. Figure 2 shows that the secondary sign contains the primary sign but it is extended with the content, which expresses an underlying or secondary meaning. As a result, the primary sign operates on a denotative level and the secondary sign on a connotative one. This idea is further developed in Figure 3, which illustrates a comprehensive view of the multiple levels of meaning.

Insert Figure 3 here

As the figure illustrates, denotation is the first order of signification. It refers to the real and concrete meaning of a sign. Fiske (1990) defines it as the obvious and common-sense level. Dingena (1994) states that the denotative level is the literal meaning of a sign, which is directly recognised and identified. Barthes (1964, p. 17) refers to a denoted message as the “analogon itself” and argues that the issue of “objectivity” can be related to the concept.

The second aspect of signification requires consideration. Barthes (1964) stresses that connotation refers to a meaning not found in dictionaries. According to Fiske (1990), connotation involves a human aspect in the creation of meaning. Fiske states that meaning on

this level is subjective, and that the interpretation of a sign is equally influenced by the person interpreting it as by the sign and the object. Connotation refers to the underlying and abstract meaning of denotation. Thus, a connotative meaning is the outcome of the relationship between the object (product) and sign (colour), including human aspects, like emotions and feelings, and the culture. However, connotation is one of the two main ways a sign works on the second level. As Figure 3 depicts, myth is the second aspect, highlighting Barthes' (1964) interest in stories. Barthes (1983a, p. 99) states: "But myth is a peculiar system, in that it is constructed from a semiological chain which existed before it: it is a second-order semiological system". Note that because denotation and connotation are generally expressed as the two main levels of signification, it can be argued that myth is the outcome of interpreting signs that convey connotative meanings. A notion here is also that the chain by Barthes (1983a) resembles the idea of semiosis by Peirce (1998b)

Barthes (1984) explains the difference between the two levels of meanings through photographs, which Fiske (1990) exemplifies as follows: the object is an urban street which is photographed in different ways. The photograph may have been taken, for example, during office hours. It may have also used colour film with a soft tone and include children playing in the street on a sunny day. Alternatively, it may have been taken with black-and-white film to portray the environment as inhuman and cold. The denotative meanings of these photographs are the same—they denote the actual street. However, these photographs differ dramatically in connotative meaning, which is based on the interpreter's emotions, feelings and past experiences, and some sort of convention is required to convey different meanings. In conclusion, it can be argued that denotation is what is photographed, while connotation is how it is photographed (Barthes, 1984).

Multifunctional colour signs

The sign type is not exhaustive because of the diversity of signs in the field of semiotics; signs represent a continuous scale on which the type of sign is defined by its degree of convention and its motivation and constraints (Dingena, 1994). For example, traffic signs are often a mixture of symbolic, iconic and indexical representations of the object (Fiske, 1990). In general, they represent symbols because their meaning is based on convention, agreement or rule. However, they are also often iconic because they represent an image that directly resembles an object, such as a church or crossroad. In addition, they may function simultaneously as indexes because the church or crossroad sign indicates that such a building or intersection is nearby. This diversity may hold true for colours as well. For example, the red stop sign is generally perceived as symbolic, but according to indexical signification origins, red is also linked to danger and fear because of its association with blood and fire (Danger, 1987). Thus, the distinction between the types of colours is not always evident, but requires interpretative insights because the meaning is, above all, related to its object and context. This applies particularly to the distinction between indexical, iconic and symbolic colour signs. Fiske (Figure 4) illustrates this challenge as the degree of convention and motivation or constraints (i.e. signs), which Eco (1977, 1988) refers to as artificial and natural signs.

Insert Figure 4 here

Convention is a precondition of understanding signs and implies some degree of learning (Eco, 1977). For example, a sign such as a map is understood only if the user has learned to “read” it. The more arbitrary or artificial a sign is, the more convention is required. Iconic signs are natural signs derived from natural sources because “nature is a universe of signs” (Eco, 1988, p. 16). Thus, these signs require less convention, and understanding depends instead on the degree of motivation or constraints to understanding it.

A semantic analysis of colours in a product context

In order to exemplify how colour is read and interpreted and how colour conveys meaning, the communicative meanings found by Kauppinen-Räsänen and Luomala (2010) are analysed. By focusing on two product groups (painkillers and medicine for a sore throat) and four visual colours (yellow, blue, green and red) expressed on experimental packaging, they found that colour conveyed taste, ingredients, pain, cure, effectiveness, trustworthiness and quality (Table 1).

Insert Table 1 here

These seven meanings about the packaged product are analysed by applying a semiotic approach; the analysis is based on the idea of semantics, the sign-object relationship, as suggested by Morris (1938, 1946). Here, the sign refers to colour and the object is the packaged product. The interpretant is the meaning created by the subject imaging himself or herself as a consumer of self-care in a pharmacy.

Colours conveying taste and ingredients as iconic signs

According to the definition of icons, colours can be considered iconic signs when they have some resemblance to their object. As discussed, resemblance is gained by imitating the object or when the sign and object share certain characteristics (Morris, 1938; 1946; Peirce, 1998b). Thus, a colour used on packaging functions as an iconic sign when it reflects the product itself or its ingredients and components.

