Journal of Pragmatics 42 (2010) 3418–3430

Contents lists available at ScienceDirect

Journal of Pragmatics

journal homepage: www.elsevier.com/locate/pragma

The impact of perceived complexity, deviation and comprehension on the appreciation of visual metaphor in advertising across three European countries

Margot van Mulken [a,*], Rob le Pair [a], Charles Forceville [b]

[a] Radboud University Nijmegen, Department of Business Communication, Center for Language Studies, Radboud University Nijmegen, Erasmusplein 1, 6500 HT Nijmegen, The Netherlands
[b] University of Amsterdam, Department of Media Studies, Turfdraagsterpad 9, 1012 XT Amsterdam, The Netherlands

ARTICLE INFO

Article history:
Received 29 May 2009
Received in revised form 21 April 2010
Accepted 23 April 2010

Keywords:
Visual metaphor
Appreciation
Deviation
Complexity
Comprehension
Cultural differences

ABSTRACT

With regard to the spatial distribution of pictorial elements in (monomodal) visual (or pictorial) metaphor three types of metaphor can be distinguished: Similes (where the target and source are visually presented separately), Hybrids (where target and source are fused together) and Contextual Metaphors (where either source or target is visually absent). In an experiment using authentic advertisements, it is tested whether consumers' experience of deviation from expectation and complexity vary with regard to these three types of visual metaphor. Participants in Spain, France and the Netherlands took part in an Internet experiment. Results show that Hybrids are the preferred type of visual metaphor, that deviation from expectation and comprehension have a positive impact on appreciation, and that perceived complexity correlates negatively with appreciation. The effects for nationality are limited.

1. Introduction

It is often thought that pictures are straightforward, iconic representations of reality, sensory analogs to objects in the environment (see Scott, 1994 for an overview). The fact that a light bulb can signal a bright idea already illustrates that this is not necessarily the case. Scott has shown convincingly that pictures, like language, can be used persuasively and hence must be processed cognitively rather than absorbed peripherally or automatically (Scott and Vargas, 2007). Images can constitute complex arguments whose rhetorical potential requires systematic description and analysis. In order to examine the effect of rhetorical communication on persuasion, McQuarrie and Mick (1996) combine semiotic analysis and consumer response theories and propose to consider rhetorical figures as a form of artful deviation from expectations (McQuarrie and Mick, 1996:425). The form of the message may stimulate the receiver to consider why the sender chose to shape his or her message in a deviant, i.e., not straightforward, way. This reconsideration implies a search for additional meaning, and, in resolving this 'incongruity', the receiver may experience cognitive pleasure (Berlyne, 1971; McQuarrie and Mick, 1996). Moreover, the artfulness of the rhetorical figure may also be the source of aesthetic pleasure for the receiver (Barthes, 1964). Empirical evidence shows that advertisements that contain rhetorical figures provoke more elaboration, are better remembered, and

* Corresponding author at: Department of Business Communication, P.O. Box 9103, 6500 HD Nijmegen, The Netherlands. Tel.: +31 243612923; fax: +31 243612177.
E-mail addresses: m.v.mulken@let.ru.nl (M. van Mulken), r.lepair@let.ru.nl (R. le Pair), c.j.forceville@uva.nl (C. Forceville).

0378-2166/$ – see front matter © 2010 Elsevier B.V. All rights reserved.
doi:10.1016/j.pragma.2010.04.030

are better liked than advertisements without rhetorical devices (McQuarrie and Mick, 1999; Tom and Eves, 1999; Toncar and Munch, 2001; Mothersbaugh et al., 2002).

According to McQuarrie and Mick, the complexity of the rhetorical figure correlates with the appreciation of the figure. This reasoning is based on Relevance Theory (Sperber and Wilson, 1995 [1986]), which claims that receivers will always assume that a message provides an optimal balance between cognitive effects and the effort required by its processing. Receivers are inclined to expend as little effort as possible to understand the message and at the same time they will try to gain as much effect as possible from the message by processing it. In other words, receivers expect that the more processing costs a message requires, the more effect they will gain. They are presumably willing to expend more cognitive effort, provided that they gain more effect, in the sense of more information, but also in the sense of more pleasure (cf. Tanaka, 1992; Forceville, 1996:chapter 5; 2005; 2009; Van Enschot et al., 2005). In the verbal domain, more complex figures (tropes) are generally preferred to less complex rhetorical devices (schemes), provided that they are not perceived as too difficult (McQuarrie and Mick, 1992; Phillips, 2000; Van Enschot et al., 2005).

Within the visual domain, things are less clear. Little is known about semiotic visual complexity, although some serious attempts have been made. Kress and Van Leeuwen (2006 [1996]); but cf. Forceville, 1999) have started the social semiotics project, in which they propose to identify patterns in visual communication. Groupe Mu has tried to describe all possible meaning relationships between pictorial elements in two-dimensional images, but has not integrated the analysis of the spatial layout of the elements (Groupe Mu, 1992). Phillips and McQuarrie (2004) also point to the necessity to develop a more fine-grained framework for visual rhetoric, and for metaphors in particular. "Because pictures are not speech, we shall argue that existing taxonomies designed for verbal rhetorical figures (e.g., McQuarrie and Mick, 1996) do not adequately capture important differentiations within the visual domain" (Phillips and McQuarrie, 2004:114). We are in need of further differentiations within and between visual "figures of depiction" (Tversky, 2001) to enable us, in the same vein as verbal figures, to assess the pragmatic effects of appreciation and perceived complexity.

For instance, there is not necessarily a linear relationship between complexity and appreciation. Phillips (2000) has shown that confronting audiences with cognitive challenges entails a risk, since appreciation depends on whether they are able to solve the riddle. Several studies have shown that if messages demand too much or too little cognitive processing effort, receivers may opt out, and appreciation will decrease: appreciation follows the pattern of an inverted U-curve (McQuarrie and Mick, 2003; Nordhielm, 2003; Phillips, 2000). Since appreciation is claimed to be a function of complexity and comprehension, we would expect that more complex metaphors risk remaining more often uncomprehended than less complex metaphors. Based on the predictions for verbal rhetorical figures, we would expect that highly complex visual metaphors result in less appreciation than moderately complex visual metaphors, but also that very simple visual metaphors are less liked than moderately complex visual metaphors. Testing such expectations presupposes that visual metaphors can be systematically characterized according to their degree of complexity.

In linguistic and psycholinguistic research, the systematic differences in complexity of verbal metaphors are subject to a lively debate (Bowdle and Gentner, 2005; Gibbs and Tendhal, 2006; Glucksberg et al., 1997; Pierce and Chiappe, 2009; Utsumi, 2007). Comparisons expressed as verbal similes, such as 'my surgeon is like a butcher', differ in processing time from 'my surgeon is a butcher'. The X IS LIKE Y-form elicits another type of elaboration than the X IS Y-form. According to some researchers (e.g., Miller, 1979; Noveck et al., 2001), similes are believed to represent more basic, direct and explicit comparisons than metaphors, because the comparison is explicitly signaled by the word *like*. Other researchers contend that metaphors are the more direct, straightforward statements (e.g., Glucksberg and Keysar, 1990). Gibbs (1990) adds another category of verbal metaphor to this twosome, namely 'referential phrases', which is a class of metaphor that takes even longer to be processed. Given a hospital context, the metaphorical construal in 'The butcher had blood on his white coat' must be totally inferred from the context in which the statement was uttered, for instance, an operating room.

