The Message is in the Metaphor: Assessing the Comprehension of Metaphors in Advertisements

Susan E. Morgan and Tom Reichert

Although metaphors are used by advertising creators to convey brand meaning and enhance brand information processing, little is understood with regard to consumers' comprehension of intended meaning. This research contributes to this body of knowledge by examining the effect of metaphor type (abstract/concrete) and hemispheric processing on respondents' comprehension of metaphors in ads. Overall, the findings suggest that concrete metaphors are more easily understood than abstract metaphors. This effect is moderated by hemispheric processing such that individuals high in right or integrative processing are more likely to provide valid interpretations of both types of metaphors. These findings are discussed and implications for advertising practitioners are offered.

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Introduction

Metaphors and analogies can be thought of as the ants of advertising. Just as the tiny insect can support many times its own weight, a single metaphor can be worth a hundred words of copy. Typically defined as statements and/or pictures which cause a receiver to experience one thing in terms of another (Lakoff and Johnson 1980), these literary devices can efficiently communicate attribute information and transfer meaning between a referent and a brand. Metaphors can also stimulate deeper levels of processing because of their interest value and because they stimulate curiosity about the brand (MacInnis, Moorman and Jaworski 1991).

Recent research suggests, however, that metaphors in ads are not always comprehended as their creators intended (Phillips 1997). In fact, despite several calls for research into the effects of metaphors in promotional communication (Stern 1988; Ward and Gaidis 1990), relatively little is known about the impact of consumers' type of hemispheric processing on the comprehension of advertisements containing metaphors. This study was designed to contribute to the gap of knowledge in this area by (1) testing differences in consumer comprehension between two different types of metaphors (concrete vs. abstract), and (2) determining if individual differences (hemispheric processing) mediate comprehension. As such, this study provides information about consumer comprehension of different styles of metaphors given important receiver differences.

Literature Review

Metaphors in Advertising

Scholars and practitioners in many fields have an interest in metaphor. Metaphor has long been the domain of rhetoricians, who have asserted the persuasive power of metaphor, as well as literary scholars, who have relied on an analysis of metaphor and symbol (among many other elements) to attain a deeper level of understanding of the meaning and significance of a text. Cognitive psychologists and neurolinguists, in an attempt to discover the origin of this rather mysterious capacity of metaphor to more effectively...
persuade and inform, have looked to the brain and its cognitive functions.

The attention afforded metaphors and analogies in advertising literature has been primarily conceptual. Stern (1988, 1990), for instance, has provided important groundwork by introducing and defining allegory and metaphor in the historical context of Aristotelian and literary tradition. Ward and Gaidis (1990) reviewed several models of metaphor comprehension and quality which were grounded in work from psychology and linguistics. In addition, Scott (1994) has argued for a theory of visual rhetoric to help researchers frame how meaning is constructed via visual arguments in ads. These contributions have provided both a call for, and a fertile ground for research into, the effects of metaphors in the marketing communication context.

Those responding to the call have provided valuable insight into the effects of these advertising message strategies. For instance, findings suggest that consumers spend more time looking at and processing ads that contain metaphors (Gray and Snyder 1989). MacInnis, Moorman and Jaworski (1991) argue that as executional cues, metaphors are interesting, they stimulate curiosity about the brand, and consequently, they result in deeper levels of processing. Recently, Pawlowski, Badzinski and Mitchell (1998) found that children's cognitive development plays a role in the comprehension of metaphors in ads, which in turn affects memory. They found that although young readers may have difficulty interpreting metaphors, there was a slight advantage in recall and perceptions compared to literal ads.

An important consideration for advertising research is determining if metaphors are correctly interpreted or even understood by consumers. According to Ward and Gaidis (1990), comprehensibility is an important variable in the study of metaphors: "To be effective, a promotional metaphor must be minimally comprehended by its intended audience" (p. 636). Stern (1988) suggests that a significant proportion of the intended audience does not always "get" the intended meaning of the metaphor. Work by Phillips (1997) emphasizes the importance of metaphor comprehension in advertising. Phillips found that while strong pictorial implicatures (metaphors in which central meaning is manifest and difficult to misinterpret) were interpreted as the advertising creator intended, weak implicatures (those which require "work" by the viewer to interpret) were either misinterpreted, or solicited multiple divergent interpretations.

Unfortunately, other than the investigation by Phillips (1997) and Pawlowski, Badzinski and Mitchell (1998), little is known about the comprehension of metaphors that appear in product advertising. For this reason, it is important to determine whether the comprehension of metaphors is necessary for valid transference of meaning to the brand.

