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Product packaging and consumers' emotional response. Does spatial representation influence product evaluation and choice?

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**Product packaging and consumers' emotional response.  
Does spatial representation influence product evaluation  
and choice?**

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**Product packaging and consumers' involvementemotional response. Does spatial representation influence emotional reactionsproduct evaluation and choice?**

### Abstract

**Purpose** - The purpose of this paper is to investigate the influence of different spatial representations (foreground and background) of a product image on the package on the consumer (a) ~~involvement with the product (measured in terms of~~ emotional state) and (b) intention to buy ~~the product~~, drawing upon the Construal Level Theory (CLT).

**Design/methodology/approach** – Two between-subjects experimental designs were conducted. A face reading software was used to measure the emotional reactions of participants while watching the stimuli.

**Findings** - Empirical results showed that the foreground representation of the product, triggered by a lower perceived psychological distance between the subject and the product, generates more positive emotional responses compared to the background representation. However, the purchase intention did not significantly differ between the foreground and the background condition.

**Research limitations/implications** - The study enriches the literature on CLT and provides some guidance to manufacturers and product managers for the understanding of the role of packaging in influencing consumer behaviour.

**Originality/value** – The paper contributes to the research on the presence of the product imagery on the package. The focus is shifted from the presence/absence of the picture to its position (proximal or distal). This aspect has been neglected in previous studies. Moreover, it is the first application of face reading to support CLT basic assumption and enrich extant marketing research on packaging.

### Keywords

Packaging, Construal Level Theory, spatial distance, emotions, face reader

### Article Classification

Research paper

### Introduction

Packaging is one of the most important factors in the buying decision process. It communicates to consumers at the point of sale, thus becoming an essential part of the selling strategy (e.g. Prendergast and Pitt, 1996; Rettie and Brewer, 2000; Silayoi and Speece, 2004). In today's increasingly competitive market-place, package becomes a primary vehicle for communication and branding, particularly in the case of new brand introductions, brand repositioning or extensions, product changes, and in product categories in which the use of pictures on packages would provide a strategic method of differentiation (Garber et al., 2000). In light of this evidence, an understanding of the impact of package design elements is crucial to enhance point of purchase communication.

A central stream within recent research concerns the visual impact of packaging in purchase decisions. Such research found that package form and appearance could have a powerful effect on consumers' responses to a product. In particular, some studies have measured the effect of incorporating product imagery (on the packaging) on consumers' attention, choice and brand

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3 beliefs, suggesting that pictures may provide potential advantages for packaging strategy (e.g.  
4 Underwood et al., 2001; Underwood and Klein, 2002). Hence, these studies have tried to answer the  
5 following question: if product image influences buying behaviour, will its removal from the  
6 package discourage consumers from purchasing that product? To the author's knowledge, no study  
7 exists that has explored the effect of different spatial positions (proximal or distal) of a product  
8 picture on the package in broadening the product's appeal and influencing the consumer's purchase  
9 decision.

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11 The purpose of this paper is to contribute to the understanding of the role of the package as a  
12 communication vehicle, starting from the research on the presence of the product imagery on the  
13 packaging. The focus is its position (foreground and background) in the spatial context of the  
14 illustration on the package, using recent theoretical advances related to the Construal Level Theory  
15 (CLT). CLT posits that individuals construe mental representations of stimuli in their environments  
16 in different ways: in terms of abstract and generalized features (high-level construals) or in terms of  
17 concrete and contextualized features (low-level construals) (Trope & Liberman, 2000; 2003). The  
18 level of construal depends on the psychological distance from the stimuli (objects or events), which  
19 systematically changes people's responses to those stimuli. For example, in construing the more  
20 psychological distant events, people would be more likely to use stereotypes rather than  
21 individuating information, generalized scripts rather than more concrete, non-schematic details, trait  
22 concept rather than situation-specific goals, and causal in construing the more explanations rather  
23 than unconnected occurrences (Liberman et al., 2002). The concept of psychological distance is  
24 considered as a broad, multifaceted concept, which includes different dimensions: temporal (near  
25 future vs distant future), social (self vs other; in-group vs out-group), spatial (here vs there; near vs  
26 distant), and certainty-related (certain vs uncertain) distance.

27  
28 Recently, literature has suggested that the construal level approach provides an integrative  
29 framework for explaining and predicting consumer behaviour. Researchers have used the CLT to  
30 understand different important aspects of consumers' decision-making, including the formation of  
31 consideration sets, methods for evaluating brands, and purchase decisions (Dhar & Kim, 2007;  
32 Kardes et al., 2006; Trope et al., 2007). We add to this line of inquiry by focusing on the spatial  
33 dimension of the psychological distance and examining the influence of different spatial  
34 representations (foreground and background) of a product on the package on the consumer (a)  
35 involvement emotional state with the product and (b) intention to buy it.

