ARTICULATING A NEW FRAMEWORK FOR VISUAL METAPHORS IN ADVERTISING

A Structural, Conceptual, and Pragmatic Investigation

Lampros Gkiouzepas and Margaret K. Hogg

ABSTRACT: This study develops and tests a conceptual framework for categorizing visual metaphors in advertising according to whether the pictorial elements in the ad are synthesized or juxtaposed. In this attempt, it subscribes to the view that creative ideas frequently share similar design structures and patterns in devising visual metaphors. This study demonstrates that compared with ad visuals that simply juxtapose metaphorical objects, ad visuals that synthesize conceptually similar metaphorical objects provoke greater elaboration and elicit more favorable consumer attitudes toward both the ad and the brand. These positive effects are not free of comprehension costs, however. Ads that synthesize very dissimilar objects (as compared with ads that juxtapose objects) fail to produce the same benefits and might, in some cases, even risk reducing the persuasiveness of the argument about key product attributes in the advertising message.

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In addressing the issue of visual metaphor, this paper shares a key assumption with researchers (Goldenberg and Mazursky 2008; Larsen, Luna, and Peracchio 2004; Sternberg 1999) arguing that the exploration of the basic attributes of the creative end product can serve as the foundation for proceeding to higher-order analyses. More complex analytical frameworks could allow the structural aspects of the visual to be combined with the interpretation of the visual, thus potentially contributing significantly to our understanding of how advertising works. It is within this research context of advertising that this study aims to address all three aspects of visual rhetoric, as identified by Maes and Schilperoord (2008), involving structural (i.e., the visual form of the metaphor), conceptual (i.e., the content of the metaphor or else its referents), and pragmatic (i.e., the effects it has on viewers) considerations. In particular, our research objectives are:

1. To investigate the importance of visual structure for viewers’ responses to advertising in order, first, to establish that the distinctions drawn in the conceptual framework between synthesis and juxtaposition (Figure 1) found in visual metaphors. Kennedy compares visual metaphors with the so-called literal visual: “deceptions that follow some standard canons might be called literal, and ones that are metaphorical would be those that deliberately violate the standard canons while being intended to make a valid point that can be determined by examining the depiction and its referents” (1982, p. 590). Such a comparison between “literal” and metaphorical visuals (see also Carroll 1994) has been questioned by Scott (1994), who argued that all visuals are essentially figurative. We argue, however, that the importance of the metaphor’s depiction and referents in establishing representational deviation (and thus attracting and encouraging readers to uncover the implied visual message) have been neglected in the literature.

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can limit the impact of visual structure on viewers’ responses to ads to demonstrate the importance of visual structure on viewers’ responses to metaphors in advertising. That is, whether one source (i.e., content) of incongruity can undermine the impact of another source (i.e., visual representation).

3. To investigate whether or not visual structures that are more deviant have a greater persuasive advantage than less deviant structures, to clarify the extent to which there is visual-verbal equivalence between similes and metaphors, because earlier studies suggested that visual similes are less explicit, and thus less effective than metaphors (see, e.g., Forceville 1996).

**VISUAL SYNTAX**

The framework (Figure 1) draws on previous rhetorical accounts of visual imagery (see, e.g., Forceville 1996; Kaplan 1992; McQuarrie and Mick 1999) but also differs from these earlier studies in that it does not aim to draw direct links between verbal rhetorical figures and visual imagery. It
categories visual forms with reference to two broad dimensions: first, the objects’ mode of representation (juxtaposition and synthesis), and second, the visual scenarios (realistic symbiosis, replacement, and artificial symbiosis). These together provide a matrix for six types of combinatorial mechanisms (for examples see Figure 1) and a starting point for proposing a syntax of visual imagery of the metaphorical relationships developed by advertisers. Incongruity in each cell has its unique features. It should be noted that the extent to which images depart from realistic depiction needs to be seen as a continuum of cases rather than as clear-cut categories.

The first dimension of an object’s mode of representation seems to involve a major distinction that appears in the visual rhetoric literature under a variety of names: pictorial simile and metaphors (Forceville 1996), scheme and trope (McQuarrie and Mick 1999), juxtaposition and identity (Kaplan 1992), association and transformation (Kaplan 1990), juxtaposition and fusion (Phillips and McQuirre 2004), or pictorial simile and pictorial metaphor (Teng and Sun 2002). The objects’ mode of representation dimension in the present framework answers the question about what is being related. The importance of what is being related represents a major source of representational incongruity that deals with how entities would ordinarily be expected to appear (mode of representation) in the real world (i.e., the realism of their static state). For example, the metaphorical objects can be depicted either in their entirety (juxtaposition) or in part (synthesis). The conceptual framework enhances this important distinction between juxtaposition and synthesis visuals by introducing the dimension of visual scenario.

The visual scenario dimension addresses a factor that is often neglected within visual incongruity when we rely solely on verbal categorizations to explain or understand visual metaphors. The neglected factor is how these whole/part objects are constructed in order to be related to each other visually. Visual scenario relates to how advertisers “justify” the coappearance of the key visual objects. That is, the extent to which the relation between the two objects complies or fits with real-life visual experiences. This issue of compliance relates both to the juxtaposition and to the synthesis categories because the relationship between the objects is important in exposing the extent to which the communicator explicitly manifests his metaphorical intentions. In terms of cognitive psychology, understanding visuals is not just a matter of listing objects. Research shows that readers’ mental representations include specifications of the various relationships among objects. The violation of these (expected) relationships can have important implications for memory and perception (see, e.g., Biederman, Mezzanotte, and Rabinowitz 1982; Friedman 1979). The next section discusses the nature of the relationships between the metaphorical objects in each visual scenario.

Realistic Symbiosis

Visuals in the first category, realistic symbiosis, propose a metaphorical link by apparently pointing to an unusual view of life, which has metaphorical implications. This usually involves unexpected similarities in terms of color, position, or angle of view. For example, the ad example in the realistic symbiosis juxtaposition cell (see Figure 1, Cell 1) utilizes such similarities between the color and shape of the hair of a pedestrian with the color and shape of a bush behind the advertised car (both in bright red), and between the car’s color and the color of the pedestrian’s clothes (both in black) to generate a connection between the pedestrian and the car. At the same time, there is a real-life scenario that “explains” the coexistence of both these visual objects in the picture. This naturally occurring coexistence appears to remove part of the advertiser’s responsibility for the visual metaphor because the advertiser’s manipulation relies on capturing this metaphor via an otherwise realistic event (the street scene). Teng and Sun (2002) have attributed this sense of a storylike scenario to the depth of pictorial space that is strongly suggested in such visuals. The most important factor introduced by the present framework (Figure 1) is that both the focal objects depicted in the visual (Cell 1) can be reasonably seen as equally relevant to the rest of the visual context.

