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DOI:
10.7370/87674

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Document Version
Peer reviewed version

Citation for published version (Harvard):
Littlemore, J & Perez-Sobrino, P 2017, 'Eyelashes, speedometers or breasts? An experimental cross-cultural approach to multimodal metaphor and metonymy in advertising', *Textus: English studies in Italy*, vol. 2017, no. 1, pp. 197-222. https://doi.org/10.7370/87674

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Eyelashes, speedometers or breasts? An experimental cross-cultural approach to multimodal metaphor and metonymy in advertising

by Jeannette Littlemore & Paula Pérez-Sobrino

Abstract
Metaphor and metonymy are key tools in communication, particularly when abstract ideas or emotions are discussed. While a number of studies have explored the role played by metaphor and metonymy in language and images, and at the ways in which they are understood, few studies have investigated the combination of metaphor and metonymy in the multimodal context of advertising, where they play a key role. Our study investigates the nature of figurative complexity (i.e. the ways in which metaphor and metonymy combine) in advertisements containing both words and images, and explores the relationship between figurative complexity and comprehension, accuracy of interpretation and advertising effectiveness. Through a mixed-methods approach of lab experiments and qualitative inquiry we assess the speed and depth of comprehension, the perceived appeal, and the physiological effect of advertisements on participants from three linguistic and cultural backgrounds (English, Spanish, and Chinese). We also explore variation in the types of interpretations provided by participants with different linguistic and cultural backgrounds.

Keywords: advertising, crosscultural, metaphor

1. Introduction

In a globalized market place there is an increasing need for European companies to develop sophisticated advertising strategies in order to increase their market share and compete successfully. To be effective, advertisements need to capture attention, be emotionally engaging and persuasive. One way that advertisements achieve these aims is through the use of verbal and visual metaphor. Metaphor is a highly noticeable, persuasive and powerful form of communication for a number of reasons. First, metaphor provokes mental images, which can be used to package and convey a large amount of information in an efficient manner. Second, metaphor allows indirect expression. Third, metaphor is a natural component of thought, and is thus evident beyond language. Intangible entities are often described metaphorically. For example, positive experiences are metaphorically ‘up’, and negative experiences are metaphorically ‘down’; emotional closeness can be construed as ‘warmth’ and emotional distance as ‘coldness’. Metaphor is thus ‘embodied’ and provides direct access to sensory-motor experiences (Johnson, 1987). In other words, humans experience a ‘gut’ reaction to metaphor, which is not experienced with more literal forms of communication. Fourth, due to its embodied nature, metaphor has been shown to be more likely to provoke an emotional response than literal forms of expression (Citron and Goldberg, 2014), and this is may help the recipient to develop a personal relationship with an advertisement (Chang and Yen 2013). Advertisements can contain a single metaphor in written or graphical format, or both (a combination is described as ‘multimodal metaphor’, Forceville 2009: 24).

Other advertisements contain an interaction of metaphor and metonymy (Hidalgo and Kraljevic 2011). Metonymy is a cognitive and linguistic process whereby one term is used to refer to another related phenomenon. For example, the word ‘Hollywood’ can be used to refer to mainstream US films. Metaphor usually involves a comparison between unrelated entities (or entities that are construed as being unrelated in a particular context), whereas in metonymy the relationship between a term and its referent is closer. These two tropes can be combined in both words and images, in increasingly complex ways. As the combination of metaphor and metonymy increases in complexity, one might expect the persuasive power of the advertisement increase. However, this relationship has never been tested and little is known about the depth to which audiences process metaphor and metonymy when they appear in multimodal format in advertisements, or how long it takes them to do so. Speed of processing is important, as advertisements often appear in locations where short viewing periods are natural, e.g., driving past billboards or browsing webpages with banner adverts.

Finally, in the development of advertisements it is necessary to consider an international audience. There is likely to be a degree of cross-cultural variation in the amount of time required to understand the multimodal metaphors and metonymies, the ways in which they are understood, and their appeal. Moreover, although studies suggest differences between Western and Chinese participants in terms of the ways in which they respond to emotions as expressed through metaphor (Jolley and Thomas, 1998), this line of investigation has never been extended to the field of advertising. The aim of the study described in this paper is to explore these issues.

2. Background to the Study

Advertisers often employ figurative language and images to communicate a positive message about their products. Often these images can be quite complex, involving different combinations of metaphor and metonymy. In the context of advertising, metaphor has been found to be more effective than literal language, and visual messages have been found to be more effective than verbal messages (Ang and Lim 2006, Chang and Yen 2013, Gkiouzepas and Hogg 2011, Jeong 2008; McQuarrie and Phillips 2005, Morgan and Reichert 1999, Phillips and McQuarrie 2009). Additionally, brands using metaphors have been found to be generally perceived to be more sophisticated and exciting, but also less ‘sincere’ and less ‘competent’, than brands using literal words and pictures (Ang and Lim 2006). As regards the mode of representation, advertisements containing visual metaphors have been shown to be more effective at eliciting positive outcomes (i.e. sales) than both advertisements containing non-metaphorical verbal messages (Mitchell and Olson’s 1981), and advertisements containing verbal metaphors (McQuarrie and Mick 2003; McQuarrie and Phillips 2005).

Although the findings from these studies are informative, one shortcoming is their lack of attention to the variables that may affect metaphor comprehension. An exception is provided in Phillips & McQuarrie (2009), who give evidence that only highly figurative metaphors (that is, metaphors that were particularly artful and clever) were able to alter specific consumer beliefs under conditions of incidental ad exposure. Additionally, Jeong (2008) found that advertisements that used metaphorical images without verbal explanations had a stronger persuasive effect than literal product images with straightforward arguments.

Other studies have focussed on the ways in which people understand metaphors in advertising. Inspired by a previous study carried out by Mick and Politi (1989), Forceville (1996) investigated how individuals identified and interpreted verbopictorial metaphors in three related IBM billboards. He concluded that, whereas most participants identified and interpreted the metaphors in similar ways, it was highly probable that some of the differences in interpretations were group-specific (such as nationality or professional background). Unfortunately, there were no additional studies to further investigate this issue.

As evidenced by this brief review of the literature, researchers are only just beginning to investigate the ways in which people actually process metaphors in advertisements, and how long it takes them to do so. *Speed of processing* can be important in cases, for example, where advertisements are on billboards which people drive past quickly, or where they appear on websites that people view rapidly while browsing the Internet. Even less is known about the extent to which audiences actually process multimodal metaphor or combinations of metaphor and metonymy in advertisements. As the combination of metaphor and metonymy increases in complexity in an advertisement, one might expect the persuasive power of the advertisement to intensify. However, we do not know how much of this information is actually picked up by viewers, how they process the information, and whether processing styles vary from one person to another.