**Concrete vs. Abstract Metaphors**

Although most researchers do not distinguish between type of metaphor, drawing a basic distinction between concrete and abstract metaphors may help us understand how consumers comprehend messages that rely on metaphor. McCabe (1988) distinguishes between concrete and abstract metaphors based on the degree to which a concept or comparison between concepts can be directly experienced.

According to McCabe, concrete metaphors are those which rely on comparisons that can be experienced directly, that is, through the five senses. Abstract metaphors involve comparisons that cannot be experienced directly; they are based on something intangible. For example, a recent ad features a Concord watch, and is titled, "Grace." The accompanying image is of two swans. The comparison offered in this case equates the watch with a particular trait, that of grace. While we can feel "graceful," this is not something which is directly experienced through touch, taste, sight, smell, or hearing. On the other hand, a recent Clinique ad for soothing skin cream provides an example of a concrete comparison. In this ad, the image of a Clinique cream jar (with the words "exceptionally soothing cream for upset skin" printed on it) with a Band-Aid stuck to it, offers a comparison between the experience of "Band-Aid" - as a comforting, protective covering for abrasions and irritations - and our use of the cream. Both the cream and the Band-Aid can be experienced directly. A similar distinction between concrete and abstract copy has been made in the advertising literature (MacKenzie 1986; Percy and Rossiter 1992).

Abstract metaphors in advertisements, then, create a comparison between the advertiser's product or service and some other quality which is not tangible. This quality may be evoked by an image in an advertisement, but the comparison being drawn is between the quality the advertiser wishes to have associated with the product and the product or service being advertised. Thus, the swans used in the Concord watch advertisement may evoke a kinesthetic experience of grace which may be truly felt or imagined by the viewer. However, this visceral experience of grace (as symbolized or evoked by the swans) is not touched, smelled, heard, tasted or seen (as an object in the
advertisement itself). A comparison between an experience evoked by an image is distinct from a comparison being generated by the presence of a real object which can be experienced directly; however, an abstract metaphor is no less valid and not necessarily any less powerful.

In a review of relevant studies, Percy (1983) concluded that concrete words and sentences are generally more meaningful and better comprehended than their abstract counterparts. Similarly, metaphors based on concrete rather than abstract experiences should also be more meaningful and more easily comprehended. Because a metaphor is a comparison of the parts of one experience to the parts of another experience, the degree to which the comparison is grounded in a sensory experience should impact the accuracy of the intended comparison. While it makes intuitive sense that the level of abstractness or concreteness would affect the comprehensibility of a metaphor, this principle has yet to be demonstrated.

**Hemisphericity**

Beyond the metaphor itself, physiological individual differences may have an impact on metaphor comprehension. The functions of the hemispheres of the brain have been the subject of considerable interest for decades. Although future research with more advanced technology (such as functional magnetic resonance imaging [fMRI]) may be able to offer a more sophisticated view of how figurative language is processed, neuropsychologists have been able to identify some of the functions of the left and right brain (Akmajan, Demers and Harnish 1986; Geschwind and Galaburda 1987; Springer and Deutch 1989). The left hemisphere of the brain appears to govern the functions of speech, especially those involving syntax and phonology. In addition, the left hemisphere is responsible for perceptions of time, sequential ordering abilities, and most analytical functions. The right hemisphere appears to be involved with the determination of meaning (semantics), nonverbal communication, music, and visuo-spatial perceptions.

Although each hemisphere seems to "specialize" in certain functions, it is important to note that these functions do not appear to reside exclusively in one hemisphere or the other; that is, each hemisphere has its functional strengths, but crossover of functions does occur. For example, language is sometimes processed in the right hemisphere in some individuals, while others process language in both hemispheres (Geschwind and Galaburda 1987; Ioccino 1993; Springer and Deutch 1989). Much of the information we have on the functions of each hemisphere has its origins in the research on split brain patients (those with the corpus colossum severed in an attempt to reduce severe seizures; see Sperry [1975]) and on stroke and head trauma survivors (Akmajan, Demers and Harnish 1986). When one region or hemisphere of the brain is damaged, the abilities corresponding to that area are likewise impaired (Akmajan, Demers and Harnish 1986; Ioccino 1993; Springer and Deutch 1989). Thus, we know that individuals who sustain right hemisphere damage are unable to comprehend or generate metaphors, even though they otherwise retain their ability to read and speak (Springer and Deutch 1989).

The work of Doktor (1978) helped to establish the idea that the activation of each hemisphere varies according to the demands of the task presented to an individual. By monitoring brain waves through electroencephalograms (EEGs), Doktor was able to document that logical-verbal tasks and intuitive-spatial tasks activated different parts of the brain. Moreover, he found that there were individual differences in these general patterns of response: those who were employed as operations research analysts (as opposed to business executives) used less right hemisphere processing, regardless of the task.