The ad in Cell 2 (Figure 1) illustrates an example of the equivalent realistic symbiosis visual that corresponds to the synthesis side of the framework. This ad proposes a connection between butter and haystacks by presenting butter in such a way that it resembles haystacks left in a field. In this case, the deviant position, the angle of view, and its contour are elements that help the viewer to recognize the visually absent object. Although the second focal object (i.e., sheaves of wheat) is not visually present in its entirety (thus satisfying the condition posed by the synthesis category), elements that belong to its domain are still identifiable. Again, the advertiser is seen as just capturing a metaphorical moment of a real-life event for his metaphorical intentions without any physical object interrupting the schema. This first category of visual metaphor as a whole seems to draw on the increasingly prominent snapshot aesthetics from the art of photography in an effort to appear authentic (Schroeder 2008) and present the deviations as “natural accidents.”

Replacement

In the second category, replacement refers to visuals (see, e.g., Figure 1, Cells 3 and 4) where one of the objects has been replaced by an object foreign to the schema. Research involving objects unlikely to appear in visual scenes is not new in the cognitive psychology literature (see, e.g., Biederman, Mezzanotte, and Rabinowitz 1982). Phillips and McQuarrie (2004) seem to
draw a similar distinction. In the present framework, however, replacement is expanded to include visuals where both objects are visually present in their entirety. An example is provided in Cell 3 (replacement juxtaposition) where a convertible car replaces a sunbed, next to a swimming pool. The ad in Cell 4 (replacement synthesis) is the equivalent example of the synthesis category. In this ad, the product is placed on an easel, thus suggesting a work of art. The common feature in the replacement category is that a dominant visual schema is evoked (e.g., an easel and its use for painting) that means the heretical visual element (i.e., air-conditioning unit) is seen as a physical intruder. All things being equal, the deviation felt in the synthesis category is expected to be greater since a unique object should have greater relevance to the visual schema than a repeated object. Unlike in the realistic symbiosis scenario (Figure 1, Cells 1 and 2), the advertisers’ metaphorical intention is manifested, not just by pointing to a peculiar view of a real-life event, but by manipulating the expected content of a real-life visual schema. Moreover, research suggests that such relational violations are accessible to viewers at least as quickly as the identification of objects or the violation of other physical relations, such as depth, size, and space (e.g., Biederman, Mezzanotte, and Rabinowitz 1982).

Artificial Symbiosis
The third category, artificial symbiosis, refers to those visuals where the focal objects are boldly placed within the same visual space, such as within a single page. For example, the ad in Figure 1, Cell 5 (artificial symbiosis juxtaposition) proposes a link between the car and the military aircraft without either being unified by a real-life visual scenario or interrupting a unified one. Thus, the artificiality in this visual symbiosis is clearly established from the outset. Nevertheless, the artificiality cannot be attributed only to the absence of a realistic visual background, but also to other elements, such as the lack of perspective, differences in position, and size (see Biederman, Mezzanotte, and Rabinowitz 1982): These would all otherwise suggest a real-life spatiotemporal coexistence. It is believed that the same holds for visuals that combine part of two focal objects to form a single hybrid one (Forceville 1996), such as the example in Figure 1, Cell 6 (artificial symbiosis synthesis). In both cases (Cells 5 and 6), these structures manifest the advertiser’s metaphorical intention in a rather explicit way because the advertiser does not suggest a metaphor under the guise of a seemingly real visual event.

HYPOTHESES
Moderating Role of Conceptual Tension
Despite the variety of approaches that have been adopted to account for differences in the content of verbal metaphors in both the wider metaphor (e.g., Indurkhya 1991) and advertising (e.g., Morgan and Reichert 1999; Spears 2003) literature, advertising research has paid limited attention to differentiating the content of visual metaphors. It seems, however, that the categories of visual structure identified in the framework (Figure 1), as well as those proposed in the literature (e.g., Forceville 1996; Phillips and McQuarrie 2004), could accommodate pairs of objects that can vary greatly in terms of content. A factor that might function as a source of incongruity and add to the creative impact of ad visuals is that of conceptual similarity between the metaphorical objects.

Conceptual similarity might be understood as the degree of relatedness between the two metaphorical objects (i.e., concepts). Put another way, conceptual similarity is about the semantic proximity of the categories in the readers’ mind. For example, a car and an aircraft (Figure 1, Cell 5) might be in closer conceptual proximity to each other than a car and a sunbed (Figure 1, Cell 3) or a television and a razor (Figure 1, Cell 6). As the ad in Figure 1, Cell 5, suggests, there are plenty of characteristics (e.g., safety systems, engine) on which a car and an aircraft can be compared. It seems self-evident that the construct of conceptual similarity is broad and could be subdivided into a plethora of dimensions (e.g., based on similarities in appearance, material, or function), which themselves can be further divided. Apart from the role that conceptual similarity might play in viewers’ perception of incongruity and creativity, research on metaphor shows that conceptual similarity can have important implications for the perceived quality of metaphors and their recall. For example, McCabe (1988) has found that spoken metaphors are better remembered when they compare dissimilar things, whereas literary metaphors are better remembered when they compare similar things. Furthermore, the similarity of the two objects of a metaphor seems to determine its quality when that metaphor occurs in isolated formulaic sentences, as compared to occurring in extended, natural contexts (McCabe 1983).

A pertinent question is whether or not the impact of visual structure can be moderated by the tension caused by the conceptual dissimilarity of two objects in an ad. It seems legitimate to expect that differences in the visual structure might exert a less strong influence on deviation, and thus on viewers’ responses, when the metaphorical categories being coupled are conceptually more unrelated (i.e., conceptually dissimilar). Put another way, the impact of visual structure might be limited to those instances where the objects are conceptually seen to be more closely related to each other. Thus, it can be hypothesized that visual structure, in the case of synthesis visuals, for instance, might play a less important role when the conceptual tension between the objects is already heightened.

It might appear that the argument above contradicts existing incongruity theories that predict increased elaboration or other positive effects with higher degrees of incongruity. This is well documented (Goodstein 1993; Houston, Childers,
and Heckler 1987; Lee 2000; Meyers-Levy and Tybout 1989; Stafford, Walker, and Blasko 1996). However, the essence of our argument is not that greater incongruity, when successfully resolved, cannot lead to positive effects, but rather that one source of incongruity (i.e., semantic content) might be able to offset the impact of another source of incongruity (i.e., visual structure). That is, different sources of incongruity do not necessarily have to add up in a linear fashion as might be the case when considering a single source of incongruity. Conceptual tension might act competitively rather than synergistically in relation to visual structure, in terms of induced incongruity. The discussion that follows on the impact of visual structure on such key consumers’ responses as elaboration, attitude toward the ad, attitude toward the brand, and product attribute beliefs, examines these in the light of the possible moderating role of conceptual tension.

