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# Cognitive grounding for cross-cultural commercial communication

**Abstract:** Internationally recognized brands are an increasingly essential asset for present-day companies. This paper takes a cognitive perspective on the semantics of commercial brands (and their related logos), and explores the role of image schemas in endowing them with a cross-culturally significant core meaning. Two surveys were carried out among speakers of four different languages (i.e., English, Spanish, Chinese, and Arabic) in relation to the logos of several car categories (minis, family cars, 4 × 4s, and sports cars) and a limited set of image schemas (CONTAINER, FORCE, and ATTRIBUTE). The analysis of the results reveals a consistent correlation between the participants' semantic interpretation of the car brands, and the basic meanings deriving from the image schemas included in their logos. The outcome of the surveys also points to the existence of potential constraints on the universal reach of image-schematic-based communication. These limitations emerge either from the combination of image schemas with additional idealized cultural models, or from the use of specific richer configurations of the image-schematic visual cues at work. In this connection, the present study explores the inventory of visual configurations available for the representation of the image schemas under scrutiny, assesses their universal significance, and raises awareness about differences in the cross-cultural communicative effectiveness of the various layouts of a given image-schematic cue.

**Keywords:** cognitive grounding, image schemas, branding, global communication

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## 1 Introduction

Coining a new brand name that manages to communicate the key features of a product or service with equal success in a broad range of countries and cultures is a complex task (Hollis 2008). Often, brand names are arbitrary, language-

specific constructs and, most of the times, they are semantically opaque to members of different speech communities. This has led branding designers to explore alternative means for conveying their target messages across an ever-growing spectrum of brand audiences. The inventory of such strategies is to date, however, fairly limited.

In this connection, there has been extensive consideration of cross-linguistic sound symbolism (Klink 2000; Lowrey and Shrum 2007; Shrum et al. 2012), i.e., the idea that speakers of one language can appreciate the expressive force of sounds in another (possibly unknown to them) language. In names whose literal meaning may not be understood in all languages, the natural expressiveness that may derive from the symbolic force of their phonetic configuration becomes relevant, as shown in relation to well-known brands like *Blackberry* (Begley 2002).

More recently, studies developed within the framework of Cognitive Linguistics have also pointed to the role of multimodal cognitive metaphor and metonymy as alternative marketing instruments for conveying meaning to global audiences (Velasco-Sacristán and Fuertes-Olivera 2006; Forceville and Urios-Aparisi 2009: Ch. 3–6; van Mulken et al. 2010).

Considering further cognitive constructs involved in meaning construction, this paper explores the role of *image schemas* in the design of international brands. In his 1987 seminal work *The body in the mind*, Mark Johnson drew attention to a collection of pre-conceptual experiential gestalts derived from recurrent bodily patterns of sense perception and motor programs. Because of their embodied nature, image schemas are widely pervasive across cultures, a characteristic that makes them especially appealing for the purpose of conveying meaning across borders and reaching consumers of different cultures.

Although research on this topic is scarce, a few previous studies have already pointed to the pervasiveness of certain image schemas (i.e., VERTICALITY, FORCE, CONTAINER, PATH) in the logos of many international well-known brands, such as *Seven-Up*, *Arrow Energy*, *Lancia*, *Nissan Pathfinder*, etc. (Ortiz, 2010; Pérez Hernández 2011, 2013a, 2013b), as well as to the role of image schemas in the creation of city branding and the building of corporate image (Koller 2008 and 2009, respectively), and in the design of global marketing campaigns (Velasco Sacristán and Cortés de los Ríos 2009; Ortiz 2010).

Surprisingly enough, the literature on branding and naming does not include any reference to the use of image schemas in the task of designing new trademarks. The exploitation of image-schematic visual cues by branding designers, as revealed in Pérez Hernández's (2013b) work on car logos, appears as largely unconscious and unsystematic. In fact, empirical confirmation of the role of image schemas in facilitating global communication of brand attributes is still lacking. It remains to be attested whether speakers of different languages actually

reach a similar interpretation of the image-schematic layouts found in brands and their related logos. In proving the cross-cultural validity of brands displaying image-schematic configurations, we shall be providing the branding industry with yet another useful tool for the creation of global brands.

In addition, from a more theoretical perspective, little attention has been paid to exploring the different types of specific visual cues (e.g., fonts, type styles, arrows, vectors, bounded spaces, etc.), which can be used in the representation of image schemas. Neither has it been empirically ascertained yet whether the visual representations of image schemas discussed in the literature (e.g., bounded spaces, paths, vectors, etc.) are actually effective in activating the image schemas traditionally associated with them, and how their functionality may vary with subtle modifications of their most prototypical configurations.

This paper presents the results of a piece of research designed to shed some light on the above issues. In order to assess the relevance of image schemas in facilitating and enhancing the cross-cultural validity of commercial brands, two experiments were carried out. The first of them examines the semantic interpretation of car logos displaying image-schematic visual cues by speakers with different language and cultural backgrounds. The second undertakes the task of assessing the speakers' understanding of the same image-schematic visual cues in isolation from the specific logos.

The analysis of the resulting data suggests that (1) brand logos displaying some sort of embodied schemas are in fact readily associated with the basic semantics of the corresponding schema by consumers of different languages and cultural backgrounds; (2) when the semantics of the image schemas used in the design of a new trademark are made to coincide with the key attributes of the target product, the resulting brand has been attested to prompt a similar relevant interpretation among international consumers.

The results also provide interesting feedback on the performance of a selected group of visual configurations for the representation of the image schemas under scrutiny. In this connection, an interesting path of research opens up, which calls for consideration of the degree of effectiveness of subtle variants of the same visual cues for the communication of their associated image-schematic meaning. By way of illustration, our findings make it apparent that in order to imbue a commercial logo with a sense of *protection* and *safety* not every visual representation of the CONTAINER schema is equally effective. The choice of a circular versus a squared bounded space, or the use of a two versus a three-dimensional container shape, for instance, may largely influence the consumers' interpretation of the logo. This is so to the point that certain layouts may be fully unsuccessful in triggering the default semantics of the image schemas involved (e.g., split containers, containers displaying broken boundaries, etc.).

This paper takes the following structure. Section 2 introduces the notion of *image schema*, offers an assessment of its universal vs. culture-specific dimensions, describes the three types of image schemas (CONTAINER, FORCE, and ATTRIBUTE) that are relevant to the present investigation, isolates the concrete visual inputs which can be used to represent each image schema, and establishes the general and specific research hypotheses. Section 3 describes the data collection method, the nature of the informants, procedures, measures, and results. We conclude with a final section that offers a summary and discussion of the findings and lays the groundwork for further investigation.

## 2 Theoretical background and research hypotheses

Johnson (2005: 18–19) defines image schemas as “recurring patterns of our sensory-motor experience by means of which we can make sense of that experience and reason about it”. These pre-conceptual building blocks of human understanding and reasoning arise from our bodily interaction with the world, thus anchoring our conceptual system in our human physical and perceptual capacities. By way of illustration, Johnson explains that our ability to stand erect within the earth’s gravitational field gives way to the VERTICALITY schema; our constant interaction with containers leads us to conceptualize many human experiences and feelings in terms of the CONTAINER schema; etc.<sup>1</sup>

One of the most relevant aspects of image schemas is that they underlie all facets of meaning and cognition and hence they motivate important aspects of how we think, reason, and imagine. As a result, they play a very important role in persuasion.<sup>2</sup> In addition to this, their directly meaningful, pre-conceptual, universal nature turns this type of embodied schematic gestalts into potentially useful resources for global communication, in general, and for the marketing and design of international trademarks, in particular. Endowing a commercial brand with the basic semantics conveyed by image schemas would provide it with a

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<sup>1</sup> Johnson’s (1987: 126) initial inventory of image schemas included up to twenty different experiential gestalts (PATH, VERTICALITY, MASS, LINK, CENTER-PERIPHERY, CONTAINER, FORCE, ATTRIBUTE, etc.). See also Peña Cervel (2008) for a complete list of image schemas and their relationships, stemming from a corpus-based discussion of previous proposals by other scholars.

<sup>2</sup> The persuasive role of image schemas has already been dealt with in the context of advertising. See Umiker-Sebeok (1996), Velasco Sacristán and Cortés de los Ríos (2009), among others. The persuasion communicative domain itself has been analyzed in terms of the FORCE image schema (Núñez Perucha 2003).

cross-culturally shared semantic core, which could be straightforwardly understood by consumers worldwide.

In previous work (Pérez Hernández 2013b), it has been argued that the basic meaning structure and logic provided by image schemas could, at a later stage of the brand creation process, be enriched and profiled through its embeddedness within concrete cultural, emotional, and interactional experiences. In this respect, there is growing scientific consensus that attending only to the structure of image schemas as recurring patterns of sensory-motor experiences, and ignoring their socio-cultural specificity hinders the account of their functionality in situated cognition (see Gibbs 1999; Sinha and Jensen de Lopez 2000; Johnson 2005; Kimmel 2005). This is the process that Johnson (2005: 27) refers to as “putting flesh on image-schematic skeletons”. In relation to the image schema of CONTAINER, which is not culture-specific, for instance, it is yet possible to distinguish a varied range of perceptions associated with the actual experience of containment: from the sense of freedom to the touch of anxiety that people may experience when leaving a closed area, and from the feeling of warmth that follows a hug or a cuddle to the constraints prompted by the confines of a prison.

Our analysis of the use of image schemas in the semantic make-up of commercial brands is not primarily concerned with such aspects of situated cognition (i.e., those schemas capturing commonalities of a limited set of (typically culture-specific) experiential settings, as defined in Kimmel 2005: 300). On the contrary, bearing in mind that one of the central aims of the present-day branding industry is to create globally-valid trademarks, our analysis focuses on those universal traits of image schemas which facilitate this task. Still, some aspects of the situated and context-sensitive dimension of embodied schemas are closely tied to this objective. Thus, as noted in Pérez Hernández (2013b), it is still “possible to find a balance between the use of too general schemas devoid of anything context-bound, on the one hand, and the positing of isolated, culturally-tied, situated schemas lacking a universally shared semantic core, on the other.” In the context of branding, this can be achieved by selecting some specific elements of the initial image-schematic configurations and their internal logic on the basis of their compatibility with the *affordances* of the related product/service. Gibson (1979) defines affordances as patterns of potential engagement and interaction with parts of our environment. A vehicle, for instance, affords driving-ability. In turn, different car categories will afford diverse types of driving ability, from fast driving to safe driving, power driving, etc. In the context of brand name creation, such distinctive affordances, which can be made to coincide with the product/service target attributes, can help to eventually flesh out the full semantic interpretation of the initial schema at work. In this line of thought, Pérez Hernández

(2013b) has observed that the exploitation of the FORCE image schema in relation to automobile brands differs largely depending on the car category under analysis. When the target product is a sports car, the inclusion of the FORCE schema in its brand/logo activates the related notion of *speed*. Interestingly enough, when the car under consideration is a jeep, its specific affordances bring to the front those features of the FORCE schema related to the notion of *power*.

Each image schema has an internal logic of its own, which can be expressed propositionally and used in abstract thinking (Johnson 1987; Lakoff 1987, 1990; Talmy 1988). A brief characterization of the three image schemas (CONTAINER, FORCE, and ATTRIBUTE) included in our study is thus in order. The following description also makes reference to the specific visual cues that represent each image schema in the context of the car brand names and logos selected for this study.

