

# *Anomaly in novel metaphor and experimental tests\**

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## **Abstract**

*In this article, we assess some of the empirical work available in relation to anomaly in novel metaphor. This revision allows us to argue that the results of reaction time experiments do not provide, as many theorists have argued (Gibbs and Gerrig 1989; Keysar and Glucksberg 1992), evidence against any version of anomaly; at most they can be used against anomaly as categorial falsity. In addition, we assess the argument against anomaly based on the results of reaction time experiments to show that it is unsound. Thus, we show that contextual abnormality, a sub-propositional version of anomaly (Romero and Soria 1997/1998), cannot be rejected as one of the necessary identification conditions of novel metaphor. Furthermore, contextual abnormality is supported by the results of recent empirical studies on metaphor processing designed by neuropsychologists to test hypotheses related specifically with anomaly in novel metaphor (Tatter et al. 2002; Ahrens et al. 2007).*

“It is hard to find in pragmatics crucial evidence [experimental or not] that would clearly confirm one claim and disconfirm another.” (Sperber and Noveck 2004: 7)

## **1. Introduction: Negation of anomaly in psycholinguistics**

Scholars have often argued for anomaly as a condition of novel metaphor identification.<sup>1</sup> Nevertheless, there is not a unique way to characterize it. From a standard conception of metaphor as implicature, anomaly is understood as a categorial falsity. Grice (1975: 34) exemplifies it with (1)

(1) [A tells B:] You are the cream in my coffee.

and explains that the speaker, A, literally says, in a first propositional stage which involves a semantic anomaly, *that B is the cream in A's coffee*, something A believes to be “categorially false” and thus cannot be what A means. So, with (1), A metaphorically implicates, in a second propositional stage, *that B is A's pride and joy*. This conception of metaphor as implicature is often conceived as a psychological speculation about the temporal sequence of the cognitive processes. However, as Bach (2006) claims, this is in fact a misconception of Grice's theory of implicature, which was merely intended to exhibit the sorts of information that a hearer needs to take into account for explaining metaphor and how this information is logically organized.

In any case, this position was considered problematic, among other things, because not all metaphors need a categorial falsity and not all metaphors can fix a literal propositional content. These problems with semantic anomaly led several theorists to modify this

conception of anomaly. Within a pragmatic view of metaphor as implicature, semantic anomaly is converted in Ortony's (1980) contextual anomaly or in Kittay's (1987) incongruity. Kittay's incongruity, in contrast to Ortony's contextual anomaly, does not depend on processing a literal proposition but on processing literally the sub-propositional constituents. Our proposal to account for anomaly (Romero and Soria's 1997/1998), called "contextual abnormality", is also sub-propositional but differs from Kittay's incongruity in that it is completely independent from the view of metaphor as implicature.

Despite the fact that many theorists have tried to produce an adequate notion of *anomaly* for metaphor, many psycholinguists (Gerrig 1989; Gibbs and Gerrig 1989; Keysar and Glucksberg 1992; Gibbs 1994) have rejected the view that metaphor identification is a part of the first step in metaphor processing. Their most persuasive attack, based on empirical evidence from reaction time experiments, is their argument against any version of anomaly. Although this argument takes different forms depending on the particular theoretical proposal under consideration, it always incorporates the premise that there is identity of reaction times in interpreting literal and metaphoric uses of language. Their argument can be divided in two parts.

The first incorporates a rejection of two standard pragmatic proposals on metaphor as implicature. In particular, they express disapproval of anomaly as categorial falsity in metaphor identification and a two-stage interpretation of metaphoric utterances, first literally and then metaphorically. This first part of the argument is as follows. They assume that anomaly understood as a categorial falsity entails that metaphoric comprehension is located after the literal comprehension (Gibbs 1992: 580) or that metaphoric interpretation is produced in two propositional stages. They also accept that metaphoric interpretation in two propositional stages entails that there must be additional time taken in metaphoric interpretation (Way 1991: 51-52). As the latter consequent is false because certain reaction time experiments show that the interpretation of literal and metaphoric utterances exhibit equivalent processing times, the two propositional stages in metaphoric interpretation must be rejected; metaphoric comprehension does not entail prior literal propositional interpretation. This involves the rejection of the categorial falsity criterion as well.

Many cognitive metaphor theorists also hold a stronger proposal than the rejection of categorial falsity; they claim, in what we call "the second part of the argument" that any identification criterion of metaphor should be avoided. This proposal is a conclusion that depends on the equivalence in processing times and two additional assumptions. The first links the equivalence in reaction times with the proposal that the same procedures are used in literal and metaphoric interpretation (they reject not only an additional interpretation process in novel metaphor but also any difference in the procedures for interpreting literal and metaphoric utterances). The second assumption is that if there is no specialized cognitive mechanism for metaphor processing, it makes no sense to establish an identification criterion to trigger that metaphoric mechanism.