Consumer Elaboration and Pleasure

The first research objective concerning the framework is to demonstrate that the distinctions proposed are meaningful. In trying to validate the conceptual framework, we concentrate on the objects’ mode of representation rather than on the visual scenario dimension. This is necessitated in part first, by the importance of the objects’ mode of representation in the current understanding of visual rhetoric in the literature (e.g., Forceville 1996; Kaplan 1992; McQuarrie and Mick 1999), and second, in part, by our expectation that if visual form matters, then this should be more evident in the broader dichotomy between juxtaposition and synthesis visuals. Moreover, visual scenario violations, although qualitatively different, might not have an incremental impact on perceived incongruity. However, visual scenario violations are important in distinguishing between juxtaposition and synthesis visuals. It seems that such relational violations might have other important implications such as for memory (Friedman 1979; Goodman 1980). An important test of the meaningfulness of the conceptual framework is to check whether or not synthesis visuals can provoke greater elaboration and ad liking than juxtaposition visuals. This effect has previously been attributed to visual rhetorical figures, and even more so, to visual tropes (McQuarrie and Mick 1999). Although McQuarrie and Mick’s (1999) findings reveal that visual tropes provoked greater elaboration and ad liking than visual schemes, it still remains unclear how visual structure corresponds to tropes and schemes. Such a correspondence still remains a tentative proposition (Phillips and McQuarrie 2004). Similarly, Phillips (2003) suggested that a richer understanding of visual metaphor requires matching the form of a metaphor with its effects.

Our prediction that synthesis visuals can provoke greater elaboration is in line with the basic premise that incongruity provokes elaboration (Heckler and Childers 1992; McQuarrie and Mick 1996), yet it avoids the problematic issue of suggesting some degree of identity between verbal and visual rhetorical figures. Our expectation is based on two premises. At the lower level of visual representation, the process of mentally inferring or completing a partially depicted object in synthesis visuals (e.g., Figure 1, Cells 2, 4, and 6) might require a greater cognitive effort on the part of the viewer than when the objects are fully depicted (Peracchio and Meyers-Levy 1994) (e.g., Figure 1, Cells 1, 3, and 5). Moreover, the greater incongruity of synthesis visuals might increase the likelihood that a representational violation will be detected and the visual metaphor will be elaborated for its implicit meaning. Sperber and Wilson’s (1986) notion of the presumption of relevance might explain why incongruity is not dismissed as a mere error but can lead to elaboration. In particular, the presumption of relevance states that every communication act holds the promise of being optimally relevant to the receiver of the communication. Given the existence of a presumption of relevance, it might be hypothesized that not only is it more difficult for the viewer to ignore the metaphorical intention of a synthesis visual, but its implications might seem to carry more “weight,” and thus viewers might seek out the meanings more carefully. It is interesting to note that research shows that visual elements that differ from expectations attract readers’ attention and gaze, and are subjected to closer examination because of their perceived informative value (Friedman 1979; Loftus and Mackworth 1978; Parker 1978). Hence, we expect that

H1: Synthesis visuals will provoke greater elaboration than juxtaposition visuals in low (versus high) conceptual tension conditions.

The pleasure derived from successfully resolving ambiguous visuals (McQuarrie and Mick 1999) might point to the importance of readers’ participation in the construction of the ad’s meaning (Lagerwerf and Meijs 2008). We argue that synthesis visuals, by being more deviant at a structural-surface level and more inviting at a semantic level, might be better liked because they give readers a greater sense of personal relevance and mastery over the creative product when interpreted. In addition, research shows that the ambiguity induced by single cropped visual objects, which is more a characteristic of synthesis visuals, was found to enhance affect even if the intention was not to initiate a metaphorical interpretation (Peracchio and Meyers-Levy 1994). Of secondary importance to advertising theory, but not to advertising practice, is whether or not increased ad liking can be transferred to brand attitudes. It is well established that attitude toward the advertisement can affect attitude toward the advertised brand (Gardner 1985; Mitchell and Olson 1981). Therefore, it could also be hypothesized that synthesis visuals could increase positive attitudes toward the brand. Thus, we hypothesize that
H2: Synthesis visuals will provoke more favorable attitude toward the ad in low (versus high) conceptual tension conditions.

H3: Synthesis visuals will provoke more favorable attitude toward the brand than juxtaposition visuals in low (versus high) conceptual tension conditions.

Persuasiveness

The third objective was to test the widely held view that metaphors communicate certain properties from the secondary to the primary subject more strongly than similes. The issue of metaphor persuasiveness is important. This is because a greater understanding of rhetorical figures could be achieved at a theoretical level (Phillips 2003) and because it constitutes a major advertising objective at the practical level. In the wider literature, it has generally been hypothesized that verbal metaphors are more effective in communicating their intended figurative meaning than similes (Black 1979; Morgan 1979). Similarly, other theorists seem to subscribe to the proposition that pictorial metaphors are stronger in expressing figurative messages (e.g., Forceville 1996; Teng and Sun 2002). This assumption usually implies a persuasive advantage for metaphors over similes in advertising.

Phillips (2003) points to alternative approaches (e.g., Hitchon 1997) that do not freely adopt a de facto assumption about the superiority of the metaphor. The latter approach seems to result from the diachronic debate about whether metaphors are a matter of language or of thought. By accepting that a metaphor is essentially a matter of thought (Lakoff and Johnson 1980), then it might be argued that any distinctions at a surface level (i.e., either language or visual structure) cannot play any significant role in their effectiveness because all forms essentially initiate the same cognitive operation in viewers’ minds (i.e., understanding one thing in terms of another). That is, the mental representation of similes and metaphors does not differ. Actually, Chiappe and Kennedy (2000) challenge the commonly held view that verbal metaphors are stronger than similes by showing that such a superiority holds only in those cases where a metaphor corrects a simile, as in the sentence “John’s not just like a tree, he is a tree” (Morgan 1979).

