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**Using food pictorial metaphor in the advertising of non-food brands: An exploratory
investigation of consumer interpretation and affective response**

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Using food pictorial metaphor in the advertising of non-food brands: An exploratory investigation of consumer interpretation and affective response

Abstract

Using visual metaphors in ads is one of the communication techniques that brands have adopted to grab consumers' attention. The phenomenon of using food pictorial metaphors in non-food brand ads has spread in recent years, and given food's sensory nature, using this cue for a non-food brand can affect the way in which consumers interpret such ads. This research seeks to understand whether and how consumers perceive and process such a rhetorical figure. An exploratory qualitative approach is taken in two studies by using semi-structured interviews to explore consumers' reactions to different types of ads with food visual metaphors. The results reveal the predominance of congruency as a key processing mechanism of the ad at three levels: (a) between the food pictorial metaphor and the brand product category, (b) between the food visual metaphor and the brand itself, and (c) between the visual metaphor and the headline. Moreover, the food appetizing dimension, ad creativity, aesthetic appreciation of the ad, and consumers' aesthetic sensitivity are all revealed to play major roles in attitudes toward the ad.

Keywords: metaphors – advertising – food – exploratory qualitative study

1. Introduction

In the world today, brands are facing a challenge not only to build awareness but also to generate consumer preference and an emotional connection in a global and digital environment. Brands take into account the increasingly cluttered and hectic context in which consumers are exposed to ads. Consumer attention becomes a precious asset for brands to ensure better receptivity to their claims. For this reason, creative advertisers use different communication techniques combining text and pictures to design impactful ads. The use of visual metaphors in ads enables brands to convey their messages in a more attractive manner without directly mentioning the real selling proposition: enhancing consumer responses (McQuarrie and Mick 1996).

Given its sensory nature, food is a powerful and appealing cue to mobilize in advertising (Krishna et al. 2014). Consequently, when used as the visual metaphor source, a food picture is more likely to produce a specific inference. While it can be obvious to see food as a visual metaphor within the context of food brands' advertisements, it is more surprising when it is used for non-food brands. This phenomenon is visible in many print and online ads around the world: from the global British Airways advertising campaign in 2011 (candy can), Jaguar's Canadian campaign in 2014 (pretzels and blueberries), and the BNP Paribas bank campaign in 2015 (hamburger made of Chinese porcelain) to The Guardian's online ad in 2017 (ice cream), see Appendix 1. In such ads, food seems to be used as a visual metaphor to attract consumers, although this association between food picture and non-food brand can look peculiar and difficult to understand, given the dissimilarity and distance between two disconnected domains.

Prior research has shown that better recall occurs when ads provide pictures and verbal claims that show discrepant information (Unnava and Burnkrant 1991). Many studies have examined

advertisements' visual and verbal elements, and concluded that incongruity has a positive effect on individuals' elaboration of the ad (Houston et al. 1987; Heckler and Childers 1992; McQuarrie and Mick 1992; Phillips 2000). However, Lee and Mason (1999) show that incongruity between visual and verbal elements in advertising leads to a positive attitude only when the association is both relevant and unexpected, and that ads with unexpected and irrelevant information yield less favorable attitudes. Furthermore, Mohanty and Ratneshwar (2015) demonstrate that a visual metaphor using high incongruity generates poorer comprehension. Therefore, how do consumers understand advertising with food visual metaphor for non-food brands, facing the high incongruity generated by 1) the use of a food representation for a non-food brand, and 2) the complexity of the visual metaphor itself?

In addition, the use of food cues in advertising is a multisensory experience that is likely to alter consumers' perceptions and judgments (Krishna et al. 2014; Zhang et al. 2014; Elder et al. 2010). Specifically, hedonic food - in the form of appetizing and indulgent products-, is connected to positive emotions (Macht et al, 2002) and thus may interfere with consumers' processing of the ad and generate a positive affective consumer response. By contrast, non-hedonic food, associated with the pursuit of health and more utilitarian values (Werthenbroch 1998), may generate different reactions. It seems worth exploring how consumers understand and process the case of ads for non-food brands, with visual metaphor using hedonic vs non-hedonic food as the metaphor source.

Finally, with respect to ads making use of visual metaphors, Bergkvist et al. (2012) show that a headline clearly spelling out the message produces more effective communication, in contrast to Phillips (2000), who indicates that a headline hinting at a visual metaphor (without clearly expressing it) increases ad liking. These contrasted results call for further research and, in the context of ads using food as a metaphor source, exploring how consumers react to

ads with a headline clearly expressing the message or providing just a clue to the visual metaphor.

To the best of our knowledge, no previous research has examined how consumers understand and process advertising using food image as a metaphor source for non-food brands. Therefore, the objective of this research is to explore consumers' interpretation of food pictorial metaphors in non-food brand advertising and specifically to understand (1) whether and how congruency considerations play a role in this interpretation process, (2) how the hedonic or non-hedonic dimension of the food interfere in this process, and (3) the possible outcomes on consumers' affective responses to the ad.

2. Theoretical background

2.1. Metaphor in Brand Advertising and Consumer Affective Response

From an anthropological perspective, metaphors are widely diffused and consumers use them (both consciously and unconsciously) on a regular basis in their everyday lives. A metaphor is defined as “understanding and experiencing one kind of thing in terms of another” and is also “primarily a matter of thought and action and only derivatively a matter of language” (Lakoff and Johnson 1980, p. 5). This postulation refers to the cognitive linguistic perspective, which focuses on conceptual metaphors that are supposed to arise out of widely general cognitive processes reflected in figures other than language, such as gestures or pictures (Langacker 1987). As metaphors are related to thought, they are not only conveyed by language but also perceived at more abstract and different sensorial levels: sight (pictures), sound (music), etc.

In general, metaphors involve the juxtaposition of **two concepts or ideas from different domains, like in this Shakespeare's quote: “All the world's a stage, and all the men and women are merely players”**. **Metaphors both emphasize common properties and invite new inferences or interpretations from the object conferring attributes (the vehicle, i.e. the *stage* in**

this quote) to the subject to which attributes are ascribed (the topic, i.e. the *world* in this quote). As far as metaphors' processing is concerned, there are two types of models, those which use analogy to explain metaphors and those models that are based on attribute transference. For example in the famous quote "life is a journey", it's an analogy model since the relationships among the aspects of a journey (starting, end, moving toward a destination, etc.) are in analogy with the aspects of the dynamic experience of life. So the metaphor in this case focuses on mapping the relational structure of the vehicle (journey) to the topic (life). By contrast, the quote "the chocolate market has always been a roller coaster" refers to attribute transference model of metaphor, because it's about transferring properties of the roller coaster like "risky" or "experiencing ups and downs", to the **chocolate market dynamics**. According to Gentner and Markman's (1997) structure-mapping model, the initial stage of metaphor processing is symmetrical since it involves the alignment of elements of two representations on the basis of local identities and common roles within the larger knowledge structures. Once a common system has been identified, the information related to the roles of each system's element is used to project directional inferences. However, Glucksberg and Keysar (1990) do not align with Gentner's sequential approach and initially role-neutral alignment process. They consider metaphor processing to be based on category inclusion and to be directional from the beginning. Thus, the vehicle and topic in the metaphor are processed in role-sensitive ways from the very beginning of comprehension. This perspective refers to attributive category theory. In sum, two main aspects seem to guide these two prominent approaches of metaphor processing: relational comparison vs. object properties transfer.

Metaphors have been used in advertisements for decades to promote products and strengthen the case for believing the brand's promise (McQuarrie and Mick 1996). In such examples, ad effectiveness depends heavily on the degree to which consumers perceive the metaphor as

intelligible, smart, and successful. Research has shown that using metaphors in advertising can be useful: They elicit more cognitive elaboration (Kardes 1988), lead to favorable attitudes (McQuarrie and Mick 1999), and add novelty, thus increasing the motivation to read and process the ad (Goodstein 1993). Metaphors in ads can be verbal and/or non-verbal. According to Forceville (1998, p. 1), a “metaphor can occur in pictures, more specifically in printed advertisements and billboards,” and pictorial metaphors are usually more effective at grabbing attention than verbal ones. Consequently, the impact of an advertisement will depend on not only texts or slogans but also static or moving pictures. In terms of objectives, non-verbal stimuli are generally mobilized to convey the message, strengthen some ad arguments, and illustrate the verbal message.

A visual metaphor is an important rhetorical tool among the wide range of multimodal communications (Forceville, 2008). McQuarrie and Philipps (2005) examined the phenomenon of indirect persuasion in advertising and the extent to which it affects consumers’ processing in relation to direct claims. As a figure of indirect persuasion, the visual metaphor has been shown to make consumers more receptive to multiple, distinct and positive inferences about the advertised brand (McQuarrie and Philipps, 2005). In addition, their study found that when the indirect metaphorical claim was in the form of a picture, consumers were more likely to spontaneously generate such positive inferences during exposure. Similarly, the findings of the qualitative study by Philipps (1997) support the position that consumers understand the use of rhetorical figures such as metaphors as an invitation from the advertiser to elaborate on how the incongruity can be resolved. Furthermore, Phillipps and McQuarrie (2004) focus on visual (rather than verbal) rhetoric that distinguishes the pictorial metaphor advertising strategies and links them to consumer response. The authors ended up identifying a typology with nine types of visual metaphors based on their degree of complexity (i.e., visual structure or physical arrangement of image

elements) – juxtaposition, fusion, and replacement – and richness (meaning operation or instructions for suggested inference) – connection, similarity, and opposition. Then, they indicated the effects of complexity and richness on consumer responses like cognitive elaboration and ad liking. Ang and Lim (2006) later confirmed that pictorial metaphors elicit a more favorable attitude toward the ad and purchase intention than metaphorical headlines do. They revealed that when the picture is metaphorical, there is no difference in attitude and purchase intention between a metaphorical headline and a non-metaphorical headline. More recently, Šorm and Steen (2013) explored individuals' mental operations when exposed to visual metaphors. They provide an integrative model for visual metaphor processing and identify three main stages: incongruity perception, incongruity resolution, and contextual processing. However, no research thus far has specifically investigated pictorial metaphors using food and how consumers process advertisements using this visual rhetoric. Our research addresses this theoretical gap.