In this paper, we assess the experimental evidence available in relation to anomaly in novel metaphor. This revision allows us to argue for our notion of contextual abnormality as a necessary condition of novel metaphor identification once we find that the result of reaction time experiments does not provide evidence against it. Indeed, we consider the first part of the previous argument -- the part that concludes in the rejection of the categorial falsity criterion -- unsound because, as we will see in section 2 below, the identical processing times conclusion is questionable on a closer inspection of psychological experiments. We review the experimental methods used in reaction time experiments and their design, and show the unreliability of some of them. Taking into account only those that are reliable, we find that

their results do not always show equivalent processing times in the interpretation of literal and metaphoric utterances; there is a lack of homogeneous results. Nevertheless, if experiments show that at least some metaphoric interpretations take no more time than the literal interpretations of utterances of the same expressions, semantic anomaly or categorial falsity cannot be defended as a necessary condition to trigger a two-stage interpretation process for all metaphors.

But, as we have reported above, semantic anomaly is not the only version of anomaly available. Thus, we assess the part of the argument against any identification criterion not only to show that it also is unsound but additionally to argue that there is no way to change it to avoid its unsoundness. We see this in section 3, where we question one of the assumptions in the second part of the argument: that if there is equivalence in processing times, the same procedures are used in the interpretation of the literal and the metaphoric use of language (this consequent in turn supports the idea that any conception of anomaly must be avoided). We propose that equivalence in processing times alone cannot warrant the assumption of identity in processing procedures. In addition if, as just indicated, reaction time experiments only sometimes support the postulation of equivalence in processing times, even less can they support postulation of identity of processing procedures. The part of the argument for rejecting anomaly in any version is irremediably unsound.

The metaphoric mechanism cannot be rejected from psycholinguistics' arguments against it. Indeed, as we consider in section 4, some of the current explanations of metaphoric interpretation involve a special mechanism. This allows us to support the objective of this article from a different angle: we argue that an elaboration of identification criteria for metaphor is not an unnecessary theoretical task and reaction time experiments do not provide evidence against it.

We can therefore rescue some versions of the anomaly account, those that do not entail an interpretation process in two propositional stages. In section 5, some sub-propositional conceptions of anomaly are considered: incongruity, contextual abnormality, and clash. These are compatible with the different results of reaction time experiments. In addition, there are other types of empirical evidence related to anomaly that, as we see in section 6, support anomaly in metaphor interpretation and do not entail two propositional stages. Thus we conclude, in section 7, that contextual abnormality (characterised as operating sub-propositionally) not only solves the problems that other anomaly proposals have but is compatible also with all experimental results and with the most explanatory theories of metaphoric interpretation.

## **2. Revision of reaction time experiments**

To make comparisons between literal and nonliteral uses of language, some psycholinguists run experiments using reaction times as an indication of a possible contrast between the processing of literal and metaphoric utterances. Most of them report that the results of their experiments show equivalent processing times. Experiments of this type are called "Reaction Time Experiments". Not all of them, however, focus on the same points. In particular, there are studies on the difference in reading times when interpreting literal and metaphoric uses of the same sentence (Gerrig 1989; Giora 1999), on effects of position of vehicle on metaphor understanding (Gerrig and Healy 1983), on interferences of literal truth on metaphoric utterances (Keysar 1989) and on comprehension differences between different types of metaphors (Gibbs 1990a; Onishi and Murphy 1993) to mention only a few (for more

information on the different views, see Budiu and Anderson (2002)). As equivalence in processing times is the result of reaction time experiments run to draw conclusions about the distinction between literal and metaphoric processing, we will consider their design in order to revise if that result can be justified.

Not all reaction time experiments follow the same methodology and thus their results are not always of the same kind. To begin with, we will have a look at some experiments which, in our opinion, are problematic if used to get to conclusions about the distinction between the metaphorical and the non-metaphorical. Indeed some of them do not compare literal and metaphoric uses and thus they are not useful to test whether the interpretation of literal and metaphoric utterances exhibit or not equivalent processing times. For example, Gerrig and Healy (1983: 668) compare two modes of metaphor presentation in terms of reaction time. When reaction times for (2) and (3) are compared,

- (2) The night sky was filled with drops of molten silver.
- (3) Drops of molten silver filled the night sky.

the results show that (3) takes longer to understand than (2). In this type of experiment the comparison is made between two metaphoric uses and still there is a difference in processing times. This shows that there may be aspects affecting the processing time which might not depend on the difference metaphor and non-metaphor. These aspects may be the way metaphor is presented or other aspects unconnected with metaphor such as the active/passive contrast.