Although brain imaging technology is continually advancing, we can only hypothesize how the brain executes tasks such as metaphor processing. It is possible that the type of "connections" (or synapses) required to process metaphors and analogies would entail the involvement of both left and right hemispheres. Since the left hemisphere is primarily responsible for the "technical" aspects of language processing, the processing of metaphors probably begins there. When linear processes of meaning creation prove to be insufficient, the right hemisphere may be activated by neurons seeking the more creative, holistic meaning creation processes associated with that hemisphere (Gibbs 1995; Morgan 1997).

**Visual Metaphors**

What makes an analysis of metaphors in product advertising more complex is the presence of both verbal and visual metaphors. Unfortunately, very little scholarly research has been done on the relative advantages that one type of metaphor might have over the other. Kaplan (1992) operationalizes product advertisements containing visual metaphors as "those which depict relationships between a product or service...and some object or visual element (the metaphor source) with...qualities that the advertiser wishes..."
to impute to the product or service" (p. 202). Still, Kaplan does not offer any speculation on whether visual metaphors might be more effective than verbal metaphors. There is some indication from current literature, however, that visual metaphors might be easier to comprehend. For example, studies on memory indicate that presenting metaphors in visual form facilitates recall (Kaplan 1992). Whittock (1990) offers some explanation as to why visual metaphors might be easier to understand. When artists or advertisers construct a metaphor, they choose a specific image to accompany the comparison created by the metaphor. While verbal metaphors require a receiver to create their own image (which may or may not be "correct" or even make sense to the receiver), a visual metaphor has done part of the "work" of comprehending the comparison being generated.

It is important to point out that the relative advantage that visual metaphors may have over verbal metaphors in product advertisements is probably not a result of any difference in how these metaphors would be processed neurolinguistically. Although generally speaking, visual information is processed by the right hemisphere of the brain and most elements of verbal communication are processed by the left hemisphere, metaphors are considered a "special case" of language, where receivers must process the verbal elements of a metaphor in a more holistic or creative way. Metaphors constitute a violation of the normal, literal use of language (Kaplan 1992; McQuarrie and Mick 1996) and thus require somewhat more work on the part of the receiver to comprehend (although, as McQuarrie and Mick [1996] point out, this effort is often pleasurable). This type of comprehension occurs as a result of right hemisphere processing. There is no reason to believe, therefore, that verbal metaphors would be best comprehended by those high in left hemisphere processing abilities or that visual metaphors would be better understood than verbal metaphors by those who are high in right hemisphere processing abilities. It appears from current research that the comprehension of all metaphors involves functions associated with the right hemisphere, or it occurs via some cooperation between the left and right hemispheres.

**Hypotheses and Research Questions**

Our first question sought to determine how well people understand metaphors contained in print advertisements. It appears from the ubiquity of metaphors in advertising that advertisers assume consumers understand the intended meaning. The amount of resources devoted to the production and distribution of these ads demands that they are effective in persuading consumers to purchase these goods or services; however, there is a paucity of research that clearly demonstrates the level of comprehension of metaphors in advertising.

RQ1: How well are metaphors contained in advertisements understood?

Given the definition of concrete and abstract metaphors discussed earlier, metaphors based on concrete comparisons (i.e., grounded in sensory experiences) will be more familiar and more tangible to respondents compared to those based on abstract comparisons. Therefore, respondents should be able to "translate" concrete metaphors better than abstract metaphors.

H1: Concrete metaphors in advertisements will be easier to understand than abstract metaphors in advertisements.

Ads containing abstract metaphors should be particularly challenging to understand. However, those people who have the greatest degree of "cooperation" between the creative (right) and analytical (left) hemispheres should have the advantage in understanding abstract metaphors. High integrative processing individuals are likely to be less reliant on concrete (sense) experience since this category represents an ability to be "creatively analytical."

H2a: People scoring high in integrative processing will understand ads containing abstract metaphors better than those scoring high in left hemisphere processing.

H2b: People scoring high in right hemisphere processing will understand ads containing abstract metaphors better than those scoring high in left hemisphere processing.

H2c: People scoring high in integrative processing will understand ads containing abstract metaphors better than those scoring high in right hemisphere processing.
It would be expected that while the differences between integrative or right and left hemisphere processing will be most pronounced in the area of abstract metaphors (the most challenging metaphor condition), these advantages will also hold true in the concrete metaphor condition.

H3a: People scoring high in integrative processing will understand ads containing concrete metaphors better than those scoring high in left hemisphere processing.

H3b: People scoring high in right hemisphere processing will understand ads containing concrete metaphors better than those scoring high in left hemisphere processing.