2.2. Food Pictorial Metaphor Processing: What is at Stake?

As mentioned above, a metaphor is “a special type of comparison whereby one domain is understood in terms of another” (Peterson 2018). Thus, a food pictorial metaphor refers to using food-related representations to convey a message. As for many metaphors, the reference to food in the ad can be in the form of a food picture or some other visual element arranged or designed to represent it. In the context of food pictorial metaphors used by non-food brands in their advertising, consumers may experience an incongruity resolution stage (Šorm and Steen 2013) as a result of the complex mapping, as they have to solve the incongruity (or deviation) generated by the pictorial metaphor in addition to the incongruity of relating a food representation to a non-food brand. Furthermore, Werthmann et al. (2013) mentioned the attentional bias to characterize the role of stimuli like food-related pictures in capturing and/or

holding attention. In the same vein, other authors examined food-related thoughts which capture attention and lead to craving and to thought intrusion or diversion (Kavanagh, Andrade and May 2005; May et al. 2010).

With regard to the use of food in advertising, Moore and Konrath (2014) have examined the impact of individual differences in affect intensity between people's responses to food advertisements. Their findings emphasize the two moderators of the relationship between affect intensity and consumption-related consequences: vividness of advertisement and participants' dieting status. For example, their results show that high-affect intensity consumers reported stronger food cravings only in response to vivid advertising appeals, which underscores the emotional state at stake. More recently, Tseng (2017) examined food metaphors displayed in a design event and emphasized the specificity of food-based metaphors and their ability to evoke a sensory experience. Finally, many studies consider the use of food cues in advertising to be a multisensory experience that is likely to alter consumers' perceptions and judgments (Krishna et al. 2014; Elder et al. 2010).

Consumers' reactions may also be different according to the type of food, hedonic or non-hedonic, presented in the advertising. Past research has outlined that food consumption choices tend to favor hedonic food in the form of tasty, indulgent, appetizing, and calorie-dense products at the expense of more healthy, utilitarian, and non-hedonic counterparts (Ragunathan, Naylor and Hoyer 2006). Hedonic food is connected to positive emotions (Macht et al, 2002) and may interfere with consumers' elaboration of the ad to generate a positive affective consumer response. By contrast, non-hedonic food, associated with the pursuit of health and more utilitarian values (Wertenbroch 1998), may generate different reactions.

Therefore, an ad using a pictorial metaphor with food – hedonic food, in particular – may trigger emotions and consequently alter consumers' cognitive processes, which are likely to

follow a different path. This research addresses this gap by examining consumers' interpretation process regarding such ads.

Thus, in the specific context of food pictorial metaphors, we can reflect on how the consumer interpretation process is affected when the visual metaphor is embodied by food. Babbes and Morgan (1997) argue that cognitive structure is based on embodied mental representations that are required to analyze a metaphor. For food pictorial metaphors, we suppose that contextual processing – that is, additional information that may serve as a guide to the perception and conceptualization of a visual metaphor – corresponds to consumers' personal mental multidimensional representations. The cognitive structure could be impacted by different embodied mental representations. Indeed, the same food could be embodied in very different ways depending on consumers' mental representations, affective states, and (hedonic or non-hedonic) food representation. In other words, the “meaning operation” in which consumers engage to decode the “visual structure” (Phillips and McQuarrie 2004) could be different for food pictorial metaphors than for other visual metaphors. This leads to the issue of “incongruity perception” and “incongruity resolution” stages (Šorm and Steen 2013) in this specific context.

*2.3. The Issue of Congruency in Advertising and **its** Relevance in the Context of Food Visual Metaphors for Non-food Brands*

In advertising, the issue of congruency is critical to ensuring context and message consistency with the brand. Social cognition theory defines congruency as the level of structural correspondence between two entities based on existing schemas (Mandler 1982). These schemas refer to representations of previous experiences that guide action, perception, and thought to allow individuals to make sense of the world (Dahlén and Lange 2004; Mandler 1982). From a cognitive psychology standpoint, congruency is considered a bi-dimensional

holistic concept based on expectation and relevance, two dimensions used in ad processing (Heckler and Childers, 1992). Expectation is conceptualized as the degree to which a piece of information falls into an existing schema or structure evoked by the topic. Relevance is defined as the extent to which the information contained in the stimulus contributes to or detracts from clearly recognizing the theme or primary message being communicated.

For ads of non-food brands with food visual metaphor, consumers have to solve the incongruity of relating a food representation to a non-food brand, in addition to solve the incongruity generated by the visual metaphor itself. In the case of visual metaphor, Šorm and Steen (2013) indicate that visual metaphor processing goes through incongruity identification, processing, and resolution. Incongruity processing and related internal conflicts (Houston et al., 1987) affect information processing, memorization, and attitude. In fact, the lack of congruity leads to more intensive cognitive processing (Heckler and Childers 1992; Meyers-Levy and Tybout 1989). However, Mohanty and Ratneshwar (2015) examined the extent to which visual metaphor incongruity affects message comprehension. They found that a visual metaphor using high (rather than low) incongruity generates poorer subjective comprehension. In the case of adverts with visual metaphors using food as source domain for non-food brands, the perceived incongruity should be high for consumers, so that it seems interesting to explore how they really process to make sense to these ads.

In addition, the added food representation in these adverts appears as an irrelevant item but could generate an affective reaction, as the use of food cues in advertising is a multisensorial experience likely to alter consumers' perceptions and judgments (Krishna et al. 2014; Elder et al. 2010). Previously, Fiske (1982), showed that an item congruent with an existing schema in the consumer's mind will get the same affective value as the schema, but when the item is irrelevant, there is no transfer of affective value. Therefore, to which extent is the affective

reaction generated by the food representation able to overcome the irrelevance of using food cues for a non-food brand?

Furthermore, in the case of visual metaphors, Phillips (2000) emphasizes that a verbal headline providing a clue to a visual metaphor (without clearly expressing it) increases ad liking. By contrast, Bergkvist et al. (2012) show that a headline clearly spelling out the message in addition to the visual metaphor leads to more positive communication effects. This calls for more research on ads associating visual metaphors and verbal elements with each other. In this regard, it also seems relevant to explore the case of ads with food visual metaphor and a headline clearly expressing the message or providing just a clue to the visual metaphor.

3. Pre-Study

3.1. Methodology

To better understand whether and how consumers process food visual metaphors in non-food brands' ads, an exploratory qualitative approach was taken in two steps: First, a pre-study focusing on two ads was conducted to explore how consumers perceive and understand food visual metaphors (with hedonic or non-hedonic food), in non-food brand advertising. Second, the main study aimed at deepening the findings and broadening the scope of the pre-study was conducted and will be presented later.

For this pre-study, given the exploratory nature of the examined issue, a qualitative methodology was adopted, and in France we carried out 40 semi-structured interviews with a convenience sample (17 males, 23 females, aged 18–60 years, various occupations).

Prior literature has often used qualitative approach in exploring the process of interpreting and processing visual metaphors (Phillips 1997; Proctor et al. 2005; McQuarrie & Mick 1999 ; Phillips 2003 ; Šorm and Steen 2013). Because the objective was to examine food pictorial

metaphor processing in non-food brand ads, it was relevant to select real advertisements from well-known brands for this study. Furthermore, using real ads made it possible to (1) build on richer and more creative food pictorial metaphors, (2) facilitate participants' interpretation of the ads, and (3) increase the findings' applicability. Prior qualitative research has also used real print adverts to examine consumers' interpretation of pictorial metaphors in advertising (Phillips 2003).

A search for all international print ads of non-food brands using food pictorial metaphors over the past 10 years was carried out online and in magazines, resulting in 100 potential ad candidates from various markets (make-up, fashion, services, automobile, airline companies...). In terms of visual structure, all the ads in our corpus displayed 1) one dominant image element of real food or representing food (for example, fabrics placed in such a way that they call to mind a certain kind of food), 2) the logo of the company/brand (and often the picture of the product being advertised), and 3) verbal elements (headline, sometimes subhead and/or text in body copy).

Two ads were then selected from our corpus, according to the following criteria: 1) two different well-known non-food brands from similar industries and 2) a food pictorial metaphor central to each of the ads but with a variation in its hedonic nature (hedonic food picture associated with sensory stimulation, enjoyment and better taste (Werthenbroch 1998) vs. non-hedonic food picture associated with the pursuit of health and more utilitarian values). The authors chose a) an SNCF (French national railway company) 2015 print advert (food visual metaphor: ice cream, a hedonic food) and b) an Orange (telecommunication operator) 2014 print advert (food visual metaphor: cereal, a non-hedonic food). The SNCF ad uses the picture of an ice-cream cone as the source domain to represent the idea of summer and holiday and uses a verbal message to invite readers to buy their train tickets in advance (see Appendix 2 for a detailed analysis of conceptual metaphor elements). The Orange ad

(Appendix 2) uses the picture of a cereal box and bowl as the source domain to suggest the idea of the Orange Livebox offering full energy and super power for the whole day.