Johnson (1987: 21) rightly unveiled the pervasiveness of containment and boundedness features in our human bodily experience:

We are intimately aware of our bodies as three-dimensional containers into which we put certain things (food, water, air) and out of which other things emerge (food and water wastes, air, blood, etc.). From the beginning we experience constant physical containment in our surroundings [. . .]. We move in and out of rooms, clothes, vehicles, and numerous kinds of bounded spaces. We manipulate objects placing them in containers. (Johnson 1987: 21)

The CONTAINER image schema is just an abstract pattern arising from the common structure of our many physical experiences of containment. According to Lakoff (1989: 116), the CONTAINER schema consists of an interior, an exterior, and a boundary. This pattern, which exists pre-conceptually in our experience, can nevertheless give rise to rational entailments, which can be described propositionally. Thus, Johnson (1987: 22) points out that since the boundaries of containers prevent what is outside from affecting the entities inside, the notion of containment is fundamental to the concepts and the discourse of protection, safety, and security (see also Chilton (1996) and Krzeszowski (1993) on this issue).

The image schema of CONTAINER is often represented by three-dimensional receptacles (i.e., a cube/sphere). Alternatively, it has also been depicted as a two-dimensional figure (i.e., a circle). This representation is licensed by the PROMINENT PART FOR WHOLE high-level metonymy. The images in Figure 13, for instance, illustrate the presence of visual cues related to the CONTAINER schema in *Fiat* logos.

The image schema of FORCE receives pride of place among the collection of image schemas identified so far. The experience of force is ubiquitous, since all

“causal interaction requires the exertion of force, either as we act upon other objects or as we are acted upon by them” (Johnson 1987: 42). The following features are relevant to the description of the image schema of force (Johnson 1987: 43–44):

- Force is always experienced through interaction.
- Forces have a vector quality or directionality. Our experience of force usually involves the movement of some object through space in some direction.
- Forces usually display a single path of motion.
- Forces have degrees of power or intensity.
- Forces are experienced as causal sequences.

The exertion of force may cause *motion* and, in turn, the degree of intensity of the force results in a corresponding degree of *speed* of the moving object affected by the force. Johnson (1987: 45) distinguishes several types of force schemas: COMPULSION, BLOCKAGE, REMOVAL OF RESTRAINT, COUNTERFORCE, ATTRACTION, etc. For the purpose of our analysis, we shall concentrate on the most basic of them, namely, the FORCE image schema of COMPULSION, which “involves an external force physically or metaphorically pushing, or tending to push, an object” (Johnson 1987: 45). The image schema of COMPULSION has traditionally been represented by an object between two directional vectors, the first representing the force and the second signaling the path of motion followed by the affected object (see Figure 1).



**Fig. 1:** Directional vectors as visual cues for the FORCE image schema.

In addition, high-level conceptual metonymies, such as EFFECT FOR CAUSE (Panther and Thornburg 2000), have been found to license the use of a broad range of specific visual effects of the exertion of force for the graphic representation of this image schema. Thus, italics, any type of tilted letters, and virtually any angled form resembling a vector (i.e.,  $>$ ) may potentially cue the FORCE image schema through a metonymic expansion operation. The conceptual mapping at work maps the effect of the force (i.e., the tilted position of entities affected by a force or speed, the directionality of the moving object, etc.) onto its cause (i.e., the force exerted upon the entities):

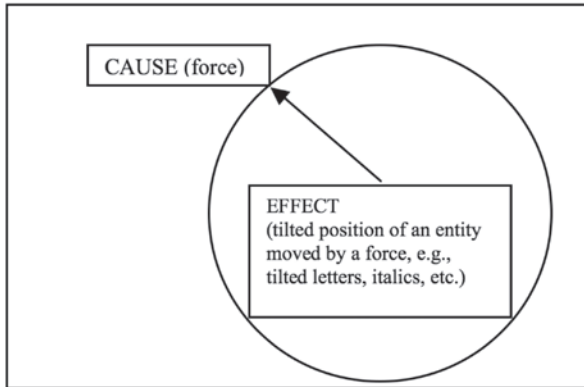


Fig. 2: Metonymic mapping EFFECT (tilted objects/letters) FOR CAUSE (force)

Finally, ATTRIBUTE image schemas, which denote common properties of objects, are less rich in structure. Evans and Green (2006) list a collection of ATTRIBUTE schemas, including *heavy-light*, *dark-bright*, *big-small*, *warm-cold*, and *strong-weak*. Both the heavy-light and big-small schemas will be of relevance to our study. The ATTRIBUTE (big-small) schema, in particular, has also been found to display interesting interactions with the corresponding propositional *Idealized Cognitive Model of Size* (henceforth *ICM of Size*), which Ruiz de Mendoza (1996: 164) formulates as follows:

#### ICM OF SIZE

1. Entities range in size from very small ones to very large ones.
2. A small entity is often more manageable than a bigger one.
3. A small entity is often less harmful than a bigger one.

From 2 and 3 we derive, as corollaries, two opposed emotional reactions in our understanding of small entities:

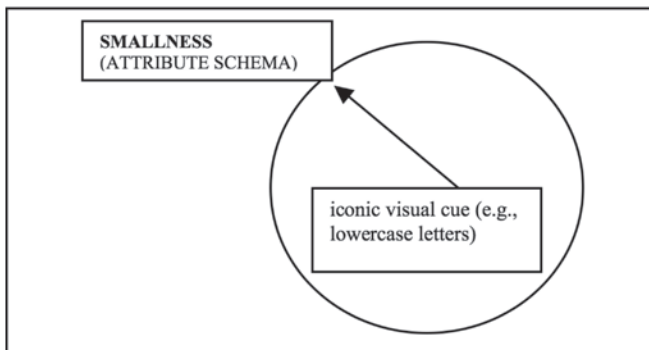
4. We feel that small entities are likeable.
5. We feel that small entities are unimportant.

In the Cognitive Linguistics tradition, *propositional cognitive models* are a type of knowledge organization structure offering idealized, schematic constructions of reality (Lakoff 1987) that are often used to make inferences. The cultural ICM of Size explains some of our automatic reactions and feelings towards small entities. On the one hand, since small objects are not likely to affect us, they can be



easily ignored in most cases.<sup>3</sup> On the other hand, interestingly enough, they can also be perceived as attractive and desirable (i.e., a small dog is *cute*, a small boutique hotel is *charming*, etc.). The interaction of the ATTRIBUTE (big-small) image schema with the ICM of Size, as well as its cross-cultural validity, are assessed in the following section in relation to the conceptual make-up of the *Alfa Romeo Mito* trademark.

Visual inputs that may potentially activate the big-small schema include the use of lowercase letters, capital letters, and an alternation of both (see the visual inputs for the *Alfa Romeo Mito* brand in Figure 4). In turn, the specific use of bold fonts and thick strokes may point to the heavy-light schema, whose workings are considered in relation to the semantic configuration of the *Mitsubishi Captiva* logo (Figure 7). Again, as shown in Figure 3 below, a high-level metonymic mapping, which involves a domain expansion operation (i.e., SPECIFIC FOR GENERIC), is at work in the interpretation of these visual cues as instances of the ATTRIBUTE (big-small) schema:



**Fig. 3:** Metonymic mapping involving a domain expansion operation, SPECIFIC (lowercase letters) FOR GENERIC (small ATTRIBUTE), in the interpretation of lowercase letters as a visual representation of the ATTRIBUTE (big-small) image schema

As pointed out in the introduction to this paper, it remains to be empirically demonstrated, however, whether the aforementioned image-schematic visual

<sup>3</sup> Some straightforward counterexamples to the generalizations captured in the ICM of Size are represented by undesirable small entities such as bacteria, viruses, or dust. However, in the context of marketing and commerce, these exceptions do not invalidate the general claim of the ICM, especially since such small axiologically negative organisms are not likely to be the object of everyday life commercial transactions.

configurations are actually interpreted in a similar fashion by members of different speech communities. In this connection, we predict that:

H1: The visual representations of image schemas described in this section (i.e., fonts, type styles, vectors, bounded spaces, tilted characters, etc.) trigger semantic interpretations based on the internal logic of the corresponding schemas in speakers of different linguistic and cultural backgrounds. This general hypothesis comprises three more specific working hypotheses:

- H1.1. Bounded spaces are expected to trigger a sense of protection and safety associated with the CONTAINER image schema.
- H1.2. Vectors, vector-shaped figures, tilted characters, and italics may function as visual representations of the FORCE schema and, in turn, they may activate the notion of speed.
- H1.3. Different font sizes and type styles are hypothesized to work as visual cues of the ATTRIBUTE image schema, and thus, they may be useful in communicating some concepts linked to its internal logic, like those of space, size, power, lightness, weight, and toughness, among others.

For each of the hypotheses in the present study, we have chosen the most straightforward, traditionally accepted rational entailments associated with each of the image schemas at work (i.e., CONTAINER = protection/safety; FORCE = motion/speed; ATTRIBUTE = size/weight/power; see Johnson 1987). It could be argued that the CONTAINER schema, in relation to a car logo, does not necessarily mean protection. It may equally well indicate a space for the transport of goods, a place for undisturbed, private talking, etc. Research constraints, however, required a limitation of the number of semantic aspects under analysis for each of the image schemas under scrutiny. Additionally, as shown in a previous study (Pérez Hernández 2013b), the aforementioned associations had already been intuitively established in the design of real car logos. Thus, the image schema of ATTRIBUTE was pervasive in the category of *minis* and *4 × 4s* logos, whose most salient features are related to size and power, respectively; the image schema of CONTAINER was most frequent in the logos of *family cars*, which are commonly associated with the notions of protection and safety; and the schema of FORCE was recurrent in the logos of *sports cars*, which are straightforwardly linked with the notion of speed.

In addition, the three image schemas under analysis have been selected precisely because of their ability to relate to the affordances/nature of the product under scrutiny (i.e., cars). The CONTAINER schema, for instance, was chosen not because cars are containers, but rather because it is an important feature of car

brands to convey a sense of protection, and the logic of the CONTAINER image-schema is closely tied to that notion. It is predictable that the logos and brands of different products will benefit from the use of different image schemas, depending on the nature and attributes of the target products. By way of illustration, the logo of an Internet company may largely benefit from the use of the LINKING schema. This schema emphasizes the *connectedness* affordance of the services provided by such companies. Likewise, it may also profit from the use of the FORCE schema, which will add a sense of speed, since this is also an important feature of Internet service providers. This paper does not intend to claim that all products may benefit from the use of the three image schemas under analysis. These particular schemas convey very specific notions of safety, protection, speed, and space, which are useful when trying to sell cars. Different types of products or services, however, display specific affordances and, in each case, particular image schemas may be of use in order to highlight them and make their meaning cross-culturally available. Brand creation is a rather complex process, and the success or failure of a brand is often due to a variety of factors, the correct exploitation of cognitive constructs, like image schemas, being just one of them. In this connection, this paper argues for the inclusion of image schemas within the inventory of conceptual tools (i.e., metaphors, metonymies, etc.) that can help marketing professionals maximize the effectiveness and, especially, the global reach of their brands.