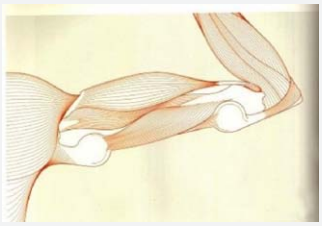
We contend that in the visual domain we can make a similar distinction between types of metaphor, based on 'grammatical' or structural characteristics of the composition of the image. The spatial layout of the pictorial elements can be seen as a grammatical feature of visual composition. Like Kress and Van Leeuwen (1996), we believe that visual structures realize meanings also in patterned ways. Forceville's (1996, 2005) work on visual/pictorial metaphor proposes a typology of visual metaphor that allows for predictions that complex visual metaphors, with their greater reward for the invested cognitive effort, will be better appreciated than less complex ones. Building on Relevance Theory, Forceville presupposes that receivers will engage in certain effort-demanding interpretive paths in exchange for an increase in contextual effects – such as cognitive or aesthetic pleasure. He distinguishes several types of visual metaphor, which will here be briefly explained.

In (a) 'Simile' both source and target domains are visually presented separately; (b) metaphors with two pictorially present terms ('Hybrid Metaphor'), combine target and source domain into a single 'gestalt'; and in (c) metaphors with one pictorially present term ('Contextual Metaphor') the source domain or the target domain is visually absent, in such a way that the absent domain is evoked by the visual context. Forceville proposes to characterize pictorial Similes as "gentle, explicit comparisons [...] *inviting* rather than *forcing* the viewer to experience one [domain] in terms of the other" (1996:143, italics in original), and describes Hybrid metaphor in terms of "violent fusion" (Forceville, 1996: 143). However, he does not say anything about the ease or difficulty with which each type can be interpreted. Table 1 illustrates the three types of metaphor. Note the analogies with the three types of verbal metaphors discussed above.

The three types of metaphor discussed so far all belong to the class of monomodal metaphors: metaphors that occur in only one mode, here, the visual mode. Purely pictorial metaphors – where the signaling of the two terms is achieved by visual means only – are relatively rare (cf. Forceville, 2009). In real life, visual metaphors are often combined with verbal

Table 1
Forceville's (1996, 2005) typology of visual metaphor.

Type a: Simile (Car is like a Dolphin)



Type b: Hybrid Metaphor (Car is a Muscle)

Type c: Contextual Metaphor (Car is a Shark)

information (not in the last place to assure anchorage of meaning and representation, see Barthes, 1964). The case of multimodal metaphors is also addressed in Forceville's typology, more specifically by the category of verbo-pictorial metaphors (2006, 2008), but multimodal metaphors (see Forceville and Urios-Aparisi, 2009) remain outside the scope of this study.

Forceville's typology partly resembles the taxonomy suggested by Phillips and McQuarrie (2004) for visual rhetorical figures. Their taxonomy is based on two axes: complexity (the structure or spatial layout of the image) and visual richness ('connection', 'similarity' and 'opposition'). Richness refers to the degree and range of processing opportunity and processing depth, which makes richness difficult to operationalize (but see McQuarrie and Phillips, 2005; Utsumi, 2007). The axis of complexity is what interests us here, because the three types of visual structure in the Phillips and McQuarrie framework also address the issue of spatial distribution: Similes are called 'Juxtapositions', Hybrids 'Fusions', and Contextual Metaphors 'Replacements'. The Phillips and McQuarrie framework encompasses nine different classes of visual rhetoric, which makes it rather difficult to put it to the test. Unlike Forceville, however, Phillips and McQuarrie commit themselves to predictions about the effects visual complexity will have: "Increases in complexity can be expected to produce greater elaboration as part of comprehension efforts [...]. Because complexity, within limits, is pleasurably arousing, it will also be associated with greater ad liking' (Phillips and McQuarrie, 2004:129)".

But appreciation may not necessarily be triggered by metaphorical form only. How universally comprehensible are visual metaphors? A topic which is often mentioned in discussions of the use of visually encoded messages in advertising is the role of culture. Studies that adhere to the 'copy theory of pictures' (cf. Scott, 1994) claim that visual communication is the answer to global advertising: there is no need for translation, since the same message can be used everywhere to convey the same idea: a picture paints a thousand words. However, little is known about the cultural connotations that visual imagery evokes. Especially in the case of visual metaphor, it is very well possible that some cultures process metaphors differently than other cultures. For example, print cultures as opposed to oral ones, tend to use more visual metaphors (St. Clair, 2000). In his call for a rhetoric of the image, Barthes (1964) already stressed the fact that readings of an image may vary across cultures (Barthes, 1964:48). Kövecses (2005) points out that the universality of metaphors can be questioned. He notes that cultural context may override the universal mapping in metaphors. McQuarrie and Mick (1999) have shown that non-native American participants with an Asian background were less able to interpret visual tropes than native-born American participants. The differences between the Western European countries in this study are less pronounced than those between America and Asia (Hofstede, 2001), but it is not unconceivable that they differ in their familiarity with, and preferences for, rhetorical speech (cf. Forceville, 1995; Van Mulken, 2003).

2. Hypotheses

First, we will investigate whether the Forceville typology has ecological validity. We will verify whether the taxonomy represents metaphor classes that correspond to distinctive pragmatic classes by layman viewers. Therefore, we will investigate whether the categories of Simile, Hyrbid and Contextual Metaphor correspond to different levels of deviation from expectation and complexity in the perception of layman judges. Second, we are interested to verify whether an incremental relation between complexity and appreciation can be detected, because then we have reason to believe that the assumptions based on Relevance Theory hold true. Visual metaphors that demand a high degree of effort will on average be less appreciated than less demanding metaphors. If only fully understood metaphors are considered, then we predict that the more demanding metaphors will be appreciated most, and that in that case the relationship between perceived complexity and appreciation follows an incremental pattern.

We furthermore expect advertisements that contain a metaphor to be considered more artful and deviant from expectation than advertisements that contain no metaphor (cf. McQuarrie and Mick, 1996; Toncar and Munch, 2003). Since in Similes the integrity of both target and source is left intact, whereas with Hybrids target and source are fused together into one single 'gestalt', we expect Similes to be considered less deviant than Hybrids. But Contextual Metaphors might be

considered even more deviant, since a key element in the comparison is lacking in the visual representation, and it is very well possible that the respondent does not see the connection between the target and the source. Therefore, we expect to find that Similes are considered less deviant than Hybrids, which in turn will be considered less deviant than Contextual Metaphors.

H1a. Advertisements that contain no metaphor will be perceived as less deviant from expectation than advertisements that contain Similes, Hybrids or Contextual Metaphors.

H1b. Advertisements that contain Similes will be perceived as less deviant than advertisements that contain Hybrids and Contextual Metaphors.

H1c. Advertisements that contain Hybrids will be perceived as less deviant than Contextual Metaphors.

With regard to perceived complexity, we expect that the three types of metaphor represent categories of incremental complexity.

H2a. Advertisements that contain no metaphor will be perceived as less complex than advertisements that contain Similes, Hybrids or Contextual Metaphors.

H2b. Advertisements that contain Similes will be perceived as less complex than advertisements that contain Hybrids and Contextual Metaphors.

H2c. Advertisements that contain Hybrids will be perceived as less complex than advertisements that contain Contextual Metaphors.

Relevance Theory (Sperber and Wilson, 1995 [1986]) predicts that if a message requires too much effort, the receiver will opt out. We thus expect to find a negative relation between perceived complexity and appreciation. On the basis of Tanaka (1992), Forceville (1996) and Van Mulken, Van Enschot and Hoeken (2005), however, we predict that the expectation of pleasure induces the receiver to look for extra relevance, and thus to expend more effort. We therefore predict that advertisements that contain visual metaphors will be preferred to advertisements that contain no metaphor. The risk that the consumer fails to come up with a meaningful interpretation is greatest in the case of highly complex metaphors (for instance Contextual Metaphors). Therefore, the appreciation of relatively less complex metaphors is expected to be higher than the appreciation of more complex metaphors, since people are presumed to have fewer difficulties understanding the former than the latter. In short, we expect to replicate the pattern of an inverted U-curve with respect to the mean appreciation of the types of visual metaphor.

H3a. Advertisements that contain no metaphor will be appreciated less than advertisements that contain Similes, Hybrids or Contextual Metaphors.