It appears, however, that there is a crucial difference in what surface represents in the verbal domain as opposed to the visual domain. Whereas in the verbal domain, surface differences might mean using the phrase A is like B instead of the phrase A is B (where both phrases remain correct within grammatical and syntactical rules), surface differences in the visual domain might mean the violation of well-established representational norms. In that respect, synthesis visuals, by being more deviant, might increase the likelihood that the visual metaphor will be noticed and its implicit meaning will be derived. Thus, we would expect that synthesis visuals could have a greater persuasive advantage in low-tension conditions when compared with juxtaposition visuals, but not in high-tension conditions.

This advantage of synthesis visuals is expected to apply to both weak and strong implicatures. The ability of visual metaphors to communicate either a strong meaning, shared by most receivers, or a variety of weaker and more idiosyncratic meanings (referred to as strong and weak implicatures by Sperber and Wilson 1986) is well documented (Forceville 1996; McQuarrie and Phillips 2005; Phillips 1997). Although McQuarrie and Phillips (2005) found that metaphors presented in pictorial form spontaneously generated more positive idiosyncratic brand inferences than literal statements, verbal metaphors, or anchored visual metaphors, it is not yet known whether some structures communicate their intended meaning(s) more persuasively. We hypothesize that

H4: Synthesis visuals will be able to provoke stronger product attribute beliefs for both (a) strongly and (b) weakly communicated attributes than juxtaposition visuals in low (versus high) conceptual tension conditions.

STUDY 1

Method

Pretest

A pretest was conducted with 17 postgraduate students to select the two pairs (from a pool of three pairs of metaphorical objects) that differed the most in terms of conceptual similarity. The pairs of objects were presented both verbally (as word pairs) and visually. To measure conceptual similarity, participants rated the extent to which the pairs were “similar,” “related,” “connected,” and “compatible” on a seven-point, four-item scale (for verbal version, Cronbach’s $\alpha = .90$; for visual version, Cronbach’s $\alpha = .85$). The multi-item scale employed was an extension of a single-item scale (i.e., very low to very high similarity) used by McCabe (1988) to assess conceptual similarity in verbal metaphors. Finally, on a seven-point scale anchored by “easy/difficult,” participants rated the extent to which it was difficult for them to compare the two concepts-objects.

The pretest showed that the pairing consisting of a plasma television and a painting ($M = 2.60$, $SD = 1.40$) was the most dissimilar pair, while the pairing of a jar of orange marmalade and an orange ($M = 4.56$, $SD = 1.68$) were the conceptually more similar pair ($p < .01$). Although both the verbal and the visual versions of the pretest showed a significant difference for these two pairs of objects (for the visual version, $p < .01$), the visual version more clearly discriminated between the pairs of objects. Although the “easiness to compare” measure
successfully showed a significant difference when the pairs were presented verbally \((p < .03)\), such that the plasma television pair was found to be more difficult to compare than the marmalade pair, it did not manage to reach significance in the visual version of the pretest. In sum, the results from the pretest indicate that the pair that consisted of the marmalade and the orange was conceptually more similar than the equivalent pair (i.e., plasma television and painting) proposed by the plasma television ad.

**Stimuli Construction**

Six full-page, color test ads were developed for each product category based around the same two focal objects as in the pretest (see Appendix 1). These focal objects were a jar of marmalade and an orange for the Greek orange marmalade set of ads (low tension) and a plasma television and a painting for the Hitachi plasma television set of ads (high tension). The advertising visuals in the test ads were adapted in such a way as to correspond to the same structural specifications as those defined for each cell by the conceptual framework (Figure 1). Because no prior knowledge of the image of the advertised product could be assumed on the part of the respondents, a small replication picture of the product was included at the bottom of all ads. This seemed necessary for the realistic symbiosis synthesis ads—for example, where the respondents’ lack of familiarity with the marmalade jar schema might have meant that respondents would be unable to identify the visual elements in the main picture. Headlines in Greek were developed for each series of ads, identifying a key brand attribute. For the marmalade ads, the headline stated, “Greek Orange Marmalade . . . from oranges,” reinforcing the importance of the orange content for the product. The headline for the plasma television ad stated, “Hitachi plasma TV. Real art and colors,” reinforcing the color quality of the brand. Both these headlines might be seen as anchoring the visuals to the extent that they propose the way in which the visuals could be interpreted.

**Participants and Procedure**

A total of 247 Greek undergraduate students at a public educational institute participated voluntarily. Females comprised 55.6% of the sample. Participants were randomly assigned to one of the six visual structures corresponding to the categories of the conceptual framework. Participants received a booklet containing the test ads and questionnaires, placed immediately after each ad. They were free to work through the ads at their own pace. Conceptual tension served as a within-participants factor such that each participant was shown one marmalade (i.e., low-conceptual tension) and one plasma television (i.e., high-conceptual tension) ad of the same visual structure. The order of presentation was counterbalanced. The cover story introduced the study and provided an example of the questions and scales to be answered.

**Measures**

**Manipulation Checks.** To check whether synthesis visuals are more artful than juxtaposition visuals, a seven-point semantic differential item anchored by the adjectives “artful, clever/plain, matter of fact” was used. This single-item measure was developed and used by McQuarrie and Mick (1996, 1999), and also used later by Mothersbaugh, Huhmann, and Franke (2002). In addition to measuring artful deviation, deviation from reality was measured by two 7-point semantic differential items anchored by “realistic/unrealistic” and “real/fictitious.” Participants were asked to describe each photograph in the ads in relation to these two items. These two items were averaged to form an index for picture realism (Cronbach’s \(\alpha = .75\)).

**Dependent Variables.** Elaboration was measured as in McQuarrie and Mick (1999). This scale consisted of six items (Cronbach’s \(\alpha = .75\)). Three items anchored by “provokes imagery/not imagery provoking,” “vivid/dull,” and “interesting/boring” (Unnava and Burnkrant 1991) tap the imagistic part of elaboration and three items anchored by “I had many/few thoughts,” “the ad has multiple/one meaning(s),” and “the ad has complex/simple meaning(s)” measure the discursive form of elaboration. Apart from measuring both imagery and information processing (MacInnis and Price 1987), the scale offers the advantage of continuity with past research. Attitude toward the ad was measured by the sum of three items anchored by “liked/disliked,” “good/bad,” and “pleasant/unpleasant” (Cronbach’s \(\alpha = .82\)). Attitude toward the brand was measured based on three 9-point items anchored by “favorable/unfavorable,” “like/dislike,” and “positive/negative” (Cronbach’s \(\alpha = .89\)). Furthermore, to check whether or not the predicted advantages of synthesis visuals incur a cost in terms of comprehension, two 7-point items anchored by “easy/difficult to understand” and “straightforward/confusing” (Cronbach’s \(\alpha = .83\)) were used.