The four co-authors, who are experienced researchers in qualitative methodologies, conducted the 40 semi-structured interviews (average length: one hour). Informants were shown the two ads in turn, with a rotation to avoid order bias. The interview guide focused on consumers' overall perception of the ad, projective associations to the ad, understanding of the ad, perceived coherence between ad and brand, and attitude toward the ad. All interviews were recorded, transcribed, and analyzed using an iterative process (Spiggle 1994) to assess comprehension and appreciation of the visual metaphors by developing thematic categories and identifying potential links between reactions. Several themes emerged in the categories and were compared between co-authors to reach a final agreement.

3.2. Pre-study Findings

3.2.1. Congruency as Consumers' Main Perception Filter

The analysis of pre-study interviews reveals the predominance of perceived congruency when participants are processing the ad. This process appears to be anchored in a search for meaningful associations between the food pictorial metaphor and other ad elements, independently of the food's hedonic/non-hedonic aspect.

Logically and in line with prior advertising literature, the food picture (visual metaphor) is the first thing that attracts the participants, as in the SNCF railway ad: *The first thing I see is the ice cream. I feel like eating it! I love sugary things. It evokes kids, lollypops, sandcastles on the beach....* (L, woman, 38).

But consumers instantly seek meaning by looking for connections – relevance – with the textual message or the brand, as illustrated by these quotations:

For the SNCF, the image of an ice cream evokes summer; the headline is also about summer. So the two elements fit well together. It's well done. (D, man, 34).

The ice cream automatically calls sea and sun to mind. And the SNCF helps you get there. So, in a way, there's a link there. (A, woman, 56).

Overall, all the participants express this strongly perceived congruency between the ice-cream picture and 1) the headline and 2) the SNCF brand. By contrast, for the Orange ad, there is low perceived congruency between the food pictorial metaphor and the brand for almost all participants: *I don't get the link between this cereal's photo and an Orange Livebox: This brand has nothing to do with cereal* (L, woman, 38).

Some participants also question the link between the headline and the food picture because they only see the nutritional meaning associated with words. They do not decode the second metaphorical level implying energy for the Livebox, like energy for the body: *This picture evokes only food to me. Then the words "recharge your batteries with super power" make me think just about food. I don't get the link. I just think this is some ad for food. Do they want to say something else with this headline about the Livebox?* (M, woman, 57). The message in the headline does not appear to be clear enough to support and spell out the food visual metaphor in the Orange ad.

Consequently, it seems there are three steps to ad processing: food picture processing, congruency between food visual metaphor and headline, and congruency between food visual metaphor and non-food brand.

These first findings converge with previous studies. Indeed prior research has already shown that congruency between an ad's verbal and visual elements is important (Heckler and Childers 1992; Lee and Mason 1999), that a verbal headline providing a clue to the meaning of the pictorial metaphor increases ad liking (Phillips, 2000), and that a complete headline

clearly spelling out the message leads to more positive communication effects (Bergkvist et al. 2012).

However, this pre-study highlights another level of congruency sought by consumers for ads with food visual metaphors in this stage of “incongruity resolution” (Šorm and Steen 2013) when interpreting ads: the search for congruency between food visual metaphor and non-food brand.

3.2.2. *The Food Picture’s Appetizing Dimension*

The food picture’s appetizing dimension is expressed instantly in all the participants’ narratives in the case of the SNCF ad: *This picture makes me feel hungry, and I feel like having an ice cream right now!* (Y, man, 26). According to different studies on food psychology, appetizing (called also attractive or tempting) food refers to food that is visually attractive (Van Dillen et al. 2013), generally has a high calorie or energy content, activates reward-processing (Van der Laan et al. 2011), and triggers spontaneous reactions (Veling et al. 2013).

In other words, appetizing food is connected to both nutrition and experience as it triggers goal-directed action toward consuming them. Many of these aspects are verbalized in our informants’ statements. The appetizing nature of the food picture helps to generate a favorable appreciation of the SNCF ad, as all informants understand the link between the food pictorial metaphor, the brand, and the verbal elements: *Overall, I like this ad. I like the message. It’s positive and cool. During wintertime, it’s positive to think about summer and holidays, and the Italian ice-cream cone looks tasty and evokes summer* (D, man, 34).

By contrast, the cereal picture in the Orange ad is mostly perceived as non-hedonic and unappetizing: *There is a picture of cereal in a box and in a bowl. I don’t feel like eating it. I’d rather have some tastier cereal. I don’t like this picture; it’s not appealing* (L, woman, 38). A

minority of informants, however, appreciated this food picture: *What I like in this ad is the cereal picture, as I like eating and I like this type of food* (X, woman, 19).

However, if the congruency link between the food picture, the brand, and the headline is not understood, this favorable appreciation of the food picture in the case of cereal (a non-hedonic food) seems inoperative and fails to generate a positive consumer response to the ad: *I think there's no connection between cereal and the Livebox. There is no logical link between them, and one loses time trying to understand the meaning of this ad. One doesn't know whether it's about cereal or about an internet package* (X, woman, 19).

Thus, this pre-study shows that the hedonic dimension of the food pictorial metaphor appears to contribute to a favorable consumer attitude toward the ad when there is perceived congruency between a) the visual metaphor and the verbal elements and b) the visual metaphor and the non-food brand. When the food pictorial metaphor is non-hedonic (cereal) and there is no perceived congruency, the consumer evaluates the ad unfavorably. Given these first results, it seemed important to further explore consumers' reactions to food pictorial metaphors on a broader scale of non-food brands and products/service categories by combining different levels of perceived congruence and the hedonic or non-hedonic nature of the food picture.

4. Main Study

4.1. Methodology

Building on pre-study results, the authors conducted additional semi-structured individual interviews to explore the processing mechanisms of food pictorial metaphors in non-food brand ads. **The aim was to** 1) further investigate potential perceived congruency effects that have previously been revealed and 2) analyze a complementary and varying set of ads in terms of perceived congruence and the hedonic or non-hedonic nature of the food picture.

4.1.1. Selection of Advertisements

A set of eight international ads was selected based on the judgment of five experts (marketing scholars and marketers). First, within our corpus of 100 ads, they identified examples where the pictorial food metaphors could be hedonic or non-hedonic. This first criterion was used to produce two subsets of ads. Next, these ads were examined by using another criterion: strong or lower perceived congruency between the food picture and the headline. This criterion was chosen as its importance was revealed in the pre-study, at the consumer level.

Experts evaluated the various ads and categorized them into two subsets: those where the headline meaning goes well with the picture meaning (congruent) and those where the headline meaning fits the figure less well and requires additional elaboration (less congruent). It was crucial to combine both criteria in order to categorize our ad corpus, as the pre-study only examined 1) a congruent and hedonic food picture (SNCF ad) and 2) a non-congruent and non-hedonic food picture (Orange ad). Finally, the objective was also to cover various product/service categories of well-known non-food brands.

Therefore, combining these criteria resulted in the final selection of eight international ads for the study by the expert panel: four congruent and four less congruent ads, with three hedonic and five non-hedonic food visual metaphors. It should be noted that, in the subset of non-hedonic food ads, experts underlined that one ad displaying a picture of raw meat for Land Rover could even generate more negative emotions than other 'neutral' non-hedonic food (such as milk or eggs): For this reason, this specific ad was selected and is the lone example of this type in our corpus of ads.

Finally, the authors checked that the ad selection covered a broad range of the visual metaphor classification developed by Phillips and McQuarrie (2004), as it seemed relevant to explore consumer interpretation of varying levels of visual structure complexity and richness

of meaning operation. This resulted in the final selection of eight international ads shown in Table 1 (see also used ads and a detailed analysis of conceptual metaphors' elements in Appendix 3), based on our examination of the selected ads' visual and verbal rhetoric, which has now been detailed.

Table 1
Description of selected ads and participant sample (main study).

Selected ads Advertiser (year) Aired in/developed in	Food used for the visual metaphor	Product category	Type of pictorial food metaphor		Congruence food picture/text		Number of interviewees		
			Hedonic	Non- hedonic	Some	Lower	Men	Women	Total
Leroy Merlin (2010) France/France	Ice cream	Insulation material	x		x		14	17	31
Jaguar (2014) Canada/Canada	Pretzels	Car	x			x	20	10	30
Issey Miyake (2012) Japan/Japan	Pancake	Clothing	x			x	-	30	30
Faber Castell (2010) International/Germany	Banana	Pencils		x	x		7	8	15
Faber Castell (2010) International/Germany	Eggplant	Pencils		x	x		19	15	34
Eurostar (2006) France/France	Egg and beans	Railway		x		x	13	20	33
Lego (2011) International/Germany	Milk	Toys		x	x		9	7	16
Land Rover (2013) United Kingdom/UK	Meat	Car		x		x	22	8	30

4.1.2. Examination of Metaphorical Visual Structure and Verbal Rhetoric in the Selected Ads

Overall, the eight selected ads enable us to cover all cases of fusion and replacement defined by Phillips and McQuarrie's (2004) typology of visual metaphors, except for opposition by fusion, which was employed in only two ads in our corpus of 100 ads, and these were not selected by our expert panel. The following description of selected ads is based on secondary online data related to copy strategy, provided by the advertising agencies in order to better apprehend their creative intention.

In our selection of eight ads, three display a hedonic food picture, with three different visual structures according to this typology. First, the Leroy Merlin ad shows an ice-cream cone image, created out of insulation materials, as the source domain. This ad creates a figure of similarity via fusion, as Leroy Merlin DIY/insulation products are fused to represent an ice

cream, which symbolizes a pleasurable summer experience. Visually, the consumer is asked to recognize a similarity between the pleasurable experience of the ice cream and the pleasurable experience of DIY work during summertime. The headline highlights its implicit message of the pleasurable summer experience of DIY work communicated through the shape of an ice cream with the following words: “A bit of holiday during your summer work.”