H3b. Advertisements that contain Similes will be appreciated less than advertisements that contain Hybrids.

H3c. Advertisements that contain Contextual Metaphors will be appreciated less than advertisements that contain Hybrids.

However, if the 'riddle' would be fully understood, then, by contrast, we would expect the more complex metaphors to be preferred: Relevance Theory allows us to predict that the extra cognitive elaboration that they require simply will be rewarded with the extra cognitive effects in the form of humor or aesthetic pleasure. Provided that the invested effort is considered worthwhile, that is, provided that the message is understood, the appreciation of more complex metaphors will go up accordingly (cf. Tanaka, 1992:5; Phillips and McQuarrie, 2004). Comprehension of a metaphorical relation in the advertisement will result in more appreciation of the advertisement. Moreover, if our predictions on the perceived complexity of Contextual Metaphors are correct (H2c), than we would expect that the downward direction of the inverted U-curve (H3c), where the more complex metaphor is appreciated less than the less complex metaphor, is turned upwards: if participants invest more effort in solving a relative complex riddle and eventually reach comprehension, appreciation will be higher than when relatively simple riddles are successfully solved.

H4a. There is a positive correlation between perceived complexity and appreciation for fully understood visual metaphors.

H4b. Fully understood Contextual Metaphors are preferred to fully understood Similes and Hybrids.

It remains possible, however, that we cannot replicate the same classes of types of visual metaphor based on the evaluations of layman judges, but that the deviation from expectation, the perceived complexity, and the comprehension of the individual metaphors allow us to verify the underlying assumptions based on Relevance Theory – the positive impacts of deviation from expectation and comprehension and the negative impact of perceived complexity. The model for the appreciation of visual metaphor in advertising can be depicted as in Fig. 1.

H5a. Deviation from expectation will correlate positively with appreciation of the advertisement with a visual metaphor.

H5b. Perceived complexity will correlate negatively with appreciation of the advertisement with a visual metaphor.

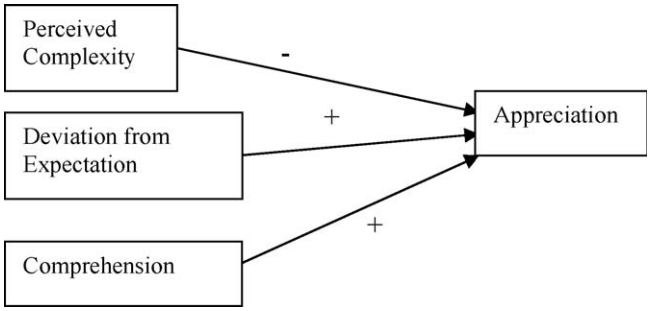


Fig. 1. Proposed model for the appreciation of visual metaphor.

H5c. Comprehension of the metaphor will result in more appreciation of the advertisement with a visual metaphor.

Whether the appraisal of visual metaphor is universal or differs across cultures is tested within West-European cultures. Spanish, French and Dutch cultures differ with regard to the manner in which information is processed: the Spanish and French cultures are known to be high-context cultures, where communication relies on the specific situational context to be properly interpreted, whereas Dutch culture can be characterized as a low-context culture, in that communication involves direct expressions and requires clear, explicit verbal articulation (Hall and Hall, 1990). Callow and Schiffman (2002) have shown that consumers from high-context cultures are more apt than those from low-context cultures in deriving implicit meaning from visual images in print ads. Consequently, one might expect to come across similar differences in the preferences for visual metaphors. We thus hypothesize that the French and Spanish experience less difficulties in deciphering the metaphors, and that they appreciate metaphors more than Dutch participants do, since in everyday life French and Spanish customers are familiar with indirect and contextualized speech.

H6a. French and Spanish audiences will experience less difficulty with visual metaphor than Dutch audiences.

H6b. French and Spanish audiences will appreciate visual metaphor more than Dutch audiences.

3. Method

3.1. Participants

Participants were approached via snowball sampling via the Internet. Although our predictions for French and Spanish respondents are the same, we decided to create a French and a Spanish sample, because French and Spanish culture differ on other dimensions than contextualization alone. According to Hofstede (2001), the French are less individualistic and more sensitive to power distance than the Spaniards. Although these differences cannot directly be related to the assessment of visual metaphor, they might influence the way participants treat advertising and questionnaires (Albers-Miller and Gelb, 1996; Herk et al., 2004).

Of the 323 Dutch persons approached via snowball sampling, 189 completed the questionnaire (59%). Of these 189, four had another than the Dutch nationality, and consequently they were removed from the data file. 185 participants remained, and, in order to have roughly the same amount of participants as with the other nationalities, 75 participants were randomly selected in order to allow for comparison with the French and Spanish subjects. Twenty-six participants were men (34.7%) and 49 were female (65.3%). Three participants were younger than 20 (8.8%), 51 participants were between 21 and 40 years old (68%), 17 persons were between 41 and 60 years old (22.7%), and 4 were older than 61 (5.3%).

A total of 175 French-speaking candidates was invited via snowball sampling, and 73 completed the questionnaire (42%). Of these 73 French participants, five had another than the French nationality, and they were removed from the data file. Of the 68 remaining participants 13 (19.1%) were men and 55 (80.9%) women. 20 (29.4%) were younger than 20, 42 (61.8%) were between 20–40 years old, five (7.4%) were between 41 and 60 years old, and one (1.5%) was older than 60.

Of the 168 Spanish-speaking persons that were approached via the Internet, 105 completed the questionnaire (62%). Of these 105 Spanish-speaking participants, 36 (27 of whom were Latin American) had another than Spanish nationality. They were removed from the data file. Of the remaining 69 participants, 15 (21.7%) were men, and 54 (78.3%) were female. Fifteen (21.7%) were younger than 20, 48 (69.6%) were between 20 and 40 years old, 6 (8.7%) were between 41 and 61 years old.

3.2. Stimuli

Just one product category was selected (automobiles) with several instantiations of the type of metaphor. Whereas for the identification of verbal metaphor a detailed procedure has been devised (Pragglejaz Group, 2007), there exists as of yet no

fully reliable procedure for the identification of visual metaphor. Therefore, approximately 135 automobile advertisements were collected from Internet databases (www.Adworld.com; www.adsoftheworld.com; www.advertisingarchives.co.uk; www.adverbox.com) and were submitted, in a pretest, to a jury of two expert judges (the first two authors) and 15 graduate students at Radboud University Nijmegen who were familiar with the identification procedure proposed by Forceville (1996). Only automobile advertisements that indisputably (i.e., all 17 judges agreed) could be attributed to one of the three types of metaphors were included in the material set. In order to control for the effect of product involvement (Rossiter and Percy, 1991), we chose to examine advertisements for cars – a tangible, high involvement product. It was made sure that in the metaphorical stimuli the comparison pertained to the entire car, and not just to an aspect of the car or to characteristics of the user. The visual metaphors in the original advertisements could be considered as authentic representations of the three types of metaphor under investigation. We only removed the logos, the slogans and the brand names (if present) from the original advertisements, because the place, the size and the font type might influence the evaluation of the ads. In order to make sure that participants were aware of the advertising context, brand names were mentioned above each ad in Verdana font 18 pts. Each type of metaphor was represented by five automobile advertisements. Five advertisements were added to represent a category with no metaphor (see Appendix).

3.3. Design and measures

A 4 (Type of metaphor: 'no metaphor', Simile, Hybrid, Contextual Metaphor) by 3 (Nationality: French, Spanish and Dutch) design was used. Each participant judged 20 advertisements for automobiles, with five instances of each type of metaphor ('no metaphor', Simile, Hybrid and Contextual Metaphor). 'No metaphor' was included as a control set. A within-subjects design (four types of metaphor) with a between subjects factor (nationality) was used. To control for order effects, two versions of each language variety were created (French, Dutch and Spanish) in which the order of advertisements was reversed. Order proved to be of no influence.