Another unreliable experiment in relation to the distinction between literal and metaphoric utterance interpretation is provided by Onishi and Murphy (1993: 765). They compare the reading times of the metaphoric utterance of (4)

- (4) The cat is my princess.

with the literal utterance of (5),

- (5) The cat is my favourite.

a sentence by which, according to them, the speaker is communicating the same content. They also compare the reading times of the metaphoric reference of (6)

- (6) My princess won't eat. (When talking about the speaker's favourite cat)

with its literal paraphrase, (7)

- (7) My cat won't eat.

They suggest that there is an important difference between metaphoric predications such as "is my princess" in (4) and metaphoric referring expressions such as "My princess" in (6). When (4) and (6) are compared respectively with (5) and (7), the results show that while the metaphoric predications apparently take no more time than literal paraphrases, metaphoric reference does take significantly longer than literal reference. Experiments of this type are unreliable because if they involve different sentences when metaphoric/literal interpretations are compared, the reaction time could be affected again by other aspects unconnected to the

distinction between the literal and the metaphoric use of language.

This calls for a methodological constraint, to wit, that the comparison is significant only if we compare exactly the same expression in different contexts of use. Only the studies that satisfy this methodological constraint would serve to conclude something regarding identity of processing time. The comparison is possible, for example, with sentence (6) when talking about Letizia (literally a princess) or about the speaker's favourite cat.

Nevertheless some experiments remain unreliable even when satisfying the methodological constraint. They include both metaphoric and literal uses of the same expression, but do not always assess the reaction times for the metaphoric and literal interpretation respectively. In Keysar (1989), discussed in Keysar and Glucksberg (1992: 641), subjects were presented with two different uses of sentence (8)

(8) Rena lives in a castle.

where it was contextualized in two different ways:

(8<sub>L</sub>) [Rena, a retired rock star, has bought a chateau in France and, in this context, subjects read:] Rena lives in a castle.

(8<sub>M</sub>) [Rena has bought a small adobe box of a house in the middle of Arizona desert, in a private and secluded place and, in this context, subjects read:] Rena lives in a castle.

Subjects were then asked to assess the literal truth in each case. It transpired that subjects took longer to decide that (8) is literally false in (8<sub>M</sub>) than to say that it is literally true in (8<sub>L</sub>). They explained the result by saying that the metaphoric interpretation is automatic and interferes with the possibility of interpreting the utterance literally. Thus, it takes them longer to assess the literal falsity in (8<sub>M</sub>). But, in our opinion, the result just supports additional processing time for the literal and false interpretation of (8<sub>M</sub>) without indicating the processing time needed for its metaphoric interpretation. This result is compatible both with the proposal that the metaphoric utterance, (8<sub>M</sub>), is interpreted directly metaphoricly, delaying its literal and false interpretation, and with the proposal that metaphoric interpretation is not achieved directly but after a longer literal and false interpretation.

Another unreliable experiment, often reported in the literature (Steen 1994: 90), is the one in which subjects are presented with a target sentence such as (9)

(9) The hens clucked noisily.

which follows a passage either about a women's club meeting or about chickens on a farm. The result is that when contextual support increases, the time needed to interpret the metaphoric use of language decreases until becoming equivalent to the processing time for the literal. The time required for the metaphoric interpretation is equivalent to the processing time for the literal. The experiment conducted for example (9) is of no use since the utterance of (9) to talk about clucking women is a case of conventional metaphor. In cases such as these, processing times might be expected to be equivalent since the non-literal meanings of these metaphors have become conventionalized and thus can be accessed directly; nothing is proved about metaphor interpretation. Conventional metaphors and literal utterances are interpreted similarly, although conventionality in metaphor is a matter of degree (Romero and Soria 1998, 2005; Bowdle and Gentner 2005; Ahrens et al. 2007). The problem shown with example (9) is found in many experiments. This is the reason why some theorists, such as

Recanati (1995: 208), understand that the experiments showing equivalent reaction times do not permit us conclusively to reject the implicature view of metaphor. Nevertheless, in our opinion, this defence is inappropriate because (as we shall now show) it ignores the fact that there are tests in which novel metaphors are used and the results show equivalence in reaction times. If this is the case, not all the results can be explained with a standard theory of implicature.

Thus, in contrast to the previous set of experiments, there are some studies that satisfy the methodological constraint and support equivalence in processing times. Gerrig (1989), for instance, compares the reading time of the sentence (10)

(10) The winter wind gently tossed the lacy blanket.

when inserted in two different contexts, one leading to a literal interpretation and the other to a metaphoric one, as we can see respectively in (10<sub>L</sub>) and (10<sub>M</sub>)

(10<sub>L</sub>) [Joan didn't want to put her silk blanket in her automatic dryer. Although it was January, she risked putting it on the clothesline. And she uttered:] The winter wind gently tossed the lacy blanket.

(10<sub>M</sub>) [Joan looked out into her yard with great excitement. Over night, a layer of snow had covered the ground. And she uttered:] The winter wind gently tossed the lacy blanket.