As mentioned above, another issue of concern to anyone involved in the production of advertisements is the fact that they must often appeal to an international audience, particularly when the advertisements are posted on the Internet. Metaphor has been shown to present significant difficulties to speakers of other languages (Littlemore, 2001), but we do not know whether this is also the case for metaphor when it occurs in multimodal settings or in combination with metonymy. Furthermore, many of the metaphorical meanings that are intended may be closely tied to specific cultures, and thus fail to communicate to a global audience (even when rendered through visuals). We do not know whether speakers of different languages find complex combinations of metaphor even more difficult to interpret than single metaphors or metonymies. There is there likely to be a degree of *cross-linguistic and cross-*

cultural variation in terms of the amount of time required to understand the multimodal metaphors and metonymies, the ways in which they are understood, and their appeal.

3. Aims of the Study

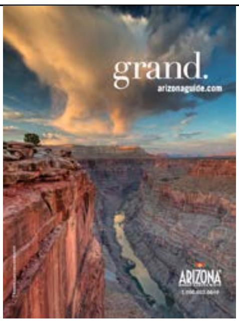
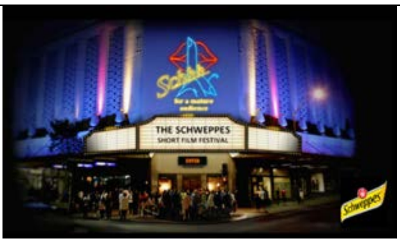
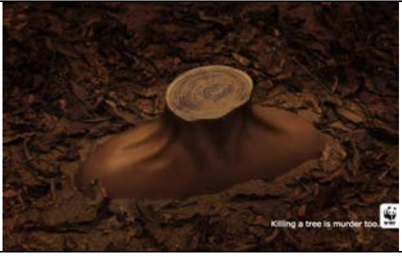
The aims of the study described in this paper are to address the issues raised above by seeking answers to the following Research Questions:

1. Does speed of comprehension relate to figurative complexity?
2. Does speed of comprehension relate to perceived effectiveness?
3. Does figurative complexity relate to the complexity of one's understanding?
4. Does figurative complexity relate to the perceived effectiveness of the advertisement?
5. How do the above variables, along with the actual interpretations provided, vary according to the linguistic and cultural background of the reader?

We expected that more complex advertisements would take longer to process than less complex ones, and that participants would provide more interpretations for the advertisements containing complex metaphors. We did not know whether they would appreciate the advertisements containing the complex metaphors or the more simple ones, and we expected a degree of linguistic and cultural variation in terms of the reaction times, complexity of responses, and appreciation of the advertisements but we did not know the exact form that this would take.

4. Selection and Coding of the Advertisements

We originally selected fifty authentic advertisements, at random, from the corpus of advertisements gathered by Perez-Sobrino (2016a). We rated these independently for figurative complexity using a 1-5 classification scheme (1=metonymy, 2= chain of metonymies, 3=metaphor, 4=metaphtonymy, and 5=metaphoric amalgam). Examples of advertisements in each of these categories are shown in *Figure 1*:

1. Metonymy: Grand Canyon for Arizona	 Arizona
2. Metonymic complex: 'sh' stands for noise of drink and silence; also chain of metonymies, standing for sex in adult films	 Schweppes
3. Metaphor: The tree is a person	 Killing a tree is murder too.

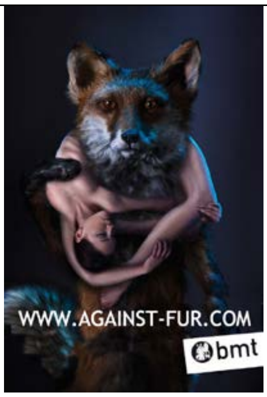
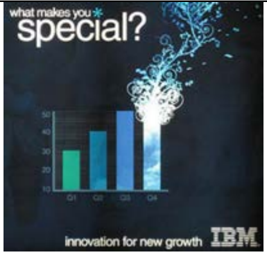
	World Wildlife Fund
4. Metaphtonomy: The woman's skin is like an animal's skin; role reversal; animal is wearing it like a woman wears an animal; defiant look a metonymy for uncaring attitude to animals.	 Anti-Fur Campaign
5. Metaphoric complex: The bars are going up but also the pictures in the bars are changing colour and going from dark land to blue sky; finally there is an explosion of creativity.	 what makes you special? innovation for new growth IBM IBM

Figure 1. Examples of advertisements in each category of figurative complexity

The rating was conducted independently by two raters who then met to discuss their ratings. Cases of disagreement (which constituted approximately 15% of the total number of ratings) were resolved through discussion and 100% agreement was reached. From these fifty, we selected twenty-four advertisements for use in the study plus two advertisements that were used in the training phase. Our criteria for selection were that the advertisements selected should display a wide range of figurative complexity, that the selection should be as heterogeneous as possible in terms of product type, and that the amount of text was kept to a minimum, in order to reduce the impact of English for non-native participants (especially in the reaction time experiment).

5. Selection of participants

For our study, we chose a group of 30 participants (15 male and 15 female) whose countries of origin were the United Kingdom, Spain, and China (10 participants per nationality). 50% of the participants were male and 50% female and their ages ranged from 19 to 33. English and Chinese participants were enrolled in undergraduate and masters courses at the University of Birmingham (UK). Spanish participants were recruited in Spain and were either master's degree students or young professionals studying and working in Logroño, Spain. Interviews took place in Birmingham and in Spain. The participants were recruited by a public announcement, and were paid 10 GBP for taking part in the experiment. The language throughout the experiment was English for all the participants.