Second, the Jaguar ad shows a picture of pretzels arranged to represent the Audi brand logo as the source domain. The present food image (pretzels) calls to mind the absent image (Audi logo): The ad is a replacement figure with an operation of opposition (Jaguar is not like Audi). The explanation for the opposition is not given in the picture itself but implicitly derived from the metaphorical headline “Devour the road,” which compares the enjoyment of devouring the pretzel (and by extension its competitor, Audi) to the pleasure of driving fast on the road (implicitly faster than Audi). Unlike the case of Leroy Merlin, the headline of the Jaguar ad is not directly coherent with the picture and introduces another complex level of metaphorical meaning.

Third, for its clothing line called “Pleats Please,” the Issey Miyake ad presents the image of a pancake with a white top representing whipped cream but made out of the brand’s pleated tissue: The pleats picture of the brand stands for the whipped cream picture. This ad creates a figure of similarity via replacement: The reader is asked to understand that Miyake pleats/fabrics are soft and pleasurable to wear, just like whipped cream on pancakes is soft and pleasurable to eat. The verbal element positioned under the brand logo (“Pleats Please. Happy anniversary”) should have a limited congruency with the picture as it just conveys the international name of the clothing line and the contextual anniversary of the brand but does not explain the reference to the ‘pleats execution’ that is iconic in Miyake fashion: One can understand “pleasure with pleats,” “pleats indulgence,” and “give me pleats, please” in addition to the anniversary mention.

Five ads display a non-hedonic food picture with a varying visual structure according to Phillips and McQuarrie (2004). This makes it possible to explore visual situations that are different from the aforementioned examples and to deepen the analysis in some cases by contrasting consumer reactions to non-hedonic vs. hedonic food pictures (that also have a similar visual structure).

First, the Faber Castell ad shows a picture of an eggplant combined with one of a pencil: This ad creates a figure of connection via fusion. The purple color of the pencil is associated with the purple color of the eggplant. The verbal headline, “True colours,” emphasizes the same message as the picture and, thus, emphasizes that the true color of the vegetable is transferred to the pencil. Second, the Faber Castell ad with a banana also represents connection via fusion: This ad was selected to deepen our analysis, as consumers may find the banana image more pleasurable and hedonic than the eggplant, which may interfere with their advertising interpretation.

Third, the Eurostar ad displays a picture of a fried egg and beans (typical English breakfast food: source domain) arranged so that the fried egg stands for the ovum and the red beans depict sperm cells, as in a love situation. This ad creates a figure of connection via replacement: The fried egg and beans picture is a substitute for the satisfied love situation experienced in London, and through this picture the Eurostar train journey is connected to this pleasurable experience. The headline states “Romantic getaway in London”: It explains the implicit meaning of the fried-egg-and-beans image and underlines the reference to London and the love situation: It adds new meaning to the initial food picture and requires elaboration, thus appearing less congruent with the picture than in the case of the Faber Castell ad.

Fourth, the Lego ad shows a picture of a glass filled with “milk” comprised of white Lego blocks: It is a metaphorical, visual representation of milk. Here, the visual structure is a replacement (the white Lego blocks replace white milk) suggesting similarity (Lego is good

for your children like milk is good for your children). The headline, “Pure brainfood,” highlights the same message implicitly conveyed by the image.

Fifth, in the Land Rover ad, consumers see a picture of raw meat (source domain) and read the headline and additional text stating: “The Lions have been fed. Congratulations to the British and Irish Lions on their successful Tour of Australia.” The raw meat stands for Australia, as the picture has the same shape as the country: It is a visual structure of replacement. In terms of meaning, consumers are asked to understand that the Lions rugby team has eaten the meat (representing Australia), in other words, they have successfully won the Tour of Australia. This ad represents a figure of similarity via replacement. The headline, “The Lions have been fed,” is also a metaphor (the Lions team is similar to lions), and its meaning and link to the picture is not immediate as it does not refer explicitly to Australia. Thus, the implicit meaning of the raw picture (representing Australia) cannot be understood without the verbal elements (headline and additional text), and this ad seems to be more difficult for consumers to grasp.

To conclude, the selection of these ads makes it possible to explore five cases of the visual rhetoric typology of Phillips and McQuarrie (2004) regarding fusion and replacement. It also facilitates a comparison between consumer reactions to three different cases of similarity-replacement with a variation on food hedonic nature (Miyake/hedonic picture, Lego/non-hedonic picture, Land Rover/non-hedonic picture with potential negative connections of raw meat) and two cases of connection-fusion where the food hedonic associations could have a different impact (Faber Castell/banana vs. Faber Castell/eggplant). Following Phillips and McQuarrie (2004), a classification of the ads that we examined is presented in Table 2.

Table 2
Classification of main study ads, with Phillips and McQuarrie’s (2004) typology of visual metaphors.

		Meaning operation		
		Connection	Similarity	Opposition
Visu	Fusion	Faber Castell, banana Faber Castell, eggplant	Leroy Merlin, ice cream	-

	Replacement	Eurostar, egg and beans	Issey Miyake, pancakes Lego, milk Land Rover, meat	Jaguar, pretzel
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4.1.3. Methodological Procedure

In-depth semi-structured interviews were conducted with male and female French consumers aged 18–70 with various occupations to gauge their spontaneous reactions to one ad. The **four** authors stopped asking informants to participate when saturation was reached (between 15 and 34 interviews for each ad, see Table 1). These sample sizes are in line with requirements for qualitative research and sufficient to obtain data diversity and thematic exhaustiveness (Guest et al. 2006). In total, 219 interviews on eight ads were conducted and transcribed (length ranging from 20 to 60 minutes). For each ad, our sample is aligned with the target of the advertised brand in terms of gender, age, and social milieu. For example, subsamples are balanced between males and females for Leroy Merlin, Faber Castell, Eurostar, and Lego; they are skewed toward males for Jaguar and Land Rover, and toward females for Issey Miyake. Each interview focused on one ad, which was presented to participants in printed form.

As the study was conducted in France, verbal elements from the English-speaking ads (Jaguar, Issey Miyake, Faber Castell, Lego, Land Rover) were translated with the help of two English-native researchers using a back-translation procedure as recommended (Brislin 1986). These verbal elements in French replaced the verbal elements in English on the ads. It should be noted that, for the Land Rover advert, as French consumers may not all know that the British and Irish Lions is a rugby team, we added the words “*rugby team*” in the initial headline and subhead: “The Lions have been fed. Congratulations to the British and Irish Lions *rugby team* on their successful Tour of Australia.” All participants understood this advertisement.

The interview guide focused on the (1) overall perception of the ad, (2) projective associations, (3) understanding of the ad and of the visual metaphor, (4) coherence between an ad's different visual and verbal elements, and (5) attitude toward the ad.

The collected material was then analyzed using an iterative process (Spiggle 1994) of searching for recurring patterns and themes. First, the researchers read all transcripts to reveal themes and categories for each type of ad. Then, narratives were clustered and grouped within the different subsets of ads, comparing and contrasting ads with a congruent or a less congruent verbal message, then ads with a hedonic or a non-hedonic food pictorial metaphor. The data was also contrasted for different ads within the same visual structure: for the three ads executing similarity by replacement (Miyake, Lego, Land Rover) and for the two Faber Castell ads. Finally, the thematic analysis was deepened using comparisons between co-authors to reach a final agreement. A check analysis of consumers' perceptions of food pictures in the ads was also conducted; the results confirmed the experts' judgments regarding hedonic/non-hedonic perceptions and will not be detailed any further.

4.2. Main Study Findings

4.2.1. The Key Role of Congruency at Three Distinct Levels

The main study results confirm the predominance of congruency as a key processing mechanism of these ads that emerges from the informants' narratives: The dominant aspect of food pictorial metaphors leads informants to first try to establish a link between the food pictorial metaphor and other ad elements. This causes them to seek congruency within three distinct levels: a) congruency between the food pictorial metaphor and the text, b) congruency between the food picture and the product category, and c) congruency between the food picture and the brand itself. These three levels of congruency are key to producing a favorable appreciation of the advertisement and are integrated into the proposed conceptual framework

(Figure 1). We begin by detailing the search for congruency between food picture and text, as it appears to be the first step in participants' process of interpreting these ads.

4.2.1.1. Congruency between Food Pictorial Metaphor and Text

As seen in the pre-study, participants' first reaction is to focus on the predominant food pictorial metaphor and then to compare it with the headline to find some fit between the two elements as they seek an exact meaning to interpret from them. This is evidenced by the following quotation regarding the advertising of Leroy Merlin, a well-known home improvement and gardening retailer: *I first look at the picture and see ice cream. Then I read the headline for Leroy Merlin: It really matches the ice-cream picture because it uses the word 'temptation,' and with ice cream, you get tempted. It's about repairing your home during the summer vacation, so it makes sense as the ice cream symbolizes summer* (B, man, 35).

In some cases, informants really express in their narratives the two dimensions of congruency outlined in prior literature: expectedness and relevance (Heckler and Childers 1992). For instance, all spontaneous discourse about the Leroy Merlin ad first focuses on the unexpected use of a picture of ice cream to advertise a home improvement and gardening store before turning to look for relevance and a match between the picture and the headline: *First, I see ice cream: This is unexpected, striking. Next, I see this headline with the words 'holiday,' 'summer work'' and 'Leroy Merlin,' so I try to figure out the connection. Then I understand the idea: Leroy Merlin and food don't usually go together, but here it's summertime, a nice period for DIY work, and the ice cream evokes summer* (F, woman, 53).