The study suggests that the meanings of *taste* (honey and lemon, lime, peppermint rock, menthol, mint, fruits) and *ingredients* (herbs) detected by Kauppinen-Räsänen and Luomala

(2010) stand in an iconic relation with their objects, where meaning is directly conveyed through similarity and imitation. For example, yellow was expressed as the taste of lime, honey and lemon, and green represented mint. The iconic relation through similarity and imitation is evidently explained by the fact that the tastes of lime, lemon and honey originate from objects that are yellow or yellowish; similarly, mint as an herb is green. In terms of meaning related to ingredients, the study's subjects stated that the colour green conveys meanings about ingredients (herbs). The result of the iconic sign-object relationship is demonstrated in Figure 5.

Insert Figure 5 here

The figure illustrates that specific colours communicate products; the colours communicate as direct signs of the taste of the core products and their ingredients.

Colours conveying pain and cure as indexical signs

In general, an index is a sign that is directly related to its object (e.g. Morris, 1938; 1946; Peirce, 1998b). In fact, the relation does not have to be absolutely direct, but logical. This means that the relation may also be based on an association or casual connection (Morris, 1946), which in fact is the focus of many past colour association studies in marketing (e.g. Grimes and Doole 1998; Jacobs *et al.*, 1991; Ko, 2011; Koch and Koch, 2003; Madden *et al.*, 2000; Pantin-Sohier, 2009).

While the colour of red on skin is an iconic sign of heat, it may also be an indexical sign of embarrassment, fever and fire. Similarly, blue on skin may convey coldness, whereas black may convey gangrene. In nature, the colour brown may be an indexical sign of dryness, a black sky may be an index of impending storms and black smoke is an index of fire (Fiske,

1990). In a similar vein, yellow may be exemplified on packages as an indexical sign. Since the sun is a source of energy, a sign-object relationship exists between yellow and energy; which appears to be utilised on many soft drinks.

As per the discussion above, the meanings of *pain* and *cure* (by Kauppinen-Räsänen and Luomala, 2010) indicate that the sign and object have an indexical relation, where the colour conveys the meaning about the product through association. Kauppinen-Räsänen and Luomala (2010) found that red was associated with pain for painkillers and blue with a cure for sore throat. Given its iconic relation with heat and fire, it can be postulated that red is an index of *experiencing* pain. Strikingly, the authors found that this association was made in both a negative and a positive sense, which may provide means for segmentation and brand positioning. The interpretation of blue as a colour for cure can be explained by its iconic relation with objects such as water and the sky, which may in specific geographical contexts be perceived as not only cold but also fresh and calming. Thus, blue can be considered an indexical sign that represents a cure or a *fresh and calming impact* on the body.

The outcome of the indexical sign-object relationship is demonstrated in Figure 6.

Insert Figure 6 here

The figure suggests that in an indexical relation, colours indirectly communicate the illness that the products are intended to cure; thus, colours communicate both cure and pain because each is a sign that is closely related to its object.

Colours conveying quality, trustworthiness and effectiveness as symbolic signs

As noted above, colours are most often referred to as symbolic signs or symbols (e.g. Woods, 1981). The symbolic reference to colours is exemplified by their linkage to moods. For

example, a person is blue-eyed (meaning the person is naive) and becomes green with envy. A novice is also stated to be green, while a person is said to become white with horror and red with anger (Lewis, 1994). In fact, the last example is based on an indexical sign-object relationship, because one consequence of anger is increased blood pressure and blood is red. In addition, the face of the person may redden, so an iconic relation may be detected. Further, black is said to symbolise mourning in some cultures, whereas white conveys the same meaning in other cultures. Similarly, green is not only linked to environmental issues in a positive sense but is also the colour of poison.

As with the previous types of signs, the meaning a colour conveys depends on the object to which the sign relates; however, the impact of the sign-object relationship increases when it concerns symbolic signs as it affects the interpretation of the relation. Thus, the same sign-object relationship may result in different meanings, depending on contexts like product or culture.

Based on the previous discussion, a colour is a symbol when the link between the sign and object is arbitrary. This means that the symbolism of colours is understood only through a silent agreement, which may explain why this symbolism is not universal and why meanings may vary across products and when crossing borders and cultures.

This study claims that the meaning of *quality*, *trustworthiness* and *effectiveness* is symbolic; for example, some colours were perceived as more trustworthy and effective than others. These interpretations indicate an arbitrary relationship between the colour and product. The sign-object relationship is said to be arbitrary either because the association is not direct or because the link between the sign and object is too remote. Thus, blue was perceived to be effective for a sore throat (blue – cure – effectiveness), yet the link is too remote for an indexical relation, so a symbolic relationship from blue to effectiveness, with cure having dropped out, is assumed.

The outcome of this symbolic sign-object relationship is depicted in Figure 7.