Beliefs strength about brand attributes was measured by asking informants to rate the probability of the advertised brand having more of an attribute when compared with other brands on a nine-point semantic differential item anchored by “unlikely/likely.” Two attributes were measured for each of the advertised products. The first attribute measured was supported by the headline of the ads (i.e., orange content, color quality) and can be referred to as a strong implicature in Sperber and Wilson’s (1986) terminology. Because visual metaphors can also communicate weak implicatures (Phillips 1997), two additional attributes were included in the study. Although neither of these latter attributes were reinforced in the verbal part of the ads, they would be legitimate interpretations of
the experimental ads. It could be argued, however, that the responsibility for achieving such interpretations lies more with the readers than with the advertiser. We do not argue that all the readers would agree with the weak attributes tested. For marmalade, the weak attribute of sugar content tested was based on the assumption that more oranges might also be taken to mean less sugar, whereas for plasma television, manufacturing quality served as the weak implicature on the assumption that color quality implies attention to details—a quality that might be transferred to manufacturing.

Results

Unless otherwise indicated, the data were analyzed based on 2 × 2 ANOVAs (analyses of variance) with objects’ mode of representation (juxtaposition or synthesis) serving as a between-participants factor and conceptual tension (low or high) serving as a within-participants factor. Main effects for the conceptual tension are not interpretable insofar as the low and high conceptual manipulation was applied to different sets of ads. Visual scenario results would also have required a slightly different approach in the development of stimuli (e.g., variation of the visual background) to be meaningful.

Manipulation Checks

For the manipulation check, ANOVAs were performed comparing juxtaposition and synthesis visuals on artful deviation and picture realism. We found a significant interaction between conceptual tension and objects’ mode of representation for both figurativeness, \(F(1,245) = 19.01, p < .01\), and picture realism, \(F(1,245) = 19.84, p < .01\), such that synthesis visuals were found to be more figurative and unrealistic than juxtaposition visuals in the low-tension condition, but not in the high-tension condition (see Table 1).

Treatment Effects

Before examining the effects of visuals’ structure on key dependent variables, we assessed whether synthesis visuals were more difficult to understand than juxtaposition visuals. No significant interaction was found (\(F < 1\)), indicating that neither in the low-tension condition nor in the high-tension condition was there a significant difference between juxtaposition and synthesis visuals in terms of comprehension. Although the comparison is not directly interpretable, it appears that high-tension ads were overall more difficult to understand than low-tension ads, \(F(1,245) = 202.62, p < .01\).

Research Objective 1 and 2. Hypotheses 1–3 predicted that synthesis visual structures will provoke greater elaboration (H1), more favorable attitude toward the ad (H2), and more favorable attitude toward the brand (H3) than juxtaposition visuals in the low-tension condition, but not in the high-tension condition. A significant interaction between conceptual tension and objects’ mode of representation, \(F(1,245) = 10.88, p < .01\), revealed that elaboration was greater under synthesis conditions than under juxtaposition conditions only when conceptual tension was low. Thus, H1 was supported. As predicted by H2, attitude toward the ad was more favorable for the ads employing synthesis visuals than for the ads employing juxtaposition visuals in low- (but not in high-) tension conditions. The interaction term was significant, \(F(1,245) = 3.97, p < .05\). Similarly, attitude toward the brand was greater under synthesis conditions than under juxtaposition conditions.

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<thead>
<tr>
<th>MANIPULATION CHECKS</th>
<th>LOW-CONCEPTUAL TENSION</th>
<th>HIGH-CONCEPTUAL TENSION</th>
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<td></td>
<td>Juxtaposition</td>
<td>Synthesis</td>
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<tr>
<td>Artful deviation</td>
<td>3.35</td>
<td>1.79</td>
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<td>Picture realism</td>
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<td>1.28</td>
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TABLE 1

Study 1: Means and Standard Deviations for Manipulation Checks and Dependent Variables (N = 247)
in low- (but not in high-) tension conditions, although this interaction was only marginally significant, $F(1, 245) = 3.23$, $p < .07$. Hence, H3 was only marginally supported. It appears that the effect on attitude toward the brand is not as clear as the effect on ad liking.

**Research Objective 3.** Hypothesis 4 suggested a persuasive advantage in communicating both strong (marmalade content) and weak (sugar content) implicatures for ads with synthesis visuals than for ads with juxtaposition visuals in low-tension conditions. The interaction term for the strongly communicated attribute approached significance, $F(1, 245) = 3.04$, $p < .08$. An examination of the means reveals that there was no difference between juxtaposition and synthesis visuals as to the level of orange, but synthesis visuals were, in fact, less convincing than ads with juxtaposition visuals in high-tension conditions. In terms of the secondary attribute, ads with synthesis visuals were neither more nor less persuasive than juxtaposition visuals in both tension conditions. The interaction was not significant ($F < 1$). Thus, H4 was rejected insofar as there was no persuasive advantage for synthesis visuals as compared to juxtaposition visuals in low-tension conditions.

In accordance with the research objectives, Study 1 shows that synthesis visuals can increase elaboration, attitude toward the ad, and attitude toward the brand without being more difficult to understand when the objects being coupled in the visual metaphor are not excessively dissimilar to each other. It seems that the framework can successfully discriminate between synthesis and juxtaposition visual structures. Synthesis visuals did not manage to positively influence the persuasiveness of either strong or weak implicatures. By contrast, it appears that when conceptual tension is high, synthesis visuals might even inhibit the communication of the strong implicature.

Study 2 was designed to assess the degree of generalizability of Study 1 findings and to tackle some of its limitations. Study 1, by manipulating a small number of artificial ads, was aimed at achieving internal validity. Thus, a main concern in Study 2 was to explore whether or not the findings from Study 1 could be extended to a larger number of real-world ads. A further issue was the presence of the smaller picture of have to infer the partially depicted object, and (2) removed part of the intriguing properties of the synthesis ads. A further concern was the validation of the conceptual tension dimension. In addition to the level of conceptual tension, the two sets of ads (in Study 1) differed in other respects; notably, they differed because the primary objects belonged to different product categories.

**STUDY 2**

**Method**

**Stimuli Construction**

To test whether the main findings from Study 1 can be extended to (and are generalizable to) real-world ads, an initial set of nine ads that represented a diversified pool of product categories were chosen for pretesting. Each visual scenario in the original framework (see Figure 1) was represented by three ads. The aim of the pretest was to choose one similar and one dissimilar pair for each visual scenario. Because the verbal version of the pretest in Study 1 had been sufficient to differentiate between pairs of objects, the objects were presented only verbally in this pretest for Study 2. Moreover, the verbal test seems to be more appropriate for measuring similarity at a conceptual level because the verbal presentation of the concepts is not bound with any specific physical form (i.e., the verbal presentation avoids the issue of physical resemblance), and in that sense, the comparison is decontextualized (see also McCabe 1988).

