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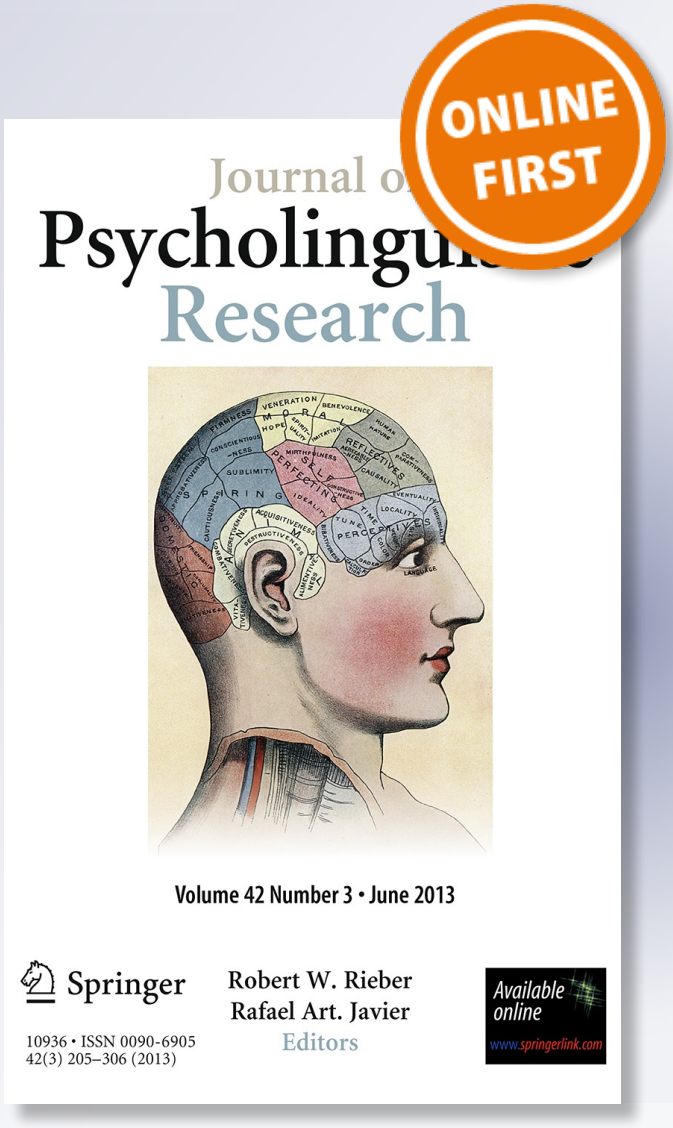

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Spain is Not Greece: How Metaphors are Understood

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Abstract Metaphoric expressions are pervasive and powerful communication tools. The present report sheds light on two questions: how do we extract meaning from metaphors and similes, and are these two tropes interchangeable? Existing models propose different mechanisms for metaphor comprehension: comparison, categorization, and a shift from comparison to categorization as metaphors become conventionalized. While the categorization model allows for the possibility that metaphors and similes are not always interchangeable, all the variants of the comparison model assume equivalence of meaning between the two tropes. The findings reported here rule out this assumption: they show that metaphors and similes may express different, and even incompatible meanings. Aptness, rather than conventionalization, seems to determine processing mechanisms: apt metaphors, both novel and conventionalized, are understood as categorizations, while similes and inapt metaphors are understood as comparisons.

Keywords Metaphor · Simile · Comparison · Categorization

"We're not Greece", reassured President Obama at a press conference in July 2011. The previous year, Spanish finance minister Elena Salgado had aimed to alleviate economic concerns: "Spain is not Greece", followed months later by: "Spain is neither Ireland nor Portugal." George Papaconstantinou, the Greek finance minister, jumped right in: "Greece is not Ireland," he charged, at the same time as Irish finance minister Brian Lenihan declared: "Ireland is not in Greek territory." Refusing to be out-metaphored, Angel Gurria, secretary-general of the Organization for Economic Cooperation and Development, reassured and clarified: "Neither Spain nor Portugal is Ireland."

How do we make sense of this deluge of metaphors, other than by staying attuned to the financial markets worldwide? How do we come to understand and derive meaning from figurative utterances, and does it matter if we express them as metaphors or similes? Existing

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models propose two different mechanisms for metaphor comprehension: comparison and categorization.