A questionnaire was developed in Dutch to obtain the opinions of the participants. Two bilingual colleagues specialized in cross-cultural research checked and approved the translation of the Dutch questionnaire into French and Spanish. The dependent variables were deviation from expectation, perceived complexity and appreciation. The degree of perceived complexity was operationalized with the help of the semantic differentials 'straightforward – unclear', 'easy to understand – difficult to understand', on a 7 points scale. The reliability of these scales was high in all three groups, with Cronbach's alpha ranging from .70 to .92, and an n-weighted average of .83. Deviation was operationalized with the help of the semantic differentials 'original – banal', 'boring – novel', 'predictable – surprising'. The reliability of these scales was also high in all three groups, with Cronbach's alpha ranging from .77 to .89, and an *n*-weighted average of .85. Our operationalizations of complexity and deviation are in line with McQuarrie and Mick (1996, 1999). Appreciation was operationalized with the help of a single item 7 points Likert scale ('My overall opinion of this advertisement is positive – negative').

The second part of the questionnaire started with a short explanation of metaphorical comparison. With the help of a sample advertisement for KLM (Dutch Royal Airlines), which was a Contextual Metaphor, it was explained that in this advertisement an airplane was compared to a swan in order to invoke elegance, quality and luxury. In order to investigate whether the metaphors were indeed understood as metaphors the first time round, participants were invited to reexamine the 20 advertisements, and to answer whether they had recognized a comparison the first time they evaluated the advertisement. Participants who ticked the comparison option were prompted to verbalize the comparison in a gap-filling question ('in my view, the car is compared to ...'). If the participant indicated that in his or her opinion, no comparison was visualized, he or she would be prodded with a commentary such as: 'Some people thought that in this advertisement, the automobile is compared to the strength of a horse.' Participants were then offered a choice: 'I don't see it at all' or 'I didn't see it at first sight, but now I understand how other people interpret it.' Participants were asked to indicate whether they had already seen the advertisement before participating. If participants thought they had seen the advertisement before, their evaluation, their estimation of the ad's complexity, and their appreciation of the ad were not included in the analysis.

3.4. Procedure

Participants were approached by an e-mail or via an Internet Forum, in which they found a link to the website and a password to enter the questionnaire. Participants were invited to forward the questionnaire to other potential participants. They received no compensation for their participation. It took approximately 20 minutes to fill in the questionnaire.

3.5. Data analysis

The data were analyzed using a two-way analysis of variance or ANCOVA followed by pairwise comparisons. Analyses by participants (F1) and by stimulus (F2) were carried out. Significant effects in the F1-analysis suggest that these effects would occur again if different participants had been used, significant effects in the F2-analysis suggest that these effects would occur again if different slogans had been used. Pairwise comparisons (Bonferroni) were studied for main and interaction effects. Pearson's correlation was used to test Hypothesis H4a and linear regression analyses were carried out to test Hypotheses H5a–H5c.

4. Results

Table 2 presents the mean evaluations on perceived complexity, deviation from expectation, and appreciation.

4.1. Deviation

Recall that our first set of hypotheses claimed that advertisements that contain no metaphor would be perceived as less deviant from expectation than advertisements that contain Similes, which in turn would be perceived as less deviant than advertisements that contain Hybrids, which in turn would be perceived as less deviant than Contextual Metaphors. In a variance analysis of repeated measures with deviation from expectation as dependent factor, Nationality was entered as a between subjects factor. There was a strong main effect of type of metaphor on deviation from expectation (F1 (3,204) = 553.25, $p < .001$, $\eta^2 = .89$; F2 (3, 48) = 140.18, $p < .001$, $\eta^2 = .9$). Pairwise comparisons (Bonferroni) in the participant analysis showed that the different types of metaphor all differed significantly from each other. No Metaphor was considered least deviant, followed by Contextual Metaphors, closely followed by Similes, while Hybrid metaphors were thought of as most deviant. Pairwise comparisons in the item analysis revealed exactly the same, except that Similes and Contextual Metaphors did not differ significantly from each other.

There was a small interaction effect for nationality and type of metaphor in the participant analysis (F1 (6,408) = 5.16, $p < .001$, $\eta^2 = .07$; F2 < 1). This interaction effect was caused by small differences in experienced deviation between the three nationalities of the four categories of advertisements. Pairwise comparisons (Bonferroni) revealed that French differed significantly from Spanish participants in their assessment of the deviation of No Metaphor: the French participants found No Metaphor less deviant than Spanish respondents. French respondents also differed significantly from Dutch and Spanish respondents in their assessment of the deviation of Hybrid metaphors: the French found Hybrid metaphors more deviant than the Dutch and Spanish respondents did. For Contextual Metaphors there was again a noteworthy difference: the Spanish appreciated the deviation of Contextual Metaphors significantly less than Dutch or French respondents. The interaction effect can be interpreted as follows: with regard to Hybrid metaphors, the French were more pronounced in their assessment, whereas with regard to Contextual Metaphors, the Spanish were (relatively) more extreme in their evaluation. However, the pattern of experienced deviation was similar for all nationalities: Hybrids were considered more deviant than Similes, which in turn were considered more deviant than Contextual Metaphors, and all types of metaphors were considered more deviant than No Metaphor. We thus can confirm Hypotheses H1a and H1b, but we have to refute H1c.

4.2. Perceived complexity

Recall that our second set of hypotheses claimed that advertisements that contain no metaphor would be perceived as less complex than advertisements that contain Similes, which in turn would be perceived as less complex than

Table 2
Mean evaluations and standard deviations on perceived complexity, deviation from expectation and appreciation as a function of type of metaphor and nationality.

Type of metaphor	Country	*N*	Perceived complexity[a]		Deviation[b]		Appreciation[c]	
			M	SD	*M*	SD	*M*	SD
No metaphor	Dutch	74	2.12	.98	1.89	.81	2.93	1.09
	French	67	2.07	1.25	1.66	.67	2.78	1.09
	Spanish	68	2.01	1.14	2.07	.77	3.14	1.30
	Total	209	2.07	1.12	1.88	.77	2.95	1.17
Simile	Dutch	74	3.35	.97	4.68	.92	4.61	.78
	French	67	2.99	.90	4.78	.84	4.77	.91
	Spanish	68	2.68	.92	4.78	1.11	4.93	.96
	Total	209	3.01	.97	4.75	.96	4.76	.89
Hybrid	Dutch	74	3.39	1.07	5.05	.94	4.76	.84
	French	67	3.03	.85	5.47	.74	5.14	.87
	Spanish	68	3.06	1.16	5.13	.99	5.10	.85
	Total	209	3.17	1.04	5.21	.91	4.99	.87
Contextual	Dutch	74	5.05	1.07	4.63	.90	3.70	.84
	French	67	4.84	1.00	4.67	.86	3.82	1.05
	Spanish	68	4.50	1.22	4.33	1.07	4.01	1.02
	Total	209	4.80	1.12	4.55	.95	3.84	.97

[a] 1 = very easy to understand, 7 = very difficult to understand
[b] 1 = not very deviant, 7 = very deviant
[c] 1 = very negative appreciation, 7 = very positive appreciation

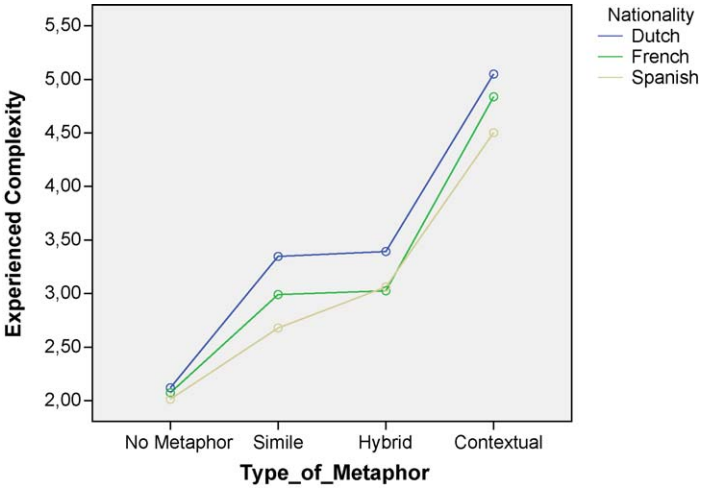


Fig. 2. Perceived complexity.

advertisements that contain Hybrids, which in turn would be perceived as less complex than advertisements that contain Contextual Metaphors. In order to check whether the theoretically predicted complexity was also perceived by our participants, we asked them to estimate their perceived difficulty of the advertisement. There was a main effect for type of metaphor (F1 (3, 203) = 223.03, $p < .001$, $\eta^2 = .77$; F2 (3, 48) = 41.49, $p < .001$, $\eta^2 = .72$) on perceived complexity. Pairwise comparisons in the participant and item analyses (Bonferroni) showed that our respondents clearly differentiated between the complexity of No Metaphor – perceived as the least complex type – as opposed on the one hand to Hybrids and Similes and on the other to Contextual Metaphor – the latter perceived as the most complex type.