In other cases, informants do not highlight the unexpectedness of the ad's execution in their discourse but concentrate directly on finding the connection between the food pictorial metaphor and the headline. This is illustrated in the following quotation regarding the Faber

Castell ad with a banana/pencil picture: *I see a banana that changes into a pencil in the middle. This picture is creative. Then I read the headline, and it's quite good because it's a natural color; this yellow is natural. Therefore, transforming the pencil into a banana and writing 'true colours' in the headline is relevant and fits together; it shows that these colors are authentic. Faber Castell colors come directly from the trees!* (N, man, 24).

Overall, for the adverts of Leroy Merlin, Faber Castell, and Lego (labeled as congruent between food metaphor and text, Table 1), all participants expressed a strongly perceived congruency between the food visual metaphor and the headline, which contributed to them evaluating the adverts favorably. This result is in line with previous literature underlining the benefits of having relevance and congruency between verbal and visual information in advertising (Heckler and Childers 1992; Lee and Mason 1999). It is also in line with Phillips (2000), who shows that verbal headlines make ads with pictorial metaphors more comprehensible, and confirms more recent experiments showing that a complete headline clearly spelling out the message, in addition to the visual metaphor, leads to more effective communication (Bergkvist et al. 2012).

By contrast, in the case of the Miyake advertisement, there is low perceived congruency between the text and the pancake picture for all informants, despite the stimulus being appetizing and hedonic. This generates difficulties in understanding the message and an unfavorable attitude toward the ad, as illustrated by this quotation: *I can't see any connection between this line of clothes by Miyake and pancakes. I don't get it. Maybe the meringue texture on top of the pancake is light, and these clothes are made of light material, too? I don't understand this ad! This picture with the pancake and the white meringue is appealing and distinctive. But I don't really understand the link between this food picture and the text. It's weird. I don't feel attracted to this ad!* (C, woman, 26). Similar findings emerge regarding other ads pre-classified as less congruent, such as those advertising Land Rover and Jaguar.

4.2.1.2. Congruency between Food picture and Brand Product Category.

The second identified level of congruency emerged only from the main study and refers to the congruency between the food pictorial metaphor and the brand's product category. This may be related to the fact that the main study integrated many ads with a limited congruency between visual metaphor and headline. When informants do not instantly understand the verbal message supporting the visual metaphor and do not see a clear link between the two, they search for meaning: This search for a relationship between the product category and the food pictorial metaphor then emerges in their speech (Jaguar, Miyake, Eurostar, Land Rover ads).

For example, all respondents instantly qualify the food picture as "pretzels" in the Jaguar ad, and almost all of them immediately decode the Audi logo (except for two women, one finding out herself later, and the other asking the interviewer which car logo it represents). However, most of them (21 out of 28 informants 'decoding' Audi) spontaneously find the association between this food and the car category incongruous, in their first words about their overall perception of the ad.

In the end, this contributes to an unfavorable attitude toward the ad for most informants (27 out of 30). Thus, D (man, 53, BMW owner) says: *There is a picture of pretzels representing the Audi logo. It's witty because it's the image of Germany. But when I read the headline, I don't get it. I don't get the link between the Audi logo and the Jaguar brand, and I don't get this association with food/biscuits. Biscuits and cars are two distant worlds; it's too complex and intellectual for me. The words 'Devour the road' are meaningful for Jaguar when you think about it; but the link between pretzels and a sports car seems incongruous to me.*

To a lesser extent, the same is true of Eurostar's ad, which uses the picture of a fried egg for the railway network. Here again, most informants (20 out of 33) first question the congruence

between the egg and the train service: *I wonder what relationship there is between the train and food. It's a food picture. Well, you don't know, maybe they offer food on this train* (H, man, 55). But, unlike with the Jaguar ad, there is a stronger perceived congruency between the food picture and the headline for most respondents (23 out of 33), which leads to an overall sense of humor and finally to a favorable attitude toward the ad for half of them: *You see sperm cells migrating toward an egg, and the headline indicates there is a promotion to get to London by 2. The headline states: Romantic getaway in London. So, it's clear and efficient. You understand straightaway with the headline! It's very funny! I like this ad* (H, man, 55).

Another representative example is Land Rover's ad, which uses a picture with red meat for the car industry. This leads most informants (17 out of 30) to question the relationship between these two categories and to criticize the usage of meat, even though they understand the meaning of the message with the Lions team and truly think the association between rugby and meat is relevant. For instance, P (man, 36, accounting officer) explains: *I see a piece of raw red meat; it represents the map of Australia. It's an ad for Land Rover that celebrates the Lions team made up of British and Irish on tour in Australia. Well, associating meat, lions, a rugby team, and a car, that's striking! But people could be resistant to this ad because of this piece of meat, like vegetarians... To me, it's striking but violent. Associating meat with a car, this is new! But I don't see the direct relationship between a piece of raw meat and a car. I don't get the link here. The link with meat is logical for rugby and for the Lions but less relevant for a car.*

In most cases, this strongly perceived incongruency between the meat and the car is connected with a strong dislike of the meat picture, perceived as 'repulsive' by 14 respondents (5 women). This specific result will be discussed later. As a consequence, most informants (26 out of 30) tend to have an unfavorable attitude toward this ad, all the more so

because the congruency between the food picture and the headline, as well as the congruency between the food picture and the brand, is also perceived as low.

4.2.1.3. Congruency between Food Picture and the non-food Brand

The third congruency level identified from the pre-study relates to the congruency between the food picture and the non-food brand itself. In all the examined advertisements, consumers repeatedly seek some connection between the two elements. When this congruency is perceived as weak, as in the Jaguar, Land Rover, and Miyake ads, the steps to process the ads are dominated by many unfavorable remarks and questions from the informants. Although they may acknowledge during the ad elaboration process that they finally perceive some link between the ad's food picture and headline, the weak congruency between the food picture and the brand eventually leads to an unfavorable evaluation of the ad.

This is illustrated by the narrative of N (man, 49, Porsche owner): *Associating these pretzels, which represent Audi, with the Jaguar brand – static and cheap food with a luxurious dynamic car – I can't see the connection. It's weird. The headline 'Devour the road' goes well with the food image. It makes sense. And the headline fits the Jaguar brand because this animal jumps out and devours its prey. But the pretzels are not consistent with the brand: It's cheap, indulgent food that depreciates a beautiful prestige sports car. I don't like this ad.* This weak congruency is mentioned by half the respondents in the case of the Jaguar and Land Rover ads and by most of them for the Miyake ad.

4.2.2. Appetizing Dimension and Attitude toward the Ad

The main study interviews reveal that the food pictorial metaphor's associated appetizing dimension influences consumers' appreciation of the ad. The appetizing dimension refers to the fact that the food representation looks appetizing and pleasurable to consumers. This

associated appetizing dimension grabs attention and leads to a favorable appreciation when the three levels of congruence are satisfied.

For all ads with a hedonic food visual metaphor (Leroy Merlin, Jaguar, Miyake), all informants mention the picture's associated appetizing nature, as in this quotation regarding the Jaguar ad: *I like sweet foods, and this pretzel picture is the first thing you see! This picture is appealing and appetizing. It's an attractive ad. It conveys the pleasure of driving a car* (T, man, 36, Ford owner). When the pictorial metaphor is not an image of food but rather a representation of food (as in the ice-cream cone of Leroy Merlin, which is made of insulation materials, or the whipped cream of Miyake, which is made of pleated fabrics), the results are similar. However, the appetizing aspect seems inoperative when the different levels of congruence are not perceived in parallel: This is the case for both the Jaguar and the Miyake ad.

By contrast, the raw meat picture in the Land Rover ad generates strong negative reactions from almost half our respondents (a majority of our female respondents), contributing to the unfavorable appreciation of this ad: *A piece of meat like this, I find it repulsive. This raw, bleeding aspect. And the meat looks fatty, not appetizing. I really dislike this meat picture in the ad. If this were an ad for a meat producer, well, you'd have to accept it... But here, the association in the headline means you have devoured your competitor. It's aggressive. I don't like this idea of using meat like this for a car* (Y, man, 55). These negative reactions to the use of a meat image echo prior research showing that meat represents an aversive type of food, even more so for women than for men (Scott and Downey 2007).

Furthermore, should informants perceive the food pictorial metaphor as non-appetizing even though they recognize some congruence in the advertising, they tend to evaluate the ad unfavorably. For example, regarding the Eurostar ad: *I'd rather see some kind of appetizing English food in this ad, like pancakes! Why didn't they put a nice pancake picture (or*

something funny) with this fertilization message to be appetizing at the same time? Add something appealing to make me want to take the Eurostar. This doesn't attract me (J, woman, 23).

Similarly, some informants do not appreciate the association with eggplants in the Faber Castell ad because it is not deemed appetizing as a vegetable, even though the congruence is recognized and the ad message is well understood: *Comparing a pencil to a vegetable is degrading. This picture is not even appetizing. There are other elements worth selecting to express 'true colors,' like flowers or landscapes (L, woman, 23).* Several informants suggest employing more pleasurable and enjoyment-related fruits: *Pencils are about fun and joy, and the eggplant is a dull vegetable. I would suggest more pleasurable fruits instead: strawberry, orange, banana, plum... (M, man, 49).*

By contrast, the Faber Castell/banana advert generates only favorable comments regarding the appetizing nature of the employed fruit. Therefore, the appetizing dimension associated with the food visual metaphor seems to be useful to elicit a favorable evaluation of the ad.