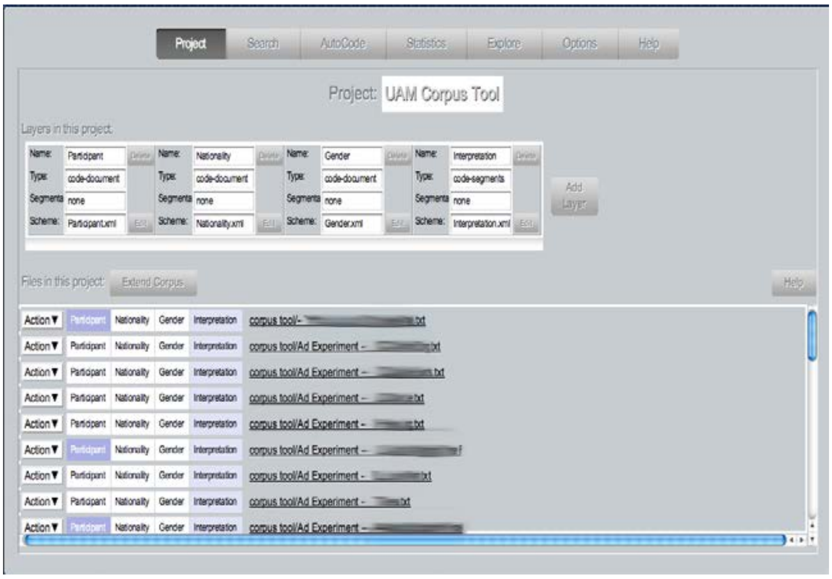
6. Data collection

The data were collected individually for each participant with each data collection session lasting approximately 30-40 minutes. The initial part of the session consisted of a reaction time study, which had been developed using DMDX software. In this part of the study, the participants were shown the advertisements one after the other on a computer screen and were asked to press the mouse button as soon as they had understood the advertisement. In order to minimise the chance that they would click the button before having identified the meaning, they were informed that they would need to explain what the advertisements meant at the end of the session. After the reaction time study, the participants were asked to rate the 'effectiveness' of each advertisement on a scale from 1 (not very effective) to 3 (highly effective), and to say what they thought it meant. They were allowed to look at the advertisement (shown in a Powerpoint presentation) and were encouraged to answer freely with no time constraints.

The interviews were recorded and subsequently transcribed.

7. Data annotation and processing

Once transcribed, we annotated the corpus of interviews using UAM Corpus Tool, a piece of textual annotation software[1]. This program enables the manual annotation of texts in several layers and sublayers. In this study, we set up layers for “nationality”, “gender”, and “interpretation” (*Figure 2*).



Project: UAM Corpus Tool

Name: Participant
Type: code-document
Segments: none
Scheme: Participant.xml

Name: Nationality
Type: code-document
Segments: none
Scheme: Nationality.xml

Name: Gender
Type: code-document
Segments: none
Scheme: Gender.xml

Name: Interpretation
Type: code-segments
Segments: none
Scheme: Interpretation.xml

Participant Nationality Gender Interpretation corpus tool/-[redacted].txt
Participant Nationality Gender Interpretation corpus tool/Ad Experiment – [redacted].txt
Participant Nationality Gender Interpretation corpus tool/Ad Experiment – [redacted].txt
Participant Nationality Gender Interpretation corpus tool/Ad Experiment – [redacted].txt
Participant Nationality Gender Interpretation corpus tool/Ad Experiment - [redacted].txt
Participant Nationality Gender Interpretation corpus tool/Ad Experiment – [redacted]
Participant Nationality Gender Interpretation corpus tool/Ad Experiment - [redacted].txt
Participant Nationality Gender Interpretation corpus tool/Ad Experiment - [redacted].txt
Participant Nationality Gender Interpretation corpus tool/Ad Experiment – [redacted]

Figure 2. Layers and sublayers of annotation in UAM Corpus Tool

After having coded all the interpretations provided we were able to identify differences in the types of interpretations offered by the English, Spanish and Chinese participants. In order to reduce the subjectivity in rating the responses, both researchers participated in the annotation process. The first researcher identified a number of possible interpretations that came up during the annotation of the first half of the corpus. The second researcher began with these categories but added subsequent categories in cases where new interpretations were identified, and the data did not fit the initial set of categories. Once the annotation was complete, the researchers went through the categories together and merged similar labels in order to avoid the proliferation of similar categories, as shown in Figure 3.

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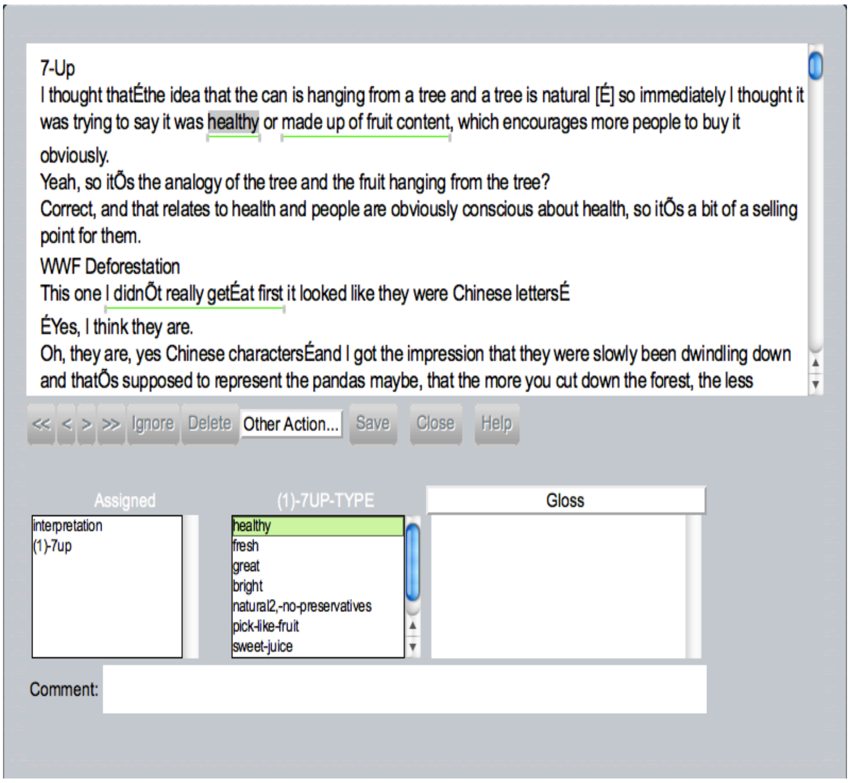
[1] UAM Corpus Tool: http://www.wagsoft.com/CorpusTool/