Twenty respondents rated all nine pairs of objects. The procedure and the items used for measuring conceptual similarity (Cronbach’s $\alpha = .82$) were the same as for Study 1. The pairs of objects that were found to be the most similar to each other (all $p s < .01$) were between ketchup and tomato ($M = 5.48$, $SD = 1.69$), glass of beer and can of beer ($M = 5.56$, $SD = 1.19$), and air-conditioning unit and refrigerator ($M = 4.31$, $SD = 1.72$). The most dissimilar pairs were between paper for note and towel ($M = 1.74$, $SD = 1.28$), used car and fruit ($M = 1.08$, $SD = .23$), and LCD television and double-sided razor blade ($M = 2.16$, $SD = 1.65$).

Table 2 provides descriptions of all the ad stimuli included in Study 2 (see Appendix 2 for stimuli examples and descriptions). The stimuli for Heinz ketchup, Post-it notes, Stella Artois beer, Volkswagen Beetle used cars, and Toshiba television were based on real-world synthesis ads. Only the picture of the razor was changed from the original Toshiba television ad for this visual (Figure 1, Cell 6) so that the blade could be more readily adapted to generate both juxtaposition and synthesis visual structures. The headline for this particular test ad (Appendix 2, Cells 5 and 6) emphasized the product’s thinness because of constraints posed by the translation of the original headline. Last, the test ad for the LG air-conditioning unit was not based on any real ad (not shown here).

**Participants and Procedure**

A new sample of 110 students (59% women) was recruited from the same institution as in Study 1. Participants received a booklet with six ads. They rated each ad immediately after seeing it, working at their own pace. The order of the ads was
counterbalanced. Participants were randomly assigned to one of the two objects’ mode of representation conditions (juxtaposition or synthesis) such that each participant rated all six ads that fell within the same mode of representation. The cover story and the instructions were the same as for Study 1.

Measures

Measurement of artful deviation and of the dependent variables of comprehension (Cronbach’s $\alpha = .79$), elaboration (Cronbach’s $\alpha = .70$), attitude toward the ad (Cronbach’s $\alpha = .90$), and weak and strong implicatures were identical to those in Study 1. A seven-point semantic differential item anchored by the adjectives “related/unrelated” served as a manipulation check for conceptual similarity. The two objects to be compared for conceptual similarity were mentioned in parenthesis. This question always appeared last to avoid priming participants. As in Study 1, strong implicatures were perceived as those that were more closely linked to the ads’ headlines. These were tomato quality (ketchup), product quality (beer), cooling capacity (air-conditioning unit), reliable reminder (notes), being more “like new” (used cars), and thinness (LCD TV). The weakly communicated attributes measured were level of tomato content, smoothness of beer taste, noiseless operation of the air-conditioning unit, quality of notes, reliability of used cars, and resolution of the LCD TV, respectively. These attributes were based on our reading of the ads and they are referred to as weak implicatures only to emphasize the difference from the strong implicatures that had been reinforced by the headlines of the ads.

Results

Each participant had the chance to rate all low and high conceptual tension ads falling within the same mode of representation condition (juxtaposition or synthesis). Thus, the interaction term in an ANOVA with one within-participants factor (low- or high-conceptual tension) and one between-participants factor (juxtaposition or synthesis visual structure) can serve as a test of whether the impact of the visual structure treatment is moderated by the conceptual similarity of the two metaphorical objects. Interactions were qualified by post hoc $t$-tests.

Manipulation Checks

We first checked whether respondents perceived a difference in the conceptual similarity of the metaphorical objects involved (Table 3). A within-participants comparison using the manipulation check for conceptual similarity showed that the pairs of objects in the low-tension condition were found to be conceptually more similar than the pairs in the high-tension condition, $t(109) = 20.02, p < .01$. We then examined whether a synthesis structure was able to induce perceptions of artfulness only in low conceptual tension conditions. A significant interaction involving the two factors in the design was found, $F(1, 108) = 12.92, p < .01$. It appears, however, that the manipulation of the beer ad was not successful. This low conceptual tension ad was not found to be more artful in the synthesis condition $(M = 4.58, SD = 1.41)$ than in the juxtaposition condition $(M = 4.79, SD = 1.65)$. The rest of the low tension condition ads were in the expected direction such that a synthesis visual structure significantly increased perceptions of artfulness ($p < .01$), whereas there was no significant difference between juxtaposition and synthesis visual structures in the three high-tension ads.

Treatment Effects

Synthesis visual structures appeared to have a negative impact on the comprehension of the ads as compared to the

<table>
<thead>
<tr>
<th>Brand/product</th>
<th>Description</th>
<th>Conceptual tension</th>
<th>Description</th>
<th>Headline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heinz ketchup</td>
<td>Realistic symbiosis</td>
<td>Low</td>
<td>Sliced tomatoes stacked up in the shape of a ketchup bottle</td>
<td>“No one grows ketchup like Heinz”</td>
</tr>
<tr>
<td>Stella Artois beer</td>
<td>Replacement</td>
<td>Low</td>
<td>Glasses of beer replacing cans of beer in a six-pack</td>
<td>“The civilized six-can pack”</td>
</tr>
<tr>
<td>LG air-conditioning unit</td>
<td>Artificial symbiosis</td>
<td>Low</td>
<td>Floor air-conditioning unit merged with refrigerator</td>
<td>“LG air-conditioning unit . . . real cold”</td>
</tr>
<tr>
<td>Post-it notes</td>
<td>Realistic symbiosis</td>
<td>High</td>
<td>Creased and wrinkled note resembling creased and unironed laundry</td>
<td>“Iron the clothes”</td>
</tr>
<tr>
<td>Volkswagen used cars (Beetles)</td>
<td>Replacement</td>
<td>High</td>
<td>Volkswagen Beetle replaced by fruits in a wooden crate</td>
<td>“Approved Used Volkswagen. Always Fresh.”</td>
</tr>
<tr>
<td>Toshiba LCD television</td>
<td>Artificial symbiosis</td>
<td>High</td>
<td>Toshiba television merged with double-sided razor blade</td>
<td>“Introducing the slimmest LCD TV ever”</td>
</tr>
</tbody>
</table>
We obtained a significant interaction for the elaboration measure, $F(1, 108) = 11.84, p < .01$. Although the difference for the beer ad was negligible, synthesis structures had a positive impact on elaboration as compared to juxtaposition structures in the rest of the low-tension ads, but exerted no influence in high-tension conditions. Moreover, the interaction term involving the persuasiveness of the strongly communicated attribute also approached significance, $F(1, 108) = 3.57, p < .06$. Synthesis structures appear to be more effective in communicating the key product attribute than juxtaposition structures in low-tension conditions. The interaction effect for weak implicatures was not significant, $F(1, 108) = .13, n.s.$ (not significant).