Insert Figure 7 here

An important notion concerning the symbolic meaning of colours is that as the outcome of the sign-object relationship is dependent on the context, the same relation may be interpreted differently depending on variations like product class or culture.

Conclusions and guidelines for future research

This study aimed to reveal insights into colour meaning by exploring how colour as a visual cue is read and interpreted, and how meaning is conveyed. To achieve that, the study proposed semiotics as a conceptual framework to understand colour communication in context.

Semiotic theory focuses on meanings evoked by all types of signs and explains the underlying mechanism to how colour communicates. Marketing activities are systems or constructs of signs that evolve into meanings as interpreted by consumers. Thus, consumer interpretation or response to a marketing activity like product, brand or brand packaging is an important stage in understanding the process of communication. An insightful understanding of this process requires acknowledging the mechanism underlying the communication—that is, how meanings are conveyed. This study addresses this mechanism by identifying colour semantics and colour as a symbolic, iconic and indexical sign. Figure 8 captures how colour conveys meanings.

Insert Figure 8 here

The first level indicates a direct relationship between sign and object. The sign-object relationship is interpreted as a denotative meaning based predominantly on the obvious and common-sense understanding, which some observers would call “reality”. As for the three types of signs defined by Peirce (1998a), it can be argued that iconic and indexical colour signs convey denotative meanings at the first level. Here as well, iconic signs resemble their objects, whereas indexical ones have a direct or indirect connection with their objects. These definitions imply that consumers understand the sign-object relationship in a fairly similar manner, although the specific meanings of indexical signs are culturally influenced.

The second level indicates that the sign-object relationship is largely indirect and the outcome of the relationship has a connotative meaning. The framework suggests that icons, indexes and symbols convey meaning at the second level. In general, iconic colour signs directly resemble their objects, as on the first level; however, they also convey meanings at the second level because iconicity also means abstract resemblance (Nöth, 1990) such as a table of contents on a brand package or an abstract colour drawing of the object on food packaging. Indexical colour signs also have a direct relationship with the object. However, an index is related to its object through association. This implies that meanings are conveyed at the second level as well. The assumption that indexical signs convey meaning at the second level is further confirmed because signs are also indexical in the case of a sign-object relationship. The third sign on this level is a symbolic one. As noted, there is no direct connection between a symbolic colour sign and the object; rather, the relationship is based on convention, agreement or rule. Consequently, symbolic signs are the most evident signs on the second level.

Figure 8 shows that the sign of colour works on two levels that convey different meanings: denotative and connotative, e.g. a rose conveys the meaning of a flower, but the same rose can send a message of passion. Second, it illustrates that the meaning is the outcome of the sign-object relationship, such as that of the colour and product. To be more explicit, in

marketing the message sent to the consumer relates to the product itself, but also to the used colour. Thereby, the colour of the product—the rose—may convey the meaning of a plant, passion or death, for example. Third, it postulates that the outcome of this relationship depends on various elements such as the product and cultural context of the sign and object. Fourth, the figure suggests that the outcome of the sign-object relationship associated with the context results in different types of signs.

This conceptual study attempts not only to enrich current scholarly knowledge of colour in marketing but also caters to managerial interests, given that the strategic use of sensory cues, in particular those involving vision, is one way of identifying discerning consumers. The study enables marketers to understand how consumers interpret representations of single visual cues expressed in context, thus facilitating the use of visual signs such as colour for product decisions. This study suggests that companies should adopt a human approach in marketing activities and investigate meanings like those conveyed by colour in context. Colour is integrated into our daily lives; its effects are widely acknowledged in fields such as the arts, architecture, chemistry, physics, physiology and psychology (Itten, 1970). Despite this, it has been a rather neglected area within marketing. The growing interest in sense-driven behaviour also pertains to colour and discovering the potentials of single visual signs in facilitating holistic experiences. A human approach will likely provide the means to impact the intended audiences' emotions and feelings, establish a stronger brand connection and contribute to long-term and sustainable relationships and actions.

The framework of the study, however, needs evidence; similarly, colour communication in marketing should be further developed. This study's suggestions for future research include investigations into cultural meanings conveyed by global brand colours and comparative studies across various product dimensions, like product group and type, and cultures. Another challenge is the use of pre-defined meanings or colour names in past studies,

while in reality visual cues convey meanings in context and as a response to sensation and perception. Hence, a true understanding of colour communication requires acknowledging whether it is the colour of the core product or representing the product on its packaging that is being studied. Bottomley (2006) found that red is a functional colour that fits products filling utilitarian needs and blue is a sensory-social colour that meets those needs. Grounded in the typology of product benefits (Lai, 1995), an interpretation of the colour-product meanings in Table 1 reveals that colour has the potential to convey sensory (taste), functional (relief or calmness), hedonic (medicinal cures) and even situational (strong medicine that cures immediately) meanings. Indeed, these findings offer additional insights into the potential of colour and provide worthwhile avenues for future research. Finally, as colour meaning is the outcome of the interlink between the object and sign, including human aspects, the influence of aspects such as emotions in colour communication merits further scholarly attention.

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