7-Up
I thought thatÉthe idea that the can is hanging from a tree and a tree is natural [É] so immediately I thought it was trying to say it was healthy or made up of fruit content, which encourages more people to buy it obviously.
Yeah, so itÕs the analogy of the tree and the fruit hanging from the tree?
Correct, and that relates to health and people are obviously conscious about health, so itÕs a bit of a selling point for them.
WWF Deforestation
This one I didnÕt really getÉat first it looked like they were Chinese lettersÉ
ÉYes, I think they are.
Oh, they are, yes Chinese charactersÉand I got the impression that they were slowly been dwindling down and thatÕs supposed to represent the pandas maybe, that the more you cut down the forest, the less

interpretation
(1)-7up

healthy
fresh
great
bright
natural2,-no-preservatives
pick-like-fruit
sweet-juice

Figure 3. Manual annotation of the corpus with UAM Corpus Tool

The use of this software allowed us to explore the data from a qualitative and quantitative angle. An additional feature of the software is that it provides a subjective positivity rating, which allowed us to assess whether English, Spanish or Chinese participants responded more positively to the advertisements. The UAM Corpus Tool makes use of the Subjectivity Lexicon made available by University of Pittsburgh[2]. *Subjective strength* indicates, from 0 to 1, the degree of tokens found in the Subjectivity Lexicon that are "strong" or significantly present in the data being studied. *Subjective positivity* looks at each open-class word in the text and, if it is in the Subjectivity Lexicon, records a value (1.0 for positive,-1.0 for negative, 0 for neutral, etc.), depending on how it is rating in the Subjectivity Lexicon. Subsequently, UAM Corpus Tool finds the mean of these values (0 is neutral, 1.0 very positive, -1.0 very negative). Through this data collection and analysis procedure, we were able to obtain the following measures for each participant for each advertisement:

1. Figurative complexity of the advertisement (independent of participant)
2. Perceived effectiveness of the advert
3. Speed of comprehension
4. Complexity of one’s understanding

We were able to identify differences between the responses produced by participants with different linguistic and cultural backgrounds in terms of the average perceived effectiveness ratings, the average speed of comprehension, the complexity of their understanding content of their interpretations, and the average subjective positivity ratings.

8. Findings and discussion

In this section we discuss our findings in relation to each of our research questions

8.1. Does speed of comprehension relate to figurative complexity?

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[2] (http://mpqa.cs.pitt.edu/lexicons/subj_lexicon/)

Our first research question asked whether the figurative complexity of the advertisements was related to the speed of comprehension by the participants. We anticipated that reaction times would increase along a continuum based on figurative complexity from metonymy, through metonymic chains, metaphor, and metaphtonymy, to metaphorical complexes. However, we found no statistically significant relationship between the amount of figurative complexity and time of processing. This means that the variations in reaction times taken by our participants must have been dependent on factors other than the levels of figurative complexity of the advertisements.

8.2. Does speed of comprehension relate to perceived effectiveness?

We found a statistically significant negative relationship between the time taken to find meaning and the perceived effectiveness of the advertisements ($p<0.1$). That is to say, the participants were quicker to understand those advertisements that they perceived to be effective. It is difficult to locate the cause-effect relationship here. It could be that they perceived them to be effective them because they understood them quickly or they understood them quickly because of their perceived effectiveness. One reason why some advertisements took longer to process may have been because they led to some sort of cognitive dissonance. Given that humans strive for conceptual consistency, exposure to such a contradiction may have led them to perceive the advertisement as being less effective.

This observation provides interesting feedback on Relevance Theory (RT), which has only made broad predictions (experimentally supported by Gibbs, 1994) relating to the effort-effect balance. Our experiment introduces a degree of refinement into the notion of “effect” by considering “perceived persuasive power” as part of this broader communicative criterion.

8.3. Does figurative complexity relate to the complexity of one’s understanding?

This research question addressed the extent to which figurative complexity of the advertisement corresponded to the complexity of the participant’s own interpretation of the advertisement. We hypothesized that more complex operations would lead to greater inferential activity, and therefore we expected more possible interpretations of the advertisements addressing the increasing number of available conceptual mappings as we move along the continuum. This hypothesis is consistent with the relevance-theoretic approach to effort-effect relationships in optimally relevant communication. This approach argues that people will only put in the amount of effort required to reach an understanding that fulfills their expectations of relevance. This is why any act of interpretation is *optimally* (and not *maximally*) relevant (Sperber and Wilson 1986: 747).

In order to answer this question, we must turn to the findings from the interview data. Here we looked at the number of different responses that the participants provided for the different items. In line with our prediction, we found that figurative complexity was significantly related to the number of different types of responses ($p<0.01$). In other words, our participants produced more elaborated interpretations for advertisements that exhibited higher levels of figurative complexity. This finding lends broad support to our postulated figurative continuum, except for the case of metaphtonymy. Interestingly enough, as we can see in Figure 4 below, metaphor was found to be more productive than metaphtonymy in terms of inferential activity.

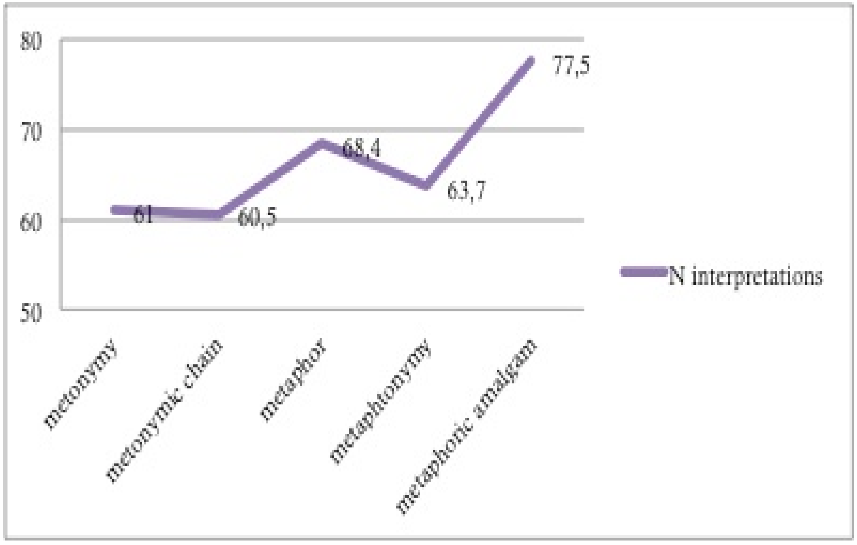


Figure 4. Graphic overview of the relationship between figurative operations and the number of triggered interpretations

This is possibly due to the degree of conventionalization of an interpretive route. Metaphtonymy has been found to be a highly conventional conceptual operation in advertising (Pérez-Sobrino 2016a). Moreover, it often forms the basis of idiomatic expressions (Goossens 1990, Ruiz de Mendoza and Galera 2014). Even though it is apparently more complex than metaphor, the presence of metonymy in a metaphtonymy provides the viewer with a shortcut to the metaphor.