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37 Two experimental studies were conducted to respond to a call for more research on the role of  
38 construal level in consumer behaviour contexts (Liberman et al., 2007; Lynch & Zauberger, 2007).  
39 Findings are in line with the key conceptual premise of CLT and should provide managers with a  
40 greater understanding of the package's ability to communicate and the nature of its effects on  
41 consumers' product evaluation and choice.

42  
43 The paper is organized as follows. The next section reviews the relevant literature and proposes the  
44 research hypotheses. Then Study 1 and Study 2 are presented, describing the research methodology  
45 and depicting results. General discussion, limitations and recommendations for further  
46 developments end the work.

## 47 48 49 50 51 52 53 **Literature review**

### 54 55 56 **The role of packaging in the buying decision process**

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3 In marketing literature, packaging is considered a vehicle for consumer communication and  
4 branding, which takes a role similar to other marketing communications elements (Rettie and  
5 Brewer, 2000).

6 According to some authors, packaging forms part of the product and the brand (Evans and Berman,  
7 1992). In this perspective, it is an intrinsic property or characteristic of the product. On the contrary,  
8 other authors considered packaging as an extrinsic element, like price. It is related to the product  
9 and takes a role in the buying and consuming process but that does not form part of the physical  
10 product itself (Olson and Jacoby, 1972; Underwood, 2003; Underwood et al., 2001). For Keller  
11 (1998) it is one of the five elements of the brand together with the name, the logo and/or graphic  
12 symbol, the personality and the slogans.

13 From the consumers' perspective, the package often represents the product itself. Its overall features  
14 can underline the uniqueness and originality of the product and influence the quality judgments  
15 (Silayoi and Speece, 2007). Several factors justify the crucial role of package in the purchasing  
16 process. First, package is the first thing that individuals see before making the final decision to buy  
17 (Vidales Giovannetti, 1995). This is particularly relevant for products purchased without prior  
18 planning in an impulse buying event. In this case, the differential perception and the positioning of  
19 the graphics elements on a package may make the difference between identifying and missing the  
20 item (Herrington and Capella, 1995). Second, many consumers today shop under higher levels of  
21 perceived time pressure and tend to purchase fewer products than intended (Herrington and Capella,  
22 1995). Therefore, a package that attracts consumers at the point of sale will help them make  
23 decisions quickly (Silayoi and Speece, 2004; 2007). Third, consumers' purchasing intention  
24 depends on the degree to which they expect that the product can satisfy their expectations about its  
25 use (Kupiec and Revell, 2001). Nevertheless, when they have not even thought about the product  
26 before entering the store, their intention to buy is determined by what is communicated at the point  
27 of purchase. As a result, the package becomes a critical factor in the decision-making process  
28 because it communicates to consumers favourable or unfavourable implied meaning about the  
29 product at the time they are actually deciding in the store (Silayoi and Speece, 2007). Finally, in the  
30 current self-service economy, packaging provides manufacturers with the last opportunity to  
31 persuade possible buyers before brand selection (McDaniel and Baker, 1977). Therefore, decisions  
32 on the communication elements in the package became strategic marketing and positioning  
33 decisions.

34 Among the elements that compose the packaging, visual imagery is an essential attribute. It refers to  
35 the picture of the product, which has the capability to communicate aspects of how a product looks,  
36 tastes, feels, smells, or sounds. Pictures are more vivid stimuli than words, are more noticeable and  
37 easier to recall and, thus, may serve to attract consumers' attention and set expectations for the  
38 contents (Underwood et al., 2001). Prior research focusing on visual imagery of packaging suggests  
39 that the picture may be an information cue that consumer can use to compare and differentiate  
40 among products and brands. Underwood and Klein (2002) demonstrated that packages displaying  
41 the pictures of food products could communicate information about the brand, and thus change  
42 brand beliefs. In another empirical study, Underwood et al. (2001) found that adding product  
43 picture to a package positively affect attention to the brand and brand choice. Contextually, such  
44 influence is moderated by the degree of familiarity the consumer has with the brand.

45 The basis for picture effectiveness may be its vividness and ability to evoke imagery processing of  
46 product consumption. A well-represented product image is likely to create more enjoyable aesthetic  
47 experiences for the consumer and evoke memorable and positive association with the product  
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(Underwood et al., 2001; Underwood and Klein, 2002). This has significant implications in terms of marketing. For two years, Campbell Soup Co. researchers conducted a series of interviews and neuromarketing studies to see how consumers react to the elements of package design of its condensed soups (from pictures of bowls of soup to logo design) with the aim of figuring out how to increase sales. Results showed that the soup pictured on the can and shelf labels did not look warm. And the big spoon holding a sample of soup on each label provoked little emotional response. In light of these results, the company changed some of the iconic pictures of its condensed soups on packages: steam rose from larger, more vibrant pictures of soup in more modern, white bowls, and those unemotional spoons disappeared.

