

Visual Metaphor in Advertising: Is the Persuasive Effect Attributable to Visual Argumentation or Metaphorical Rhetoric?

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ABSTRACT *The purpose of this study is to test the persuasive effects of visual metaphors in advertising. Advertisements containing visual metaphors deliver persuasive arguments in visual modality and metaphorical style of rhetoric, both of which may increase the persuasiveness of messages. The study has three message conditions that are advertisements containing (a) non-metaphorical (literal) visual image with verbal argument; (b) metaphorical visual image with verbal argument; and (c) metaphorical image without accompanying verbal argument. Cognitive elaboration, source credibility, ad attitude, brand attitude, product belief, and purchase intention are considered as outcomes. The study results suggest that visual metaphors may be more persuasive due to both visual argumentation and metaphorical rhetoric. The theoretical explanations and managerial implications of the findings of this study are further discussed.*

KEY WORDS: Metaphor, visual argumentation, advertising, message effect, elaboration, credibility

Introduction

Visual metaphors are commonly used to deliver advertising and marketing communication messages (Boozer *et al.*, 1991). For example, Clinique lipstick used a glass of soda in the advertisement to claim that the lipstick is cool and fresh (see Scott, 1994); Dexter shoe advertisement included an image of a bed to suggest that the shoe brand is comfortable as a bed; and Reflex sports racquet advertisement had an image of a shark to claim that the racquet will help one become a fierce and aggressive competitor (see Phillips and McQuarrie, 2004). In their analyses of rhetorical style in US magazine advertisements from 1954 to 1999, Phillips and

McQuarrie (2002) found that various rhetorical figures, including visual metaphors, had been prevalent throughout the period and have increased in incidence over time.

Metaphorical style of rhetoric and visual modality are two important properties of visual metaphor. Metaphor is a rhetorical style of comparing two dissimilar objects, and because of the comparison, the characteristic of one object is transferred to the other (Sopory and Dillard, 2002). Visual metaphors are similar to verbal metaphors yet visual metaphors can also be characterized as visual argumentation in that it employs the syntactic structure of visual persuasion (Messaris, 1997). In other words, instead of verbally stating two objects or concepts that are linked analogically, visual metaphors juxtapose two images often without accompanying verbal explanations. Visual metaphors, thus, tend to be more implicit and complex than verbal metaphors and allow for several possible interpretations (McQuarrie and Mick, 1996; Phillips, 2000).

Metaphorical style of rhetoric and visual argumentation, both of which can be characterized as implicit argumentation, are likely to increase audiences' cognitive elaboration when they process the message, which may lead to greater persuasion. Sopory and Dillard's (2002) meta-analytic summary of the effects of metaphor suggests that metaphorical rhetoric, overall, enhances attitude change due to cognitive (e.g., superior organization of information, elaboration of thoughts, and mobilization of cognitive resources), affective, (e.g. positive attitude toward the advertisement), and motivational, (e.g. increased source credibility) processes. Studies of visual persuasion, (e.g. Messaris, 1997), however, propose that the implicit characteristic of visual argumentation and the subsequent cognitive elaboration of the audience lead to greater persuasiveness of visual propositions.

Research on visual metaphors are often based on qualitative in-depth interviews exploring viewers' comprehension of visual metaphors and the role of prior knowledge structure in metaphor interpretation (Phillips, 1997), audiences' impression of advertisements using visual metaphors and the meanings that they associate with the ads (Coulter *et al.*, 2001), and the process whereby metaphors are interpreted (Proctor *et al.*, 2005). In addition, research on visual metaphors has examined the moderating roles of metaphor types, (e.g. abstract or concrete), individual differences, (e.g. hemisphericity), age differences, and gender differences in viewers' comprehension and interpretation of metaphors (Morgan and Reichert, 1999; Pawlowski *et al.*, 1998; Proctor *et al.*, 2005). While much research has more focused on viewers' comprehension, interpretation, and attitude toward the ad as the outcome, relatively little research examined the persuasive effects of visual metaphors as in research on verbal metaphors (see Sopory and Dillard, 2002 for a review). In addition, although some studies, (e.g. Mitchell and Olson, 1981) suggest that visual metaphors may be more effective than literal verbal arguments, previous research has not examined whether the persuasive effects of visual metaphors are due to the rhetorical style, (i.e. metaphorical rather than literal) or argument modality (i.e., visual rather than verbal). This study, thus, (a) tests the persuasive impact of advertisements containing visual metaphors, (i.e. effects on product belief, brand attitude, and purchase intentions as well as on cognitive elaboration and perception of source credibility); and (b) examines the effects of rhetorical style as well as the effects of argument modality.