There also was a small interaction effect of nationality and type of metaphor in the participant analysis (F1 (6, 406) = 2.13, $p = .05$, $\eta^2 = .03$) (Fig. 2). Pairwise comparisons revealed that the Dutch participants considered Similes and Contextual Metaphors to be significantly more complex than the Spanish participants. Pairwise comparisons also revealed that whereas the Dutch and French participants considered Hybrids and Similes to be equally complex, the Spanish participants considered Similes as less complex than Hybrids. The Spanish participants perceived complexity exactly as predicted. We can thus confirm Hypothesis H2a and H2c, but we have to refute Hypothesis H2b, at least for the French and Dutch participants. For the Spanish participants, we can also confirm H2b. Our Hypothesis H6a has to be refuted: Dutch participants did not experience the visual metaphors as more difficult than the French or Spanish participants.

4.3. Appreciation

Our third set of hypotheses claimed that advertisements that contain no metaphor would be appreciated less than advertisements that contain Similes, which in turn would be appreciated less than advertisements that contain Hybrids, which also would be appreciated more than Contextual Metaphors. In order to investigate their impact on appreciation, perceived complexity and deviation from expectation were entered as a covariate in an ANCOVA (Repeated Measures for participant analysis and Univariate for item analysis), and 'nationality' as a between subjects factor.

There was a main effect of type of metaphor in the participant analysis after controlling for the effect of deviation from expectation and perceived complexity (F1 (3, 201) = 4.34, $p = .005$, $\eta^2 = .06$). Pairwise comparisons (Bonferroni) revealed that all types of metaphor differed significantly from each other, in that No Metaphor was least appreciated, followed by Contextual Metaphor. Similes were appreciated better than Contextual Metaphors, and Hybrids were appreciated most. The covariates, perceived complexity and deviation from expectation were significantly related to appreciation (F1 (3, 201) = 9.15, $p < .001$, $\eta^2 = .12$; F1 (3, 201) = 3.52, $p = .016$, $\eta^2 = .05$). There was no interaction effect of nationality and type of metaphor ($p > .05$). In the item analysis, there was no effect of type of metaphor. We thus found support for our hypotheses H3a–H3c: the pattern of the appreciation of the types of metaphor has the shape of an inverted U-curve. All nationalities prefer Hybrids to Similes and Contextual Metaphors; we thus have to refute H6b. Lack of understanding may explain why there is reduced appreciation for certain metaphors, and this issue will be addressed in the next section.

4.4. Comprehension of metaphor

More complex metaphors might on average be less well understood than less complex metaphors. Therefore, we asked our participants whether they recognized a metaphor in every advertisement they were initially exposed to. To verify whether comprehension modified the appreciation of Contextual Metaphors, we have calculated the mean judgements on

Table 3
Mean judgment (and standard deviations) on appreciation as a function of the type of metaphor, nationality and comprehension of the metaphor.

Type of metaphor	Nationality	Appreciation if metaphor is recognized[a]		Appreciation if metaphor is not recognized[a]	
		M	SD	*M*	SD
Simile	Dutch	5.01	.92	3.69	1.39
	French	5.07	1.08	4.40	1.19
	Spanish	5.37	1.05	3.67	1.13
	Total	5.14	1.02	3.95	1.28
Hybrid	Dutch	4.91	.87	3.53	1.27
	French	5.43	.87	4.00	1.43
	Spanish	5.41	.99	4.10	1.51
	Total	5.25	.93	3.88	1.41
Contextual	Dutch	4.11	1.20	3.04	.97
	French	4.40	1.33	3.13	1.55
	Spanish	4.73	1.30	2.75	1.23
	Total	4.40	.97	2.99	1.28

[a] 1 = very negative appreciation, 7 = very positive appreciation.

ad liking in two rounds, once for the participants who claimed to have interpreted the advertisement as a metaphor, and once for participants who mentioned not having recognized a metaphor. The means are presented in Table 3.

Hypothesis H4a predicted a positive correlation between the appreciation of fully understood metaphors and perceived complexity. The contrary is, however, true: perceived complexity correlates negatively with appreciation of visual metaphors that were effectively recognized as such (r (265) = −.28, $p < .001$). Hypothesis H4a has to be refuted.

In order to verify whether understood Contextual Metaphors are preferred to understood Similes and Hybrids (H4b), a new two-way analysis of variance was carried out. The analyses revealed main effects of comprehension (F1 (1, 86) = 141.80, $p < .001$, $\eta^2 = .62$; F2 (1, 72) = 30.23, $p < .001$, $\eta^2 = .30$), and of type of metaphor (F1 = (2, 85) = 33.08, $p < .001$, $\eta^2 = .44$; F2 (2, 72) = 8.95, $p < .001$, $\eta^2 = .34$). Pairwise comparisons (Bonferroni) revealed significant differences between Contextual Metaphors on the one hand and Similes and Hybrids on the other. There were no differences between Similes and Hybrids, the two best liked types of metaphor. In the participant analysis, these main effects were qualified by a small three way interaction of type of metaphor, nationality and comprehension (F1 (4, 170) = 2.71, $p = .032$, $\eta^2 = .06$). This can be explained as follows: French participants had a higher appreciation for unrecognized Similes than for unrecognized Hybrids, whereas both the Spanish and Dutch participants preferred Hybrids, whether recognized as a metaphor or not.

Recognized metaphors were always preferred to unrecognized metaphors. Having recognized the advertisement as a metaphor did not make our participants prefer Contextual Metaphors to Hybrids and therefore, H4b has to be refuted.

The set of Hypotheses H5a–H5c disregards the type of metaphor, but claim a positive relationship between deviation and comprehension on appreciation on the one hand, and a negative correlation between perceived complexity and appreciation on the other hand. We performed a linear regression analysis on the data. Comprehension was entered as a predictor, just as nationality (with dummy variables), perceived complexity and deviation from expectation. The dependent variable was appreciation. Our model fitted with an Adjusted R^2 of .51 (F (5,544) = 116.28, $p < .001$). Deviation from expectation had a positive influence on appreciation ($\beta = .51$, $p < .001$) and perceived complexity had a negative influence ($\beta = -.36$, $p < .001$). Comprehension also had a positive influence on appreciation ($\beta = .17$, $p < .001$). The contribution of the regression coefficients of the variables of Nationality was not significant ($p > .05$). This means that the more participants thought the advertisement was deviant from expectation or contained a metaphor, the more they liked it, but the more they considered the advertisement as being difficult to understand, the less they appreciated it. We have thus found support for Hypotheses H5a–H5c.