The present research intends to contribute to the knowledge on this vein of research by shifting the focus from the presence/absence of a realistic picture of the product to its position (foreground and background) on the package. The theoretical framework is the Construal Level Theory, with a focus on the spatial dimension of the psychological distance.

### **Theoretical Framework: Construal Level Theory**

Construal level theory (CLT) is a leading theory that posits that individuals construct different mental representations of stimuli in their environments, which vary in terms of the degree of abstraction (Freitas, Salovey, & Liberman, 2001; Liberman and Trope 1998; Trope & Liberman, 2000; 2003; Vallacher & Wegner, 1987). The level of abstraction depends on the psychological distance, which changes people's perceptions of an object or an event by altering the way people mentally construe it.

The conceptual framework of psychological distance was first introduced by Lewin (1951) and subsequently reviewed within CLT (Trope and Liberman, 2003). It is defined as the subjective distance between an actor and an event in the actor's psychological space and is considered the primary determinant of construal level. CLT assumes that individuals tend to use concrete mental models when thinking about near psychological objects (i.e., low-level construals) and more abstract mental models when thinking about distant psychological objects or events (i.e., high-level construals). In other words, people mentally construe objects that are psychologically near in terms of low-level, detailed and contextualized features, whereas distant psychological events are construed in terms of high-level, abstract, and stable characteristics (Trope, Liberman & Wakslak, 2007).

A considerable body of research demonstrates that differences in construal level lead to differences in the ways that individuals make judgments and choices (e.g. Fujita et al., 2006; Kardes et al., 2006; Trope and Liberman, 2000). Changes in construal levels may lead people to shift their evaluations of a stimulus when information changes such that people's evaluations of an event or an object are more influenced by the value associated with high-level (low-level) construals when the event or the object is psychologically distant (near).

Trope and Liberman (2003) theorized that there are four major distance dimensions that are highly relevant to the psychology of consumer decision-making and can be unified under the psychological space: temporal, social, spatial, and certainty-related (hypotheticality) distance. There is accumulating evidence that the basic principle of CLT applies to all these dimensions of psychological distance: the greater the temporal, social, spatial or hypothetical distance from an event, the more distant it appears and the more abstractly we would expect it to be represented.

The basic premise of CLT originated from a particular focus on temporal distance (see Liberman & Trope, 1998) and numerous studies examined the hypothesis that distant future events are



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3 represented in a more abstract, structured, high-level manner than near future events. Trope and  
4 Liberman (2000) tested a change in the weights of abstract versus concrete features of events,  
5 according to temporal distance, by varying the valence of the two types of construals. They found  
6 that individuals rated the events as more positive at a near versus distant future time and concluded  
7 that high-level construal features, compared with low-level construal features, are more important in  
8 determining distant future preferences than near future preferences. Similarly, Nussbaum et al.  
9 (2003) reported that when participants were allowed to seek new information before making a  
10 prediction about a target person, they tended to prefer information about more global traits (high-  
11 level construals) when the goal was to predict the target person's behaviour in distant rather than  
12 near future situations.

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15 Level of construal may also be related to social perspective, such as self *vs* other, in-group *vs* out-  
16 group, and familiar other *vs* unfamiliar other. Many studies have documented the actor-observer  
17 bias – the tendency to explain others' behaviours in dispositional (high-level, abstract) terms and  
18 one's own behaviour in situational (low-level, concrete) terms (e.g. Fiedler et al., 1995; Jones,  
19 1976; Jones and Nisbett, 1972). Similarly, it has been shown that when social distance to another  
20 person increases from an in-group member (close social distance) to an out-group member (far  
21 social distance), people will describe the target person using abstract, primary concepts such as  
22 stereotypes and traits (Fiedler et al., 1995; Idson and Mischel 2001; Linville et al., 1996; Werkman  
23 et al., 1999). Compared to in-groups, out-groups are perceived as more homogenous (Jones et al.,  
24 1981; Park and Judd, 1990; Park and Rothbart, 1982), less differentiated into subgroups (Brewer  
25 and Lui, 1984; Linville, 1982; Park et al., 1992), and as possessing more structured, predictable sets  
26 of properties (Linville et al., 1996). In synthesis, the less similar someone is to oneself or in-group  
27 members, the more socially distant they typically seem; therefore, the behaviour performed by a  
28 dissimilar other would be represented at a higher level of construal than behaviour performed by a  
29 similar other (Trope et al., 2007).

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32 Literature is also consistent with the notion that more abstract construals are applied to an  
33 improbable event as compared to a probable event. An improbable event would seem more distant  
34 than a probable event, and the lower the probability of the event, the greater its psychological  
35 distance (Trope et al., 2007). Liberman et al. (2002) used a categorization task in which participants  
36 grouped objects related to each of the four scenarios into as many groups as they deemed  
37 appropriate. Participants were asked to imagine that they were either highly likely or highly  
38 unlikely to engage in the scenario. Results showed that participants in the high-likelihood condition  
39 created fewer, broader groups out of the objects than participants in the low-likelihood condition.  
40 Similarly, manipulating construal level in different ways and examining a variety of probability  
41 judgments, Wakslak and Trope (2009) found that participants led to adopt a high-level-construal  
42 mind-set made lower probability assessments than did those led to adopt a low-level-construal  
43 mind-set.