According to the comparison view (Ortony 1979; Gentner 1983; Fogelin 1988), metaphors of the form X is a Y, such as *Some lawyers are sharks*, where the X term is the metaphor topic and the Y term is the metaphor vehicle, are recognized as implicit similes, e.g., *Some lawyers are like sharks*, and they are understood through a matching process: properties or relations of the topic and the vehicle are first extracted, and then checked against each other, with the most relevant ones being used as the grounds for the comparison.

Proponents of the categorization model (Glucksberg 2001; Glucksberg and Keysar 1990; Glucksberg and Haught 2006) make a different argument. Metaphors are understood not as comparisons, but as categorization statements. Similes, on the other hand, are understood as comparisons. In metaphor form, the vehicle term *sharks* refers to the class of vicious, predatory creatures, of which the literal shark is a prototype. In simile form, it is used to refer to the literal level, to the marine creature with fins and leathery skin.

A recent account aims to integrate the two approaches into a hybrid model called the "career of metaphor" (Bowdle and Gentner 2005; Gentner and Bowdle 2001). It claims that the processing of metaphors shifts from comparison to categorization, as novel metaphors are used repeatedly and thus become conventionalized.

A critical assumption of both the comparison and the career of metaphor accounts is that similes and metaphors are interchangeable and convey the same meaning. Comparison theorists thus view metaphors as implicit similes: the meaning of a metaphor is derived from converting it into its corresponding simile, so the interpretations of the two tropes must be identical. Similarly, proponents of the career of metaphor account assume equivalence of meaning between metaphors and similes. As Bowdle and Gentner (2005) put it: "because metaphoric categories are created as a byproduct of figurative comparisons, they do not affect the interpretation of these comparisons" (p. 198).

The categorization account, on the other hand, allows for the possibility that similes/comparisons and metaphors/categorical assertions could convey different meanings. Consider metaphors and their corresponding similes through the lens of the dual reference property of the metaphor vehicle. In the simile *Some lawyers are like old sharks*, the predicate *old sharks* refers to the literal term denoting marine creatures that are past their prime, hence slower, weaker, and not as vicious as younger sharks. The simile should therefore be interpreted to mean that some lawyers are weak, tired, and less aggressive. By contrast, in the metaphor *Some lawyers are old sharks*, the vehicle refers to the abstract category of vicious, predatory creatures, whose advanced age implies more experience and increased aggressiveness. Therefore, the metaphor should be taken to mean that some lawyers are shrewd, experienced and well-versed in their profession, like old pros.

The experiment reported below explored this important question: is it possible for metaphoric statements to have meanings that are radically different, as a function of whether they are presented as similes or metaphors? If so, then any theory of metaphor comprehension that assumes equivalence in meaning is fundamentally flawed. The study employs a new technique for generating novel metaphors: adjectives are used to modify the metaphor vehicle, i.e., the second term in the expression. These metaphors, of the type X is an A (adjective) Y, have not been previously studied experimentally.

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Method

Participants

Thirty-two undergraduate students from Rider University participated in this study for course credit. All were native speakers of English.

Materials

Novel metaphor vehicles, e.g., *old shark*, were generated for twenty nominal metaphors and similes of the type *The lawyer was (like) an old shark*. The metaphors were constructed by the experimenter, based on existing psychological research on figurative language. All the adjectives that modified the metaphor vehicle were selected such that they applied to both the topic and the vehicle, e.g., both lawyers and sharks can be described as old. For each pair of metaphor and its corresponding simile, we generated two paraphrases: a 'category paraphrase', which is compatible with the meaning of the metaphor, and a 'comparison paraphrase', which is compatible with the meaning of the simile. (See "Appendix" for a complete list of materials.) For the lawyer-shark example, the category paraphrase, consistent with the meaning of the metaphor *The lawyer was an old shark,* read: "The lawyer was shrewd, experienced, and well-versed." The comparison paraphrase, consistent with the meaning of the simile *The lawyer was like an old shark,* read: "The lawyer was weak, tired, and less aggressive."

All the paraphrases were based on interpretations generated by six independent participants who were asked to describe what they understood each metaphoric expression to mean. Each participant only saw one form of the figurative statement: metaphor or simile. They were instructed to simply paraphrase each statement, in their own words, by producing a sentence that captured the meaning of the given statement. The final experimental items consisted of the most succinct and comprehensive wording that captured the underlying meaning of these paraphrases.