H3c: People scoring high in integrative processing will understand ads containing concrete metaphors better than those scoring high in right hemisphere processing.

Finally, we believe that advertisements containing visual metaphors will be easier to understand than advertisements using only verbal metaphors with an accompanying illustration. Visual metaphors offer some support in the effort at "translating" the comparison being offered in the advertisement and thus should make the process of metaphor comprehension easier.

H4: Advertisements containing visual metaphors will have a higher rate of comprehension than advertisements relying on verbal metaphors.

Method

To examine the research questions and test the hypotheses set forth, this study was designed as a 3 (left, right, and integrative hemisphere processing) x 2 (concrete/abstract metaphors for hypotheses 1-3, and visual/verbal metaphors for hypothesis 4) factorial design. Hemisphere processing is a between-subjects factor and metaphor type is a within-subjects factor. The dependent variable was metaphor comprehension.

Participants

One hundred and three undergraduate students enrolled in communication courses at a large state university were recruited to participate in this study for extra credit (N=103). Females comprised 54% of the sample, and 93% reported being white with the remaining participants indicating African-American or Asian ethnicity.

Stimulus Materials

The materials used in this study were 13 full-page magazine advertisements that contained either a concrete or an abstract metaphor. Nothing in the previously published advertisements was altered in order to maintain the broad applicability of results to advertising practitioners. Ads containing concrete metaphors offered comparisons between two tangible objects (one of which was the product) which could be experienced through touch, taste, sight, smell, or hearing. Ads containing abstract metaphors relied on comparisons between the product and an intangible trait or concept. These classifications were confirmed through discussions with former advertising professionals and academics with an interest in figurative language. This expert panel examined a pool of 18 ads; only the ads which were consistently placed in either the abstract or concrete condition were retained for the study. Appendix A provides a list of the product advertisements used.

Procedures

All participants completed the 40-item Human Information Processing Survey (HIPS) (Torrance, Taggart and Taggart 1984) and offered "translations" for each of the 13 ads. Ads were reordered to reduce order effects, and the ads were randomly distributed to the participants. Respondents were asked one question for each ad, the response to which would require an understanding of the metaphor present in the ad. This single question generally took the form of, "When the ad says that ____, what does it mean?" Although this format requires that respondents pay far more attention to the ad than they would in real life, it does provide a conservative measure of how well people understand what they are viewing.

Variables

Metaphor Comprehension. Two independent coders rated the validity of respondents' interpretations of the metaphors in each advertisement. Coders were trained by one of the authors and were provided with a "translation sheet" that offered basic information about the comparison being made in each ad. Coders were instructed to record as "valid" all interpretations of the metaphor appearing in the ad that were supported by the metaphor. Thus, there was no single correct interpretation of the metaphors in the ads. While working through several examples, the coders discussed differences until they felt comfortable with the criteria for "valid" and "invalid." Accuracy scores ranged from 1 to 3 (1=an invalid interpretation, 2=partially valid interpretation, 3=valid interpretation). A valid interpretation was one in which both the topic
(the product or subject of the ad) and the vehicle (the object or concept being used to create the comparison) were identified in a valid way; that is to say, that their interpretation was supported by the metaphor. Partially valid translations of a metaphor appearing in an advertisement were those which correctly identified only one half of the "equation" of the comparison. Appendix B provides several examples of valid, partially valid, and invalid interpretations of the metaphors appearing the advertisements in this study. These "accuracy" scores were averaged across ads in each of the metaphor conditions to obtain overall scores as well as scores for the abstract and concrete metaphor conditions. Inter-coder agreement on the level of validity of respondents' interpretations was relatively high as measured by Cronbach's alpha=.88.