Conceptual Framework

Metaphorical Rhetoric

Messages containing visual metaphors can be persuasive, in part, due to the metaphorical style of rhetoric. A meta-analytic review of the metaphor literature (Sopory and Dillard, 2002) suggests that metaphorical arguments can be more persuasive than literal arguments. Cognitive, affective, and motivational processes are three broad categories of explanations that have been offered to explain the relative effectiveness of metaphorical rhetoric compared to literal arguments.

First, cognitive explanations involve superior organization of information, elaboration of thoughts, and mobilization of cognitive resources. Message using metaphors help recipients to better structure and organize the message information than literal language (Mio, 1996; Read *et al.*, 1990). This is because metaphors are based on relational structure between two concepts (A is B) and can evoke a more complex set of associations in people's semantic memory (Gentner, 1983; Whaley, 1991). For example, when provided with a metaphor such as "words are a sword," people associate sword with concepts such as "sharpness" and "can hurt," which are then linked to the concept of "words." Gentner's notion of structure mapping suggests that metaphors convey a structural map of interrelated concepts based on the relational concepts, (e.g. words and a sword). These semantic associations embedded in metaphorical messages, require greater mobilization of cognitive resources, and subsequently, evoke greater elaboration of thoughts. The semantic associations also help the audience structure and organize the metaphorical arguments because they are more coherently connected.

Similarly, visual metaphors can produce a greater degree of elaboration or cognitive activity (McQuarrie and Mick, 1999). Metaphors can elicit cognitive elaboration because they often are deviation from expectations. Deviation, which is in other words incongruity, can provoke elaboration (Childres and Houston, 1984; Heckler and Childers, 1992). Proctor *et al.* (2005), for example, illustrated audience responses to metaphors and the process whereby they reconcile conflicting cues in metaphorical advertisements. These suggest that metaphorical style of argumentation may invite audiences to elaborate on the message arguments. The important role of cognitive elaboration in persuasion can be further explained based on the elaboration likelihood model (ELM; see Petty and Cacioppo, 1986).

Second, metaphorical messages can influence audiences via affective processes such as positive attitude toward the ad and/or motivational processes such as increased source credibility. With regard to affective processes, metaphors can result in greater persuasion mediated by positive attitude toward the ad. Studies on metaphors suggest that metaphorical messages may cause positive affect regarding the message such as pleasure due to tension and relief processes (Bowers and Osborn, 1966; Reinsch, 1973). McQuarrie and Mick (1999) have described metaphors as "one form of artful deviation from reality with their literally false but nonetheless illuminating equation of two different things" (p. 39). The novelty of metaphors induces perception of error, but when the meaning is understood, the negative tension is relieved. Visual metaphors also elicit pleasure since the initial ambiguity stimulates interest and motivation, and the subsequent resolution is rewarding. The simple result of finally "got it" or revealing a novelty idea from the ads increases

viewer pleasure (McQuarrie and Mick, 1992; Peracchio and Meyers-Levy, 1994), and these perceptions of pleasure and relief of tension may all contribute to positive attitudes toward the ad (Mick, 1992). The role of attitude toward the ad in persuasion is suggested by the dual mediation hypothesis (Brown and Stayman, 1992; Lutz *et al.*, 1983; MacKenzie *et al.*, 1986) in which (a) ad attitudes influence brand attitude both directly and indirectly through its effects on brand cognitions and (b) brand attitudes, subsequently, affect purchase intentions.