Our second general hypothesis is related to the cross-cultural communicative potential of the image-schematic cues under scrutiny in relation to the logos of several specific car categories:

H2: Car brands, whose logos include visual representations of image schemas, partake of the semantics of the latter. The image schemas involved can be chosen so that their semantics coincide with the key attributes of different car categories. In doing so, the essential semantics of the brands are reinforced and their interpretation in a global market is facilitated. It is further hypothesized that slightly different configurations of those image-schematic visual inputs may display diverse degrees of effectiveness in the task of communicating the products' key attributes to a global audience. H2 has also been split into six more specific working hypotheses:

- H2.1. In the context of *minis*, lowercase letters visually cue the image schema of ATTRIBUTE (small), thus emphasizing the smallness and lack of space of the car.
- H2.2. In the context of *minis*, the use of capital letters or the alternation of capital and lower case letters cue the image schema of ATTRIBUTE (big), thus leading the consumer to picture a small, but spacious car.

- H2.3. Those visual cues (e.g., lowercase letters), which are linked to the image schema of ATTRIBUTE (small), trigger an activation of the ICM of Size, which may equate *smallness* with notions of *endearment* and *charm*.
- H2.4. Thick bold strokes and fonts cue the image schema of ATTRIBUTE (heavy-light), thus leading the consumer to picture a heavy, solid, powerful car (e.g.,  $4 \times 4$ ).
- H2.5. Fonts in italics, tilted letters, horizontal lines or paths, and visual representations of vectors cue the image schema of FORCE, thus leading the consumer to entertain the notion of speed, a key attribute of the category of sports cars.
- H2.6. Visual representations of bounded spaces (either two, or three-dimensional) cue the image schema of CONTAINER, thus activating notions related to its internal logic, such as those of protection, safety, and control, typical of family cars.

It is interesting to note that previous studies on the semiotics of typography (van Leeuwen 2006) and the effects of type style on brand perception (Childers and Jass 2002; Henderson et al. 2004; Doyle and Bottomley 2009) explore the semantic potential of different fonts and typographical styles on an isolated, case-by-case basis. In our proposal, however, typography is just one of a more extensive group of linguistic (Johnson 1987), auditory (Brower 2000; Johnson and Larson 2003; Pérez Sobrino 2014) and/or visual (Forceville 2006; Pérez Hernández 2011, 2013b) resources which can be used to cue a particular image schematic notion. Linking the use of these resources with the activation of a particular image schema is what allows for expectations of a universal reception of their meaning. In other words, not all type styles will have the potentiality to convey a similar meaning to a global audience. Nevertheless, we predict that those that are readily associated with and capable of cueing a particular image schema will have such potential.

## 3 Methods, analysis, and results

### 3.1 Participants, logos, and data collection

Data collections were conducted to test the general and specific hypotheses specified in Section 2. This section briefly describes the nature of the participants, the criteria for the selection of the logos and brands under study, and the data-gathering process.

*Participants.* Four groups of participants were included in the study, each of them comprising 25 speakers of the following languages: Arabic, Chinese, Spanish, and English. All participants were only fluent in their own native languages. English, Chinese, and Arabic speakers had all spent less than a month in Spain and this was their first contact with the Spanish language and culture. Spanish participants were students at a school for adult education; English, Chinese, and Arabic respondents were undergraduates at a Spanish university participating in a summer course on Spanish culture and language for people with no previous knowledge of either.<sup>4</sup>

None of the participants had any prior specialized knowledge on branding, cognitive linguistics, or the notion of image schema itself. On the contrary, all participants were acquainted with the car brands under scrutiny. In order to minimize interference stemming from preconceived notions about different car brands, each question contained only alternative versions of one and the same brand. Since participants were asked to assess the differences perceived among different logos of the same car brand, it is not likely that previous knowledge of the brand may have influenced their reactions. Even if they all associated *Mito* – as opposed to *Fiat* or *Captiva* – with a small car, for instance, they still had to decide which of the three alternative *Mito* logos included in the survey conveyed better the idea of a smaller car. For this reason, it was concluded that the study could be pursued with the use of real logos, rather than with self-produced logos of fictitious cars.

*Criteria for the selection of the brands and logos.* The selection of the logos and car brands used in this study obeyed to several criteria, which aimed to strike a balance between the research interests and more practical issues, such as the availability of the logos and the procurement of reproduction permits. The selection process was performed in three steps. Initially, a simple Google search was carried out in order to find car logos and brands that included one or more of the image-schematic representations under analysis (i.e., container shapes, italics, tilted letters, vectors, etc.). At a second stage, those brands that offered a higher number of available logos were selected from the initial collection. In this regard, the brand *Fiat* was especially productive, offering over a dozen alternative layouts, displaying, for example, a variety of container shapes (i.e., 3D-containers, broken containers, plain containers, all encompassing containers, etc.). Such

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<sup>4</sup> English-speaking participants came from North America, New Zealand, Australia, and the United Kingdom. Arabic-speakers were all of Moroccan nationality. Chinese respondents all originated from Mainland China. Spanish informants were all speakers of Castilian Spanish.

diversity was useful to enable the assessment of the semantic import of slightly different realizations of the same image-schematic visual inputs. Finally, a third filtering obeyed to more practical issues (i.e., the availability of reproduction permits), thus yielding the final set of brands for analysis: *Alfa Romeo Mito*, *Fiat* and *Mitsubishi Captiva*.

Real logos have been used whenever the related brand offered enough versions of the same logo to enable comparison and analysis. This was the case with *Fiat* and *Captiva*. Thus, all *Fiat* and *Captiva* logos included in the study are real ones. On the contrary, the *Alfa Romeo Mito* logo is more fixed. It only has two alternative variants and only one of them was useful in order to assess the communicative effects of using capital versus lower case letters. Thus, the original *Mito* logo was manipulated in order to enable the comparison of the semantic import of using these alternative realizations. The use of real logos is not without problems. A real logo usually displays many different elements for analysis. It could be argued that our respondents may have been distracted by such varied input. Nevertheless, real buyers, in real life, are confronted with this type of raw data, from which they need to abstract the most relevant information depending on the context. The logos included in this study were carefully chosen in order to minimize potential distracters. All in all, the results of this initial – and arguably somewhat broad in scope – analysis are suggestive enough to encourage a more in-depth, specific study of the interrelations between different visual cues for the activation of a particular image schema.

*Procedure and measures.* All participants received the same set of stimuli in the form of two questionnaires that differed only in the language in which they were administered to each of the groups (by way of illustration, see the survey form for English respondents in Appendix 1). The questionnaires were translated from Spanish into Arabic, Chinese, and English by native speakers of these languages. The same native speakers provided a translation into Spanish of the results of the surveys.

a) The first questionnaire was aimed at assessing hypothesis H2, which predicts that the inclusion of specific image-schematic visual cues in car logos may result in a similar interpretation of the latter, in terms of the semantics of the corresponding image schemas, by speakers of different linguistic and cultural backgrounds.

This first questionnaire included six specific questions. In each of them, respondents were asked to indicate their choice between two potential interpretations of several car brand logos on a seven-point Likert scale containing signposts for its two extreme points. The specific notions whose understanding was being

assessed were both potential key attributes of the car category under scrutiny and, at the same time, basic concepts pertaining to the internal logic of the image schema included in the visual configuration of the trademark.

Questions 1–3 were aimed at measuring the impact of the use of the ATTRIBUTE (big-small; heavy-light) image schema in the semantic interpretation of the brands under scrutiny (i.e., *Alfa Romeo Mito* and *Mitsubishi Captiva*), thus searching either confirmation or rejection of hypotheses H2.1, H2.2, H2.3, and H2.4; question 4 was designed to measure the semantic outcome of the inclusion of FORCE image-schematic visual inputs in *Fiat* logos (H2.5); finally, questions 5–6 addressed the effects of the CONTAINER image schema in the interpretation of *Fiat* logos (H2.6).

Some of the questions (e.g., question 6) were specifically designed to assess the communicative impact of using slightly different configurations of the same visual cue.

This questionnaire was handed in to participants in the first place, so that the more specific visual cues included in the second questionnaire (see below) would not provide hints as to the object of the enquiry. It was thus sought that respondents considered the car logos without being consciously aware of the specific image-schematic visual inputs they included.

b) In the second questionnaire, the same image-schematic visual cues used in questionnaire one were again presented to our participants, but this time in isolation from specific car logos. This questionnaire was designed to assess the validity of H1 by analyzing our participants' understanding of the semantics traditionally associated with the image-schematic visual representations under consideration. By way of illustration, the use of bounded figures (i.e., CONTAINER schema) was considered in relation to the conceptualization of the notions of safety and protection. More specifically, this part of our analysis was intended to ascertain whether the semantic correlation between car logos and their built-in image schemas, observed in the results from the first questionnaire, could actually be due to the image-schematic elements used in the brand logos, and not to other types of stimuli.

This second questionnaire consisted in five additional questions. Question 7 explored the influence of CONTAINER visual cues in the activation of concepts such as protection and safety (hypothesis H1.1). Questions 8 and 9 crossed the notion of speed with the use of several visual hints for the FORCE image schema (i.e., vectors and italics), as stated in hypothesis H1.2. Finally, questions 10 and 11 analyzed the effects of using different fonts in the understanding of the semantics associated with the ATTRIBUTE schema (i.e., heavy-light, and big-small, respectively), in order to assess the validity of hypothesis H1.3.

For each question in the surveys, respondents were presented with a limited number of car logos and were asked to rate them on a 7-point Likert scale. The survey took on average about 10 minutes to complete.

Since one of the factors of the study was between-subjects (i.e., language groups) and the other was within-subjects (i.e., car logos), the data collected through the questionnaires was analyzed using a mixed two-way ANOVA with repeated measurements. Results were, at a later stage, complemented with specific within-subjects ANOVAS for each language group when necessary.

Section 3.2 offers a detailed description of the results obtained for each of the questions.

## 3.2 Results and discussion

### 3.2.1 Questionnaire 1: Assessing the global understanding of the semantics of car logos including visual cues of image schemas in their layout

In question 1, the category of minis was matched with the image schema of ATTRIBUTE (big-small) under the assumption that the use of some visual inputs for the latter (i.e., capital letters or an alternation of capitals and lowercase letters) would convey an idea of a *small, but spacious* car, while the opposite (i.e., the exclusive use of lowercase letters) would be more readily associated with the notion of a *small, not spacious* car. Three variants of the *Alfa Romeo Mito* logo, corresponding to the three aforementioned visual cues, were compared in the analysis:

Logo 1	Logo 2	Logo 3
<b>MiTo</b>	<b>MITO</b>	<i>mito</i>

Fig. 4: *Alfa Romeo Mito* logos and the ATTRIBUTE (big-small) image schema<sup>5</sup>

For each of the three logos, participants were given a 7-point Likert scale ranging from 1 (small, not spacious) to 7 (small, but spacious). A mixed two-way ANOVA confirmed the significance of the relation between the use of different

<sup>5</sup> Logo 1: [[http://lakinplates.com.au/index.php?main\\_page=index&cPath=350\\_86\\_230](http://lakinplates.com.au/index.php?main_page=index&cPath=350_86_230); accessed June, 23rd, 2012]. Logos 2 and 3 are self-produced variations of the real logo (number 1).