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46 Finally, a series of studies examined the relationship between spatial distance and mental construal.  
47 It has been shown that spatially distant events occurring in a different country are associated more  
48 with high-level construals than events occurring in the local city (Fujita et al., 2006). In another  
49 experiment, a sample of students at NYU's Washington Square campus watched a video of two  
50 students interacting and provided a written description of the activity in the video (Fujita et al.,  
51 2006). Findings showed that participants who were told that the video protagonists were located in a  
52 spatially distant location used more abstract language in describing the events in the film than those  
53 who believed the video protagonists were located in a spatially near location.

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### ***Influence of spatial distance on ~~product involvement~~ emotional state and intention to buy***

Amit (2006) has recently suggested that because psychologically near events or objects tend to be represented concretely and psychologically distant events or objects tend to be represented abstractly, psychological distance should impede the processing of concrete event/object representations. In particular, since a picture is a concrete representation that carries the properties of the referent object in full detail, processing of pictures should be facilitated when they are psychologically near. In an experiment on spatial distance, Amit presented a pair of items in pictorial format inside background pictures that created an illusion of depth. The items were presented either in proximal or distal position in the background picture. As expected, participants responded faster to pictures of objects when they were spatially near than spatially distant.

The present work relies on the CLT basic assumptions and Amit's (2006) findings on the effect of different construal levels in a background picture. Focusing on spatial dimension of the psychological distance, it proposes that different spatial distances in the representation of a product may influence the consumer ~~involvement~~ ~~emotional state with this product~~ and, consequently, ~~the his/her purchase~~ ~~intention to buy it~~. Specifically, it is hypothesized that the proximal (foreground) position of the product imagery on the packaging may reduce the psychological distance between the consumer and the product, compared to distal (background) position. If consumers mentally represent products that are psychologically near in terms of low-level, detailed and contextualized features, this could translate in a higher and positive ~~involvement~~ ~~emotional response~~ and a greater intention to purchase compared to psychologically distant products, which are represented in terms of high-level, abstract, and stable characteristics. ~~In this study, involvement was measured in terms of~~ ~~The~~ emotional state, ~~which~~ is considered as "a short-term affective state that usually has a definite cause and clear cognitive content" (Forgas, 1992). Other authors have hypothesized that emotional intensity about events might make those events seem psychologically closer in multiple dimensions, including time, space, and sociality. Starting from the evidence that increased emotional intensity is naturally associated with reduced objective distance (Frijda, 1988, 1992; Loewenstein, 1996; Metcalfe and Mischel, 1999), Van Boven et al. (2010) proposed that, in everyday experience, people may feel more intense emotions when events are psychologically closer in temporal, spatial, and social distance. In six experiments, they highlighted the role of emotional intensity in reducing perceived psychological distance. Sharing this point of view, the following hypotheses are formulated:

H1: The proximal (foreground) position of the product imagery on the package stimulates more positive emotions than the distal (background) position.

H2: The proximal (foreground) position of the product imagery on the package positively influences purchase intention compared to the distal (background) position.

### **Methodology**

The emotional ~~involvement~~ ~~state~~ of individuals watching the picture of the product on the package in the two spatially distance conditions (foreground and background) was measured through the affective computing technology. The FaceReader 5 software by Noldus was used to track and



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3 measure the presence and intensity of emotional reactions of participants as captured in their facial  
4 expressions while watching the stimuli, namely the product package images. Such facial-  
5 recognition device captures images of human face through the use of a webcam and can identify the  
6 six basic emotions described by Ekman (1970): happiness, sadness, anger, surprise, scare, disgust  
7 and a neutral state. Moreover, the software provides measures of overall emotional valence, which  
8 indicates whether the person's emotional status is positive or negative. The face modelling method  
9 uses a database of over 10.000 annotated images and calculates the main sources of variation found  
10 in the model dimensionality. New faces can then be described as deviations from the mean face,  
11 using a vector. The actual classification of the facial expressions is done by training an artificial  
12 neural network, which takes the above vector as input. FaceReader can recognize facial expression  
13 with an accuracy of 90%. The output of FaceReader is a vector of values for the seven emotions and  
14 an overall valence of emotional state. The possible values of each emotion range from 0 to 1, and  
15 valence ranges from -1 to +1. The valence measure compares the conformity of the facial  
16 expression to "happy", the only positive emotion, with that to the four negative emotions (sad,  
17 angry, scared, disgusted).