8.4. Does figurative complexity relate to perceived effectiveness?

We had expected to find a significant relationship between the figurative complexity of the advertisement and its perceived effectiveness, with more figuratively complex advertisements being perceived as effective. Somewhat surprisingly, the relationship was negative ($p<0.01$), with participants perceiving adverts with lower levels of figurative complexity to be more effective than those with higher levels of complexity. Although unexpected, this finding corresponds to the finding referred to above, where we showed that speed of processing was significantly and positively related to the perceived effectiveness of the advertisements. In other words, adverts that were figuratively less complex were perceived to be more effective and took less time to process. Again, processing efficiency appears to have been a key factor in shaping the participants' responses.

8.5. How do the above variables vary according to the linguistic and cultural background of the reader?

Finally, our fifth research question looked into the linguistic and cultural background of the participants in order to investigate whether such a background had any effect on the variables studied above.

(a) Speed of comprehension

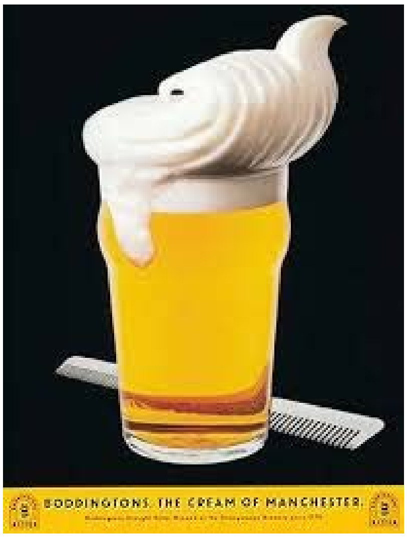
We found a significant effect of the linguistic/cultural background on the time taken to process the advertisements. By means of an ANOVA with an LSD post hoc test, we found that Spanish participants were significantly faster at making sense of the advertisements than the English participants, who were in turn significantly faster than the Chinese ($p<0.01$). This is interesting result as we had expected the English–speaking participants to respond more quickly, given that the advertisements were in English.

(b) The complexity and nature of the interpretations

English participants produced a significantly higher amount of interpretations (each participant produced an average of 25,73 different interpretations throughout the experiment) in comparison to the Spanish (21,31) and Chinese participants (18,5) who reported significant lower inferential activity. We also found significant variation in the content of the responses provided by the participants according to their country of origin. By way of illustration, let us consider four interesting examples.

Example 1: Boddingtons

In this advertisement, the metaphtonymic chain (FOAM FOR) BODDINGTONS IS (QUIFF FOR) ELVIS QUIFF IS (CREAM FOR) MILK helps us to reason about the quality of Boddingtons beer in quite a complex way: on the one hand, the notion of a high quality beer is activated by the cream, which is, for many people, the 'best' part of the milk; on the other hand, Elvis characterizes the taste of Boddingtons as authentic and vintage.

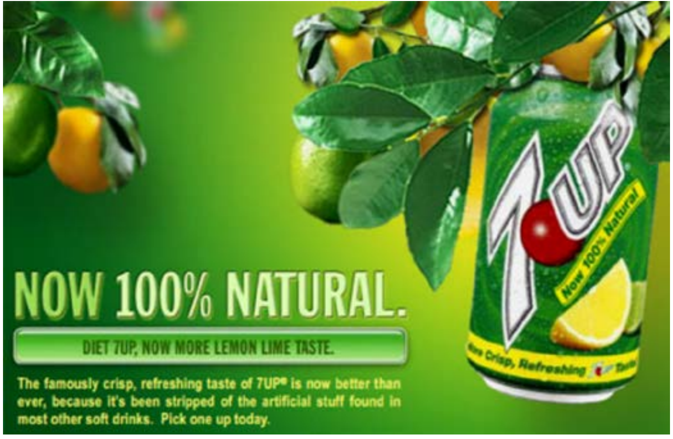

BODDINGTONS. THE CREAM OF MANCHESTER.

Example 6. Boddingtons: The cream of Manchester

English participants were more likely to report that the beer is for "fashionable people" (p<0.01) and that it is "creamy" (p<0.01), thus giving the same prominence to both ELVIS and CREAM as metaphorical source domains. In turn, Spanish participants were more likely to report that "you can shape it the way you like" (p<0.01), thus focusing on the role of the cream as the provider of conceptual structure, and somehow disregarding Elvis as a viable source domain. Surprisingly enough, Chinese participants usually reported that the beer was "for young men" (p<0.01), whereas English and Spanish participants pointed out that it was "for old men" (p<0.01). This may be due to the fact that rock and roll music was not as popular in China in the fifties (unlike in the UK and Spain). Here we see a clear case of the role played by cultural knowledge in the interpretation of multimodal metaphors.

Example 2: 7UP.

We also found significant variation in the interpretation of the 7UP advertisement.


NOW 100% NATURAL.
DIET 7UP, NOW MORE LEMON LIME TASTE.
The famously crisp, refreshing taste of 7UP® is now better than ever, because it's been stripped of the artificial stuff found in most other soft drinks. Pick one up today.
7UP
Now 100% Natural
Crisp, Refreshing

Example 7. 7UP: Now 100% natural

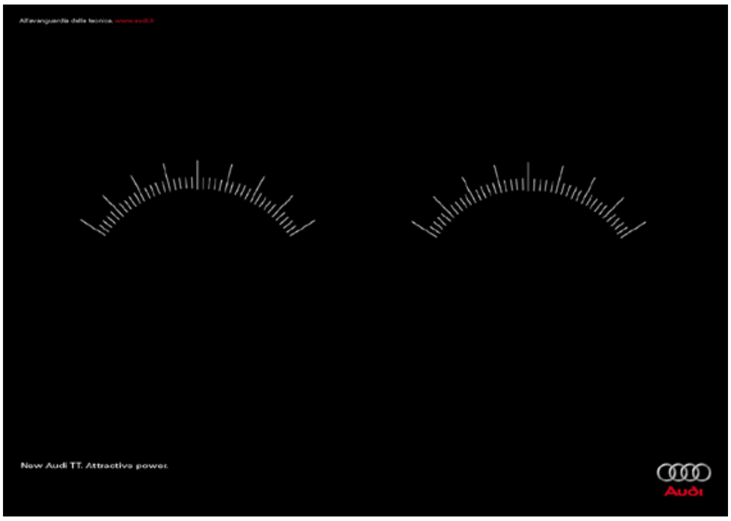
English participants were significantly more likely than Spanish and Chinese subjects to describe 7UP as "healthy" (p<0.01), thereby giving prominence to the role of the metonymic chain GREEN FOR

NATURE FOR NATURE-FRIENDLY in the understanding of the soft drink as natural and healthy as lemon juice. In contrast, Spanish participants significantly preferred to describe it as “sweet” ($p<0.01$), thus focusing on the metaphor 7UP IS A LEMON. It is not clear why Spanish participants regarded lemons as sweet. It may be that lemons in southern countries are less acid, or they may simply have been more aware of the fact that soft drinks are generally full of with sugar, and therefore, and that any inherently acid drink can be made sweet.