Examining the attitude toward the ad measure did not reveal a significant interaction, $F(1, 108) = .78, n.s.$ A closer inspection of the means for the beer ad revealed that these were in the opposite direction, however, such that synthesis visual structures were found to be more difficult to understand than juxtaposition visual structures in all ads involving a low conceptual tension pair of objects.

We also obtained a significant interaction for the elaboration measure, $F(1, 108) = 11.84, p < .01$. Although the difference for the beer ad was negligible, synthesis structures had a positive impact on elaboration as compared to juxtaposition structures in the rest of the low-tension ads, but exerted no influence in high-tension conditions. Moreover, the interaction term involving the persuasiveness of the strongly communicated attribute also approached significance, $F(1, 108) = 3.57, p < .06$. Synthesis structures appear to be more effective in communicating the key product attribute than juxtaposition structures in low-tension conditions. The interaction effect for weak implicatures was not significant, $F(1, 108) = .13, n.s.$ (not significant).

Examining the attitude toward the ad measure did not reveal a significant interaction, $F(1, 108) = .78, n.s.$ A closer inspection of the means for the beer ad revealed that these were in the opposite direction, however, such that the juxtaposition structure ($M = 5.09, SD = 1.30$) was liked better than the synthesis structure ($M = 4.34, SD = 1.28, p < .01$). Post hoc $t$-tests reveal that both the other two low tension synthesis ads scored higher in ad liking than their juxtaposition counterparts (for ketchup, $p < .01$; for air-conditioning unit, $p < .09$). Synthesis ads did not achieve a significantly higher score in ad liking as compared to juxtaposition ads in the high-tension condition ($ps > .15$). The main effect of objects’ mode of representation on ad liking was not significant, $F(1, 108) = .26, n.s.$

**Discussion**

**Implications and Conclusions**

This study examined visual metaphor as a major outcome of the advertising creative process. We suggest, in a similar fashion to Larsen, Luna, and Peracchio (2004), that the study of visual rhetoric and creativity in advertising would benefit from a systematic analysis of the most basic attributes of the creative product (e.g., different combinations of visuals to create metaphors) before proceeding to higher levels of analysis of how creativity works in advertising. Using the framework of visual structures (Figure 1), we showed how one prominent exemplar of creativity output can be studied without necessarily having to understand it through verbally based categories (e.g., similes or rhymes) that seem difficult to apply to the visual domain. It appears that systematically studying basic visual attributes is not merely an exercise in categorization, but it can have significant implications in understanding consumer responses (Phillips and McQuarrie 2004). These findings align with text-interpretive visual categorizations (McQuarrie and Mick 1999) and provide the empirical evidence for answering Phillips’s (2003) crucial question about whether or not categorizations based on descriptive differences in appearance matter. Our findings showed that we matched the form of the visual with its effects over an extended array of visual structures. Furthermore, recent research findings indicate that the impact of such deeper structures does not diminish over repeated exposures (Goldenberg and Mazursky 2008).

This study demonstrated that differences in visual form, such as whether conceptually similar objects are juxtaposed or synthesized, can indeed have an impact on such important consumers’ responses as elaboration, attitude toward the ad and attitude toward the brand, thus largely validating the conceptual framework (Objective 1). The managerial implications of the present findings are straightforward given that the positive

**Table 3**

<table>
<thead>
<tr>
<th>Study 2: Means and Standard Deviations for Manipulation Checks and Dependent Variables ($N = 110$)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low-conceptual tension</strong></td>
</tr>
<tr>
<td><strong>Juxtaposition</strong></td>
</tr>
<tr>
<td><strong>M</strong></td>
</tr>
<tr>
<td>Conceptual similarity</td>
</tr>
<tr>
<td>Artful deviation</td>
</tr>
<tr>
<td><strong>Dependent variables</strong></td>
</tr>
<tr>
<td>Comprehension</td>
</tr>
<tr>
<td>Elaboration</td>
</tr>
<tr>
<td>Ad liking</td>
</tr>
<tr>
<td>Strong implicature</td>
</tr>
<tr>
<td>Weak implicature</td>
</tr>
</tbody>
</table>
impact of synthesis visuals on elaboration, attitude toward the ads, and attitude toward the brand remained relatively unaffected by changes in the specific type of synthesis structure used (i.e., visual scenario). Advertisers should exercise some caution when employing synthesis visuals, however, especially in adverse processing conditions where the opportunity to process the ad is limited. This is because synthesis visuals seem to be more difficult to understand than juxtaposition visuals. Future research, however, might explore whether synthesis visuals can compensate for some of the comprehension costs by attracting consumers’ attention and by motivating consumers’ processing of the ad.

This study also examined a key question in the wider literature involving the persuasive impact of visual rhetoric in advertising (Objective 3). While synthesis visuals were no more effective in communicating explicit product attribute claims in Study 1 than were juxtaposition visuals, synthesis visuals were consistently more persuasive in Study 2 when compared to juxtaposition visuals across all scenarios in the low-tension condition. Given that Study 2 involved a large number of ads and product categories, this seems to be a significant finding. However, as the two studies seem to reveal, the evidence for such a complex phenomenon as persuasion is far from conclusive. It appears that synthesis visuals might be able to point to the implicit meaning of the visual metaphor to a greater extent than juxtaposition visuals in low-tension conditions. It is interesting to note that high-tension ads, taken as a set, were more difficult to understand than low-tension ads in both studies. This might point to the increased processing demands posed by high-tension ads, in general. However, the fact that the means for strong implicatures were overall higher for high- (versus low-) tension ads indicates that the main message was conveyed and thus the greater ambiguity of high-tension ads was resolved.

Conceptual tension emerged as a major limiting condition for the impact of synthesis visual structures. Both studies suggest that the metaphorical objects embodied in visual form should not be excessively dissimilar from each other if the superior impact of the synthesis visual is to be achieved. The experimental analysis shows that synthesis visual structures did not have an incremental effect on elaboration, ad liking, and brand attitudes when compared with juxtaposition ads in high-tension conditions. These effects were again consistent over all three visual scenario manifestations and expose the limits of the impact of visual structure on consumers’ responses (Objective 2). It appears that the impact of visual structure is conditioned by conceptual tension, which seems to mark the text at a higher semantic level and that this overwhelms the importance of visual structure differences at a lower surface level.