4.2.3. The Perception of Ad Creativity

The main study interviews reveal that by evaluating congruency within these three levels and combining them, consumers try to decode the ad's meaning and ultimately form an overall opinion about it. At one point, the 'incongruity resolution' stage of the interpretation process stops, and consumers produce a statement about the ad's creativity. This is shown in the following quotation: *In this ad for Lego, the picture looks like a glass of milk with the Lego blocks, and the headline says 'brain food,' so Lego is like calcium, like food for the brain. The link is easy! It's clever and witty! I like this advertisement! (G, man, 38).*

Ad creativity has been defined as the extent to which an ad contains brand or executional elements that are different, novel, unusual, original, unique, etc. (Smith and Yang, 2004). In

their model, the authors indicate that ad creativity is based on two dimensions: divergence (i.e., novel or unusual) and relevance. This perception of an ad's creative dimension is expressed by all the informants after processing the different levels of congruency and appreciating the food picture's associated appetizing dimension, and it generates a positive attitude toward the advertising.

By contrast, weak perceived congruency in one of the three identified levels may lead to a perception of low ad creativity and, in turn, to an unfavorable attitude toward the advertising. This finding is in line with prior literature on artful deviation, which suggests that incongruity (or deviation) is among those factors that arrest consumers' attention, produce a pleasurable degree of arousal, and should produce a more positive attitude to the ad (McQuarrie and Mick 1996).

4.2.4. The Role of Aesthetic Appreciation of the Ad and Individual Aesthetic Sensitivity

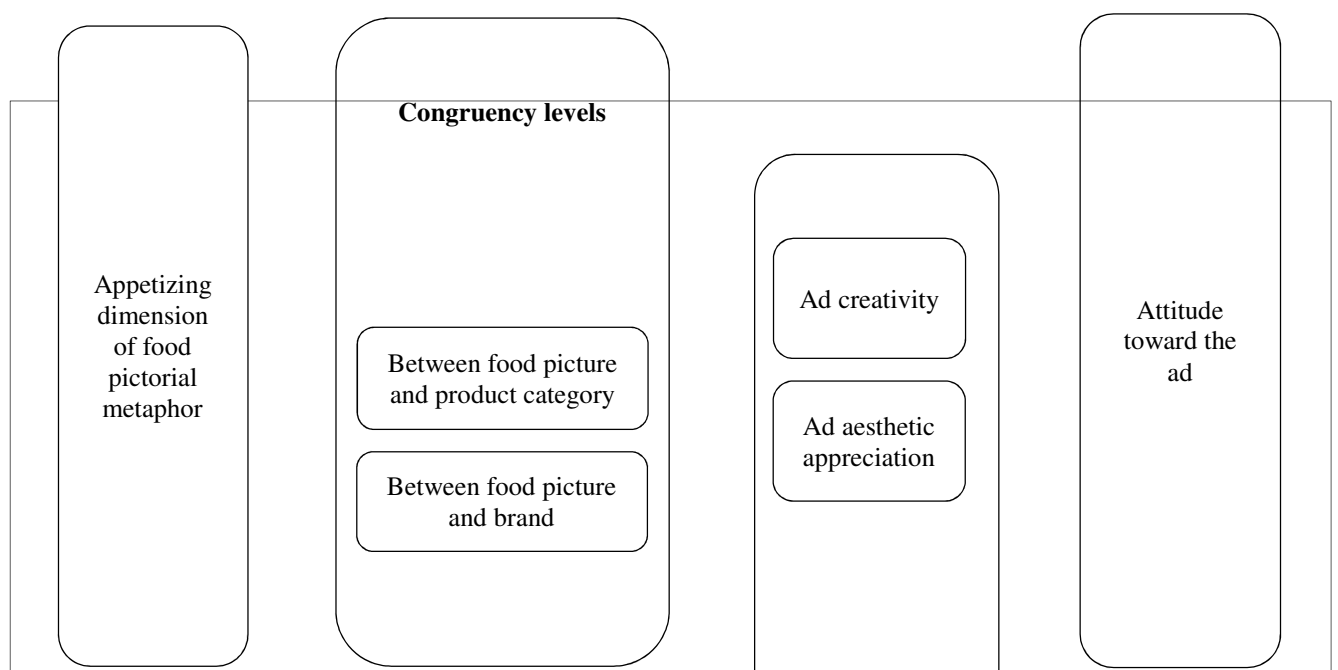
The main study results also show that informants' aesthetic evaluation of the ad appears to influence their affective response to the ad. Our findings allow for the emergence of two aspects: 1) the aesthetic evaluation of the ad and 2) informants' aesthetic sensitivity. Aesthetic appreciation is sensuous in nature and refers, in many studies, to the amount of information of stimuli and people's capacity or way to process this information (i.e., elicited arousal) (Berlyne, 1974). Prior literature on aesthetic evaluation has highlighted the role of aesthetic sensitivity, which refers to an individual's ability to perform a set of basic perceptual analyses of the stimulus based on its balance-related features, such as order and symmetry (Leder et al., 2004).

Thus, many informants comment favorably on the Faber Castell, Miyake, and Lego advertisements' aesthetic attributes. This positive appreciation of aesthetic characteristics generates a favorable attitude toward the ad, as shown here with the Faber Castell/eggplant

ad: *This ad is very chic, very classy. The color of the eggplant, this high-quality picture with the light behind it, looks so classy, like some kind of luxury advertising. It's clean and refined. And then there's the funny touch of this headline and this eggplant being a pencil... Yes, definitely, I like this ad!* (S, woman, 31).

This finding confirms prior literature underlining the aesthetic judgment of ads (Leder et al., 2004) that Šorm and Steen (2013) incorporated into the 'incongruity resolution' step of visual metaphor processing. This aesthetic judgment of the ad appears more prevalent in the discourse of some informants than others and seems to be connected to their own aesthetic sensitivity, in the way it is verbalized and emphasized, as illustrated by the quotation of R (man, 25): *From an artistic perspective, this Faber Castel ad is really successful. This eggplant picture looks like a piece of art. I appreciate art, beautiful things. Here I like this aesthetic execution. It's pure and simple.*

Based on our qualitative findings, a conceptual framework representing the elaboration process of such specific food pictorial metaphor ads was elaborated (Figure 1). It integrates the three levels of congruency and the different variables emerging from our data that influence consumers' attitude toward the ad (see Fig.1).



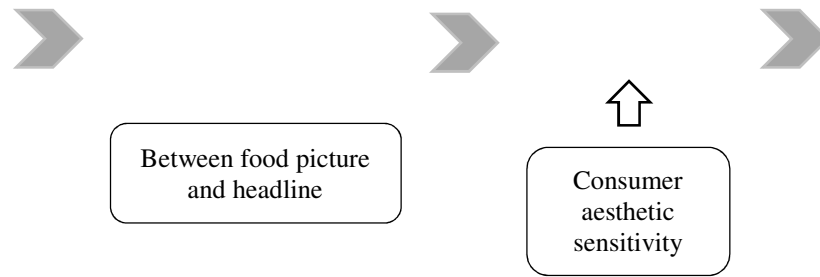


Fig. 1. Conceptual framework of consumer interpretation process of food pictorial metaphors in ads for non-food brands

5. General Discussion

This research builds on existing theory regarding metaphors and congruency to examine the cognitive processing and affective influence on consumers of food pictorial metaphors in non-food brands ads. To the best of our knowledge, this is the first study to address and deeply examine the use of food pictorial metaphors in the context of non-food brands. This study aims to examine and shed light on how the usage of food pictures may alter the cognitive process of elaboration within established types of visual metaphors (Phillips and McQuarrie 2004). This study represents an initial exploration of this phenomenon within the trends of sensorial advertising, cleverness seeking, and emotional branding, and it provides a conceptual framework eliciting the influence on consumers' affective response. Various categories of products/services (internet package, railway, pencils, home improvement, car, clothing, toys) and various types of ads' visual structure along the existing typology were explored to give robustness to our findings. Food's emotional, ingestive, symbolic, and rewarding character makes it a very specific source for a visual metaphor. Food is likely to alter perceptions and judgments (Krishna et al. 2014) and initiate a complex mapping leading to incongruity resolution (Šorm and Steen, 2013) in the context of non-food brand ads. In fact, although the use of food pictorial metaphors may grab consumers' attention, this research reveals their impact is not systematically positive and may entail negative consequences at the

consumer level. The qualitative findings allow for (1) the identification of the three required levels of congruency related to food pictorial metaphors, (2) the emergence of the food appetizing dimension, and (3) ad creativity and aesthetic appreciation, related to consumer aesthetic sensitivity, as additional factors influencing the process.

First, this research shows that adverts using food pictorial metaphors for non-food brands lead consumers to seek congruency between food cues and three different levels in the ads: the product category, the brand itself, and the headline text. To the best of our knowledge, the first two levels were revealed by our studies and had not been reported in prior literature. With regard to the third level, which concerns congruency between the food visual metaphor and the headline, our findings seem to be in line with Bergkvist et al. (2012), who highlight the importance of a headline clearly spelling out the message conveyed by the visual metaphor. These new contributions highlight the predominant role of congruency in the processing of such ads, in line with the findings of Heckler and Childers (1992), who rely on cognitive psychology and emphasize consumers' tendency to contrast new information with existing schemas. When consumers have to deal with food metaphors for non-food brands or products, they struggle to use existing schemas and, thus, engage in a sensemaking process by focusing on congruency aspects.

Second, the role of the food appetizing dimension in the processing of these ads is another major contribution of this research since it generates positive emotions, as previous studies have stated (Macht et al. 2002; Krishna et al. 2014). Our findings reveal the operating process of this appetizing dimension. First, by going beyond the simple appealing aspect of food, it is crucial to consider and foster metaphors that will be perceived as congruent and especially relevant to the three identified levels. Second, when the food visual metaphor is seen as non-appetizing, consumers display an unfavorable attitude toward the ad, even though they perceive congruency within the three levels (as in the Faber Castell/eggplant and Eurostar

ads). Third, when the food visual metaphor is repulsive (as in the Land Rover ad), the attitude toward the ad is negative.