Example 3: Audi TT

This advert for Audi displays two white speedometers without numbers and arrows over a black background, which is reminiscent of two (presumably female) eyelashes. This example is analysed in Pérez-Sobrino (2016b) in terms of metaphtonymy. The metonymies SPEEDOMETERS FOR CAR and EYELASHES FOR WOMEN develop the visual material provided in the billboard to the extent required for the metaphor CAR IS WOMAN to take place. There are at least two possible interpretations of this advertisement: (1) the eyelashes metonymically represent an attractive woman and the car is therefore metaphorically construed as an attractive woman or (2) the fact that there are two speedometers means that it is twice as fast as other cars. Alternatively, as Pérez-Sobrino (2016b) suggests, the *centrality* of eyelashes to female beauty corresponds to the car’s unlimited power (in terms of speed and fuel consumption).

The advert compares the eyelashes, as the most outstanding feature of female beauty, with the car’s speedometers. In this interpretation of the advertisement, the focus shifts from the understanding of a car as an attractive woman towards the understanding of speedometers (and by extension, the information they provide regarding speed and fuel consumption) as the most attractive feature of the advertised car, which corresponds to the fact that eyelashes are one of the most salient attributes of female beauty.


All'avanguardia della tecnica. www.audi.it
New Audi TT. Attractive power.
Audi

Example 8. New Audi TT: Attractive power

Interestingly, Spanish participants were significantly more likely to report that Audi is a ‘friendly’ car ($p<0.01$), because the speedometers resembled the eyes of a smiling person. In turn, English speakers reported more neutral interpretations: a great deal of them considered that the lack of numbers indicated that drivers should not worry about fuel consumption ($p<0.01$). In a similar vein, most of Chinese participants focused their attention on the absence of numbers and pointed out that they were meant to emphasize the ‘unlimited possibilities’ of the car ($p<0.01$)[i].

The findings for this advert are particularly interesting in that they reflect the subjective positivity ratings identified through the UAM corpus tool. We identified very different subjective positivity ratings across nationalities. As shown in *Table 1*, Spanish participants appeared to use significantly more positively connoted words (0,259) than English (0,194), and Chinese (0,178). These results are commensurate with a recent study by Dodd et al. (2014) that provides empirical evidence in order to locate languages in a continuum of positivity bias: Spanish > Portuguese > English> Indonesian >

French > German > Arabic > Russian > Chinese.

Nationality	Subjective positivity
English	0.194
Chinese	0.178
Spanish	0.259

Table 1. Subjectivity strength and positivity in the responses of the participants according their nationality

(c) Perceived effectiveness

Finally, we did not find any significant effect of linguistic and cultural background on the perceived effectiveness of the advertisements. All the participants were inclined to consider the advertisements convincing in spite of their linguistic and cultural backgrounds, with average scores per nationality being 1.91 for English, 1.96 for Chinese, and 2.05 for Spanish. Therefore, differences in the way participants rated the effectiveness of the advertisements must be explained in terms other than their linguistic and cultural background. We saw above that both processing time and figurative simplicity were significantly related to effectiveness ratings.

9. Conclusion

In this study, we set out to measure the impact of varying degrees of figurative complexity on consumer responses to advertisements. Our main findings were that figurative complexity *is not significantly related* to speed of processing, but that it is *significantly related* to the participants' complexity of the interpretation, that it is *significantly negatively related* to the advertisement's perceived effectiveness, and that there is significant cross-cultural variation in the role of figurative complexity in the interpretation of advertisements. In particular, we found *statistically significant cross-linguistic/cultural variation* in (a) the time taken in processing the advertisements (were Spanish participants were significantly faster than English and Chinese), (b) depth of interpretation (where English participants produced a greater variety of possible interpretations), and (c) linguistic subjectivity (Spanish participants used significantly more positively-connoted words than English and Chinese). However, we did not identify any significant effect of linguistic ad cultural background on the perceived effectiveness of the advertisements.

These preliminary findings have important implications for global marketing. As shown, the linguistic and cultural background of the informants appears to affect the ways in which people respond to advertisements although it does not appear to affect the likelihood of a campaign being perceived as effective. At first sight, these findings might lead one to conclude that it is not worth investing in figurative complexity as this does not appear to be related to perceived effectiveness. Caution should however be exercised at this point. The participants in this study were asked to respond to the advertisements immediately after they had seen them and we do not know anything about the impact of these advertisements on their long term attitudes towards the product or indeed their tendency to actually purchase the product. Furthermore, it is difficult to extrapolate from such as small sample of participants (N=30).

This study does show however that figurative complexity can be independently assessed. Depending on their marketing strategies, advertisers may opt for more complex and elaborate advertisements that may take a little longer to process (e.g. in magazines, where there are no time constraints), or simpler advertisements that are processed more rapidly (e.g. for TV and cinema commercials, or road billboards).

Besides the benefits for the linguistic research community, findings from this study have practical applications for the effective design of more culturally-sensitive advertising practices. A striking finding from the study was the extent to which participants from different linguistic backgrounds varied in their understanding of what the main message in the advertisement actually was. This kind of information sheds light on the extent to which it is possible to make use of shared experiential knowledge for global campaigns, while selecting specific cultural content for local campaigns.

This study has addressed a number of theoretical and empirical issues in advertising, multimodal communication and figurative meaning making.