Third, motivational explanation for the effects of metaphor involves message recipients' perception of source credibility. Communicators who use metaphors can be judged more credible because their creativity is highly evaluated (Bowers and Osborn, 1966; McCroskey and Combs, 1969; Osborn and Ehninger, 1962). The role of source credibility in persuasion has been examined in a series of experiments conducted by Hovland and colleagues (1953). Their research suggests that perception of communicator credibility leads to greater acceptance of the message argument. Thus, metaphors may lead to greater persuasion mediated by message recipients' positive evaluations of the message source. Sopory and Dillard's (2002) meta-analytic study indicates that metaphors, overall, enhance attitude change ($r=0.07$), and exert some effect on perceptions of dynamism as one sub-dimension of source credibility ($r=0.06$).

Visual Argumentation

In addition to metaphorical rhetoric as one aspect of visual metaphor, visual argumentation, which is another aspect of visual metaphor, can also play an important role in persuasion. Studies of visual persuasion, (e.g. Messaris, 1997; McQuarrie and Mick, 1999; Scott, 1994) suggest that visual images can be a persuasive device, which are often more persuasive than verbal argumentation (also see, Bulmer and Buchanan-Oliver, 2006 for a review). This is because persuasive arguments can be addressed more implicitly with visual propositions compared to verbal propositions (McQuarrie and Mick, 1996; Mick and Buhl, 1992; Scott, 1994). The implicitness and complexity of visual arguments can invite viewers to spend more time thinking about the argument and to process the message actively (Bulmer and Buchanan-Oliver, 2004; Stern, 1989). Greater degree of mental participation required by visual argumentation may lead to a product of audiences' own construction of meaning (Proctor *et al.*, 2005), and because people are often more willing to adopt a proposition that they have constructed, the implicitness of visual argumentation can be a strong point of visual persuasion (Messaris, 1997, p. 167). Although visual argumentation is complex and implicit, there is some evidence that viewers comprehend the claims that communicators intend to make (Mitchell and Olson, 1981; Zuckerman, 1990). In addition, information-processing approaches to visual persuasion (Edell and Staelin, 1983; see MacInnis and Price, 1987 for a review) suggest that visual imagery can enhance information encoding, storage, and retrieval.

Mitchell and Olson's (1981) widely cited classical study provides some evidence that viewers can comprehend implicit visual arguments and that those implicit visual arguments may be more effective than explicit verbal arguments. Their experiment tested the persuasive effects of four facial tissue advertisements containing one

element (a visual or a verbal argument) and the brand name. The first version contained a verbal argument that the tissues were soft. The three other versions showed visual images of a kitten, a sunset over an ocean, or an abstract painting. The image of a fluffy kitten was designed to connote softness while the other images had nothing to do with the idea of softness. Results show that both the ad with verbal text (“soft”) and the ad with an image of a kitten made subjects believe that the product was soft compared to the advertisements containing the other visual images, yet the softness rating for the kitten advertisement was even higher than the one with an explicit verbal message. In addition, subjects reported significantly more positive brand attitude after being exposed to the kitten advertisement compared to the verbal advertisement. The study results suggest that viewers seem to be able to infer beliefs about product attributes from implicit visual arguments, (i.e. “The tissue of this brand is soft as a kitten”) and that implicit visual arguments may be more persuasive than straightforward verbal arguments. However, modality and rhetorical style seems to be confounded in Mitchell and Olson’s study materials. The ad with an “image of a kitten” and the ad with a verbal argument “soft” differ not only in terms of argument modality (visual vs. verbal) but also in terms of rhetorical style (metaphorical vs. literal) in that the message associating a brand of tissue with a fluffy kitten can be metaphorical. While it is relatively clear that visual arguments that use metaphorical rhetoric (image of a kitten) can be more persuasive than verbal arguments in literal rhetoric (this tissue is soft), it is less clear whether the persuasiveness is due to argument modality, rhetorical style, or both.