Third, this research also adds to previous literature by highlighting the importance of artistic execution and cleverness in advertising. In many cases, consumers engage in an evaluation of the advertisement's creativity. When consumers perceive congruency, they manage to understand the message and evaluate the advertising creativity positively, which is likely to lead to a positive attitude toward the ad. However, when the metaphor is perceived as incongruent and irrelevant, our findings are in line with those of Mandler (1982) and Lee and Mason (1999): For all the examined ads, any perception of incongruency leads to a negative evaluation of advertising creativity and, ultimately, to a negative attitude toward the ad. It is crucial for consumers to perceive a connection between the pictorial food metaphor and the brand, as the picture is simultaneously perceived to be unexpected: The dimension of relevance, which Heckler and Childers (1992) identify in their work on the bi-dimensional concept of congruency, is paramount to this process. Individuals enjoy and experience some pleasure in trying to understand the meaning of a rhetorical figure (Peracchio and Meyers-Levy 1994). When ad complexity is not very high, it is pleurably arousing and associated with greater ad liking (Phillips and McQuarrie 2004). The deviation from expectations in the rhetorical figures may generate tension at the beginning, but once the meaning is understood, the tension decreases (Jeong 2008). Furthermore, this study sheds light on the role of aesthetic appreciation and individual aesthetic sensitivity in consumers' affective response to the ad, both of which appear in informants' discourse after solving the incongruity issues.

In addition and unlike many previous studies, the adopted methodological design allows for a contrast between consumers' interpretation of real ads and the advertisers' intent (secondary data collected from producers, art directors, copy writers, etc.) in order to better apprehend

food pictorial metaphor understanding. This approach improves the objectivity of the analysis and the applicability of the findings.

From a managerial standpoint, the results of this research provide relevant and inspiring guidelines in terms of advertising creativity and copy strategy execution. While using food visual metaphors is gradually being used by more and more advertising companies around the world, it seems important to consider congruency and avoid some pitfalls. The findings call for going beyond food's appealing and appetizing character, which might be effective to seriously address the fit between execution elements: represented food, product category, brand, and text. The identified congruency levels can clearly be integrated into some pre-testing steps to ensure a better understanding of the message and effectiveness of food visual metaphors. Moreover, ad creativity and aesthetic aspects allow managers to better understand and sharpen the relation between congruency and affective response.

The qualitative findings reveal consumers' processing of this type of metaphor but call for further empirical studies. A 3x3 experimentation design based on varying the three congruency levels (ad headline, product category, and brand) and the two types of pictorial food metaphors (hedonic, non-hedonic) could test ad evaluation on aesthetics and creativity levels. This empirical step might help examine the strength and hierarchy of relationships between all identified variables. In addition, experimental examination will also help consider contextual variables that drive attention like mood, hunger, satiety, and individuals' dieting status during exposure to ads (Moore and Konrath 2014), in addition to cultural considerations. Finally, the findings call for exploring the ads' memorization effects according to the different congruency levels examined. While this research focuses on attitude formation, it would be interesting to pursue an examination of the effect of perceived incongruency on memorization.

Appendix 1

British Airways campaign.	Jaguar campaign in Canada.
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BNP Paribas campaign.

The Guardian subscription campaign.

**IN A CHANGING WORLD,
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Appendix 2 SNCF ad (left) and Orange ad (right) used in the pre-study



As of 5 February with TGV, it smells like summer already



Livebox Zen. Recharge your batteries with super power for the whole day: Internet + TV + Phone

Conceptual metaphor elements for SNCF and Orange ads (Pre-study)

	SNCF Ad	Orange Ad
Source domain	Ice-cream cone	Cereal box and bowl (with milk)
Target domain	SNCF train tickets for the south of France	Orange Livebox Zen offer
Mapping from source domain to target domain	Summer, pleasure, holiday	Breakfast, full offer/energy for the day, high speed, complete formula (usable for the whole day from everywhere)
Headline	<i>“With TGV, it smells like summer already”</i>	<i>“Recharge your batteries with super power for the whole day”</i> Internet + TV + Phone

Appendix 3 Ads used for the main study



From 23 June to 16 August, “A bit of holiday during your summer work” – Leroy Merlin...et vos envies prennent Vie!



“Devour the road.” The 550 hp F-TYPE R Coupe. Jaguar



“Pleats Please. Happy anniversary.” Issey Miyake



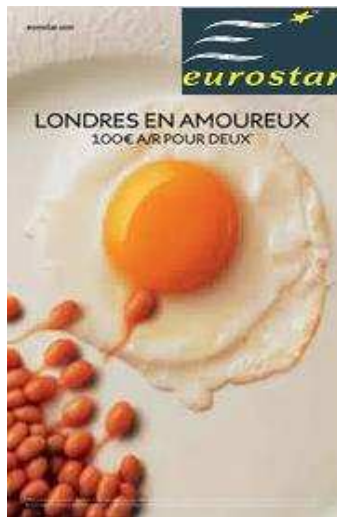
“True Colours” – Faber Castell



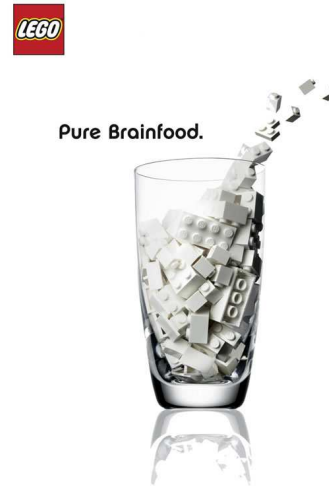
“True Colours” – Faber Castell



“The Lions have been fed.” Congratulations to the British & Irish Lions on their successful Tour of Australia – Land Rover Above and Beyond – Official Global Sponsor



“Romantic getaway in London”.
100 € return ticket for two – Eurostar



Pure Brainfood – Lego

Conceptual metaphors elements for the main study ads

	Source domain	Target domain	Mapping from source domain to target domain	Headline
Leroy Merlin	Ice-cream cone made of insulation materials	DIY products on sale in the store	Summer, pleasure, holiday, DIY work	“A bit of holiday during your summer work”
Jaguar	Pretzels in the form of the Audi brand’s logo	Performances of the Jaguar F-Type R Coupe	Pleasure, competition, fast driving	“Devour the road”
Issey Miyake	Pancake with whipped cream made of pleated tissue	Pleats Please anniversary	Pleasure, delicious and refined taste/fashion Pleated fabric	“Pleats Please. Happy anniversary”
Faber Castell	Banana or eggplant combined with a pencil	Faber Castell color pencils	Quality, authentic colors	“True Colours”
Eurostar	Egg and beans	Two return tickets on the Eurostar for 100€	English breakfast, pleasure/love	“Romantic getaway in London”
Lego	Glass of milk made of white Lego blocks	Lego bricks/plastic construction toys	Awakening senses and intelligence	“Pure Brainfood”
Land Rover	Raw meat	Sponsor of the British and Irish Lions rugby team	Australia, power, energy/victory	“The Lions have been fed”

References

- Ang, S.H., & Lim, E.A.C. (2006). The influence of metaphors and product type on brand personality perceptions and attitudes. *Journal of Advertising*, 35(2), 39-53. <https://doi.org/10.1080/00913367.2006.10639226>
- Babbes, G.S., & Morgan, P. (1997). Metaphor and embodied cognition: A content analysis. *Advances in Consumer Research*, 24, 39–40. <https://doi.org/10.1590/S0102-44502010000300014>
- Bergkvist, L., Eiderbäck, D., & Palombo, M. (2012). The brand communication effects of using a headline to prompt the key benefit in ads with pictorial metaphors. *Journal of Advertising*, 41(2), 67–75. <https://doi.org/10.2753/joa0091-3367410205>
- Berlyne, D. E. (Ed.) (1974). *Studies in the new experimental aesthetics: Steps toward an objective psychology of aesthetic appreciation*. Oxford, England: Hemisphere. <https://doi.org/10.2307/3394907>
- Brislin, R.W. (1986). The wording and translation of research instruments, in Lonner, W.J. & Berry, J.W. (eds), *Field methods in cross-cultural research*. Beverly Hills, CA: Sage. <https://doi.org/10.1177/017084068800900318>
- Dahlén, M., & Lange, F. (2004). To challenge or not to challenge: Ad-brand incongruity and brand familiarity. *Journal of Marketing Theory and Practice*, 12(3), 20–35. <https://doi.org/10.1080/10696679.2004.11658522>
- Fiske, S.T. (1982). Schema-triggered affect: Applications to social perception, in *the 17th Annual Carnegie Symposium on Cognition*, eds. Margaret S. Clark and Susan T. Fiske, Hillside, NJ: Erlbaum, 55–78. <https://doi.org/10.4324/9781315802756>
- Elder, R.S., & Krishna, A. (2010). The effects of advertising copy on sensory thoughts and perceived taste. *Journal of Consumer Research*, 36, 748–756. <https://doi.org/10.1086/605327>