Hemisphericity. This variable was measured with the 40-item HIPS instrument. An advantage gained over other measures of hemisphericity is that HIPS allows respondents to score according to their hemisphere processing preferences without forcing them into a single "dominant" hemisphere category (i.e., "left-brained" vs. "right-brained"). An earlier measure that has been used extensively in hemisphericity research, especially with regard to learning styles and management styles, is SOLAT (Your Style of Learning and Thinking) which was developed by Reynolds, Riegel, and Torrance (1977). Although SOLAT has been used successfully, the instrument used in this study (Torrance, Taggart and Taggart's [1984] Human Information Processing Survey) was chosen because it can measure more than simple hemispheric dominance. We did not want respondents to be forced into a left/right dichotomy, especially in light of our beliefs about the way metaphors might be processed by the brain (as outlined earlier in this paper). The Human Information Processing Survey (HIPS) allows these more sophisticated patterns of processing to be reflected in respondents' scores, and for this reason, contributes to the formation of predictions regarding relationships between hemisphericity and metaphor comprehension. In addition, HIPS was employed as a measure of hemisphericity because it has achieved good levels of reliability and validity (Taggart and Valenzi 1990). Alternate forms test-retest reliability coefficients ranged from .82 for the integrated hemisphere scale to .86 for the left hemisphere scale (Reynolds, Riegel and Torrance 1977). Denny and Wolf (1980) reported a Cronbach reliability coefficient of .84. Construct validity was assessed by Torrance and Frasier (1991) by correlating the left and right hemisphere scales with the Creativity scale of the Biographical Inventory. This study yielded a significant positive correlation between right hemisphere processing and creativity (r=.54) and a significant negative correlation between left hemisphere processing and creativity (r=-.58). Torrance (1979) tested the predictive validity of the HIPS instrument by testing predictions that those individuals scoring high in right hemisphere functions would be better able to connect sounds and images; the results supported the hypotheses with a significant positive correlation of .63 for right hemisphere scores and -.40 for left hemisphere scores. Taggart and Valenzi (1990) present the results of numerous reliability, construct validity, and predictive validity studies which support the use of HIPS.

In this study, a research participant's score on the HIPS consisted of continuous scores (from 0 to 40) for left hemisphere, right hemisphere, and integrative processing. These scores were split on the median to create high and low categories on each of the types of processing.

Results

RQ1 sought to determine the accuracy of participants' interpretations of metaphors in advertising. The mean accuracy score demonstrated that, overall, participants were generally valid in their understanding of the metaphors used in the ads in this study (M=2.37).

Hypothesis 1 predicted that concrete metaphors would be easier to understand than abstract metaphors. The results of a two-tailed paired samples t-test supported this hypothesis, (t [102]=4.43, p<.001, eta2=.16). Participants were more valid in their interpretation of concrete metaphors (M=2.45) than abstract metaphors (M=2.26). Results are summarized in Table 1.

Hypotheses 2a and 3a posited that people high in integrative hemisphere processing (IH) would have an advantage in comprehension of abstract and concrete metaphors in ads compared to people high in hemisphere processing (LH). After selecting only those individuals who were high in either IH or LH (although it was possible to score high in both LH and IH, only those who scored high in only one or the other were selected for this analysis), a one-way ANOVA was performed to test the differences in the mean comprehension of each type of metaphor. The results support both Hypothesis 2a (F [1.72]=29.41, p<.001, eta2=.29), and Hypothesis 3a (F [1.72]=8.62, p=.004, eta2=.11). People high in integrative processing interpret abstract and concrete metaphors in ads in more valid ways than people high in left hemisphere processing.
Hypotheses 2b and 3b predicted that people high in right hemisphere processing (RH) would comprehend abstract and concrete metaphors in advertisements better than people who scored high in left hemisphere processing (LH). Selecting only those individuals scoring high in either right or left hemisphere processing, one-way ANOVAs revealed support for Hypothesis 2b ($F_{[1,57]}=6.33, p=.02, \eta^2=.10$), and marginal support for Hypothesis 3b ($F_{[1,57]}=4.06, p=.056, \eta^2=.07$). Compared to those high in left hemisphere processing, people high in right hemisphere processing are more valid in their comprehension of abstract metaphors in ads and somewhat more valid in their comprehension of concrete metaphors.

Hypotheses 2c and 3c predicted that people high in integrative processing have an advantage in comprehending metaphors over those who are high in right hemisphere processing. The results of one-way ANOVAs support Hypothesis 2c ($F_{[1,74]}=7.19, p=.01, \eta^2=.09$), indicating that such an advantage exists for abstract metaphors; however, the results did not support Hypothesis 3c ($F_{[1,74]}=2.04, p=.16, \eta^2=.03$). Therefore, the advantage of integrative processing is not as large for concrete metaphors (which are more easily comprehended) as it is for abstract metaphors (the more challenging condition).

Hypothesis 4 predicted that visual metaphors would be more easily comprehended than verbal metaphors. Three advertisements representing the visual metaphor condition were selected along with three advertisements representing the verbal metaphor condition. To control for the possible confounding effect that the inclusion of (the more difficult to comprehend) abstract metaphors might exert, only ads using concrete metaphors were selected. This hypothesis was supported, $t(75)=4.66, p<.001$. The mean comprehension score for visual metaphors was 2.69, while the mean for verbal metaphors was 2.38.