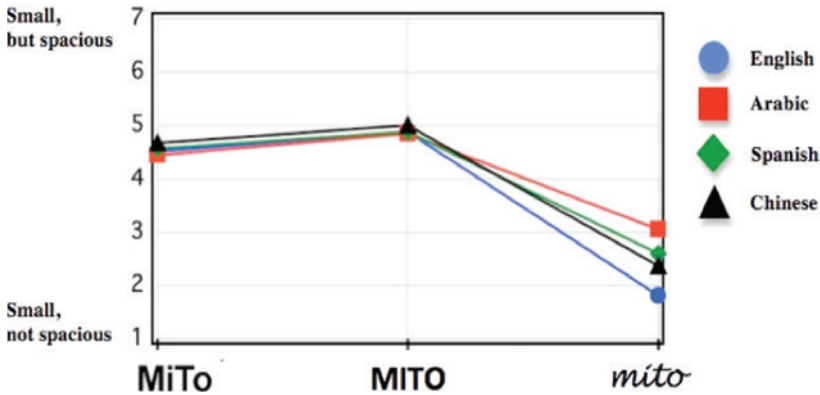


Fig. 5: Interaction graphic for question 1 (x-axis = logos; y-axis = semantic poles; lines = languages)

visual cues and diverse perceptions on the size of the car ( $F(2, 72) = 72.0$ ,  $MSE = 2.44$ ,  $p < 0.000001$ ,  $\eta^2 = 0.9$ ). The effect size was also very strong for the visual cues, amounting to 90% of the variance. In contrast,  $P$  value for the language groups ( $F(3, 216) = 1.42$ ,  $MSE = 1.38$ ,  $p < 0.237$ ,  $\eta^2 = 0.01$ ) and for their interaction with the different car logos was not significant ( $F(6, 216) = 1.84$ ,  $MSE = 4.02$ ,  $p < 0.092$ ,  $\eta^2 = 0.04$ ) suggesting that the perception of size for each visual cue was not influenced by the speakers' first languages. As can be observed in Figure 5, logo 3 (in lowercase letters) was significantly interpreted as depicting a small, not spacious car in comparison to both logo 2 (in capital letters) and logo 1 (displaying a combination of capital and lowercase letters). Differences in the interpretation of logo 1 and logo 2, however, were not as marked, suggesting that both the exclusive use of capital letters and the alternation of the latter with lowercase letters are equally tied to the perception of a more spacious vehicle. These results fully confirm both H2.1 and H2.2.

Some consideration should be given here to the issue of style and punctuation conventions. While Spanish and English speakers are familiar with the emphatic use of capital letters, these are simply not used with Arabic or Chinese characters. Still, in our survey speakers of all four languages associated capital letters with the idea of a more spacious car. Beyond specific language conventions, capital letters are by definition bigger in size than lowercase letters, and this feature is most probably the one that allows them to function as effective visual inputs of the ATTRIBUTE (big-small) schema for speakers of all four languages. Although it goes beyond the scope of this study, it would be of interest to perform similar experiments using parallel conventions for the expression of

emphasis in Arabic or Chinese. For instance, Arabic makes use of a form of elongation (i.e., the Tatweel or Kashida: قو— vs. قو) for this purpose (Habash 2010: 14). It would be interesting to explore if this alternative way of enlarging a character has similar effects to the use of capital letters in the perception of the size of a product.

Both the Tatweel and the capital letters conventions consist in an enlargement of the original characters, which licenses both resources as visual inputs of the ATTRIBUTE (big-small) schema. Therefore, both of them are expected to have a similar global reach. However, language-specific style conventions may at the same time make each of them more familiar and/or suitable for members of different speech communities. This familiarity could be understood as an added asset, but it would not invalidate the cross-cultural understanding of the visual input based on the underlying workings of the ATTRIBUTE image schema to which it is associated.

Question 2 was designed to test the hypothesis that the use of lowercase letters in the brands of minis, functioning as a visual cue of the ATTRIBUTE (big-small) image schema, could also be connected with further well-established cultural conventions (i.e., hypothesis H2.3). As shown in Section 2, one such convention establishes a link between the notion of smallness and the perception of small objects as charming, likeable, and desirable, as captured by the ICM of Size (Ruiz de Mendoza 1996).

Respondents answered a 7-point scale ranging from 1 (*small and not charming*) to 7 (*small, but charming*) in relation to the Alfa Romeo Mito logos in Figure 4 above. Next, a mixed two-way ANOVA was conducted, which again showed a main effect of the use of different visual cues on the respondents' perception of the car dimensions/attributes ( $F(2, 72) = 64.9$ ,  $MSE = 1.78$ ,  $p < 0.000001$ ,  $\eta^2 = 0.6$ ). P value for the different nationality groups was not significant ( $F(3, 216) = 2.45$ ,  $MSE = 1.83$ ,  $p < 0.065$ ,  $\eta^2 = 0.04$ ). However, the interaction between the use of different visual cues and language groups was also highly significant ( $F(6, 216) = 8.92$ ,  $MSE = 1.83$ ,  $p < 0.000001$ ,  $\eta^2 = 0.29$ ) suggesting a strong diversity in the way speakers of different languages interpreted those visual cues (see Figure 6). Effect size analysis corroborates these findings with a 60% of the variance due to the use of different visual cues and 28% due to the latter's interaction with the language groups.

In fact, the specific post-hoc comparisons performed for each group revealed that there was no consistent pattern of interpretation. Thus, Spanish and English speakers both perceived logo 3 (lowercase letters) as designating a small but, at the same time, charming/likeable car at a high degree of significance ( $p < 0.01$ ) in comparison with logo 1 (capital letters + lowercase letters). Chinese speakers did so at a lower level of significance ( $p < 0.05$ ). By contrast, Arabic

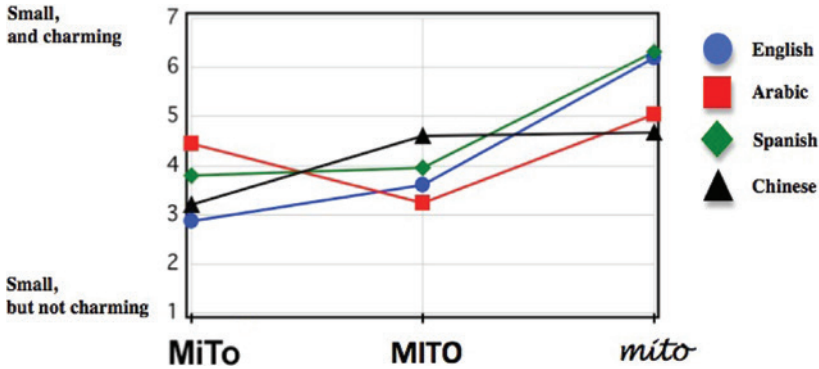


Fig. 6: Interaction graphic for question 2 (x-axis = logos; y-axis = semantic poles; lines = languages)

speakers didn't find logo 3 any much more charming than logo 1. Alternatively, in comparison with logo 2 (capital letters), logo 3 (lowercase letters) rated significantly more apt for the description of a small, but charming car for Spanish and English participants ( $p < 0.01$ ) and to a lesser extent also for Arabic speakers ( $p < 0.05$ ). Not so for the Chinese who did not find the brand in lowercase letters any more likeable or desirable than the one in capital letters. Finally, the comparison between logo 1 (capital letters + lowercase letters) and logo 2 (capital letters) was statistically significant ( $p < 0.01$ ) both for the group of Arabic respondents, who found the exclusive use of capital letters less compatible with the notion of a small, but charming car, and for Chinese speakers, who held the opposite view.

These results reject hypothesis H2.3 to the effect that idealized cognitive models (i.e., ICM of Size) seem too culture-specific to be of use in the design of semantically transparent international brands. In addition, this points to the need of performing further studies on the cultural conventions (ICMs) linked to the semantics of the different image schemas in order to establish a catalogue of red flags for their use in commercial brands. Using visual cues of image schemas, such as lowercase letters in question 2, to convey certain target notions (e.g., smallness) to speakers of different languages and cultures, arises as a potentially useful tool for branding specialists. However, the latter also need to be furnished with an inventory of the semantic conventions associated with those notions in different parts of the world, since, as shown by the results of question 2, they can largely differ from culture to culture.

Question 3 focused on the use of bold fonts and strokes as cues for the ATTRIBUTE (heavy-light) schema, thus looking for a potential correlation with the

understanding of the corresponding brand as referring to a heavy, solid, strong, and powerful type of car (i.e.,  $4 \times 4$ ). Figure 7 shows the three *Mitsubishi Captiva* logos included in the survey:<sup>6</sup>

1	2	3
<b>CAPTIVA</b>	<b>Captiva</b>	<b>CAPTIVA</b>

Fig. 7: *Mitsubishi Captiva* logos and the ATTRIBUTE (heavy-light) image schema

In this case the 7-point Likert scale ranged from 1 (light, less powerful) to 7 (heavy, powerful). The mixed ANOVA showed that both the use of bold strokes ( $F(2,72) = 173$ ,  $MSE = 1.99$ ,  $p < 0.000001$ ,  $\eta^2 = 0.87$ ) and to a lesser extent the nationality groups ( $F(3, 216) = 4.45$ ,  $MSE = 1.87$ ,  $p < 0.004$ ,  $\eta^2 = 0.03$ ) had a significant effect on the participants' conceptualization of the car behind the logos, as well as the existence of an interaction between the two effects ( $F(6, 216) = 7.21$ ,  $MSE = 1.87$ ,  $p < 0.000001$ ,  $\eta^2 = 0.10$ ). Effect size analysis corroborated the importance of the use of different fonts (86% of the variance) and to a lesser extent its interaction with the language groups (10% of the variance). In fact, as shall become apparent in the ensuing discussion, the results modulate the initial hypothesis (H2.4) that thick bold strokes and fonts cue the image schema of ATTRIBUTE (heavy-light), thus leading the consumer to picture a heavy, solid, powerful car.

Figure 8 shows how logo 3, combining capital letters with bold strokes, was clearly associated with the idea of a heavy, solid car for all four groups ( $p < 0.01$ ), thus partially verifying our initial hypothesis (H2.4). This was not the case, however, with logo 2 (combining lowercase letters with bold strokes). When compared to logo 1 (no bold strokes), logo 2 only yielded significant results for Chinese and English speakers ( $p < 0.01$ ). More surprisingly, the effect of the use of bold strokes in the interpretation of logo 2 was diametrically opposed for these two groups of participants. English respondents associated logo 2 (bold stroke plus lowercase letters) more strongly with a heavy and powerful car, while Chinese participants found this same logo markedly more suitable for a light, less powerful type of vehicle.

<sup>6</sup> Logo 1: [[http://www.logosdatabase.com/logo/captiva\\_77011945](http://www.logosdatabase.com/logo/captiva_77011945); accessed June, 23rd, 2012]; Logo 2: [<http://www.ktgreen.co.uk/chevrolet.html>; accessed June, 23rd, 2012]; Logo 3: [<http://www.viarural.com.ar/viarural.com.ar/insumosagropecuarios/ganaderos/vehiculos/chevrolet/chevrolet-captiva-08.htm>; accessed June, 23rd, 2012].