For a more rigorous test of the effects of visual argumentation, the rhetorical style of visual image should be held constant while other aspects vary. The presence and absence of verbal information is one aspect that can be manipulated to test whether visual argumentation is due to its implicitness. If visual metaphor is persuasive due to its implicitness of visual argumentation, visual metaphor without verbal explanations, (i.e. more implicit) should be more persuasive than visual metaphor with accompanying verbal explanations, (i.e. more explicit). In reality, visual arguments are often supported by accompanying verbal texts (Meyers, 1994), and Barthes (1977) refers to this as verbal “anchoring” in that verbal texts fix in place the implicit meaning of images. Research evidence suggests that visual arguments may be more persuasive when there are no verbal explanations for the visual argument. Following Barthes, Phillips (2000) proposes that verbal texts in advertisements anchor or explain the meaning of complex ads to the viewers. She conducted an experiment testing the effects of verbal anchoring on viewers’ responses to advertisements with three levels of verbal anchoring. For a toothpaste ad that associated the toothpaste with a pearl necklace, the complete verbal anchoring advertisement provided a verbal argument that “Kingfisher toothpaste will make your teeth pearly white”; the moderate verbal anchoring advertisement offered a verbal argument such as “Flash ‘em”; and the non-verbal anchoring advertisement did not provide any verbal argument. She found that the higher levels of verbal anchoring increased comprehension but decreased advertisement liking by reducing consumers’ pleasure in interpreting the advertisement message. The results suggest that persuasive effects of visual argumentation may be due to the implicit characteristic of visual syntax and viewers’ active participation in the interpretation of such type of messages.

Based on the above literature, this study hypothesizes that advertisements containing metaphorical images will be more persuasive compared to ads with non-metaphorical or literal images, (e.g. advertisement containing a product image). This hypothesis is based on the prediction that metaphorical rhetoric is more persuasive than non-metaphorical (or literal) rhetoric. Based on visual persuasion research, it is also hypothesized that visual metaphors without verbal anchoring will be more persuasive than those with verbal explanations. This hypothesis is based on the prediction that visual argumentation will be more effective when it depends primarily on visual modality, (i.e. without verbal anchoring) than on both visual and verbal messages, (i.e. with verbal anchoring). In sum, the first hypothesis tests the effect of rhetoric, (i.e. literal versus metaphorical), while the second hypothesis examines the effect of communication modality, (i.e. visual versus verbal).

H1: Advertisements that contain metaphorical visual image with accompanying verbal text will be more persuasive compared to ads that contain literal visual image with the same verbal message. Advertisements containing visual metaphors, compared to ads with literal visual images, will lead to greater cognitive elaboration, perceived source credibility, and acceptance of product belief, and positive attitude toward the advertisement, brand attitudes, and purchase intentions.

H2: Advertisements that contain visual metaphors without verbal anchoring will be more persuasive compared to ads that contain visual metaphors with verbal anchoring. Advertisements containing visual metaphors without verbal anchoring, compared to ads containing visual metaphors with verbal anchoring, will lead to greater cognitive elaboration, perceived source credibility, and acceptance of product belief, and positive attitude toward the advertisement, brand attitudes, and purchase intentions.

Method

Participants

Two hundred and sixty-one undergraduate students from a business course and a writing course at a large private university in Korea participated in this study in exchange for extra credit. There were 162 females in the sample. The average age was 20.12 (SD=1.21).

Research Design

To test the research hypotheses, three experimental conditions were created: non-metaphorical advertisement, metaphorical advertisement with verbal anchoring, and metaphorical advertisement without verbal anchoring. The difference between the first and second condition is rhetorical style, (i.e. literal versus metaphorical rhetoric), while the difference between the second and third condition is argument modality (primarily visual versus visual combined with verbal). The first hypothesis can be tested based on a comparison of the first two advertisements, and the

second hypothesis can be confirmed based on a comparison of the latter two advertisements.

A three-group (non-metaphorical ad, metaphorical ad with verbal anchoring, metaphorical advertisement without verbal anchoring) between-subject experimental design was used in this study.¹ Participants were randomly assigned to one of the three experimental conditions: 78 subjects were assigned to the non-metaphorical ad condition, 86 in the metaphorical ad with verbal anchoring condition, and 97 in the metaphorical ad without verbal anchoring condition.

Stimulus Materials

The test ads were constructed based on actual advertisements to increase ecological validity. Two Mitsubishi Motor advertisements were selected. One advertisement that tried to claim the automobile was good for a journey contained an image of a suitcase combined with the car. The verbal text in the advertisement read “Journey.” The other advertisement attempted to claim that the car offers a smooth ride. The advertisement contained an image of an iron fused with the car and the verbal text read “Smooth.” The two advertisements were manipulated to create three versions of each advertisement.