Procedure

Two separate groups of participants were tested: one saw metaphors, and the other saw similes. Below each expression, there were two possible interpretations: one was category-biased and the other was comparison-biased. The participants' task was to rate each of the two interpretations on a scale from 0 (not at all) to 6 (extremely well) based on how well they thought the interpretation captured the meaning of the metaphor. The order of presentation for the metaphoric statements was randomized and the order of the two interpretations was counterbalanced.

Results and Discussion

The results from a 2 (statement form) $\times$ 2 (paraphrase type) analysis of variance supported the prediction that metaphors and similes can convey distinct meanings (see Fig. 1). The category paraphrases were rated higher for metaphors ($M = 6.52, SD = 0.79$) than for similes ($M = 5.56, SD = 1.03$), while the comparison paraphrases were rated higher for similes ($M = 5.61, SD = 0.87$) than for metaphors ($M = 4.55, SD = 1.13$). This interaction was reliable, $F(1, 30) = 17.27$, $p < 0.0001$, $\eta_p^2 = 0.365$.

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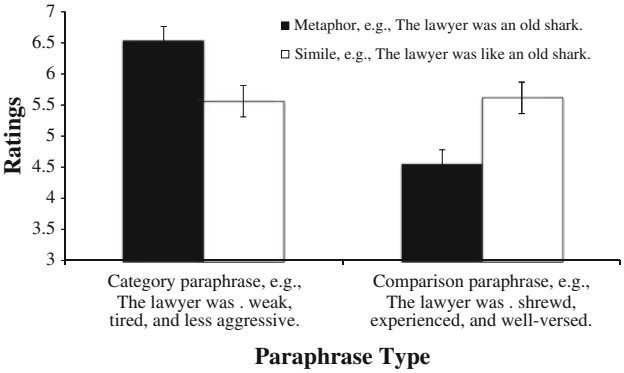

Fig. 1 Paraphrase ratings by type: category and comparison, and by statement form: metaphor and simile

The results are consistent with the categorization account and the dual reference property of the metaphor vehicle. When presented in simile form, the *lawyers/old sharks* statement refers to the literal category of *old sharks*, which is formed by marine creatures that are normally considered vicious and predatory, but that are also old, hence not as aggressive, quick or sharp-toothed as young sharks. The metaphoric vehicle refers to the abstract category of *old sharks*, which includes things or people that are even more dangerous and very competent because of their old age and the experience that it implies.

A main effect of interpretation, $F(1, 30) = 15.49$, $p < 0.001$ shows that, overall, category paraphrases received higher ratings ($M = 6.04$, $SD = 1.03$) than comparison paraphrases ($M = 5.08$, $SD = 1.13$). According to the categorization view, metaphor vehicles, with their dual reference, prompt the access to the existing figurative referent. Simile predicates, on the other hand, should access the literal referent more readily. The effect of interpretation type was significant for metaphors, $t(15) = 5.7$, $p < 0.0001$, but not for similes, $t(15) = -0.156$, ns. A more sensitive follow-up measure of response times would likely yield a reliable effect for similes as well as metaphors.

Metaphors *can* express meanings that are distinct and often incompatible with the meanings of their corresponding similes. For instance, *His job was like a secure jail* was interpreted to mean that the job is confining and virtually impossible to escape from, i.e., like a high-security prison. The metaphor *His job was a secure jail* was interpreted to mean that the job was confining, but could be depended on for a long time. The dual reference property of the vehicle accounts for these striking differences well: the adjective modifies the literal predicate in the simile and the abstract, metaphorical category in the metaphor.

These findings challenge an important assumption made by both the career of metaphor account and classic comparison theories: the equivalence in meaning of metaphors and their corresponding similes. While the career of metaphor model does acknowledge the role of vehicle polysemy or dual reference, it assumes that this dual reference must be acquired through repeated use and is never present for novel metaphors, which are processed as comparisons.