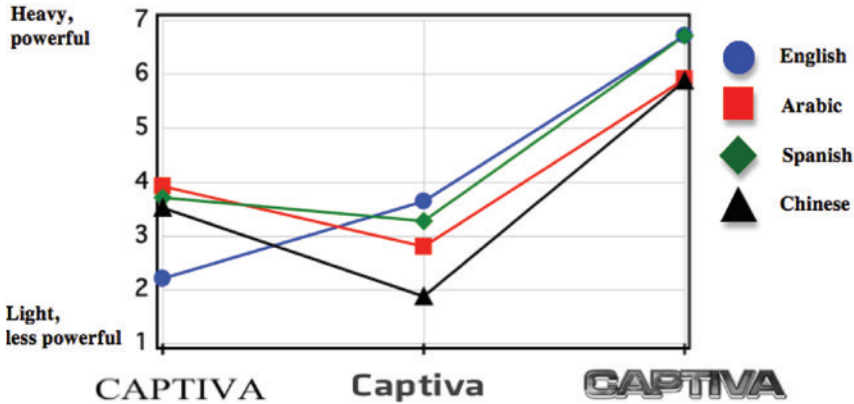


Fig. 8: Interaction graphic for question 3 (x-axis = logos; y-axis = semantic poles; lines = languages)

Under the light of these findings, H2.4 is only partially verified. Bold strokes, as a visual cue of the ATTRIBUTE (heavy-light) image schema, influence brand interpretation by activating the image of a heavy, powerful car. However, it should be noted that, according to our data, this correlation is only maintained cross-linguistically if the bold strokes are paired with the use of capital letters. Alternative combinations with lowercase letters, for instance, seem to be either not significant or largely culture-specific.

The association of Logo 3 with the notion of a heavier and more powerful car by speakers of all four languages is especially striking if considered against the diversity of conventions that these four languages display regarding the use of bold and capital letters. While Western languages, like English and Spanish, use bold for emphasis (i.e., in order to stress something and to give it *weight*), Arabic and Chinese are far from using this convention. A quick look at official documents of the United Nations, which are published in these four languages, among others, reveals that where Spanish and English display boldface, Chinese favors the use of the *Hei Ti* font. This is only natural, since applying boldface to a complex Chinese character, might turn it into an indecipherable blob. The Public Republic of China's National Standards on the Usage of Punctuation Marks also recommend the use of single dots under characters, or to the right of the character in vertical writing, in order to add emphasis.<sup>7</sup> In practice, however, Chinese

7 中華人民共和國國家標準標點符號用法 – The PRC's National Standards on the Usage of Punctuation Marks, [http://www.cmi.hku.hk/Ref/Article/article08/index.html; accessed, March 22nd, 2014].



Fig. 9: Fiat logos displaying visual cues of the FORCE image schema<sup>8</sup>

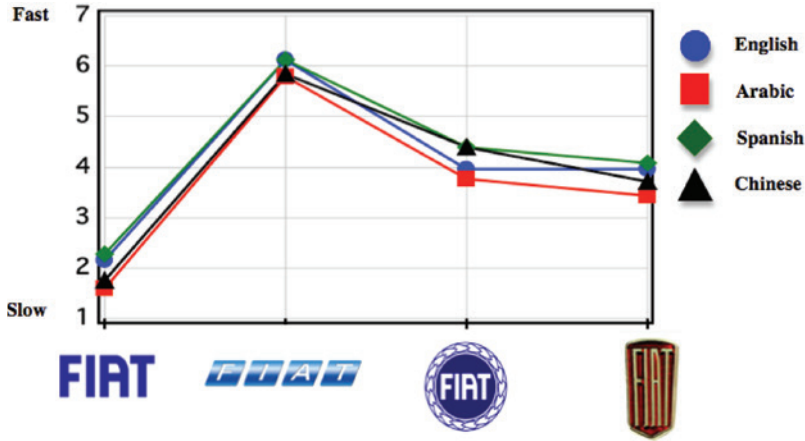
speakers often use quotation marks 「 」 for terms that require special emphasis (e.g. 「這一樣」). In Arabic, the Tatweel (lit. *elongation*) or Kashida (i.e., *\_*) is used to stretch words to indicate prominence (Habash 2010: 14), since capital letters and boldface is rarely used in original Arabic texts.

The fact that speakers of all four languages associate the combined use of capital letters and a boldface style with the notion of a heavier and powerful car, despite their diverging conventions of style and punctuation, could be taken as initial evidence pointing to the effectiveness of the ATTRIBUTE SCHEMA (heavy-light), when realized by this mixed visual input. Further investigation, however, is certainly required in order to rule out all possible interferences stemming from the diverse style and punctuation conventions involved.

Question 4 was aimed to test H2.5, which expected those brands including visual cues prompting the FORCE image schema (namely, italics, tilted characters, and vector-like shapes) to be more readily associated with fast cars. Figure 9 shows the logos chosen for this purpose: logo 1 is written in plain capital letters and does not display any of the aforementioned visual traits; logo 2 includes several visual cues associated with the FORCE image schema, such as the use of italics, and tilted frames with angled forms resembling vectors; logo 3 shows a chain of vector-like shapes around the brand name; and finally, logo 4 displays a shield-shaped frame with a downward-oriented vector form.

The two poles of the 7-point scale used for this specific question were those of 1 (slow) and 7 (fast). As illustrated by Figure 10, the mixed ANOVA yielded a main effect for the visual cues ( $F(3, 96) = 209$ ,  $MSE = 1.30$ ,  $p < 0.000001$ ,  $\eta^2 = 0.97$ ), and the nationality groups dimensions ( $F(3, 288) = 3.73$ ,  $MSE = 1.54$ ,  $p < 0.011$ ,  $\eta^2 = 0.02$ ), but a non-significant result for the interaction between them ( $F(9, 288) =$

<sup>8</sup> Logos 1, 2, 3, and 4: [<http://freecarlogos.blogspot.com.es/2013/02/fiat-logo.html>; accessed, June 22nd, 2012].



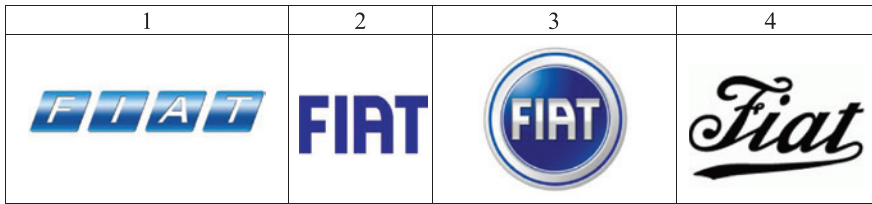
**Fig. 10:** Interaction graphic for question 4 (x-axis = logos; y-axis = semantic poles; lines = languages)

0.474,  $MSE = 1.54$ ,  $p < 0.892$ ,  $\eta^2 = 0.01$ ). The use of different visual cues, therefore, accounted for 97% of the total variability in the performance score.

These results suggest that the different native languages and origins of our participants did not influence their interpretation of the visual cues. This was confirmed by specific ANOVAs for each of the four participant groups, which yielded similar results. Using the Tukey HSD approach to multiple comparisons at the 0.01 level of significance, it was further revealed that:

1. For all four groups of participants, the association with the notion of a fast car was significantly higher for logos 3 and 4, and above all, for logo 2 than for logo 1. Since logos 2, 3, and 4 all displayed one or more of the visual cues associated with the FORCE image schema, these results seem to confirm the effectiveness of such visual inputs in activating this schema (hypothesis H2.5). In turn, they also make manifest the ability of the FORCE schema to pass on its semantic implications to the target product, which is eventually perceived as a faster car.
2. For all four groups of respondents, the perception of speed was not significantly different between logo 3 and logo 4, both rating significantly ( $p < 0.01$ ) lower than logo 2 in this respect. This tentatively points to the use of italics (logo 2) as a more effective strategy in the cueing of FORCE schemas than the inclusion of horizontal or vertical vector shapes (logos 3 and 4).

Question 5 crossed the four *Fiat* logos in Figure 11 below with the notions of protection and safety. Logos 1 and 3 display some visual cues of the CONTAINER



**Fig. 11:** Fiat logos displaying visual cues for the CONTAINER image schema<sup>9</sup>

image schema, while logos 2 and 4 do not. The theory of image schemas predicts a correlation between those brands displaying visual representations of the CONTAINER image schema and a perception of increased security and protection in their interpretation. Participants were asked to associate each of the logos in Figure 11 with a 7-point scale ranging from 1 (*minimum safety/protection*) to 7 (*maximum safety/protection*).

A mixed ANOVA once more revealed significant differences in the interpretation of the logos ( $F(3, 96) = 87.8$ ,  $MSE = 1.88$ ,  $p < 0.000001$ ,  $\eta^2 = 0.98$ ) and a non significant interaction with the different nationality groups ( $F(9, 288) = 0.48$ ,  $MSE = 1.45$ ,  $p < 0.889$ ,  $\eta^2 = 0.01$ ), thus providing support for H2.6: speakers of all four languages perceived the logos similarly in relation to the notions of protection and safety (see Figure 12). Using  $\eta^2$  as a measure of effect size, visual cues stand out as accounting for the 98% of the total variability.

Post-hoc Tukey's HSD tests offered further information about the effects of each visual configuration on the semantic interpretation of the logos:

1. Logo 3, displaying the brand name within a container shape, was readily associated with the idea of a safe car regardless of the language group being analyzed. This confirms our initial hypothesis (H2.6) that including visual cues of the CONTAINER schema in car logos succeeds in conveying a sense of protection and safety.
2. Counter to expectations, however, logo 1, which also included visual cues for the CONTAINER schema, yielded opposite and unexpected results, not being able to communicate any more feelings of protection and safety than the two logos that did not include container shapes in their layouts.<sup>10</sup>

<sup>9</sup> Logos 1, 2, and 3: [<http://freecarlogos.blogspot.com.es/2013/02/fiat-logo.html>; accessed, June, 22nd, 2012]. Logo 4: [<http://www.brandsoftheworld.com/logo/fiat-aviazione>; accessed June, 23rd, 2012].

<sup>10</sup> It could be argued that since logo 1 has already been rated as the fastest in question 4, participants may be reluctant to choose it also as representing the safest car in question 5.



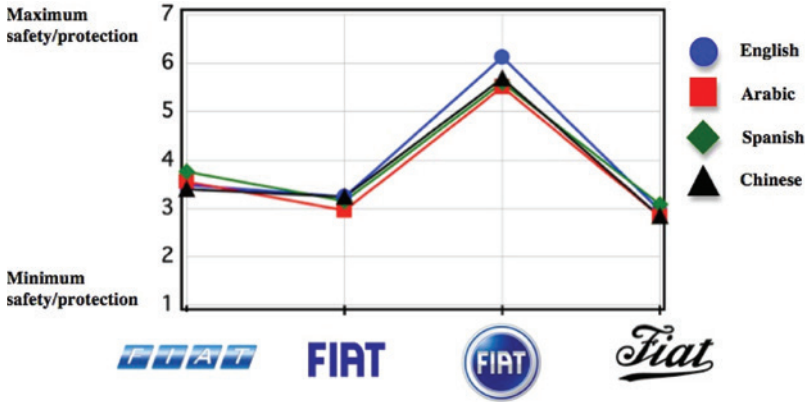


Fig. 12: Interaction graphic for question 5 (x-axis = logos; y-axis = semantic poles; lines = languages)

In light of the results above, room should be made for considerations regarding the potential effects of using slight variations of the typical bounded space employed in the visual representations of the CONTAINER schema. In fact, the containers in logos 1 and 3 differ in at least one relevant aspect: while logo 1 displays one small container framing each of the characters of the brand name, in logo 3 the full brand name was fully included within the boundaries of the container. As the post-hoc multivariate analysis revealed, such variants may influence the final interpretation of the brand. In this regard, question 6 below was useful in exploring the implications deriving from the use of four different visual configurations of the CONTAINER schema in four subtle variants of the *Fiat* logo. The latter are reproduced in Figure 13. The container in logo 1 displayed an open, broken boundary. Logo 3 combined features of the CONTAINER (i.e., a boundary) and FORCE (i.e., chained vectors) schemas. Logos 2 and 4 differed as to the thickness of the container boundaries and the three-dimensional effect of the boundary in logo 2. As in the previous question, participants were asked to rate these logos in relation to a 7-point scale ranging from 1 (minimum safety/protection) to 7 (maximum safety/protection).