The original advertisement represented the metaphorical advertisement with verbal anchoring (the second advertisement). Based on this advertisement, the metaphorical advertisement without verbal anchoring version (the third advertisement) was created by leaving out the verbal arguments. Finally, the non-metaphorical ad version (the first advertisement) was constructed by deleting the images of the suitcase or the iron; thus, only the product images were left with verbal arguments. While the second and the third advertisements used metaphors, the first advertisement did not. However, the first advertisement and the second advertisement contained verbal arguments whereas the third advertisement did not. All digital manipulation was performed using Photoshop, an image-editing computer software.

Procedure

Study participants were invited to a computer lab and were randomly assigned to one of the three experimental conditions. After random assignment, subjects were asked to sit in front of a personal computer. On the computer, the stimulus advertisements were shown in a digital image format. After viewing the advertisements, participants filled out the questionnaire on the computer. Before starting the experiment, subjects were told that the purpose of this study is to examine viewers’ responses to advertisements, and they were asked not to talk to each other during the experiment. After completing the experiment, subjects were told that the true purpose of this study was to test the effects of visual metaphors in advertising. Each participant viewed two advertisements, (i.e. “Journey” and “Smooth”), and the two advertisements were of the same type, (e.g. non-metaphorical, metaphorical with verbal anchoring, metaphorical without verbal anchoring). Thus, for example, those who were exposed to the non-metaphorical “Journey” advertisement also viewed the non-metaphorical “Smooth”

advertisement. Immediately after viewing each advertisement for approximately 30 s, respondents answered the questionnaire items probing their responses to the advertisements.

Measures

Cognitive elaboration was measured based on items used in McQuarrie and Mick's (1999) study. Some of their items, (e.g. "This advertisement has multiple meanings" or "This advertisement is rich in meaning") seem to measure the characteristic of the message rather than audiences' responses to the message. In this study, some items from the original version were selected and modified to focus on audiences' responses. The cognitive elaboration items asked subjects' agreement with the following statements: "I had many thoughts in response to the advertisement" and "The advertisement elicited lots of thinking" (journey, $\alpha=0.88$; smooth $\alpha=0.89$). Anchor labels were strongly agree and strongly disagree, and there were seven response categories.

Source credibility was measured with two items: "credible – not credible" and "trustworthy – not trustworthy" (journey, $\alpha=-.86$; smooth $\alpha=-.88$). The response options were on a 7-point scale.

Attitude toward the ad was measured with four semantic differential items: good/bad, favorable/unfavorable, pleasant/unpleasant, and appealing/unappealing (journey, $\alpha=0.74$; smooth $\alpha=0.85$). The scale is well documented and tested (Lutz *et al.*, 1983; MacKenzie *et al.*, 1986). The response options were on a 7-point scale.

Attitude toward the brand was measured with four semantic differential items: good/bad, favorable/unfavorable, pleasant/unpleasant, and appealing/unappealing (journey, $\alpha=0.88$; smooth $\alpha=0.89$). The response options were on a 7-point scale.

Product belief elicited by the ad was measured with two items (one per each product): "smooth – not smooth" (for the smooth ad) and "good for a journey – not good for a journey" (for the journey advertisement). The response options were on a 7-point scale.

Purchase intention was measured with an item that asked the likelihood that they would buy the advertised product (very likely – very unlikely). The response options were on a 7-point scale.

Finally, as a *manipulation check* measure, subjects were asked to indicate their agreement to the following item: "I think the ad presents the message... There were seven response categories ranging from very literally (1) to very metaphorically (7).

Analysis Plan

Analysis of variance with contrast test will be conducted because there are hypotheses with regard to the group means in that metaphorical visual without verbal anchoring will be more persuasive than metaphorical visual with verbal anchoring, both of which will be more persuasive than non-metaphorical visual with verbal arguments.