5. Conclusions and discussion

Our first hypothesis aimed to test whether the three types of visual metaphor represent different categories with regard to deviation from expectation in the eyes of layman judges. All types of metaphor in our advertisements were considered more deviant than advertisements that contained no metaphor, which is in line with other research on visual rhetoric (McQuarrie and Mick, 1999; Van Enschot, 2006). We also found that Hybrids were considered more deviant than Similes and Contextual Metaphors. Similes were even considered more deviant than Contextual Metaphors. Apparently, our participants considered the fusion of two pictorially present elements into a single 'gestalt', an entity that is unlikely to occur in reality, as more deviant from expectation than the cases where the comparison totally relies on contextual knowledge, and the mapping between the two domains has to be inferred. With Contextual Metaphors, viewers have to infer that they should map features from visually present element to a visually absent element (or vice versa), and that what cannot be seen may be

considered less deviant from expectation than the fusions in Hybrids. Except for Contextual Metaphors, the theoretically relevant types of visual metaphor (i.e., Simile and Hybrids) correspond with ecologically valid categories of deviation from expectation, along the lines of our predictions.

With regard to the second set of hypotheses, we found that our participants did not experience exactly the degree of increasing complexity we predicted. All advertisements with metaphors were considered as more complex than advertisements without metaphors – which is in line with the findings of McQuarrie and Mick (1996) and Toncar and Munch (2001, 2003) for verbal rhetoric. Contextual Metaphors were considered more complex than both Similes and Hybrid metaphors and this is also in line with our predictions. The French and Dutch participants, however, did not differentiate between Similes and Hybrids in their assessment of complexity. Apparently, these participants did not perceive a difference in complexity between objects juxtaposed and objects joined together. The Spanish participants, on the contrary, considered Hybrids to be more complex than Similes, precisely as predicted.

With regard to the typology of visual metaphor, we conclude that the three types of visual metaphor, based on the spatial distribution of the target and the source, indeed elicit different responses, and that the types can be differentiated with regard to their perceived complexity and deviation from expectation, albeit in a slightly different way than predicted. Contextual Metaphors were considered less deviant than predicted, and the majority of our respondents perceived Similes as no less difficult to understand than Hybrids.

Fully comprehended Contextual Metaphors were not preferred to fully understood Similes and Hybrids. In the second part of the study, we asked participants whether they had seen the comparison whilst evaluating the advertisement the first time round. We expected that the most effort-demanding type would be appreciated most, provided this metaphor is understood by the participant, precisely because the extra effort would result in extra pleasure. This is, however, not the case. We found that if participants claimed to have seen a comparison, this results in a higher appreciation of all types of metaphor. Contextual Metaphors were not better liked than Hybrids. Similes, however, were liked as much as Hybrids if a metaphor was recognized. Understanding relatively difficult visual metaphors does not lead to an enhanced appreciation of the advertisement. It might be the case that, even if fully understood, consumers think of complex metaphors as far-fetched, or contrived. Perhaps the cognitive pleasure – the pleasure of having solved a riddle – that is assumed to play a role in the appreciation of tropes, is overestimated in the advertising context. We conclude that audiences, perhaps unlike academic analysts, do not want to waste time and energy going beyond a certain level of interpretive complexity (at least not without some more tangible reward than absorbing a sales message; see also Ketelaar and Van Gisbergen, 2006; Van Mulken et al., 2005; Van Mulken, 2006).

We have seen that the appreciation of the three metaphor types follows the pattern of an inverted U-curve, as predicted on the basis of the theoretical approaches to metaphor. Recall however, that the literature on the inverted U-curve (McQuarrie and Mick, 2003; Phillips, 2000; Berlyne, 1971) assumes that it is the complexity of the riddle that accounts for the downward direction in the second part of the curve. Our findings, however, show that at least for the French and Dutch participants it is not the perceived complexity that can explain the difference in appreciation for Hybrids compared to Similes. Moreover, a negative correlation was found between perceived complexity and appreciation. Therefore, we cannot assume on the basis of our findings that this inverted U-curve represents the relation between perceived complexity and appreciation. We thus investigated the relation between perceived complexity and appreciation in another way, by abstracting from metaphor type, in our reconstruction of the model for visual metaphor appreciation.

Our findings indicate that deviation from expectation and comprehension are good predictors for the appreciation of visual metaphor, just as perceived complexity, but in the opposite direction. Therefore, the model for appreciation of visual metaphor is as presented in Fig. 3.

Although the explained variance of our construct of deviation was substantial, we think that there can be other elements in rhetorical figures that consumers may consider artful and produce aesthetic pleasure. The use of colors, the arrangement of the visual elements, the style of depiction can also enhance the experienced artfulness. Note that these characteristics can also be related to what is called 'visual complexity' in cognitive science and that visual complexity is known to correlate with familiarity (Oliva et al., 2004; Snodgrass and Vanderswart, 1980). It appears that perceived visual complexity can increase as

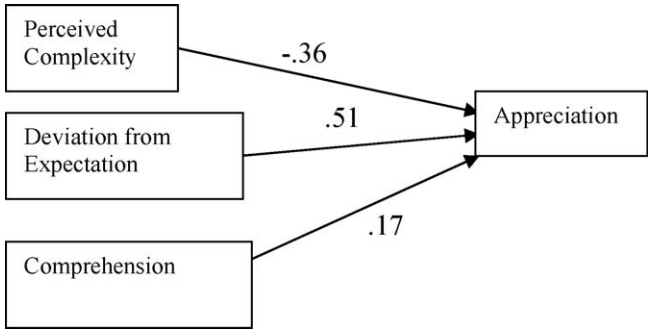


Fig. 3. Model for the appreciation of visual metaphor.

a function of the quantity and the variety of the objects shown; however, when the parts are conceptualized as a whole, perceived complexity becomes simpler (Heylighen, 1999). In Hybrids, two elements are represented as a whole, but in such a manner, that it cannot occur in reality – in other words, these manipulations cannot be qualified as familiar. In Contextual Metaphors, there is no question of manipulation of the image, so in terms of visual complexity Contextual Metaphors have to be qualified as simpler. The intriguing roles of familiarity and visual complexity deserve to be investigated in relation to aesthetic pleasure.

Our predictions on cultural differences cannot be accepted. Although we found small effects for nationality, we noticed that the differences are only relative: with regard to experienced deviation and appreciation, the three nationalities show the same pattern, and with regard to complexity, the Spanish participants experienced a difference between Similes and Hybrids that remained inexperienced by the other two nationalities, but the pattern is in all three countries incremental. It may be the case that Spaniards are more familiar with Similes than Dutch or French participants, since on several occasions, Spanish respondents have been found to prefer verbal similes to verbal metaphors (Harris et al., 1999), and this relative familiarity might explain the relative ease with which they experience similes compared to the other nationalities. The aspect of familiarity with a type of metaphor deserves to be further investigated. However, we have not found, as predicted in our Hypotheses H5a–H5c, that the Spanish and French participants considered the metaphors easier to understand or liked them better than the Dutch participants. The minor differences could be explained with the help of the tendencies of Mediterranean cultures to express their sympathies and antipathies in a more pronounced way (cf. Herk et al., 2004). We have no indication that the dimension of contextualization as described by Hall and Hall (1990) plays a role in the appreciation and perceived complexity of visual metaphor. It might be the case that the cultural differences between three Western European nationalities are too subtle, and that these cultures resemble each other a lot with respect to the preference of visual metaphor in advertising. In order to verify whether universality really can be assumed with regard to visual metaphor, future research should consider working with more distinct cultures, such as cultures that heavily rely on written discourse as opposed to cultures that rely on oral transmission. St. Clair (2006) has shown that native American children typically think and reason with the help of visual metaphor. Members of such a culture might process and evaluate the visual structure in visual metaphor in a totally different way from members of Western cultures. It is also very well possible that it is the choice of the source domain that makes the cultural difference: cultures and subcultures may differ in what source domains are used to characterize single target domains, such as beer, financial services, shampoos, or computers. This promises to be a fruitful future line of research (cf. Forceville, 2000; Kövecses, 2005).