Firstly, this is the first broad-scale empirical study of multimodal figurative language in advertising. Research to date that has taken a cognitive linguistic perspective has involved the use of experiments with a somewhat limited number of advertisements with an exclusive focus on metaphor (see Burgers et al. 2015, Forceville 1996: Chapter 6, Mulken et al. 2010), whereas marketing studies have only reported post-hoc results using made-up examples which do not take full account of issues such as figurative complexity and/or linguistic and cultural variation (cf. Ang and Lim 2006, Chang and Yen 2013, McQuarrie and Philips 2005, Morgan and Reichert 1999).

Secondly, this study goes beyond traditional approaches to multimodal metaphor by taking into account the dynamic interplay of metaphor with other conceptual operations (such as other metaphors and metonymies), thereby leading to a refined understanding of the "figurative continuum" as an inventory of conceptual complexes displaying varying degrees of complexity, ranging from metonymy, through metonymic chaining, metaphor, and metaphtonymy, to metaphoric amalgams.

Thirdly, this study has singled out and empirically tested different variables influencing the success of advertising such as figurative complexity and cultural/linguistic background that may play a role in the time and depth of comprehension. Likewise, we have investigated additional variables, such as speed of processing and the perceived effectiveness of the advertisement.

Fourthly, this has been a genuinely interdisciplinary project, bothin terms of the methodology employed, which combines theoretical with empirical (both quantitative and qualitative) and design-focused approaches, and in terms of its bringing together of cognitive linguistics and marketing theory.

Although we identified a significant relationship between figurative complexity of the advertisements and the number of interpretations offered by the participants, we do not claim that figurative complexity will always involve complex mental operations and extra cognitive effort. Following the criteria set out by Gibbs (2006: 148), we do not assume that people possess the same kinds of complex representations in their minds, or if they do posses that kind of knowledge, resort to it every time they reason and talk on the basis of certain verbal and/or multimodal cues, as this could be highly uneconomical in terms of cognitive effort. Instead, our aim in this study has been to show experimental psychologists how their view on language and though interactions could benefit from our introspective qualitative analyses, as long as they are based on explicit criteria, a rigorous methodology, and a large sample of real examples.

We acknowledge that the study has a number of limitations. Further studies could usefully allow informants from different nationalities to respond in their mother tongue. Additionally, this experiment should be replicated with a bigger corpus of examples and a greater number of participants, in order to confirm or refine the validity of our findings. Finally, even though we believe that the use of authentic examples is one of the core points of this study, it would be interesting to check whether the use of made-up examples, which would allow the researcher to control more tightly for differing degrees of figurative complexity, would affect the results of the experiment. Additionally, further research could also explore alternative psychological variables (such as 'Need for Cognition' or other personality dimensions) and/or socio-economic variables (such as education level and professional background). 'Need for Cognition' is a personality dimension reflecting the extent to which individuals are inclined towards effortful cognitive activities (Cacioppo & Petty, 1982; Cacioppo et al. 1996). For instance, Chang and Yen (2013) offer evidence supporting the fact that visual metaphors are more likely to be successfully interpreted by people with higher need for cognition, that is, people inclined towards a high elaboration in terms of appreciation of debate, idea evaluation, and problem solving. Complementarily, it would be worth examining the role played by the Big Five personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism) (Costa & McCrae 1992). There is empirical work (Schacter, Gilbert &Wegner 2011) that has found consistency of the Big Five personality traits shown in interviews, self-descriptions and observations across a wide range of participants of different ages and of different cultures. These five personality dimensions may influence the involvement of the viewer in the interpretation task, and therefore, they may affect the speed of processing, complexity of his or her interpretations, and emotional inclination towards the promoted product.

Another interesting line of enquiry relates to the role of emotion in the understanding and appreciation of metaphor. Citron and Goldberg (2014) have provided neurolinguistic evidence showing that conventional metaphors are more emotionally evocative than their corresponding literal expressions.

Further research could usefully explore the role of emotion in individual's responses to and appreciation of advertisements that contain differing combinations of metaphor and metonymy in multimodal settings.

Acknowledgements

This research has been funded thanks to Marie Curie Individual Fellowship (Project ref. EMMA-658079), the national project FFI2013-43593-P (Ministry of Innovation and Competitiveness, Spain), and the College of Arts and Law Research and Knowledge Transfer Fund (University of Birmingham).

References

ANG, SWEE HOON, and AI CHING LIM, ELISON, 2006, "The influence of metaphors and product type on brand personality perceptions and attitudes", *Journal of Advertising* 35(2), pp. 39-53.

BERGER, JONAH, and MILKMAN, KATHERINE L., 2012, What Makes Online Content Viral. *Journal of Marketing Research*, *49* (2), pp. 192-205.

BURGERS, CHRISTIAN, KONIJNA, ELLY, STEEN, GERARD, and IEPSMA, MARLIES, 2015, "Making ads less complex, yet more creative and persuasive: the effects of conventional metaphors and irony in print advertising", International Journal of Advertising: *The Review of Marketing Communications*, *34* (3), pp. 515-532.

CACCIOPPO, JOHN, and PETTY, RICHARD, 1982, "The need for cognition". *Journal of Personality and Social Psychology 42*, pp. 116-131.

CACIOPPO, JOHN. et al., 1996, "Dispositional differences in cognitive motivation: The life and times of individuals varying in need for cognition". *Psychological Bulletin 119*, pp. 197-253.

CHANG, CHUN-TUAN, and CHING-TING YEN, 2013, 'Missing ingredients in metaphor advertising: The right formula of metaphor type, product type, and need for cognition,' *Journal of advertising* 42 (1), pp. 80-94.

CITRON, FRANCESCA, and GOLDBERG, ADELE, 2014, "Metaphorical Sentences Are More Emotionally Engaging than Their Literal Counterparts". To appear in *Journal of Cognitive Neuroscienc*e, 26 (11), pp. 2585-2595.

COSTA, PAUL, and MCCRAE, ROBERT, 1992, "Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) manual", Odessa, FL: *Psychological Assessment Resources.*

FORCEVILLE, CHARLES, 1996, *Pictorial Metaphor in Advertising.* Routledge, London and New York.

FORCEVILLE, CHARLES, 2009, "Non-verbal and multimodal metaphor in a cognitivist framework: Agendas for research". In Ch. Forceville, and E. Urios-Aparisi (eds) *Multimodal Metaphor*, Berlin & New York: Mouton de Gruyter, pp. 19-42.

GIBBS, RAYMOND, 1994, *The Poetics of Mind: Figurative Thought, Language, and Understanding.* New York: Cambridge University Press.