21 Two between-subjects experimental designs were conducted. The research design and the data  
22 collection procedure are the same for the two studies. They differ with regard to the sample  
23 composition and the materials used as stimuli. Specifically, well-known brands were used in Study  
24 1 and fictional brands in Study 2. In the first case, the subjects were familiar with the brands, while  
25 in the second case individuals were not ~~been~~-exposed to them before. Investigating these two  
26 conditions reduced the potential bias due to the familiarity with actual brands.

29 The information on behavioural intentions was collected through a self-administered questionnaire.  
30 Questions measuring purchase intention were adaptations of the 3-item scale proposed by Putrevu  
31 (2008). Responses ranged from 1 (= unlikely) to 7 (= likely). Participants were asked to indicate the  
32 level of probability towards three statements: "The next time I buy *product category*, I will consider  
33 *product's name*", "The next time I consider purchasing *product category*, I will enquire about  
34 *product's name*", "The next time I buy *product category*, I will buy *product's name*". The scale  
35 exhibited high reliability ( $\alpha = .92$ ).

## 38 39 Study 1

### 40 41 Experimental Stimuli

42 Two well-known brand name food products were chosen as stimuli for the study: biscuits for  
43 breakfast by Balocco and [flatbreadfocaccia snack](#) by Mulino Bianco.

45 In the original packaging design, the picture of the two products is in the foreground. Therefore,  
46 both package images were manipulated to "move" the product in the background. Specifically, in  
47 the background condition, the foreground imagery of the product was substituted with the image of  
48 some of its ingredients (milk and chocolate for biscuits and flour for [flatbreadfocaccia snack](#)).  
49 In synthesis, four images were used as experimental stimuli (Fig. 1): the package featuring the biscuits  
50 in the foreground (prox\_bisc); the package featuring the biscuits in the background (dist\_bisc); the  
51 package featuring the [flatbreadfocaccia snack](#) in the foreground (~~prox\_bread~~prox\_focaccia); the  
52 package featuring the [flatbreadfocaccia snack](#) in the background (~~dist\_bread~~dist\_focaccia).

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## Sample and Procedure

The study was conducted at University of Parma, Italy. Forty students (males = 12; females = 28; mean age = 24), habitual buyers of the products selected as stimuli, were recruited for participation. They were equally and randomly distributed among the four conditions (“prox\_bisc”, “dist\_bisc”, “prox\_breadprox focaccia”, and “dist\_breaddist focaccia”).

Subjects were welcomed in a laboratory room and received the instructions for conducting the study. They were seated in front of a computer equipped with a webcam and were shown a video in which experimental stimuli appeared interspersed with various pictures (landscapes, foods, animals). A total of 17 images were projected for three seconds each and the experimental stimuli appeared in the video for three times, in 12 seconds distance from each other. Moreover, to maintain a high level of attention, a red dot was presented at the centre of the screen for two times during the video projection. At the sight of the red dot, the participants were required to say “red”. Each of the four videos (one for each experimental condition) lasted about 60 seconds. While viewing the video, subjects were videotaped and the videotapes were later analysed with the Noldus FaceReader.

Subjects completed the task using pen and paper. After viewing the video, they received a printed image of the product they had observed in the video and the self-administered questionnaire aimed at assessing their purchase intention, in addition to general demographics (age and gender). Two versions of the questionnaire were prepared for each types of product (biscuits and flatbreadfocaccia snack).

## Results

The non-parametric Mann-Whitney U-test was used to compare means and test the hypotheses. This was necessary as the sample size is small, which precluded the use of parametric techniques.

Findings from facial expressions showed a range of viewers’ reactions while watching the stimuli. The level of global emotional ~~involvement-response~~ was quite high for three of the four experimental groups (“prox\_bisc”, “dist\_bisc”, “prox\_breadprox focaccia”). People in the “dist\_breaddist focaccia” condition exhibited the lowest level of ~~involvement-reaction~~ (Tab. 1).

In each experimental condition, a predominant emotion emerged. Excluding the neutral state, subjects who were shown the original flatbreadfocaccia snack package registered the higher level of happiness (0.181), followed by those who were shown the original biscuits package (0.140). When the biscuits were positioned in the background (“dist\_bisc” condition) sadness prevailed over the other emotions (0.246). As just said, the package featuring the flatbreadfocaccia snack in the background (“dist\_breaddist focaccia” condition) raised a weak response for all the six basic emotions, although a slight prevalence of happiness emerged (0.092).

Combining the results for the two types of package (original and modified), the comparison of the “happy” average level highlighted how seeing the product imagery in the proximal position stimulated more positive emotions than the distal position (0.161 vs 0.075). Mann-Whitney comparison between the two samples revealed a significant difference on this variable ( $Z = -2.242$ ,  $p < .05$ ), thus supporting H1. This result is in line with the CLT basic assumption that differences in psychological (spatial) distance of a stimulus lead to differences in the ways that individuals evaluate it. Specifically, the proximal (foreground) position of the product imagery on the packaging may reduce its psychological distance and stimulate more positive ~~involvementemotions~~.