There are of course some limitations to our study. We only used off-line measurement techniques, and it is certainly worthwhile to investigate how participants process visual metaphors with on-line techniques. It is not unconceivable that the processing effort between Similes and Hybrids differs considerably (see Maes and Schilperoord, 2008:250–251), although this difference remained unnoticed by our French and Dutch participants. Moreover, the overall negative effect of perceived complexity might be due to our operationalization: we asked participants if they considered the advertisement 'difficult to understand' or 'unclear', which are known to be notions with negative connotations. In future research, operationalizations with positive connotations, such as 'like solving a riddle' or 'a challenge to the mind' might be used.

As of yet, the only procedure for the identification for visual metaphor is Forceville (1996), and this will require further refinement. Although the spatial distribution of visual elements may seem a fairly straightforward dimension, it is not uncommon to find mixed types or unclassifiable types of visual metaphors that cannot be attributed to one of the three classes. There is a clear need for a visual metaphor identification procedure, such that it captures all possible representations of visual metaphor and that also allows for the description of the spatial distribution of the pictorial elements. The definition of such a procedure would involve the construction of a large sample of images occurring in magazines, books, newspapers and websites to allow for corpus analysis.

Our study focused on monomodal metaphors, that is, we studied metaphors in which the signaling of the target and source is achieved by visual means. We are not unaware of the fact that verbal anchoring often accompanies such metaphors, because the target or source or even both are often cued in parallel, both in the visual and in the verbal mode. In future research, it would be worthwhile to incorporate verbal information in the stimuli, especially since verbal anchoring may help receivers to appreciate relatively complex metaphors, such as Contextual Metaphors, by hinting at the solution of the riddle (Phillips, 2000; Van Mulken et al., 2005). Moreover, in moving images, other modalities, such as sound and music may play a role in metaphors (see Forceville and Urios-Aparisi, 2009).

In this paper, we have not focused on the amount of cognitive elaboration that a visual structure of a metaphor evokes. The number of thoughts and associations a particular metaphor calls forth may be a function of the spatial layout of the picture. It is not inconceivable that a Simile that juxtaposes a heart to a bottle of perfume evokes fewer thoughts than a Simile that juxtaposes a devil to a bottle of perfume, and that the latter is considered more complex than the former, simply because the latter provokes more deviant thoughts and more alternative interpretations. The number of elaborative thoughts and interpretations a metaphor can elicit is called 'richness' by Phillips and McQuarrie (2004), 'openness' by Lagerwerf and Meijers (2008) and 'interpretive diversity' by Utsumi (2007). It would be interesting to investigate the interaction of deviation from expectation and interpretive diversity in visual metaphors, because the richness of the thoughts and interpretations of the metaphor meaning can have an important impact on appreciation and ad recall. Moreover, conventionality of the metaphor may also play a role: a dolphin may be perceived as a more conventional source than a poodle. This also deserves further investigation.

Consumers prefer advertisements with visual metaphor to straightforward communication. With regard to the choice of the visual structure, we think that the use of a type of metaphor that is highly appreciated for its deviation from expectation, namely Hybrids, may be a wise strategy: the individual interpretations may vary from person to person, but in general, the advertising genre induces viewers to search for a positive statement about the product (Forceville, 1996:104), and the large number of implied mappable features leads to a kind of aesthetic pleasure that is enjoyed by the viewer, and that may lead to better retention and recall. Moreover, Hybrids are not considered too difficult to understand. Visual metaphors in advertisements are a relatively efficient means of persuasive communication, at least in Western Europe: advertisers can use the same ad across cultures, and translation costs are therefore limited. We conclude therefore that a picture paints a thousand words, and, what is more, even foreign words.

Acknowledgements

The authors wish to express their gratitude towards Hans Hoeken, Joost Schilperoord, Christian Burgers and two anonymous reviewers for their useful comments to previous versions of this article.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.pragma.2010.04.030.

References

Albers-Miller, Nancy D., Gelb, Betsy D., 1996. Business advertising appeals as a mirror of cultural dimensions: a study of eleven countries. Journal of Advertising 25 (4), 57–70.
Barthes, Roland, 1964. Rhétorique de l'image. Communications 4, 40–51.
Berlyne, Daniel, 1971. Aesthetics and Psychobiology. Appleton, New York.
Bowdle, Brian F., Gentner, Dedre, 2005. The career of metaphor. Psychological Review 112 (1), 193–216.
Callow, Michael, Schiffman, Leon, 2002. Implicit meaning in visual print advertisements: a cross-cultural examination of the contextual communication effect. International Journal of Advertising 21, 259–277.
Forceville, Charles, 1995. IBM is a tuning fork: degrees of freedom in the interpretation of pictorial metaphors. Poetics 23, 189–218.
Forceville, Charles, 1996. Pictorial Metaphor in Advertising. Routledge, London and New York.
Forceville, Charles, 1999. Educating the eye? Kress & Van Leeuwen's Reading Images: the Grammar of Visual Design. Language and Literature 8 (2), 163–178.
Forceville, Charles, 2000. Compasses, beauty queens and other PCs: pictorial metaphors in computer advertisements, Hermes. Journal of Linguistics 24, 31–55.
Forceville, Charles, 2005. Addressing an audience: time, place, and genre in Peter Van Straaten's calendar cartoons. Humor 18 (3), 247–278.
Forceville, Charles, 2006. Non-verbal and multimodal metaphor in a cognitivist framework: agendas for research. In: Kristiansen, Gitte,Achard, Michel,Dirven, René, Ruiz de Mendoza Ibàñez, Francisco (Eds.), Cognitive Linguistics: Current Applications and Future Perspectives. Mouton de Gruyter, Berlin and New York, pp. 379–402.
Forceville, Charles, 2008. Pictorial and multimodal metaphor in commercials. In: McQuarrie, Edward, Phillips, Barbara (Eds.), Go Figure! New Directions in Advertising Rhetoric ME Sharpe, New York and London, pp. 272–310.
Forceville, Charles, 2009. Relevanz und Prägnanz: Kunst als Kommunikation (Martina Plümacher, Trans.). Zeitschrift für Semiotik 31 (1–2), 31–63.
Forceville, Charles, Urios-Aparisi, Eduardo (Eds.), 2009. Multimodal Metaphor. Mouton-de Gruyter, Berlin and New York.
Gibbs Jr., Raymond W., 1990. Comprehending figurative referential descriptions. Journal of Experimental Psychology: Learning, Memory, and Cognition 16, 56–66.
Gibbs Jr., Raymond W., Tendhal, Markus, 2006. Cognitive effort and effects in metaphor comprehension: relevance theory and psycholinguistics. Mind and Language 21 (3), 379–403.
Glucksberg, Sam, Keysar, Boaz, 1990. Understanding metaphorical comparisons: beyond similarity. Psychological Review 97 (1), 3–18.
Glucksberg, Sam, McGlone, Matthew S., Manfredi, Deanna, 1997. Property attribution in metaphor comprehension. Journal of Memory and Language 36 (1), 50–67.
Groupe Mu, 1992. Traité du Signe Visuel. Pour une Rhétorique de l'Image. Seuil, Paris.
Hall, Edward T., Hall, Margareth, 1990. Understanding Cultural Differences. Intercultural Press, Yarmouth.
Harris, Richard J., Tebbe, Michael R., Leka, Gary E., Garcia, Reina C., Erramouspe, Raquel, 1999. Monolingual and bilingual memory for English and Spanish metaphors and similes. Metaphor and Symbol 14 (1), 1–16.
Herk, Hester van, Poortinga, Ype H., Verhallen, Theo M.M., 2004. Response styles in rating scales: evidence of method bias in data from six EU countries. Journal of Cross-Cultural Psychology 35 (3), 346–360.
Heylighen, Francis, 1999. The growth of structural and functional complexity during evolution. In: Heylighen, Francis, Bollen, Johan, Riegler, Alexander (Eds.), The Evolution of Complexity. Kluwer Academic, Dordrecht, pp. 17–44.
Hofstede, Geert, 2001. Cultures Consequences, Comparing Values, Behaviors, Institutions, and Organizations across Nations, second ed. Sage, London.
Ketelaar, Paul, Van Gisbergen, Marnix, 2006. Openness in advertising. Occurrence and effects of open advertisements in magazines, PhD thesis. Radboud University, Nijmegen.
Kövecses, Zoltán, 2005. Metaphor in Culture. Universality and Variation. Cambridge University Press, Cambridge.
Kress, Gunther, Van Leeuwen, Theo, 2006 [1996]. Reading Images. The Grammar of Visual Design. Routledge, London and New York.
Lagerwerf, Luuk, Meijers, Anoe, 2008. Openness in metaphorical and straightforward advertisements. Journal of Advertising 37 (2), 19–30.
Maes, Alfons, Schilperoord, Joost, 2008. Classifying visual rhetoric: conceptual and structural heuristics. In: McQuarrie, Edward, Phillips, Barbara (Eds.), Go Figure! New Directions in Advertising Rhetoric ME Sharpe, Armonk, NY and London, pp. 227–253.
McQuarrie, Edward F., Mick, David Glen, 1992. On resonance: a critical pluralistic inquiry into advertising rhetoric. Journal of Consumer Research 19, 180–197.
McQuarrie, Edward F., Mick, David Glen, 1996. Figures of rhetoric in advertising language. Journal of Consumer Research 22, 424–437.
McQuarrie, Edward F., Mick, David Glen, 1999. Visual rhetoric in advertising: text-interpretive, experimental and reader-response analyses. Journal of Consumer Research 26, 37–53.
McQuarrie, Edward F., Mick, David Glen, 2003. The contribution of semiotic and rhetorical perspectives to the explanation of visual persuasion in advertising. In: Scott, Linda M., Batra, Rajeev (Eds.), Persuasive Imagery, A Consumer Response Perspective. Lawrence Erlbaum, Mahwah, NJ and London, pp. 191–221.