The mixed ANOVA attested a significant difference in the visual cues dimension ( $F(3, 96) = 78.1$ ,  $MSE = 1.61$ ,  $p < 0.000001$ ,  $\eta^2 = 0.98$ ). The different visual layouts of the CONTAINER schema were thus proved to have an impact on the

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The notion of a fast car need not be necessarily at odds with that of a safe one. Manufactures of sports cars (which are prototypically fast cars) also claim safety as one of the assets of their models.



Fig. 13: Different instances of the CONTAINER schema in four *Fiat* logos<sup>11</sup>

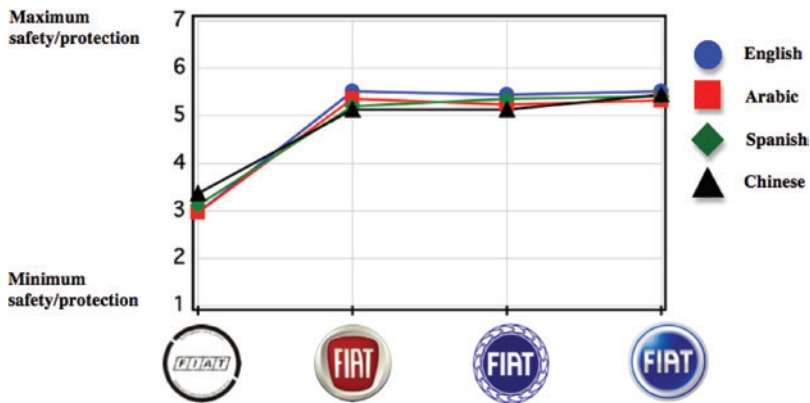


Fig. 14: Interaction graphic for question 6 (x-axis = logos; y-axis = semantic poles; lines = languages)

participants' perception of the degree of safety/protection associated with each car logo, with a big effect size amounting to 98% of the total variance of performance score. In addition, no significant effect was found either between the different nationality groups ( $F(3, 288) = 0.22$ ,  $MSE = 1.59$ ,  $p < 0.883$ ,  $\eta^2 = 0.002$ ) or in their interaction with the visual cues ( $F(9, 288) = 0.42$ ,  $MSE = 1.59$ ,  $p < 0.925$ ,  $\eta^2 = 0.02$ ). As shown in Figure 14, these findings point to the fact that participants of all four languages associate the notion of protection with those logos displaying unbroken, continuous boundaries (i.e., logos 2, 3, and 4) to a higher degree than with those showing a broken open boundary (i.e., logo 1).

<sup>11</sup> Logo 1: [[http://www.customgobos.co.za/Gallery\\_Pic/fiat%20logo.jpg](http://www.customgobos.co.za/Gallery_Pic/fiat%20logo.jpg); accessed June, 21st, 2012]; Logos 2, 3, and 4: [<http://freecarlogos.blogspot.com.es/2013/02/fiat-logo.html>; accessed, June, 22nd, 2012].

These findings also point to a potential interaction with the image schema of SPLITTING, to the effect that fragmentation of the container boundaries (as in logo 1 in question 6) or the use of the container schema in a fragmented way (as in the tiled logo (i.e., logo 1) in question 5) prevents them from achieving high ratings in safety and protection. Fragmentation and splitting activate images of broken entities, which would be felt incongruous with the notion of a safe car.

Multiple post-hoc comparisons between logos 2, 3, and 4 did not yield any significant difference for any of the four nationality groups, which leads to the conclusion that considerations of safety and protection are not apparently affected by the combination with other schemas (i.e., FORCE image schema in the case of logo 3) or by the thickness/three-dimensional effects of the container's boundary (i.e., logos 2 and 3).

### 3.2.2 Questionnaire two: Assessing the global understanding of visual cues for the image schemas of CONTAINER, FORCE, and ATTRIBUTE

The data collected through questionnaire two was expected to help us explore the potential association of the image schemas of ATTRIBUTE (big-small; heavy-light), CONTAINER, and FORCE with the notions of size/weight/power, protection/safety, and speed respectively, in isolation from the different car categories/logos under study. In attesting this association, H1 would be verified, thus providing additional support for the second of our research hypotheses (H2), to the effect that the correlation between the car brands/logos included in this analysis and their related semantic interpretations (i.e., spacious, powerful, safe, fast cars, respectively) can actually originate in the underlying workings of the aforementioned image schemas.

Question 7 explored the effects of visual configurations for the CONTAINER schema in the activation of concepts such as protection and safety. As can be seen in Figure 15, the visual cues provided for that purpose included a two-

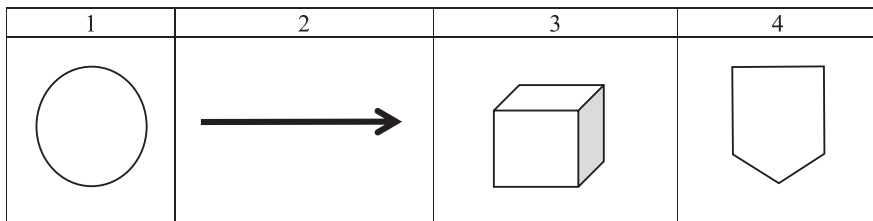


Fig. 15: Visual inputs included in question 7 and 8

dimensional container (image 1), a three-dimensional container (image 3), and a two-dimensional container combined with a vector-like shape (image 4). Image 2, in the form of an arrow/vector (i.e., traditional representation of the FORCE image schema) did not belong to the category of visual cues for the CONTAINER schema. The 7-point scale ranked from 1 (*minimum safety/protection*) to 7 (*maximum safety/protection*).

The output of the mixed ANOVA points to a significant main effect of the visual cue dimension ( $F(3,96) = 95.0$ ,  $MSE = 2.31$ ,  $p < 0.000001$ ,  $\eta^2 = 0.92$ ). As illustrated by Figure 16 below, image 2 was connected with the idea of protection to a significantly lower degree than the other three images. This pattern was consistent for all languages, thus adding further evidence in support of the hypothesis that visual cues for the CONTAINER image schema are readily associated with a sense of protection.

While  $p$  value for the different language groups is not significant ( $F(3, 288) = 2.20$ ,  $MSE = 2.00$ ,  $p < 0.088$ ,  $\eta^2 = 0.02$ ), its interaction with the visual cues is so ( $F(9, 288) = 2.23$ ,  $MSE = 2.00$ ,  $p < 0.020$ ,  $\eta^2 = 0.06$ ), accounting for 5.6% of the variance. It can be concluded, therefore, that there exists some variability in how speakers of different languages interpret some of the images in Figure 15. Specific ANOVAs for each of the groups were required in order to clarify these results.

The post-hoc Tukey tests revealed some asymmetries when comparing the interpretation of images 1, 3, and 4 by each of the four groups of participants. In this regard, Arabic and Chinese speakers found these three images equally apt for the task of conveying an idea of protection (i.e., the analysis of the data showed no marked differences in their post-hoc comparison neither at  $p < 0.01$ , nor at

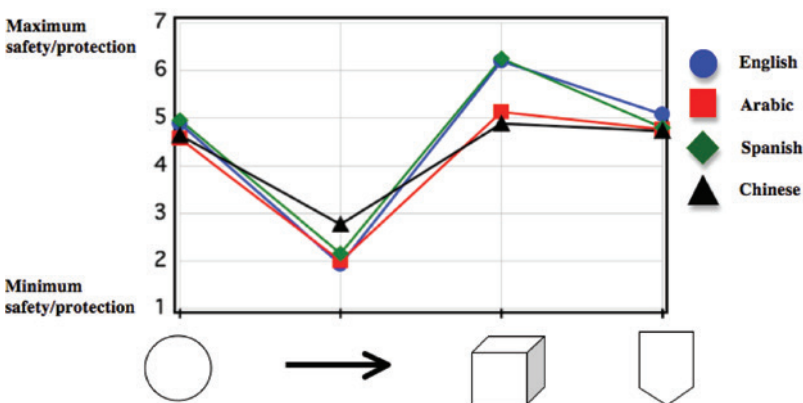


Fig. 16: Interaction graphic for question 7. (x-axis = image-schematic visual inputs; y-axis = semantic poles; lines = languages)

$p < 0.05$  levels of significance). The post-hoc analysis of the Spanish and English data did not report any main effect between images 1 and 4 either, but it did inform of a significant effect (at  $p < 0.01$ ) between image 3, on the one hand, and images 1 and 4, on the other. For speakers of these two languages, the three dimensional container in image 3 was more readily associated with a feeling of protection. These results timidly contradict those arising from question 6 above, where the three-dimensional flavor of logo 2 (in Figure 13) did not yield any significant difference in interpretation for speakers of any of the four languages involved. This may be due to the fact that the three-dimensionality of logo 2 (in Figure 13) was not as clearly marked as that in logo 3 (in Figure 15). In any case, further studies would be needed in order to clarify the scope of the effects deriving from the use of visual cues displaying slightly different configurations and shapes.

In question 8, the visual inputs in Figure 15 were put to the test a second time in order to evaluate their degree of association with the notion of speed. The mixed two-way ANOVA attested both a significant effect of the visual cues dimension ( $F(3, 96) = 136$ ,  $MSE = 1.87$ ,  $p < 0.000001$ ,  $\eta^2 = 0.96$ ) and of its interaction with the four nationality groups ( $F(9, 288) = 2.31$ ,  $MSE = 1.50$ ,  $p < 0.016$ ,  $\eta^2 = 0.04$ ). 95% of the total variability was due to the visual cues effect: speakers of all four languages tied in vector-shaped images 2 and 4 with the notion of speed at high levels of significance ( $p < .01$  and  $p < .05$  respectively, see Figure 17). This further confirms the hypothesis that vector-shaped visual representations of the FORCE schema are readily associated with the notion of speed as predicted in

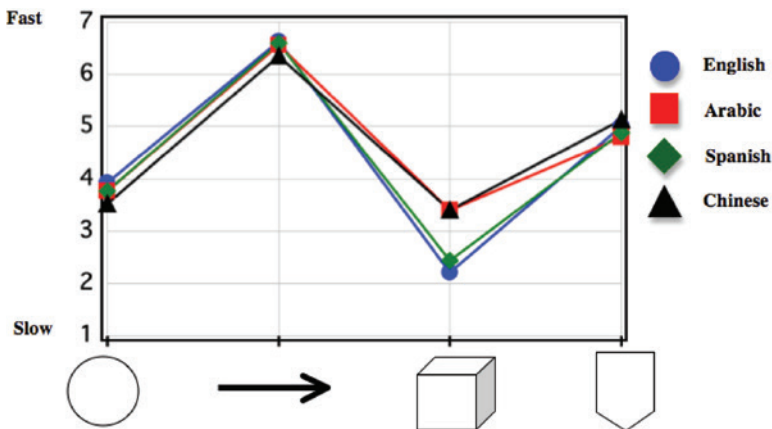


Fig. 17: Interaction graphic for question 8 (x-axis = image-schematic visual inputs; y-axis = semantic poles; lines = languages)

hypothesis H1.2. This is the case even when the vector points downwards (i.e., image 4). The lower degree of significance for logo 4 was only to be expected due to its mixed nature combining features of both the CONTAINER (i.e., two-dimensional bounded space) and the FORCE (i.e., downward vector shape) schemas.