The study of conceptual tension seems to be a promising research area for both the disciplines of creativity and visual rhetoric. Creativity can often be taken to imply a singular entity (Unsworth 2001). The effort put into drawing clear boundaries between literal and rhetorical visuals might wrongly imply that individual rhetorical figures also form a single and homogenous entity. However, it appears that the way objects are visually linked (i.e., visual structure) as well as their degree of relatedness (i.e., conceptual tension) are both important. We believe that the current operationalization of conceptual similarity, at a quantitative level, only scratches the surface of this multifaceted construct. Such conceptual distinctions at the level of the end creative product are important in that they can encourage a finer conceptualization and a deeper understanding of advertising by tapping into the essence of the creative associations generated by the use of visual metaphors.

Overall, in line with other theorists’ work (e.g., Goldenberg, Mazurksy, and Solomon 1999; Larsen, Luna, and Peracchio 2004), a contribution of this research is that the conceptual framework identifies key visual structures that exist at the lower levels of a layered sign system. The present research offers a systematic description and a theoretically meaningful way in which to analyze the position and relationships of visual objects—a lower-level subsystem that can be equated to that of syntax in linguistics. This study raises awareness of the role that these visual properties might play in initiating metaphorical interpretations and serves as evidence that analysis of visual properties can be the starting point for moving on to more complex accounts of visual communication that will combine the various subsystems together. A second contribution of this research is that it reveals the “competitive” relationship between conceptual tension and visual structure, thus shedding light on a question that has recently emerged in the rhetoric literature (Phillips and McQuarrie 2009). That is the question—whether it is the deviation of the advertising picture or the metaphor content that elicits the positive outcomes of rhetorical figures. Our research shows that high levels of conceptual tension, as induced by the content of the visual metaphor, might be able to mask the importance of representational deviation. It seems that when the conceptual tension of a metaphor is high, then the way this metaphor is visually delivered becomes less important.

Limitations and Future Research

Power to detect small effects is always an issue in research predicting null effects. While the sample size in Study 1 was sufficiently large enough to detect small effects, the smaller sample size in Study 2 might raise some concerns. Differences between juxtaposition and synthesis in the aggregated means for high-tension ads were rather small (d < .17). Random effects might also be an issue inasmuch as the test ads might be considered as representing extreme examples of each category in the framework. This might have artificially increased or
decreased the real difference between the visual categories. Although every possible effort was made to test the most typical examples of each category, the plethora of levels that can be thought of for each attribute (e.g., a color similarity can conceivably take many forms) makes an informed and structured decision as to the choice of stimuli very challenging.

The unexpected results for the beer ad in Study 2 might be explained in terms of how knowledge is structured. In particular, the six-pack might be seen as a single scheme that has been reinforced by the introduction of the cans of beer in the juxtaposition visual (Appendix 2, Cells 3 and 4). Put another way, the plastic rings, by themselves in the original synthesis ad, might not be so effective in evoking the schema of a six-pack. However, the fact that visual elements might be analyzed at various levels of abstraction should not deter researchers from exploring visual structure, since in general, this seems to be a characteristic of the representation of knowledge (Friedman 1979).

Existing brands were used to increase external validity, yet this might have influenced some measures (e.g., attribute beliefs due to product familiarity). However, we have no reason to suspect that participants were unevenly distributed among conditions in terms of product familiarity. Another issue concerns the fact that participants were exposed to the ads only once, and that was in a forced experimental environment. Such uninterrupted processing conditions are far from common. This might have artificially influenced the level of resources available to spend on the processing of the test ads. Despite research showing that visual figures perform equally well in more severe conditions of incidental processing (McQuarrie and Mick 2003), it may be that some of the results, and in particular, those relating to the persuasiveness and comprehension of the ads, might have been less encouraging than has been observed if the ads were processed within a cluttered environment.

This research contributed to the debate about the persuasive advantage of metaphors over similes, but it did not permit a full exploration of all the possible attributes communicated by the visual metaphors. The strong implicatures tested were in line with research showing that readers use the verbal copy to interpret visual rhetorical figures (Phillips 2000), but the weak implicatures tested were limited and based on the authors’ readings of the ads. Future research might explore a wider array of product attributes to test whether juxtaposition and synthesis visuals differ in the number and type of attributes communicated. McQuarrie and Phillips (2005) found that consumers become more receptive to multiple inferences when presented with unanchored visual metaphors. A potentially significant research endeavor would be to test whether unanchored synthesis visual structures are similarly more effective than unanchored juxtaposition visual structures, given that the former might be more open to alternative interpretations.

### NOTES

1. Data were analyzed with visual scenario as an additional between-participants factor. Only one significant two-way and one three-way interaction were found. These interactions did not have any significant implications, however.

2. The authors thank the anonymous reviewer who raised this issue.

### REFERENCES


Rubin, Edgar (1915), *Synchronale Fugger* (Visually Experienced Figures), Copenhagen: Gyldendal.


APPENDIX 1

Study 1: Experimental Stimuli for Low-Tension Condition

Realistic symbiosis juxtaposition

Realistic symbiosis synthesis

Replacement juxtaposition

Replacement synthesis

Artificial symbiosis juxtaposition

Artificial symbiosis synthesis
Study 1: Experimental Stimuli for High-Tension Condition

- **Realistic symbiosis juxtaposition**
  ![Realistic symbiosis juxtaposition](image)

- **Realistic symbiosis synthesis**
  ![Realistic symbiosis synthesis](image)

- **Replacement juxtaposition**
  ![Replacement juxtaposition](image)

- **Replacement synthesis**
  ![Replacement synthesis](image)

- **Artificial symbiosis juxtaposition**
  ![Artificial symbiosis juxtaposition](image)

- **Artificial symbiosis synthesis**
  ![Artificial symbiosis synthesis](image)

Note: Real brand name and painting appeared in the original stimuli.
APPENDIX 2

Study 2: Examples and Descriptions of Experimental Stimuli

Realistic symbiosis juxtaposition: Low tension

Realistic symbiosis synthesis: Low tension

Heinz ketchup red glass bottle placed next to a tomato

Replacement juxtaposition: Low tension

Replacement synthesis: Low tension

A six-pack that replaced the row of three glasses of Stella Artois on the left-hand side with a row of three Stella Artois beer cans

Artificial symbiosis juxtaposition: High tension

Artificial symbiosis synthesis: High tension

Notes: Real brand name appeared in the original LCD television stimuli. For original ad stimuli contact the first author (l.gkiouzepas@amaretto.gr).