Results

Manipulation Check

Manipulation check indicated that the three stimulus advertisements were perceived significantly differently in terms of the extent to which they present the argument literally or metaphorically for both “journey” advertisement ($F(2, 260)=32.47$, $P<0.001$) and “smooth” advertisement ($F(2, 260)=34.23$, $P<0.001$). With regard to the “journey” advertisement, participants perceived the advertisement with metaphorical image without verbal anchoring ($M=3.96$, $SD=1.23$) as more metaphorical compared to the metaphorical ad with verbal anchoring ($M=3.14$, $SD=1.39$), and the ad with non-metaphorical image ($M=2.39$, $SD=1.22$). Also with regard to the “smooth” advertisement, participants perceived the advertisement with metaphorical image without verbal anchoring ($M=4.31$, $SD=1.42$), as more metaphorical than the metaphorical ad with verbal anchoring ($M=3.23$, $SD=1.55$), and the advertisement with non-metaphorical image ($M=2.54$, $SD=1.29$).

Test of Hypotheses

It was predicted that advertisements that offer non-metaphorical image, metaphorical image with verbal anchoring, and metaphorical image without verbal anchoring would have different impact on audiences’ cognitive elaboration, perceived source credibility, and acceptance of product belief, and positive attitude toward the advertisement, brand attitudes, and purchase intentions.

Analysis of variance (ANOVA) results suggest that the main effect of advertisement type on cognitive elaboration was significant for journey ad ($F(2, 260)=22.20$, $P<0.001$) and smooth advertisement ($F(2, 260)=14.22$, $P<0.001$). The effects on other outcomes such as source credibility, attitude toward the ad, attitude toward brand, product belief, and purchase intentions were all significant (see Table 1). Yet differences between conditions were somewhat different by outcome type.

With regard to cognitive elaboration and source credibility, there were significant differences across all three of the message conditions. In terms of these outcomes, the metaphorical advertisement without verbal anchoring was rated as the highest, the non-metaphorical advertisement was rated as the lowest, and the metaphorical advertisement with verbal anchoring was rated in the middle. Regarding attitude toward the advertisement as outcome, there were significant differences between advertisements using metaphorical images and non-metaphorical images (which differ in metaphorical rhetoric) yet no significant differences between advertisements with and without verbal anchoring (which differ in modality). Alternatively, with regard to outcomes such as product belief and purchase intention, there were significant differences between ads with and without verbal anchoring (which differ in modality) but no significant differences between advertisements using metaphorical images and non-metaphorical images (which differ in metaphorical rhetoric). No significant main effects of gender or interaction effects between gender and the three experimental conditions on the outcomes were found.

Table 1. Persuasive effects by advertisement type. *Note.* Means in a row not sharing a superscript differ at $P < 0.05$ in contrast tests. Standard deviations are in parentheses

	Literal with verbal (<i>n</i> =78)	Metaphor w/o verbal (<i>n</i> =86)	Metaphor (<i>n</i> =97)	<i>F</i> value
Journey ad.				
Cognitive elaboration	2.30 ^a (1.27)	3.14 ^b (1.52)	3.69 ^c (1.31)	22.20***
Source credibility	2.70 ^a (1.17)	3.48 ^b (1.36)	3.97 ^c (.89)	27.01***
Attitude toward the ad.	2.71 ^a (1.30)	3.52 ^b (1.44)	3.63 ^b (1.11)	12.64***
Attitude toward brand	3.47 ^a (1.11)	3.85 ^b (1.43)	4.17 ^b (1.08)	7.23**
Product belief	3.86 ^a (1.56)	3.76 ^a (1.64)	4.52 ^b (1.49)	6.28**
Purchase intention	2.85 ^a (1.26)	2.98 ^a (1.42)	3.67 ^b (1.26)	10.15***
Smooth ad.				
Cognitive elaboration	2.92 ^a (1.37)	3.49 ^b (1.36)	4.01 ^c (1.30)	14.22***
Source credibility	2.98 ^a (1.32)	3.75 ^b (1.29)	3.97 ^b (0.93)	16.30***
Attitude toward the ad.	3.12 ^a (1.44)	3.77 ^b (1.51)	3.73 ^b (1.15)	5.64**
Attitude toward brand	3.72 ^a (1.29)	3.89 ^a (1.32)	4.20 ^b (1.15)	3.33*
Product belief	4.78 ^{ab} (1.53)	4.40 ^a (1.54)	4.93 ^b (1.53)	2.79*
Purchase intention	3.55 ^a (1.39)	3.41 ^a (1.63)	4.10 ^b (1.32)	5.82**