**Discussion**

This study is important for several reasons. First, it directly addresses the issue of comprehension of advertising metaphors. As mentioned earlier, several authors have called for investigations into determining the degree to which metaphors are comprehended by consumers (Stern 1988; Ward and Gaidis 1990). Because metaphors depend on meaning transfer between one referent to another, on the appropriate attribute(s) of interest, this is an important line of inquiry. Another important contribution of this study is that a meaningful distinction is made between metaphor type (concrete and abstract). The hypotheses regarding the differences in comprehension as a result of metaphor type were supported. The pattern of findings is important for theoretical and practical reasons in
advertising, since these results have implications for message design. In addition, the present research sheds light on the interplay of individual processing preferences and metaphor type and their impact on comprehension. These three contributions, coupled with a discussion of practical implications and limitations, is further outlined in the following discussion.

**Metaphor Comprehension and Consumer Response**

The first research question sought to determine at a fundamental level how well consumers interpreted metaphors contained in product advertising. It appears that at a general level, most respondents were only somewhat valid in their interpretations of metaphors in ads. This finding is congruent with past research in this area which has found that metaphors are not always interpreted as the advertiser intended (Phillips 1997). This finding offers support for the conclusion that metaphors may not be entirely effective in conveying an intended or even an obvious meaning. Although as a message strategy, metaphors may increase attention to the ad and ad processing, comprehension may not be as high as ad creators would hope.

Metaphors which are not comprehended, or are interpreted in such a manner as to be nonsensical, could be categorized as unexpected and irrelevant on Heckler and Childers’ (1992) two-dimensional model of incongruency, at least as these metaphors are experienced by receivers. According to McQuarrie and Mick (1996) figurative language (metaphor) is an atypical or uncommon comparison. This is not dissimilar to the “unexpected” or novel use of a message element to emphasize the theme in an ad. However, the power that usually accompanies a novel appeal may be lost if the appeal is not understood; in this case, it could be categorized as irrelevant. According to Heckler and Childers’ (1992) model, advertisements categorized as unexpected and irrelevant have negative effects on memory outcomes. Thus, not only are viewers unable to make sense of the appeal, they are also less likely to remember it. The conclusions of Heckler and Childers, combined with the findings of this study, point to the utility of selecting concrete as opposed to abstract metaphors in product advertising.

**Concrete vs. Abstract Metaphors: A New Conceptualization**

Another important contribution of this study is that it introduces a new way to think about and examine the effects of metaphors in advertising. This research suggests that not all metaphors are created equal, at least in terms of comprehension. Metaphors that are primarily abstract or concrete are comprehended to a different degree, with a distinct advantage being found in the use of concrete metaphors. From a practical perspective, this study provides guidance to advertising practitioners for metaphor construction. From a theoretical perspective, distinguishing between types of metaphors should strengthen future studies.

**Visual and Verbal Metaphors**

Previous research has identified important effects with regard to the presence of verbal metaphors (Leigh 1994) and interpretation of visual metaphors (Phillips 1997), but metaphors in advertising are typically an interplay of both copy and image. For this reason, several of the advertisements used in this study contained both verbal and visual metaphors. However, by contrasting ads using either visual or verbal metaphors, we discovered that the presentation of a metaphorical comparison supported by a visual image enhanced the comprehensibility of the metaphor. The clear implication is that advertisers, when seeking the advantages that metaphors provide in obtaining and sustaining attention, should consider using concrete metaphors which are reinforced with a visual image.

**Individual Differences in Interpretation**

Not only does this study provide important insight into the effects of different types of metaphors on comprehension, it goes beyond this to examine how processing preferences interact with these types of metaphors. Hypotheses 2a through 3b predicted that people high in integrative processing or right hemisphere processing would have an advantage over those high in left hemisphere processing when interpreting ads containing abstract and concrete metaphors. The results support these hypotheses. This indicates that left hemisphere processing (the hemisphere that governs most language production and comprehension tasks) alone may be insufficient for the comprehension of metaphors.

Reviewing the effect sizes, it is clear that people who engage in integrative hemisphere processing are better able to comprehend abstract metaphors, although this advantage narrows in the comprehension of concrete metaphors. The data, when considered as a whole, point to the advantage of using concrete over abstract metaphors. These data also indicate that it is important to recognize that not all consumers will fully understand messages containing metaphors (although this begs
the question of whether consumers understand all advertisements that do not contain metaphors).

In addition, this research addresses a significant gap in the advertising literature by looking at the comprehension of real ads containing metaphors. This study also accounts for the effect of individual differences in the ability to understand such ads. It appears that there has been an underlying assumption that all people process this type of message the same way. With the exception of Phillips (1997), there has been little discussion about whether consumers differ in their abilities to process metaphors, especially that of hemisphericity on the comprehension of nonliteral language appearing in advertisements.

**Limitations**

There are several limitations of this study that warrant attention. First, the use of a student sample limits the generalizability of the findings. Although students are consumers of advertising, they are not representative of all consumers. It could be argued, however, that students, with their higher-than-average level of education, are better able to interpret and articulate metaphors and analogies than the population at large. For this reason, the accuracy of the interpretations elicited in this study may actually be inflated, pointing to the need to be even more judicious when employing abstract metaphors.