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3 compared to distal (background) position. Analysis of the overall emotional valence supported such  
4 results showing higher and positive values for the original package conditions and lower or negative  
5 values for the modified package conditions.

6 The measure of behavioural intentions highlighted a higher level of purchase intention for the  
7 original package experimental groups compared to modified package experimental groups (8.7 vs  
8 7.9; Tab. 2). However, this difference was not statistically significant ( $Z = -.277$ ;  $p > .05$ ).  
9 Therefore, H2 was not supported by empirical data.  
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## 18 Study 2

### 19 20 Experimental Stimuli

21 The products chosen as stimuli are crackers and a lemon cake. A fictional brand and two versions of  
22 the package design were created for each types of product. In the first version, the picture of the  
23 product (crackers or cake) was in the foreground. In the second version, the product was depicted in  
24 the background and some of its ingredients (flour for crackers and lemons, eggs and milk for the  
25 cake) in the foreground. In synthesis, four images were used as experimental stimuli (Fig. 2): the  
26 package featuring the crackers in the foreground (prox\_crack); the package featuring the crackers in  
27 the background (dist\_crack); the package featuring the lemon cake in the foreground (prox\_cake);  
28 the package featuring the lemon cake in the background (dist\_cake).  
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### 36 Sample and Procedure

37 Sixty students (males = 28; females = 32; mean age = 26) from University of Parma, Italy, were  
38 recruited for participation, after checking that they usually purchased the products selected as  
39 stimuli. They were equally and randomly distributed among the four conditions (“prox\_crackers”,  
40 “dist\_crackers”, “prox\_cake”, and “dist\_cake”).

41 Similarly to Study 1, four video lasting 64 seconds were created in which experimental stimuli  
42 appeared interspersed with various pictures (landscapes, foods, animals). Each stimulus appeared in  
43 the video for three times, in 15 seconds distance from each other. To maintain a high level of  
44 attention, participants were required to say “red” at the sight of a red dot. While viewing the video,  
45 subjects were videotaped and the videotapes were later analysed with the facial-recognition  
46 software. Subsequently, they received a printed image of the product they had observed in the video  
47 and filled in the self-administered questionnaire. Two versions of the questionnaire were prepared  
48 for each types of product (crackers and cake). In addition to general demographics (age and gender)  
49 and purchase intention, the three seven-point semantic differential scale of Schoormans and Robben  
50 (1997) was used to assess participants’ evaluation of the package as a whole (“ugly-beautiful”,  
51 “badly finished-very well finished”, and “does not confer quality-confers quality”). Higher scores  
52 on the summated scale indicated more positive evaluation of the package. The scale exhibited good  
53 reliability ( $\alpha = .71$ ).  
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## Results

The non-parametric Mann-Whitney U-test was used to compare means.

Excluding the neutral state, happiness prevailed over the other emotions when the products were positioned in the foreground (“prox\_crack”: 0.233; “prox\_cake”: 0.224; Tab. 2). Mann-Whitney U-tests revealed significant differences ( $p < .05$ ) on this variable comparing with the background conditions (“dist\_crack” and “dist\_cake”). Subjects who were shown the package featuring the lemon cake in the background registered the higher level of sadness (0.078). Finally, people in the “dist\_crack” condition raised a weak response for all the six basic emotions, exhibiting the lowest level of involvementreaction. Analysis of the overall emotional valence supported such results showing positive values for the foreground conditions and negative values for the modified package conditions.

Combining the data for the two types of package (foreground condition and background condition), the comparison of the “happy” average level highlighted how seeing the product imagery in the proximal position stimulated significantly more positive emotions than the distal position (0.228 vs 0.030;  $Z = -2.882$ ,  $p < .05$ ). Conversely, anger significantly prevailed when the products were positioned in the background (0.010 vs 0.004;  $Z = -2.242$ ,  $p < .05$ ).

These results support the hypothesis that the proximal position of the product imagery on the packaging may reduce its psychological distance and stimulate more positive involvementemotions, compared to the distal position.

The analysis of the questionnaire did not support H2. Although subjects watching the product images in the foreground showed a higher level of purchase intention compared to the others (Tab. 4), this difference was not statistically significant ( $Z = -1.090$ ;  $p > .05$ ). However, the packaging attractiveness counterbalances this effect as packages featuring the products in proximal position received a significantly better evaluation compared to packages featuring the products in distal position ( $Z = -2.972$ ;  $p < .05$ ).

Insert Table III here

Insert Table IV here

## Discussion

In a context of growing competitive market conditions, the package has become a key element for conveying image, symbolism and/or brand meaning, thus effectively differentiating the product from competitors (Underwood and Ozanne, 1998). As a consequence, opportunities for packaging to attract, communicate and influence consumers’ choices are growing thing relative to more traditional marketing communication vehicles (e.g. mass media advertising). According to Harckham (1989), the package is the “shopper’s window” to a product because it often projects the initial impression he forms about the product, its quality or its value. Therefore, literature has focused on the communication elements in the package and, among these, on the presence of the product imagery as a vehicle to influence consumers’ evaluation in terms of perception of intrinsic characteristics of the product and purchase decisions.