First, it seems unlikely that *apt* novel metaphors, the sort that end up being used frequently in a language, are processed as comparisons. The metaphor "Spain is not Greece" was apt from its very first introduction into language: the metaphor vehicle, Greece, represents the unambiguous category of large-scale financial disasters. It seems unlikely that upon hearing this metaphor anyone would engage in comparisons of the sort: both Spain and Greece are Mediterranean countries, Spain is a kingdom while Greece is not, etc.

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Second, novel metaphors that are *not apt* do not usually become conventionalized: aptness is a prerequisite for conventionalization. Metaphors that are not apt must be processed as comparisons, and are often introduced along with an explanatory note. Consider, for example, the NPR Valentine's card that reads: "My love for you is [like] the John D. and Catherine T. MacArthur Foundation. It supports me." The greeting is compelling and funny because of its lack of aptness, which requires the clever explanatory punch-line. Indeed, much of the humorous use of metaphors consists of imposing an unexpected comparison, based on a secondary (usually literal) property of the metaphor vehicle. It is unlikely that such metaphors will become conventionalized.

Third, the abstract, figurative category, which career-of-metaphor proponents argue is created as a byproduct of the initial comparison process, is based on the literal simile predicate—and it is this very predicate (which will become the future metaphor vehicle) that drives the conventionalization process. Therefore, the initial meaning will not only *not* change, but it will be reinforced after repeated use. So, a shift from comparison to categorization cannot involve any significant changes in meaning—quite the opposite: the initial meaning is preserved and reinforced by repeated use, a key criterion for conventionalization.

Unlike similes, apt metaphors, both novel and conventionalized, are understood via a categorization-based, interactive property attribution process. Spain is not Greece, and metaphors are not similes.

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Appendix

Metaphors/Similes and their paraphrases: 'category', consistent with the meaning of the metaphor, and 'comparison', consistent with the meaning of the simile

Metaphor/simile	Category paraphrase	Comparison paraphrase
The lawyer was (like) an old shark	The lawyer was shrewd, experienced, and well-versed	The lawyer was weak, tired, and less aggressive
Some ideas are (like) small diamonds	Some ideas are valuable and, if developed, can become big diamonds	Some ideas are valuable, but disappointing compared to big diamonds
Some books are (like) cheap drugs	Some books are well written	Some books are poorly written
Their marriage is (like) a predictable rollercoaster	Their marriage is passionate and exciting	Their marriage lacks passion and excitement
The employee was (like) a young wolf	The employee was ambitious, competent, and promising as a leader	The employee was energetic, but unfocused and lacking skills
Their political campaign was (like) an expensive circus	Their political campaign was entertaining and succeeded in attracting voters	Their political campaign, though entertaining, failed to relate to the voters
Her smile was (like) a fake magnet	Her smile was attractive	Her smile was not attractive

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Appendix continued

Metaphor/simile	Category paraphrase	Comparison paraphrase
His failure was (like) an open wound	His failure seemed very painful	His failure seemed very recent
His anger was (like) a dormant volcano	The risk of an imminent outburst was fairly high	The risk of an imminent outburst was fairly low
Their relationship was (like) a legal war	There were good, justified reasons for conflict	There was no quick resolution in sight
His job was (like) a secure jail	His job was confining, but his income was guaranteed and he could not get fired	His job was confining, a dead end from which it was impossible to escape
Their theory was (like) an undisputed sandcastle	Everyone perceived their theory as frail and unconvincing	Everyone perceived their theory as solid and convincing
Some workers are (like) bad robots	Some workers cannot be passive and like to make their own decisions	Some workers are passive and prone to making mistakes
The senator was (like) a valued clown	The senator was politically influential and important to his party	The senator was good at making people laugh during tense moments
College admissions are (like) a new lottery	College admissions are unpredictable and can seem random	College admissions are nail-biting and they draw many participants
His personal character was (like) a polished rock	His personal character was smooth and flawless	His personal character was slippery and prone to downfalls
His advice was (like) old garbage	His advice had not changed over the years	His advice had useless and bad information
Her business partner was (like) a disguised witch	Her business partner was mean and revengeful, but at first sight appeared nice and friendly	Her business partner was nice and friendly, but at first sight appeared mean and revengeful
The actress was (like) a beautiful legend	The actress was accomplished and stunning	The actress was mysterious and imaginative
The professor's lecture was (like) a weak storm	The professor's lecture was brief and disappointing	The professor's lecture was somewhat engaging and inspiring

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