Second, this study employed real magazine ads as stimulus materials. It is difficult to control the level of difficulty (or familiarity) of the metaphors contained in each ad, which we recognize may constitute a threat to internal validity. However, the benefits of using real ads utilizing high production values—thereby increasing external validity—were deemed to outweigh the potential drawbacks associated with the presence of uncontrolled differences between ads.

Third, although the method of assessing the dependent variable (comprehension) was similar to other studies in this area (Phillips 1997), it is possible that respondents were unable to accurately describe their interpretations even if those interpretations were valid. Therefore, our results are limited by the degree to which each of our respondents were able to articulate the meaning of each of the metaphors. It is certainly possible that consumers respond to a more general impression or feeling when attempting to interpret a metaphor, as opposed to a full understanding of the message. The transference of affect created by a metaphorical comparison may be an important element of persuasive success compared to comprehension. In addition, the relationship between comprehension of the metaphor and favorable evaluation of the brand has yet to be established. However, we do feel confident in advancing the conclusion that the more advertisers rely on a metaphor to convey specific product information, the more careful (and concrete) advertisers should be.

**Conclusions and Practical Implications**

Overall, the results of this study suggest that metaphor type and individual differences in hemispheric processing have a significant effect on comprehension of metaphors in advertisements. As such, these findings provide several important implications for advertising creators. Regarding metaphor type, the findings suggest that advertisers should exercise caution when using abstract metaphors. Respondents appear to have lost significantly more meaning when viewing ads with abstract, rather than concrete, metaphors. However, this is not to say that abstract metaphors are without merit in product advertising. Abstract metaphors may be highly useful in accomplishing a transfer of meaning that supports the goals of an advertiser in spite of being less tangible. For example, the essence of grace is an abstract trait used to promote Concord watches, but some consumers may respond to this message more favorably than to a more concrete (and perhaps less elegant) comparison. Nevertheless, viewers are more likely to validly interpret metaphors that are based on the senses (i.e., sight, sound, touch, etc.) compared to abstract referents.

These findings, however, are moderated by the effect of the strength and type of cognitive processing skills or preferences of respondents. It appears that people high in integrative hemisphere processing show the highest comprehension of both concrete and abstract metaphors. While we would not suggest that the type of processing is something that advertisers can control, it does support the notion that there are important individual differences in viewers' ability to comprehend metaphors in advertising.

This finding is important from a practical standpoint as well. Advertisements targeted toward certain populations may experience greater or lesser success with each type of metaphor. For instance, ads targeted toward a population segment high in integrative processing (e.g., engineers [Torrance, Taggart, and Taggart, 1984]) are better able to comprehend abstract as opposed to concrete metaphors. On the other hand, ads targeted toward certain professions (e.g., business-to-business or trade advertising) in which the profession is dominated by individuals high in left or right brain processing (e.g., operations ana-
lysts (Doktor 1978) or computer programmers (Coppus 1978) versus general managers (Agor 1983) or musicians, concrete metaphors are more likely to be comprehended validly compared to abstract metaphors. Another, perhaps more unexpected, metaphor/occupation interaction may be occurring within the advertising field itself. If we accept the findings that certain occupations may be biased toward left or right hemisphere processing, there may be a bias in the advertising profession that has resulted in the heavy use of metaphors: highly creative advertising professionals may be intuitively constructing advertisements that contain metaphors because of their own tendency toward right hemisphere processing.

These results point to two important conclusions. First, that consumers may not completely understand many ads that contain metaphors, particularly those containing abstract metaphors. Second, these results indicate that hemisphere processing has a significant impact on how well metaphors in advertisements are understood. We hope that this study provides knowledge for future research by advertising scholars and by advertising professionals interested in having their metaphors interpreted as intended.

References


Lakoff, George and Mark Johnson (1980), Metaphors We Live By, Chicago, IL: University of Chicago Press.