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3 The purpose of the present research was to examine the effect of different spatial representations  
4 (foreground and background) of a product on the package on the consumer's (a) ~~involvement with~~  
5 ~~the product~~ emotional state and (b) intention to buy it, drawing upon recent theoretical advances  
6 related to the Construal Level Theory (CLT). In two affective computing experiments, ~~involvement~~  
7 ~~was measured in terms of~~ the emotional state was measured through the use of a facial-recognition  
8 software.  
9

10 The results show that the foreground representation of the product on the packaging, triggered by a  
11 lower perceived spatial distance between the subject and the product, generates on average more  
12 positive emotional responses compared to the background representation. Moreover, packages  
13 featuring the products in proximal position received better evaluation compared to packages  
14 featuring the products in distal position. These evidences support the literature on CLT, which  
15 suggests that differences in psychological (spatial) distance of a stimulus lead to differences in the  
16 ways that individuals evaluate it. The positive emotional responses and the greater appreciation for  
17 the packaging is likely to result in a more favourable image and perception of the product itself.  
18

19 However, the analysis of behavioural intentions does not support the second research hypothesis  
20 (the proximal position of the product imagery on the package increases purchase intention  
21 compared to the distal position). In both studies, the higher level of purchase intention for subjects  
22 watching the package featuring the product in the foreground was not statistically significant.  
23 Therefore, if the perception of spatial distance alters the emotional responses in favour of the  
24 product in foreground, cognitive responses showed that the "distance" variable does not  
25 consistently affect the buying process. It is conceivable that the spatial distance affects the  
26 emotional ~~involvement-reaction~~ but it is the combination of different elements of packaging  
27 (colours, words, and images) which can have a stronger impact on the consumer's choice than an  
28 image change alone. However, the present research shows that the attention to specific variables,  
29 such as the position of the product imagery on the package, combined with other elements of  
30 packaging capable of influencing the consumer's response to the product, can improve the  
31 effectiveness of packaging as a communication vehicle.  
32

33 The study has useful implications for both academics and professionals. From a theoretical point of  
34 view, it enriches the CLT literature by investigating how spatial distance affects consumers'  
35 ~~involvement with~~ emotional response to the products and supporting the use of such approach as a  
36 framework for explaining and predicting some important aspects of the consumers' evaluation  
37 process. Contextually, it contributes to the understanding of the role of packaging in influencing  
38 consumers' responses to a product. To the author's knowledge, this is also the first application of  
39 face reading to support CLT's basic assumption and enrich extant marketing research on packaging.  
40 From a professional standpoint, the research provides some guidance for manufacturers and product  
41 or category managers. To achieve the communication goals effectively and to optimize the potential  
42 of packaging, managers must understand consumers' response to their packages, and take into  
43 account their perceptual processes during design decisions (Nancarrow et al., 1998). Based on  
44 present results, the proximal position of the product in the spatial context of the illustration on the  
45 package stimulates more positive emotions than the distal position. Such emotional response state  
46 ~~translates into more positive involvement, which~~ may reduce the psychological distance between  
47 the consumer and the product. This information should be particularly beneficial in strategic  
48 decision-making aimed at communicating effectively a product's core essence and creating a  
49 differential advantage at the point of purchase. Managers should design and test packages that  
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3 feature the product picture in the foreground. Such design decisions may help to gain attention for  
4 the product and create positive beliefs about its intrinsic attributes.

5 Second, the study has implications for companies managing unfamiliar brands that compete with  
6 leading brands and need to develop positioning strategies that increase their products and brand's  
7 familiarity to consumers. They may leverage the product representation on the package by  
8 emphasizing some superior secondary attributes of their products and reducing consumers'  
9 perceived psychological distance to them.

10 The results also have potential managerial importance for e-commerce, in which spatial distance is  
11 becoming an increasingly prevalent aspect of consumer decisions (Trope et al., 2007). With the  
12 growth of online shopping, the buying process frequently occurs with sellers in remote spatial  
13 locations and the images projected on the screen become the substitute of the packaging. In this  
14 context, the image's design and the ways of representing the products play a crucial role in reducing  
15 the perceived psychological distance.