GIBBS, RAYMOND, 2006, "Introspection and cognitive linguistics: Should we trust our own intuitions?" *Annual Review of Cognitive Linguistics 4*, pp. 135-151.

GKIOUZEPAS, LAMPROS, and HOGG, MARGARET, 2011, "Articulating a New Framework for Visual Metaphors in Advertising". *Journal of Advertising, 40* (1), pp. 103-120.

GOOSSENS, LOUIS, 1990, "Metaphtonymy: The interaction of metaphor and metonymy in expressions for linguistic action". *Cognitive Linguistics, 1* (3), pp. 323–340.

HIDALGO, LAURA. and KRALJEVIC, BLANCA, 2011, "Multimodal metonymy and metaphor as complex discourse resources for creativity in ICT advertising discourse", in F. Gonzálvez, S. Peña, and L. Pérez (eds) *Metaphor and Metonymy Revisited Beyond the Contemporary Theory of Metaphor,* Amsterdam/Philadelphia: John Benjamins, pp. 153–178.

JEONG, SEE-HOON, 2008, "Visual Metaphor in Advertising: Is the Persuasive Effect Attributable to Visual Argumentation or Metaphorical Rhetoric?", *Journal of Marketing Communications 14* (1), pp. 59-73.

JOHNSON, MARK, 1987, *The body in the mind: The bodily basis of meaning, imagination, and reason.* Chicago: University of Chicago Press.

KAPLAN, ANDREAS, and HAENLEIN, MICHAEL, 2011, "Two Hearts in Three-quarter Time: How to Waltz the Social Media/Viral Marketing Dance", *Business Horizons, 54,* pp. 253-263.

JOLLEY, RICHARD, ZHI, ZHANG, and THOMAS, GLYN, 1998, “The Development of Understanding Moods Metaphorically Expressed in Pictures: A Cross-Cultural Comparison”, *Journal of Cross-Cultural Psychology, 29* (2), pp. 358-376.

LITTLEMORE, JEANNETTE, 2001, “The use of metaphor in university lectures and the problems that it causes for overseas students”, *Teaching in Higher Education 6* (3), pp. 333-349.

MCQUARRIE, EDWARD, and MICK, DAVID, 2003, “The contribution of semiotic and rhetorical perspectives to the explanation of visual persuasion in advertising”, in L. Scott and R. Batra (eds) *Persuasive Imagery: A Consumer Response Perspective*, Mahwah, NJ: Lawrence Erlbaum, pp. 191–221.

MCQUARRIE, EDWARD and PHILLIPS, BARBARA, 2005, “Indirect persuasion in advertising: How consumers process metaphors presented in pictures and words”. *Journal of Advertising 34* (2), pp- 7-20.

MICK, DAVID, and POLITI, LAURA, 1989, “Consumers’ interpretations of advertising imagery: a visit to the hell of connotation”, in E. Hirschman (ed) *Interpretive Consumer Research*, Provo, UT: Association for Consumer Research, pp. 85–96.

MITCHELL, ANDREW, and OLSON, JERRY, 1981, “Are product attribute belief the only mediator of advertising effects on brand attitudes?” *Journal of Marketing Research 18*, pp. 318-332.

MORGAN, SUSAN, and REICHERT, TOM, 1999, “The message is in the metaphor: Assessing the comprehension of metaphors in advertisements”, *Journal of Advertising, 28* (4), pp. 1-12.

MULKEN, MARGOT VAN. et al., 2010, “The impact of perceived complexity, deviation and comprehension on the appreciation of visual metaphor in advertising across three European countries”. *Journal of Pragmatics 42*, pp. 3418–3430.

PÉREZ-SOBRINO, PAULA, 2016a, “Multimodal Metaphor and Metonymy in Advertising: A Corpus-Based Account”, *Metaphor & Symbol, 31* (2), pp. 73-90.

PÉREZ-SOBRINO, PAULA, 2016b, “*Shockvertising*: patterns of conceptual interaction constraining advertising creativity”. *Círculo de Lingüística Aplicada a la Comunicación 65*, pp. 257-290.

PHILLIPS, BARBARA, and MCQUARRIE, EDWARD, 2009, “Impact of Advertising Metaphor on Consumer Belief: Delineating the Contribution of Comparison Versus Deviation Factors”. *Journal of Advertising, 38* (1), pp. 49-62.

RUIZ DE MENDOZA, FRANCISCO, and GALERA, ALICIA, 2014, *Cognitive Modelling: A Linguistic Perspective*, Amsterdam & Philadelphia: John Benjamins.

SCHACTER, DANIEL, GILBERT, DANIEL, and WEGNER, DANIEL, 2011, *Psychology* (2nd ed.), New York: Worth.

SPERBER, DAN, and WILSON, DEIRDRE. (1985/1986). “Loose talk”. *Proceedings of the Aristotelian Society LXXXVI*, pp. 153–71.

Secondary references

Example 1. Grand. Arizonaguide.com
Source: http://www.visitarizona.com/press-room/press-releases/arizona-office-of-tourism-launches-national-international-ad-campaigns-promoting-arizona-as-top-travel-destination
Year: 2012

Example 2. Schweppes Short Film Festival
Source: http://www.coloribus.com/adsarchive/online-viral/schweppes-bitter-lemon-schweppes-short-film-festival-12146755/
Year: 2008

Example 3. WWF Killing a tree is murder too.
Source: http://www.advertolog.com/wwf/print-outdoor/cut-tree-7973805/
Year: 2005

Example 4. Against fur
Source:
http://adsoftheworld.com/media/print/bmt_bund_gegen_missbrauch_der_tiere_ev_association_against_animal_abuse_fox

Year: 2011

Example 5. IBM What makes you special
Source: http://andy-potts.com/work/ibm/

Example 6. Boddingtons, the cream of Manchester
Source: http://badassdigest.com/2012/04/15/if-you-dont-get-boddies-you-dont-get-beer/
Year: 1993

Example 7. 7UP: 100% natural
Source: http://www.advertolog.com/7-up/print-outdoor/humming-bird-15001355/
Year: 2011

Example 8. New Audi TT: Attractive power.
Source: http://www.germancarblog.com/2007/12/audi-tt-nice-eyelashes-ad.html
Year: 2007

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[i] In a seminar where we discussed these advertisements, one of the participants observed that the dials looked like 'hairy breasts'. However none of the participants in our study came up with this interpretation, and we found it to be rather tangential to the advert's meaning, so we have not included it in our analysis of the advertisement's complexity.