Appendix A

Summary of Product Advertisements

<table>
<thead>
<tr>
<th>Product Advertised</th>
<th>Metaphor</th>
<th>Concrete/Abstract</th>
<th>Visual/Verbal</th>
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<tbody>
<tr>
<td>Clinique: exceptionally soothing</td>
<td>Cream=Bandaid</td>
<td>Concrete</td>
<td>Visual</td>
</tr>
<tr>
<td>cream for upset skin</td>
<td></td>
<td></td>
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<tr>
<td>Cognac Hennessy</td>
<td>Cognac Hennesssey= warmth of the</td>
<td>Concrete</td>
<td>Visual</td>
</tr>
<tr>
<td></td>
<td>winter sun</td>
<td></td>
<td></td>
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<tr>
<td>Plymouth automobiles</td>
<td>Cost of the car relative to value=</td>
<td>Abstract</td>
<td>Visual</td>
</tr>
<tr>
<td></td>
<td>proportion of an iceberg above/below water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noreico Reflex Action Razor</td>
<td>Razorblades=snake</td>
<td>Concrete</td>
<td>Visual</td>
</tr>
<tr>
<td>Plymouth Neon Expresso</td>
<td>Expresso=espresso</td>
<td>Concrete</td>
<td>Verbal</td>
</tr>
<tr>
<td>Concord Versailles watch</td>
<td>Versailles watch=grace</td>
<td>Abstract</td>
<td>Verbal/Visual</td>
</tr>
<tr>
<td>Italian wines</td>
<td>Italian wines=fine art</td>
<td>Concrete</td>
<td>Visual</td>
</tr>
<tr>
<td>Sector &quot;No Limits&quot; sport watches</td>
<td>No Limits=mindset of &quot;pushing further&quot;</td>
<td>Abstract</td>
<td>Verbal</td>
</tr>
<tr>
<td>Corelle dinnerware</td>
<td>Corelle dinnerware=Taj Mahal</td>
<td>Concrete</td>
<td>Visual/Verbal</td>
</tr>
<tr>
<td>Aetna health plans</td>
<td>Measles=monster</td>
<td>Abstract</td>
<td>Visual/Verbal</td>
</tr>
<tr>
<td>Samsung Camcorder</td>
<td>Video camera=gun</td>
<td>Concrete</td>
<td>Visual</td>
</tr>
<tr>
<td>Sonoma trucks</td>
<td>Sonoma=adventurous</td>
<td>Abstract</td>
<td>Verbal</td>
</tr>
<tr>
<td></td>
<td>mindset/opening new doors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Express</td>
<td>AMEX card=medal of honor</td>
<td>Concrete</td>
<td>Visual</td>
</tr>
</tbody>
</table>

Appendix B

Examples of Valid, Invalid and Partially Valid Translations of Abstract and Concrete Metaphors in Product Advertising

**Concrete Ads:**

**Clinique:** Why does the jar of this Clinique product have a Band-Aid on it?

**Valid:** "Whenever we get hurt, we use a band-aid to cure it. Clinique’s ad shows that it can heal our skin just like the band-aid." "It heals problem skin."

**Invalid:** "It makes you feel that it is medically proven and that it helps cure the accident other creams or you might inflict upon yourself."

**Partially valid:** "It can fix your imperfections."

**Norelco:** What does the image of a razor tell you about why you shouldn’t shave with a razor?

**Valid:** "A real razor is harmful — it can cut you in an instant like a snake can strike." "Better shave with a Norelco because it won’t nick or cut you like a razor (snake) will."
Appendix B
Examples of Valid, Invalid and Partially Valid Translations of Abstract and Concrete Metaphors in Product Advertising (continued)

Invalid: "A normal razor doesn't bend and curl like the Noreico does."
*Partially valid:* "The blades can be very dangerous and require great skill to use them."

**American Express:** Why is the American Express card pinned to this man's shirt?
*Valid:* "To equate it with a badge of honor and accomplishment. If you have AE, you have made it."
*Invalid:* "He is not leaving home without it."
*Partially valid:* "He is proud of it. It is part of his life."

**Abstract Ads**
**Plymouth:** Why did the ad creators use an iceberg in this ad?
*Valid:* "You pay a small amount in comparison to what you will receive from the car."
*Invalid:* "The toughness." "I think the iceberg was used to represent something 'cool,' implying that you are paying for a cool vehicle." "An iceberg is strong and sturdy like the Plymouth line of cars."
*Partially valid:* "Hidden substance belied by a small visible portion; many unseen improvements have been made." "You are paying for the quality of an iceberg at a smaller price."

**Concord Watch:** What do they compare their watch to?
*Valid:* "The idea of gracefulness; because Americans think anything French is elegant and stylish." "They are comparing the watch to the way swans are — very graceful ... they believe their watches are graceful like this."
*Invalid:* "Two swans in love." "Named after Grace Kelly."
*Partially valid:* "A swan; to resemble royalty which is full of grace and beauty, hoping you will think if you buy the watch that you will be graceful and beautiful."

**Sector sport watches:** The ad creators are comparing the watches to what?
*Valid:* "Our world of no limits is much more than a line of watches. It's a mindset that encourages everyone to push a little further."
*Invalid:* "Sky diving." "A team of extreme athletes."
*Partially valid:* "The world of no limits."