- Forceville, C. (1998). *Pictorial metaphor in advertising*. London & New York: Routledge.
https://doi.org/10.1207/s15327868ms0901_1
- Forceville, C. (2008). Metaphor in pictures and multimodal representations. *The Cambridge handbook of metaphor and thought*, Gibbs RW Jr, eds., New York: Cambridge University Press, 462–482. <https://doi.org/10.1017/CBO9780511816802.028>
- Gentner, D., & Markman, A.B. (1997). Structure mapping in analogy and similarity. *American Psychologist*, 52, 45–56. <https://doi.org/10.1037/0003-066x.52.1.45>
- Glucksberg, S., & Keysar, B. (1990). Understanding metaphorical comparisons: Beyond similarity. *Psychological Review*, 97(1), 3–18. <https://doi.org/10.1037/0033-295x.97.1.3>
- Goodstein, R.C. (1993). Category-based applications and extensions in advertising: Motivating more extensive ad processing. *Journal of Consumer Research*, 20(1), 87–100. <https://doi.org/10.1086/209335>
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? : An experiment with data saturation and variability. *Field Methods*, Sage publications, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
- Hastie, R. (1980). Memory for information which confirms or contradicts a general impression. *Person Memory: the Cognitive Basis of Social Perception*, R. Hastie et al., eds. Hillsdale, NJ: Lawrence Erlbaum Associates. <https://doi.org/10.4324/9781315778037>
- Heckler, S. E., & Childers, T.L. (1992). The role of expectancy and relevancy in memory for verbal and visual information: What is incongruity? *Journal of Consumer Research*, 18(4), 475–492. <https://doi.org/10.1086/209275>
- Houston, M.J., Childers, T.L., & Heckler, S.E. (1987). Picture-word consistency and the elaborative processing of advertisements. *Journal of Marketing Research*, 24, 359–369. <https://doi.org/10.2307/3151383>

- Jeong, S.H. (2008). Visual metaphor in advertising: Is the persuasive effect attributable to visual argumentation or metaphorical rhetoric? *Journal of Marketing Communications*, 14(1), 59–73. <https://doi.org/10.1080/14697010701717488>
- Kardes, F.R. (1988). Spontaneous inference processing in advertising: The effects of conclusion omission and involvement on persuasion. *Journal of Consumer Research*, 15(2), 225–233. <https://doi.org/10.1086/209159>
- Krishna, A., Morrin, M., & Sayin, E. (2014). Smellizing cookies and salivating: A focus on olfactory imagery. *Journal of Consumer Research*, 41(1), 18–34. <https://doi.org/10.1086/674664>
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago: University of Chicago Press. <https://doi.org/10.2307/414069>
- Langacker, R. W. (1987). *Foundations of cognitive grammar: Theoretical prerequisites*. Vol. 1. Stanford University Press. [https://doi.org/10.1016/0024-3841\(90\)90017-F](https://doi.org/10.1016/0024-3841(90)90017-F)
- Leder, H., Belke, B., Oeberst, A., & Augustin D. (2004). A model of aesthetic appreciation and aesthetic judgments. *British Journal of Psychology*, 95(4), 489–508. <https://doi.org/10.1348/0007126042369811>
- Lee, Y. H., & Mason, C. (1999). Responses to information incongruity in advertising: The role of expectancy, relevancy, and humor. *Journal of Consumer Research*, 26(2), 156–169. <https://doi.org/10.1086/209557>
- Macht, M., Roth, S. & Ellgring, H. (2002). Chocolate eating in healthy men during experimentally induced sadness and joy. *Appetite*, 39(2), 147–158. <https://doi.org/10.1006/appe.2002.0499>
- Mandler, G. (1982). The structure of value: Accounting for taste. in *Affect and Cognition*, M.S. Clark and S.T. Fiske, The 17th Annual Carnegie Symposium on Cognition, Hillsdale, NJ: Lawrence Erlbaum, 3–36. <https://doi.org/10.4324/9781315802756>

- McQuarrie, E. F., & Mick, D.G. (1992). On resonance: A critical pluralistic inquiry into advertising rhetoric. *Journal of Consumer Research*, 19(2), 180–197. <https://doi.org/10.1086/209295>
- McQuarrie, E. F. & Mick, D. G. (1996). Figures of rhetoric in advertising language. *Journal of Consumer Research*, 22(3), 424–438. <https://doi.org/10.1086/209459>
- McQuarrie, Edward F., & Mick, D. G. (1999). Visual rhetoric in advertising: Text-interpretative, experimental, and reader-response analyses. *Journal of Consumer Research*, 26(6), 37–54. <https://doi.org/10.1086/209549>
- McQuarrie, E. F., & Philipps, B. J. (2005). Indirect persuasion in advertising: How consumers process metaphors presented in pictures and words. *Journal of Advertising*, 34(2), 7–20. <https://doi.org/10.1080/00913367.2005.10639188>
- Meyers-Levy, J. & Tybout, A. M. (1989). Schema congruity as a basis for product evaluation. *Journal of Consumer Research*, 16(1), 39–54. <https://doi.org/10.1086/209192>
- Mohanty, P. P., & Ratneshwar, S. (2015). Did you get it? Factors influencing subjective comprehension of visual metaphors in advertising. *Journal of Advertising*, 44 (3), 232–242. <https://doi.org/10.1080/00913367.2014.967424>
- Moore, D. J., & Konrath, S. (2014). I can almost taste it: Why people with strong positive emotions experience higher levels of food craving, salivation and eating Intentions. *Journal of Consumer Psychology*, 25 (1), 42–59. <https://doi.org/10.1016/j.jcps.2014.07.001>
- Moreau, C. P., Lehmann, D. R., & Markman, A. B. (2001). Entrenched knowledge structures and consumer response to new products. *Journal of Marketing Research*, 38(1), 14–29. <https://doi.org/10.1509/jmkr.38.1.14.18836>
- Peracchio, L. A., & Meyers-Levy, J. (1994). How ambiguous cropped objects in ad photos can affect product evaluations. *Journal of Consumer Research*, 21(1), 190–204. <https://doi.org/10.1086/209392>

- Peterson, M. O. (2018). Aspects of visual metaphor: An operational typology of visual rhetoric for research in advertising. *International Journal of Advertising*, 38(1), 67-96. <https://doi.org/10.1080/02650487.2018.1447760>
- Phillips, B. J. (1997). Thinking into it: Consumer interpretation of complex advertising images. *The Journal of Advertising*, 26(2), 77-87. <https://doi.org/10.1080/00913367.1997.10673524>
- Phillips, B. J. (2000). The impact of verbal anchoring on consumer response to image ads. *Journal of Advertising*, 29(1), 15-24. <https://doi.org/10.1080/00913367.2000.10673600>
- Phillips, B. J. (2003). Understanding visual metaphor in advertising, in *Persuasive imagery: A consumer response perspective*, L. Scott and R. Batra (eds), 297-310. <https://doi.org/10.4324/9781410607256>
- Phillips, B. J., & McQuarrie, E. F. (2004). Beyond visual metaphor: A new typology of visual rhetoric in advertising. *Marketing Theory*, 4(1/2), 113-136. <https://doi.org/10.1177/1470593104044089>
- Proctor, T., Proctor, S., & Papasolomou, I. (2005). Visualizing the metaphor. *Journal of Marketing Communications*, 11(1), 55-72. <https://doi.org/10.1080/1352726042000284455>
- Ragunathan, R., Naylor, R. W., & Hoyer, W. D. (2006). The Unhealthy = Tasty intuition and its effects on taste inferences, enjoyment, and choice of food products. *Journal of Marketing*, 70(4), 170-184. <https://doi.org/10.1509/jmkg.70.4.170>
- Scott, C.L., & Downey, R. G. (2007). Types of food aversions: Animal, vegetable, and texture. *The Journal of Psychology*, 141(2), 127-34. <https://doi.org/10.3200/jrlp.141.2.127-134>
- Smith, R. E., & Yang, X. (2004). Toward a general theory of creativity in advertising: Examining the role of divergence. *Marketing Theory*, 4(1-2), 29-55. <https://doi.org/10.1177/1470593104044086>

- Šorm, E., & Steen, G. (2013). Processing visual metaphor: A study in thinking out loud, in *Metaphor and the social world 3:1*, John Benjamins Publishing Company, 1–34. <https://doi.org/10.1075/msw.3.1.01sor>
- Spiggle, S. (1994). Analysis and interpretation of qualitative research in consumer research. *Journal of Consumer Research*, 21(3), 491–503. <https://doi.org/10.1086/209413>
- Tseng, M.-Y. (2017). Primary metaphors and multimodal metaphors of food: Examples from an intercultural food design event. *Metaphor and Symbol*, 32(3), 211–229. <https://doi.org/10.1080/10926488.2017.1338027>
- Unnava, H. R., & Burnkrant, R. E. (1991). An imagery processing view of the role of pictures in print advertisements. *Journal of Marketing Research*, 28(5), 226–231. <https://doi.org/10.2307/3172811>
- Van der Laan, L. N., de Ridder, D. T. D., Viergever M. A., & Smeets, P.A.M. (2011). The first taste is always with the eyes: A meta-analysis on the neural correlates of processing visual food cues. *Neuroimage*, 55(1), 296–303. <https://doi.org/10.1016/j.neuroimage.2010.11.055>
- Van Dillen, L. F., Papies, E. K., & Hofmann W. (2013). Turning a blind eye to temptation: How cognitive load can facilitate self-regulation. *Journal of Personality and Social Psychology*, 104(3), 427–443. <https://doi.org/10.1037/a0031262>
- Veling H., Aarts H., & Stroebe, W. (2012). Using stop signals to reduce impulsive choices for palatable unhealthy foods. *British Journal of Health Psychology*, 18(2), 354–368. <https://doi.org/10.1111/j.2044-8287.2012.02092.x>
- Wertenbroch, K. (1998). Consumption self-control by rationing purchase quantities of virtue and vice. *Marketing Science*, 17(4), 317–337. <https://doi.org/10.1287/mksc.17.4.317>

Zhang, H., Sun, J., Liu, F. & G. Knight, J. (2014). Be rational or be emotional: Advertising appeals, service types and consumer responses. *European Journal of Marketing*, 48(11/12), 2105-2126. <https://doi.org/10.1108/ejm-10-2012-0613>