McQuarrie, Edward, Phillips, Barbara, 2005. Indirect Persuasion in Advertising: How Consumers Process Metaphors Presented in Pictures and Words. Journal of Advertising 34 (2), 7–21.
Miller, George A., 1979. Images and models, similes and metaphors. In: Ortony, Andrew (Ed.), Metaphor & Thought. Cambridge University Press, Cambridge, pp. 357–400.
Mothersbaugh, David L., Bruce Huhmann, A., Franke, George R., 2002. Combinatory and separative effects of rhetorical figures on consumers effort and focus in ad processing. Journal of Consumer Research 28, 589–602.
Nordhielm, Christie L., 2003. A levels-of-processing model of advertising repetition effects. In: Scott, Linda M., Batra, Rajeev (Eds.), Persuasive Imagery. A Consumer Response Perspective. Lawrence Erlbaum, Mahwah, NJ and London, pp. 95–104.
Noveck, Ira, Bianco, Maryse, Castry, Alain, 2001. The cost and benefits of metaphor. Metaphor and Symbol 16 (1), 109–121.
Oliva, Aude, Mack, Micheal L., Shrestha, Mochan, Peeper, Angela, 2004. Identifying the perceptual dimensions of visual complexity of scenes. In: Forbus, K., Gentner, D., Regier, T. (Eds.), Proceedings of the 26th Annual Meeting of the Cognitive Science Society. Erlbaum, Mahwah, NJ.
Phillips, Barbara, 2000. The impact of verbal anchoring on consumer response to image ads. Journal of Advertising 29, 15–24.
Phillips, Barbara, McQuarrie, Edward, 2004. Beyond visual metaphor: a new typology of visual rhetoric in advertising. Marketing Theory 4 (1–2), 111–134.
Pierce, Russell S., Chiappe, Dan L., 2009. The roles of aptness, conventionality, and working memory in the production of metaphors and similes. Metaphor and Symbol 24 (1), 1–19.
Pragglejaz Group, 2007. A practical and flexible method for identifying metaphorically used words in discourse. Metaphor and Symbol 22 (1), 1–39.
Rossiter, John R., Percy, Larry, Donovan, Robert J., 1991. A better advertising planning grid. Journal of Advertising 31 (October–November), 11–21.
Scott, Linda M., 1994. Images in advertising: the need for a theory of visual rhetoric. Journal of Consumer Research 21, 252–273.
Scott, Linda M., Vargas, Patrick, 2007. Writing with pictures: toward a unifying theory of consumer response to images. Journal of Consumer Research 34 (3), 341–356.
Snodgrass, Joan G., Vanderswart, Mary, 1980. A standardized set of 260 pictures: norms for name agreement, image agreement, familiarity, and visual complexity. Journal of Experimental Social Psychology: Learning, Memory, and Cognition 6 (2), 174–215.
Sperber, Dan, Wilson, Deirdre, 1995 [1986]. Relevance: Communication and Cognition, second ed. Harvard University Press, Cambridge.
St. Clair, Robert N., 2006. Visual metaphor, cultural knowledge, and the new rhetoric. In: Reyhner, John, Martin, Joseph, Lockard, Louise, Gilbert, W. Sakiestewa (Eds.), Lean in Beauty: Indigenous Education for a New Century. Flagstaff, Arizona, pp. 85–101.
Tanaka, Keiko, 1992. The pun in advertising: a pragmatic approach. Lingua 87, 91–102.
Tom, Gail, Eves, Anmarie, 1999. The use of rhetorical devices in advertising. Journal of Advertising Research 39 (4), 39–43.
Toncar, Mark, Munch, James, 2001. Consumer responses to tropes in print advertising. Journal of Advertising 30 (1), 55–65.
Toncar, Mark, Munch, James, 2003. The influence of simple and complex tropes on believability, importance and memory. Journal of Marketing Theory and Practice 11 (4), 39–55.
Tversky, Barbara, 2001. Spatial schemas in depictions. In: Gattis, Merideth (Ed.), Spatial Schemas and Abstract Thought. MIT Press, Cambridge, MA.
Utsumi, Akira, 2007. Interpretive diversity explains metaphor-simile distinction. Metaphor and Symbol 22 (4), 291–312.
Van Enschot, Renske, 2006. Retoriek in Reclame. Waardering voor schema's en tropen in tekst en beeld, PhD thesis. Radboud University, Nijmegen.
Van Enschot, Renske, Hoeken, Hans, van Mulken, Margot, 2005. Is more complex better? Verbo-pictorial rhetorical figures in magazine advertisements. In: Diehl, Sandra, Terlutter, Ralf, Weinberg, Peter (Eds.), Advertising and Communication, vol. 1. Saarland University, Saarbruecken, pp. 92–99.
Van Mulken, Margot, 2003. Analyzing rhetorical devices in print advertisements. Document Design 4 (2), 115–128.
Van Mulken, Margot, 2006. Towards a new typology for visual and textual rhetoric in print advertisements. European Advances in Consumer Research 7, 59–65.
Van Mulken, Margot, Van Bergen, Geertje, Oldenkamp, Elise, 2005. Interaction of word and image in advertising and consumer response. In: Diehl, Sandra, Terlutter, Ralf, Weinberg, Peter (Eds.), Advertising and Communication, vol. 1. Saarland University, Saarbruecken, pp. 99–115.

Margot van Mulken (Ph.D., VU University Amsterdam) is professor of international business communication in the Faculty of Arts, Radboud University, Nijmegen, the Netherlands, m.v.mulken@let.ru.nl.

Rob le Pair (Ph.D., Radboud University Nijmegen) is associate professor of business communication studies in the Faculty of Arts, Radboud University, Nijmegen, the Netherlands, r.lepair@let.ru.nl.

Charles Forceville (Ph.D., VU University Amsterdam) is associate professor in the Media Studies department of the Universiteit van Amsterdam, the Netherlands, c.j.forceville@uva.nl.