Discussion

The purpose of this study was to test the persuasive effects of visual metaphors in advertising. Previous research such as Mitchell and Olson's (1981) study suggests that advertisements with visual arguments may be more persuasive compared to ads with non-metaphorical verbal arguments. Their study, however, did not clearly test whether the effects of visual metaphors are due to metaphorical style of rhetoric or visual modality of argumentation. In order to examine whether visual metaphors lead to greater persuasion due to the rhetorical style or argument modality, this present study included three message conditions: non-metaphorical, metaphorical image with verbal anchoring and metaphorical image without verbal anchoring. The difference between the first and second condition was rhetorical style, (i.e. literal versus metaphorical rhetoric), and the difference between the second and third condition was argument modality (primarily visual versus visual combined with verbal).

The results of this study suggest that advertisements with visual metaphors may be more persuasive compared to advertisements with literal (non-metaphorical) images.

Yet the relative effectiveness of metaphorical rhetoric or visual argumentation seems to vary by outcome type, (e.g. cognitive, motivational, and affective). With regard to outcomes such as cognitive elaboration and source credibility, the three types of advertisements were significantly different. Specifically, the advertisement containing visual metaphor without verbal anchoring led to highest level of cognitive elaboration (and perceived source credibility) while the advertisement containing non-metaphorical (or literal) image with verbal argument led to lowest level of cognitive elaboration (and perceived source credibility). This suggests that both metaphorical rhetoric and visual argumentation seem to contribute to cognitive elaboration and perceived source credibility. Considering message affect and evaluation as the outcome, attitude toward ad varied by use of metaphorical rhetoric rather than by visual modality of argumentation. However, product belief and purchase intentions varied primarily as a function of visual modality than metaphorical rhetoric. The results, overall, suggest that visual argumentation and metaphorical rhetoric both seem to contribute to the persuasive effects of using visual metaphors. Yet, the relative effectiveness of rhetoric or modality may vary by type of outcome. Future research may attempt to confirm these findings and explain why the relative effectiveness may vary by type of outcome.

Given that ads containing visual metaphors may lead to greater cognitive elaboration and greater persuasion, the persuasive effect of visual metaphors can be explained by dual processing models such as the elaboration likelihood model (Petty and Cacioppo, 1986) or heuristic-systematic model (Eagly and Chaiken, 1993). These models propose that persuasion and belief change are associated with the amount of thought message recipients devote to the message. While the models suggest the important role of involvement in cognitive elaboration, they focus on audience factors, (e.g. personal relevance or need for cognition) that lead to greater involvement rather than message factors. As a message factor, visual metaphors can be considered as a characteristic of a message that may lead to greater involvement, cognitive elaboration, and subsequent persuasion. Since viewers of advertisements containing visual metaphors may thoughtfully consider and actively respond to the persuasive argument of the message, this may lead to stronger and persistent belief change. Although pictures are often considered as heuristic cues that lead to peripheral or heuristic mode of processing (Petty *et al.*, 1991), visual metaphors that deliver arguments that are central to the message content can lead to central and systematic modes of processing. Thus, which route of processing viewers will engage in may not be determined by the use of visual images itself but by the characteristics of the visual argument that is the extent to which it is central to the argument of the persuasive message.