Differences arose, however, among the nationality groups in their interpretation of images 1 and 3. Thus, once again Arabic and Chinese speakers found no significant difference between them in connection with the conceptualization of speed. Both images rated similarly lower in comparison to image 2 for these two language groups (at  $p < 0.01$ ). Spanish and English speakers, however, perceived a distinction between the use of image 1 and image 3: the three-dimensional container in image 3 rated significantly lower in the expression of the notion of speed (at  $p < 0.01$ ). These results suggest a potential functionality of two-dimensional circular visual layouts, traditionally related to the idea of containment (logo 1), for the expression of other notions, such as that of speed in the two aforementioned languages. Although it exceeds the limits of the present research, such interactional patterns arise as a promising field of study from which interesting implications may be drawn for the design of internationally-valid brands.

Question 9 deals with the specific use of italics as a visual cue for the FORCE image schema. The association of tilted letters with the FORCE schema is experientially grounded in many everyday life situations: trees leaning forward under the force of a hurricane, entities leaning backwards as a result of a fast forward movement, etc. In the analysis of the data from questionnaire one, it was shown that this type of font was effortlessly paired with the notion of fast cars. In fact, the degree of effectiveness of italics in the task of conveying a feeling of speed was shown to be markedly higher than that of other visual hints (e.g., vector-shaped containers, chained vectors, etc.). Question 9 attempts to determine whether this connection between the use of italics and the notion of speed still arises in a neutral context and in isolation from the influence of specific car brand logos. Participants were asked to rate each of the chains of letters in Figure 18, according to a 7-point scale from 1 (slow) to 7 (fast).

Figure 19 illustrates how the analysis of variance straightforwardly confirmed the main effect of the use of italics in the expression of speed ( $F(1, 48) =$

1	2
<i>ASDFÑLKJ</i>	ASDFÑLKJ

Fig. 18: Visual inputs included in question 9

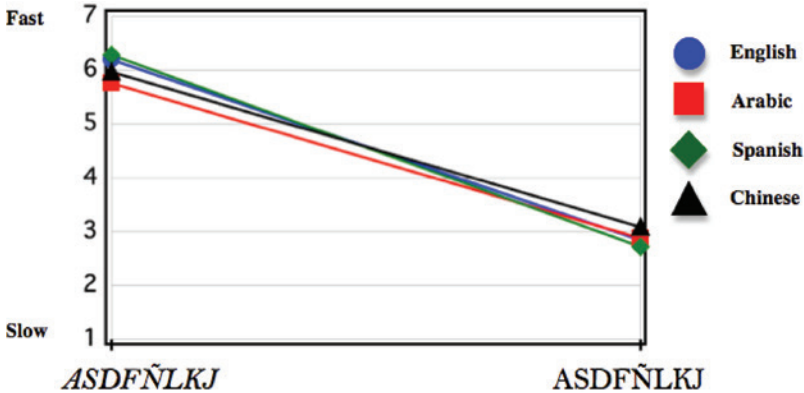


Fig. 19: Interaction graphic for question 9 (x-axis = image-schematic visual inputs; y-axis = semantic poles; lines = languages)

368, MSE = 1.37,  $p < 0.000001$ ,  $\eta^2 = 0.99$ ), amounting to 98% of the total variance of performance score. No significant effect was found for the language groups ( $F(3, 144) = 0.36$ , MSE = 1.30,  $p < 0.781$ ,  $\eta^2 = 0.002$ ) or their interaction with the visual cues dimension ( $F(3, 144) = 1.14$ , MSE = 1.30,  $p < 0.336$ ,  $\eta^2 = 0.01$ ). This provides additional support for the effectiveness of italics as visual representations of the FORCE image schema in the four language groups under scrutiny.

Finally, questions 10 and 11 were designed to analyze the effects of different fonts in the understanding of the ATTRIBUTE (big-small; heavy-light) schema. More specifically, question 10 explored the correlation between the use of bold fonts/thick strokes and concepts such as weight and power on a 7-point scale (from (1) *light, less powerful* to (7) *heavy/powerful*):

1	2
<b>ASDFÑLKJ</b>	ASDFÑLKJ

Fig. 20: Visual inputs included in question 10

Question 11 dealt with the potential association between the use of lower-case letters/capital letters and the conceptualization of the notions of size and space on a 7-point scale ranging from 1 (*small, little spacious*) to 7 (*large, highly spacious*):

1	2
asdfñlkj	ASDFÑLKJ

Fig. 21: Visual inputs included in question 11

In both cases, the statistical analysis of the data returned a significant main effect for the type of font. In question 10, the use of bold strokes was significantly connected with a sense of higher weight and power ( $F(1, 48) = 542, MSE = 1.16, p < 0.000001, \eta^2 = 0.99$ ). No significant effect was found for the language groups ( $F(3, 144) = 101, MSE = 1.30, p < 0.392, \eta^2 = 0.01$ ) or their interaction with the visual cues ( $F(3, 144) = 0.93, MSE = 1.30, p < 0.426, \eta^2 = 0.01$ ) (see Figure 22 below).

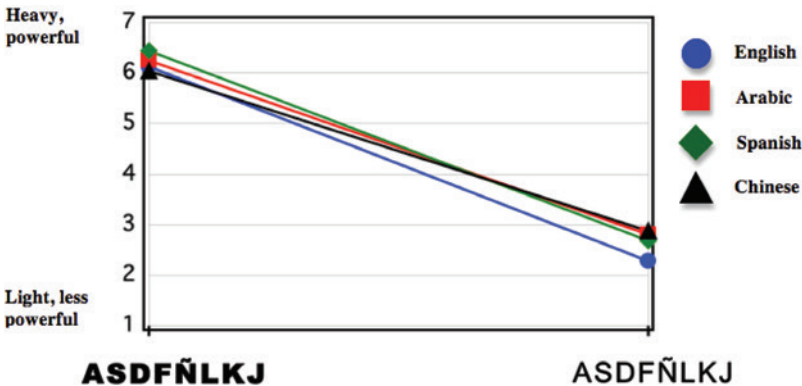


Fig. 22: Interaction graphic for question 10 (x-axis = image-schematic visual inputs; y-axis = semantic poles; lines = languages)

Likewise, the analysis of the data from question 11 yielded a significant impact of the use of capital letters on the conceptualization of a larger, more spacious entity ( $F(1, 48) = 597, MSE = 1.04, p < 0.000001, \eta^2 = 0.99$ ) independently of the language of the respondents ( $F(3,144) = 1.03, MSE = 1.12, p < 0.381, \eta^2 = 0.01$ ). The effect size for the visual cue dimension was markedly strong, adding up to 99% of the total variance.

Both sets of results provide additional evidence in support of our initial hypothesis (H1.3) that different types of fonts and type styles may function as visual layouts of the ATTRIBUTE image schema. This is so independently of the language group under consideration.



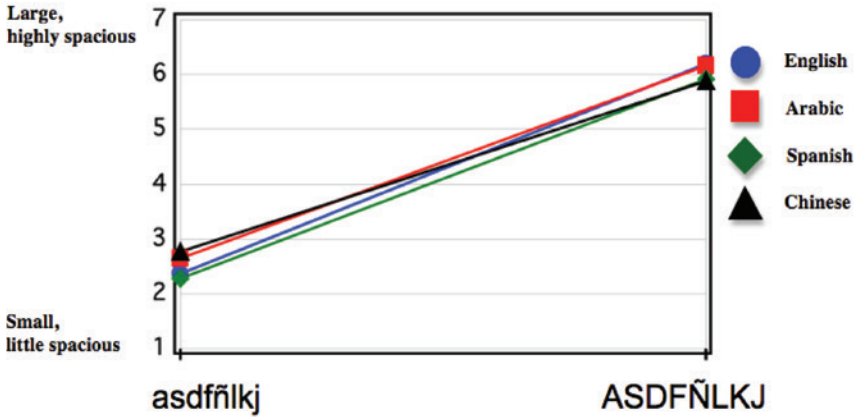


Fig. 23: Interaction graphic for question 11 (x-axis = image-schematic visual inputs; y-axis = semantic poles; lines = languages)

## 4 Summary of findings, discussion, and final remarks

This paper has approached the process of international brand name design from a cognitive perspective. Drawing on previous theoretical studies pointing to the potential of image schemas as sound strategies for global communication, we have searched for empirical evidence supporting this connection.

In our research, we have first crossed the basic semantics (i.e., size, weight, protection, and speed) of three image schemas (i.e., ATTRIBUTE (big-small; heavy-light), CONTAINER, and FORCE) with the interpretation of several car brands (and their related logos) containing visual cues for the aforementioned schemas. The analysis of the data yields a clear, consistent, cross-cultural correlation between the use of certain image-schematic visual hints and the interpretation of the corresponding brands in a way compatible with the basic semantic gist of the specific image schemas at work.

A second questionnaire has been designed to examine the potential existence of a similar correlation between the use of independent image-schematic visual cues and the meaning deriving from the internal logic of the corresponding image schemas. The results stemming from this second inquiry are compatible with those of case study one and, thus, they provide further evidence in favor of the relevant role of image schemas in providing brands with an international semantic core.

More specifically, the following relevant facts were observed:

1. The use of lowercase vs. capital letters, or a combination of both, triggers the activation of the ATTRIBUTE schema (small-big). In relation to the car brand under scrutiny (i.e., *Alfa Romeo MiTo*), it was observed that the use of either capital letters or, to a lesser extent, a combination of capital and lowercase letters was interpreted by speakers of all four languages under study to mean a small, but spacious car, as opposed to the use of lowercase letters, which was matched with the idea of a small, not spacious vehicle. By conveying a sense of spaciousness, the use of the former two fonts in the brand logo of the *Alfa Romeo MiTo*, therefore, led consumers to reinterpret in a more positive way what is, in essence, a small type of car.