16 Guidance from this study could apply to all media that allow visual representation of the product:  
17 print and television advertising; digital media; in-store signage. If the perceived distance affects the  
18 interpretation we have of an object or event, then the following questions arise that should be  
19 addressed:

- 20 • Are ads that tend to minimize the product representation (e.g. for luxury goods) in favour of  
21 other attributes really effective? For such types of products, has the perception of distance an  
22 influence or in the luxury sector is just the brand to influence the emotional **involvement**  
23 **reaction** of individuals?
- 24 • Does the perception of spatial distance change depending on the fact that the consumer is  
25 physically in front of the product or not? Does the screen of the device (PC, smartphone)  
26 increase the perceived distance between the consumer and the product?
- 27 • In advertising videos where the product is represented by different perspectives, could frames  
28 showing it in the background be eliminated, thus achieving cost savings without losing  
29 communication effectiveness?
- 30 • Can social marketing take advantage from the results of the present research? May social  
31 marketing communication campaigns decrease the individuals' perception of distance with  
32 regard to a far catastrophic event or an incorrect behaviour, thus increasing the emotional  
33 **involvement-response** and the effectiveness of the message?

### 34 35 36 37 38 39 40 41 42 43 **Limitations and future research**

44  
45 Some limitations of this work merit future inquiry. First, the sample composition focused on a  
46 student target may have partially influenced the findings of the study, limiting its generalizability.  
47 Further studies are recommended in order to extend the investigation to a larger sample that is  
48 representative of the general population. Second, because the position of the product imagery on the  
49 package does not influence purchase intention, it would be appropriate to include in the analysis  
50 variables that may mediate the causal relationships. Third, only intentions were measured, not  
51 actual behaviours. A new empirical research should be undertaken to investigate if the differences  
52 in the product representation on the package translate into different purchasing decisions.  
53 Contextually, further research in this field should verify whether the product imagery position is  
54 capable of affecting other aspects of the consumer's response to the product (e.g. attention,  
55 evaluation, taste expectation). Fourth, it would be interesting to replicate the study focusing on  
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private labels in order to assess if the consumers' emotional reaction differ compared to industrial brand products. Finally, investigating the hypothesized relationships through an in store experiment would enrich the results of the study. The attention prompt in the experiments could elevate cognitive elaboration or product involvement, which may in turn affect the purchase intention measured. If in the store individuals are less thoughtful and show a lower level of involvement towards the product, then the packaging would have more impact on behaviour.

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Figure 1. Experimental Stimuli. Study 1

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Table I. Intensity of emotions for each experimental condition. Study 1

Experimental stimuli	Neutral	Happy	Sad	Angry	Surprised	Scared	Disgusted	Total	Valence
Original biscuits package	0.776	<b>0.140</b>	0.112	0.003	0.023	0.001	0.001	0.281	0.034
Modified biscuits package	0.764	0.057	<b>0.246</b>	0.002	0.013	0.005	0.002	0.326	-0.179
Original focaccia snack package	0.635	<b>0.181</b>	0.124	0.019	0.007	0.001	0.048	0.380	0.125
Modified focaccia snack package	0.785	<b>0.092</b>	0.049	0.006	0.031	0.001	0.014	0.193	0.064
Original package	0.706	<b>0.161</b>	0.118	0.011	0.015	0.001	0.025	0.330	0.080
Modified package	0.775	0.075	<b>0.147</b>	0.004	0.022	0.003	0.008	0.260	-0.057

*Table II. Descriptive Statistics for Purchase Intention. Study 1*

	Purchase intention (min = 3; max = 21)	
	mean	SD
Original biscuits package	9.8	6.4
Modified biscuits package	8.7	5.3
Original focaccia snack package	7.6	5.3
Modified focaccia snack package	7.1	6.1
Original package	8.7	5.9
Modified package	7.9	5.6



Figure 2. Experimental Stimuli. Study 2

Foreground condition



Background condition



Figure 2. Experimental Stimuli. Study 2

127x120mm (150 x 150 DPI)

arketing

Table III. Intensity of emotions for each experimental condition. Study 2

Experimental stimuli	Neutral	Happy	Sad	Angry	Surprised	Scared	Disgusted	Total	Valence
Prox_crack	0.746	<b>0.233</b>	0.052	0.002	0.002	0.001	0.002	0.292	0.180
Dist_crack	0.892	<b>0.047</b>	<b>0.045</b>	0.014	0.006	0.000	0.001	0.113	-0.006
Prox_cake	0.647	<b>0.224</b>	0.061	0.006	0.003	0.000	0.001	0.295	0.161
Dist_cake	0.855	0.013	<b>0.078</b>	0.005	0.006	0.003	0.001	0.106	-0.068
Foreground condition	0.697	<b>0.228</b>	0.056	0.004	0.003	0.001	0.001	0.293	0.171
Background condition	0.874	0.030	<b>0.061</b>	0.010	0.006	0.002	0.001	0.110	-0.037

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*Table IV. Descriptive Statistics for Purchase Intention and Package evaluation. Study 2*

	Purchase intention		Package evaluation	
	mean	SD	mean	SD
Prox_crack	10.0	4.2	13.5	3.7
Dist_crack	9.5	3.6	11.0	2.3
Prox_cake	10.4	5.2	14.5	3.6
Dist_cake	8.8	5.2	12.6	3.6
Foreground condition	10.2	4.6	14.0	3.6
Background condition	9.2	4.3	11.8	2.2

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