The study results offer support to the notion of visual persuasion (Messaris, 1997) such that viewers may be more persuaded by implicit visual arguments because (a) those arguments require more cognitive processing and elaboration; and (b) people are more likely to adopt propositions that they have constructed rather than explicitly offered ones. Messaris's notion explanation of visual persuasion is based on Peirce's (1991) semiotics in which signs are classified into three broad categories: icon, index, and symbol. Icon is a sign that denotes its object by virtue of the similarity the sign shares with the object, (e.g. a sculpture of Caesar is an iconic sign of Caesar); index is a sign that represents the signified object based on an existential

connection between the sign and object, (e.g. smoke is an indexical sign of fire); and symbol is a sign that denotes its object based on arbitrary convention, (e.g. the word “apple” is a symbolic sign of an apple). In general, visual images are more indexical and iconic than verbal words in that the visual image of an object (a) shares some similarity with the represented object and (b) often serves as proof, (e.g. photography). These characteristics of visual images may lead to greater persuasion by eliciting emotional responses or increasing message credibility (see Messaris, 1997). In terms of the syntactic aspect of visual argumentation, visual images lack propositional syntax such as comparison, (e.g. A is better than B), causality, (e.g. A caused B), or analogy, (e.g. A is like B). While this syntactic indeterminacy may make it difficult for viewers to interpret visual arguments, Messaris proposes that it can be a potentially strong point of visual persuasion. This study supports Messaris’s theoretical predictions that visual argumentation may lead to greater persuasion due to greater cognitive elaboration that viewers engage in as a consequence of exposure to visual messages.

The results of this study also provide some evidence that viewers of metaphorical advertisements may understand the arguments of the advertisements. Whether viewers comprehend implicit arguments in ads has been questioned (Coulter *et al.*, 2001; Messaris, 1997; Philips, 1997), and the findings of this study are consistent with previous research (Mitchell and Olson, 1981; Zuckerman, 1990) suggesting that viewers may be able to understand the claims made by visual arguments. In addition, in support of Phillips (2000), this study found that presence or absence of verbal anchoring when metaphorical images are used resulted in different levels of cognitive elaboration and other persuasive outcomes. These results suggest that the persuasiveness of implicit visual argumentation can be maximized in the absence of verbal explanations.

The findings of this study have some important implications for the practice of advertising and marketing communications. Advertisements that use metaphorical images without verbal explanations may lead to greater persuasion compared to literal product images with straightforward arguments. In addition, when using visual metaphors, supplementary verbal propositions may not be necessary. However, it should be noted that the effectiveness of implicit visual messages found in this study might be because the study is conducted with college students who have a higher level of cognitive ability or intelligence compared to the general population. In other words, advertisements containing visual metaphors may be effective only to viewers who have high cognitive ability to process implicit messages. If this is the case, the findings of this study may be a result of an interaction between the characteristic of the audience and message. Even if this is true, the results are still meaningful in that there is a need for tailoring messages to audiences with different levels of cognitive ability to process implicit and complex messages. In other words, messages containing visual metaphors should be presented only to audiences who have the ability to process such messages. Future research should (a) be conducted with a more representative sample to allow for more global generalization of results and (b) test the possible interaction between audience characteristic, (e.g. cognitive ability) and message characteristic, (i.e. use of visual metaphors) on persuasion.

To increase ecological validity, this study used actual ads as well as somewhat modified versions of those ads as test materials. However, using automobile ads as

stimulus materials may be problematic given a sample of Korean college students. Young Korean students, in general, may be less likely than older adults to purchase a car in the near future. Thus, the study participants may have low involvement in the product category, which in turn, may have influenced the results of this study. Future research should test the effects of visual metaphors in advertisements with regard to products that are more relevant to the population from which the participants are sampled. Also in future research, one's pre-existing attitudes toward the brand and prior exposure to the test advertisements should be obtained as possible covariates.

Despite these limitations, the findings of this study have implications for global advertising and marketing as well. Bulmer and Buchanan-Oliver (2006) have discussed the complexity of visual argumentation, meaning production processes, and visual advertising effects in the context of global advertising and marketing. Given the study results that visual metaphors without verbal messages may be an effective persuasion strategy, global products of multinational corporations may consider creating consistent promotional messages across different countries using visual metaphors without verbal arguments.

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Note

1. It was possible to use a two- (metaphorical versus literal) by-two design (visual with verbal explanation versus visual without verbal explanation). However, for the purpose of this experiment, it is not necessary to test the effects of a literal visual message without verbal explanation, (i.e. a simple image of a product without a verbal argument), and it is unlikely to find such ads. Thus, only three conditions without the fourth condition (literal visual advertisement without verbal explanation) were included in the design.

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