In this first foray into the relevance of image schemas in the branding and naming process, only one of the most straightforward meanings associated with the ATTRIBUTE schema (i.e., size in terms of spaciousness) has been assessed. Nevertheless, being as it is an embodied experience, size qualifies as a sound source domain for primary metaphors. Further exploration of this territory is very likely to reveal that the ability of capital vs. lowercase fonts to activate the ATTRIBUTE (small-big) schema may have more far-reaching implications for the branding industry than the ones stemming from the present analysis. Primary metaphors arise from basic experiential perceptions and correlations, and are highly unconscious. Moreover, given that humans everywhere share the same basic patterns of sensorimotor experience, primary metaphors based on the latter are expected to be productive in languages around the world (Grady 1997, 2007; Johnson 1999; Lakoff and Johnson 1999; Feldman 2004). In fact, they are so entrenched in our physical experience of reality that in some cases both domains involved in the metaphorical mapping become conflated and experienced as a complex gestalt (Johnson 1999). This is the case, for instance, when we are hugged or held affectionately and the resultant WARMTH is conflated with the expression of AFFECTION. Of interest to our discussion is the fact that one such group of primary metaphors relates the physical domain of size to different abstract domains and, in particular, to some subjective fields of evaluation (e.g., something being important or not, good or bad, etc.). Thus, the IMPORTANT IS BIG and POWERFUL IS BIG primary metaphors have been shown to largely influence people's reactions when prompted with visual cues differing in size. Valenzuela and Soriano (2008) have carried out a series of experiments in which subjects were asked to choose either *friendship* or *money* as the most important life factor for them. In the experiment they were presented with these two words, whose size had been manipulated so that one of them was 20 pt. font, while the other was 12 pt. font. It was observed that people were faster in their choice of the more important factor when the size of the corresponding word was metaphor-coherent (i.e., big in size) than in the inverse case. In a similar vein, Schubert et al. (2009) looked into

the relationship between size and power. Subjects were asked to assign a social group to one of two categories: powerful or powerless. The words for these two categories were written in different font sizes. Again, people reacted quicker and more accurately when the stimulus font size matched the primary metaphor POWERFUL IS BIG than in the inverse cases.

Branding designers using different font sizes in the creation of new brand names need to be aware of these facts. Even if the interaction between the universality and culture-specificity of metaphors (see Kövecses 2007; Ibarretxe-Antuñano 2008, 2013; Yu 2009) is still in need of further clarification, primary metaphors, which make an extensive use of image schemas as their source domains, arise as a promising area of investigation for the branding and marketing industries.

2. The cross-cultural functionality of the combined use of idealized cognitive models (i.e., the ICM of Size) and some of the image schemas under consideration (i.e., the ATTRIBUTE (small-big) schema) could not be determined on the basis of the data. These results are likely due to the culture-specific nature of propositional ICMs and are, unfortunately, of little use for the creation of international brands. They do open up, however, new paths of investigation. Thus, supplementary research is needed in order to evaluate how specific cultural models or orientations may influence consumers' interpretation of brands based on image-schematic cues in different parts of the world. Lowercase letters, as shown in the present study, activate the ATTRIBUTE (small) schema equally well in all four cultures under scrutiny. Nevertheless, our study also reveals that the perception of smallness in relation to a particular target product (a car in the case under consideration) lacks cross-cultural systematicity. The activation of the ATTRIBUTE (small) schema through the use of lowercase letters (i.e., *mito*) was not found to be straightforwardly associated with the sense of charm and likeability that the ICM of Size may confer to small objects. Only English and Spanish-speaking participants seem to share a clear common conceptualization of small cars as charming and desirable. These results fare well with Kimmel's (2008: 83) reflections on cultural embodiment to the extent that it is necessary "to recognize that image schemas are also acquired and refined by culture-specific practices throughout socialization. Bodily interaction with other bodies, social space or artifacts as well as bodily participation in rituals and everyday life substantially flesh out each individual's image-schematic inventory."

Therefore, branding specialists need to be informed of the fact that the use of image-schematic cues in the construction of new brands is an effective resource for conveying primary notions (smallness, force, etc.). But, at a later stage of the brand creation process, attention should be paid to exploring the different

culture-specific interpretations of those primary concepts, as well as the connotations and potential implications they may bring about across borders. In this respect, human value priorities have already been extensively used to explain cross-cultural differences in both consumer behavior (Shavitt et al. 2006; Shavitt et al. 2008) and psychological research (Oyserman et al. 2002). The exploration of the interaction or interplay between image schemas and different cultural orientations and preferences (Torelli et al. 2012), in situations where image schemas are presented with related cultural models that contradict or support the underlying attribute, force, or containers dimensions of the image schemas, arises as a necessary field of research for the purposes of cross-cultural commercial communication.

3. Bold fonts and strokes also arise as an interesting visual resource for the expression of notions of power, heaviness, and solidness. As evidenced in the analysis, these fonts are capable of activating the image schema of ATTRIBUTE (heavy) and its corresponding meaning implications. This effect, however, was only maintained cross-culturally when bold fonts were used in combination with capital letters. Thus, the *Mitsubishi Captiva* jeep logo displaying capital letters with bold strokes was internationally accepted as the one corresponding to a sturdier, more powerful 4 × 4. These results provide evidence in favor of the cross-cultural validity of the POWER IS BIG primary metaphor, on the one hand, and also of the effectiveness of making the stimulus font size match this metaphor when creating a new brand name intended for the international markets.

4. Our analysis reveals a good performance of vectors and, above all, italics and tilted letters for the activation of the FORCE schema and, in turn, for conveying a sense of speed to a global audience. The adequacy of italics and tilted letters, in particular, for the activation of the FORCE schema has a strong experiential grounding in many naturally occurring phenomena: trees leaning forward under the force of the wind, entities pushed backwards as a result of the speed of a car, the aerodynamic shape of high-speed vehicles, etc. Interestingly enough, vectors were able to convey a sense of velocity even if they had a downward orientation, instead of the more orthodox horizontal, rightward-oriented directionality. Their arrow-shaped, directional topology, seems to bring motion to mind regardless of their orientation.

5. Containment shapes, such as circles and cubes, have been confirmed as sound visual inputs for the activation of the CONTAINER image schema and its logical entailments of protection and safety, as illustrated by many of the *Fiat* logos included in this study. In this regard, however, branding professionals should be cognizant of potential interactions with the schema of SPLITTING.

Container shapes displaying broken boundaries (*Fiat* logo 1 in Figure 13), or brand names in which each of their letters is contained in a separate container (*Fiat* logo 1 in Figure 11), yield different results. Broken and fragmented containers are unable to convey a sense of protection in any of the four language groups under consideration. This follows from the basic logic of the CONTAINER schema, according to which the experience of unbroken containers usually involves protection of the entities inside them from the dangers outside. This can only be expected from the grounding of this schema on common everyday experience where there are actual containers that protect the entities inside them (e.g., a house). It could be argued that containers can equally well restrict the freedom of entities rather than protect them (see Peña Cervel 2003). Nevertheless, an essential genre convention of the advertising discourse is its forthright commitment to make positive claims about a product. Therefore, all other things being equal, consumers will be expected to choose the positive interpretation of the internal logic of the CONTAINER schema. Future research, however, should look at those cases in which this choice may be influenced and even reversed by the simultaneous use of two or more image schemas, specially when the logical implications of one of them may point to a particular interpretation of the other. An example of this would be the concurrent use of the ATTRIBUTE (small) and the CONTAINER schemas in relation to a small car. It would be interesting to see if reference to the small dimensions of the car through the brand name cueing of the ATTRIBUTE schema may constrain the interpretation of the CONTAINER schema towards a more negative meaning (e.g., lack of comfort and freedom of movement inside it as opposed to its protective nature). Such type of potentially negative interactions should be identified, since they are obvious red flags in the process of brand name creation.

Image schemas do not make a brand successful on their own, but all in all, our findings suggest that an image-schematic approach to the realm of international commercial communication is well suited to its growing need of reaching a global audience. The strategy of visually cuing image schemas allows the branding specialist to largely avoid the cultural specificity of language and of other richer visual (non experiential) symbols. This is so, according to our data, especially when the key attributes of the product under consideration coincide with the primary notions activated by the visual image schema included in its brand. Image schemas can, therefore, be added to the so far limited inventory of strategies for the design of cross-culturally valid brands. The analysis has also drawn attention to some areas in which additional research is needed. These include the warning signals arising from (1) the use of specific configurations of a visual cue associated with a particular image schema, (2) the interaction of image schemas with related cultural models, (3) the interaction between image schemas and language-specific

conventions affecting the visual inputs (e.g., style and punctuation norms); and (4) the combination of two or more visual cues corresponding to different image schemas. The data in our study reveals potential neutralizing or intensifying effects on the international flavor of image schemas as a result of these interactions. These issues deserve careful consideration and open up new fields for future research in the area of cross-cultural commercial communication.

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## Appendix 1. Questionnaire for English respondents

**Age:**

**Nationality:**

**First Language:**

**Gender:**

1. Look at these three logos for the *Alfa Romeo Mito* (a type of mini). Rate each of them from 1 to 7, taking into account that 1 means *small, not spacious* and 7 means *small, but spacious*.

	(small, not spacious) 1-2-3-4-5-6-7 (small, but spacious)
<b>MiTo</b>	
<b>MITO</b>	
<i>mito</i>	





2. Look at these three logos for the *Alfa Romeo Mito* (a type of mini). Rate each of them from 1 to 7, taking into account that 1 means *small and not charming car* and 7 means *small, but charming car*.

	(small and not charming) 1-2-3-4-5-6-7 (small, but charming)
<b>MiTo</b>	
<b>MITO</b>	
<i>mito</i>	





3. Rate these logos for the *Mitsubishi Captiva* (4 × 4) from 1 to 7, taking into account that 1 means *light, less powerful* and 7 means *heavy, powerful*.

	(light, less powerful)1-2-3-4-5-6-7(heavy, powerful)
<b>CAPTIVA</b>	
<b>Captiva</b>	
<b>CAPTIVA</b>	





4. Look at the SHAPES of the following logos. Rate each of them from 1 to 7, taking into account that 1 means *slow* and 7 means *fast*.

	(slow) 1-2-3-4-5-6-7 (fast)
	
	
	
	

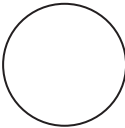

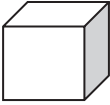
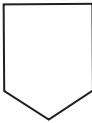
5. Look at the SHAPES of the following logos. Rate each of them from 1 to 7, taking into account that 1 means *minimum safety/protection* and 7 means *maximum safety/protection*.

	(minimum safety/protection)1-2-3-4-5-6-7(maximum safety/protection)
	
	
	
	

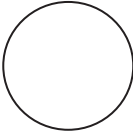

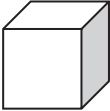
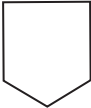
6. Look at the SHAPES of the following logos. Rate each of them from 1 to 7, taking into account that 1 means *minimum safety/protection* and 7 means *maximum safety/protection*.

	(minimum safety/protection) 1-2-3-4-5-6-7 (maximum safety/protection)
	
	
	
	

7. Rate the following shapes from 1 to 7, taking into account that 1 means *minimum safety/protection* and 7 means *maximum safety/protection*.

	(minimum safety/protection) 1-2-3-4-5-6-7 (maximum safety/protection)
	
	
	
	

8. Rate the following shapes from 1 to 7, taking into account that 1 means *slow* and 7 means *fast*.

	(slow) 1-2-3-4-5-6-7 (fast)
	
	
	
	

9. Rate the following letters from 1 to 7, taking into account that 1 means *slow* and 7 means *fast*.

	(slow) 1-2-3-4-5-6-7 (fast)
<i>ASDFÑLKJ</i>	
ASDFÑLKJ	

10. Rate the following letters from 1 to 7, taking into account that 1 means *light, less powerful* and 7 means *heavy, powerful*.

	(light, less powerful) 1-2-3-4-5-6-7 (heavy, powerful)
<b>ASDFÑLKJ</b>	
ASDFÑLKJ	

11. Rate the following letters from 1 to 7, taking into account that 1 means *small, little spacious* and 7 means *large, highly spacious*.

	(small, little spacious) 1-2-3-4-5-6-7 (large, highly spacious)
asdfñlkj	
ASDFÑLKJ	