Gerrig reports that there is no significant difference in reading times when interpreting the different uses in several examples of this kind. This type of experiment would support the equivalence in processing times thesis, since reaction time is compared between a literal and a metaphoric use of the same sentence and there are no other apparent distorting aspects.

Nevertheless, there are also some reaction time experiments that satisfy the methodological constraint and do not support equivalence in processing times. Giora (1997), for example, compares a metaphoric and a literal utterance of the sentence (11).

(11) Their bone density is not like ours.

The interpretation of the literal utterance (11<sub>L</sub>)

(11<sub>L</sub>) [Our granny had a fracture from just falling off a chair and was rushed to the hospital. I told my sister I never had a fracture from falling off a chair. She explained to me about elders:] Their bone density is not like ours.

involves less processing time than the interpretation of the metaphoric utterance (11<sub>M</sub>),

(11<sub>M</sub>) [Mary utters: My husband is terrible annoyed by his new boss. Every day he comes home even more depressed than he had been the day before. Somehow, he cannot adjust himself to the new situation. And Jane utters:] Their bone density is not like ours.

There is a heavier processing load for the interpretation of expressions used metaphorically, as in (11<sub>M</sub>), than for corresponding ones used literally, as in (11<sub>L</sub>). The results of experiments like this, confirmed by a great deal of empirical work (Giora 1999: 921), show that the interpretation of a metaphoric utterance of a sentence takes more time than the interpretation of a literal utterance of the same sentence. This type of result gives support to the asymmetric

dependence of non-conventional metaphoric meaning on conventional meaning. The cognitive process involved in the derivation of metaphoric non-conventional meaning from conventional meaning might be responsible for the increase in processing time. Identification criteria to trigger this derivation process might be necessary.

But what is important at this moment is that the results of different reaction time experiments do not always show equivalent times for metaphor processing and thus the first part of the argument is unsound. Some metaphors do not need more processing time (Gerrig's examples) and some do (Giora's examples). In order to generalize from the results that all metaphors need more processing time (or not), researchers must refute the opposite findings. If they do not, psychological reaction time experiments just show that the interpretations of literal and metaphoric utterances sometimes exhibit equivalent processing times and sometimes do not. This proposal recollects the varying results of the experiments. The question now is whether the first part of the argument can work even with the lack of homogeneous results in reaction times experiments. Do we really need all metaphors to show equivalent processing time to reject the semantic anomaly thesis? Not really. If semantic anomaly were a necessary condition of metaphor and the latter necessarily entailed more processing time, the results of the experiments should be non-equivalence in all cases. But as experiments show that at least some metaphors take equivalent processing times, semantic anomaly cannot be a necessary condition for metaphors.

We consider the first part of the argument unsound since, unless tests such as Giora's were refuted, equivalence in processing times cannot be supported. However, if we accept irregular rather than constant identity of processing times as the premise which is really supported by the empirical evidence, this first part of the argument is not only valid but also sound. The weaker assumption, the irregular processing-time identity, provides evidence against the two propositional stages thesis and thus against categorial falsity as a necessary condition of metaphor. In addition, as we will show in sections 5 and 6, there are also reasons for these rejections that do not depend on the empirical results from reaction time experiments.<sup>2</sup>

### **3. An untenable assumption in the argument**

Irregular rather than constant processing-time identity allows rejection of anomaly as categorial falsity, but does it also allow rejection of any conception of anomaly? Taking into account the way in which psycholinguists construct the argument for the rejection of any conception of anomaly, identity of processing times is required in all cases. Since that result is questionable, we will raise the issue of whether irregular processing-time identity can really do the job assigned to identity of processing times in the second part of the argument. But before that, we focus on the second part of the argument and argue that it relies upon an untenable assumption: that identity of processing times equates to identity in modes of processing. This assumption is manifest, for example, in the following quotations from Gibbs:

The general results of these experiments indicate that metaphor does not require specialized cognitive mechanisms to be understood and that metaphorical meanings can be recovered very rapidly during normal language processing.  
(Gibbs 1990b: 70)

There clearly exists a large body of experimental evidence against the idea that figurative language understanding requires special mental processes. ... This refutation of the standard pragmatic model has prompted psychologists to make two related claims about figurative language comprehension (Gibbs and Gerrig, 1989).

1. Comprehension does not take place in three different stages. Figurative language interpretation does not follow after an obligatory literal misanalysis.
2. Identical mental processes drive the comprehension of both literal and figurative utterances.

(Gibbs 1994: 109)

Although processing-time identity may be used to support the absence of an additional process applied in a second step, it is also compatible with an additional process that operates concurrently (Romero and Soria 2003: 176-182). In that sense, the rejection of two propositional stages in metaphor interpretation does not involve the rejection of any additional conceptual process in novel metaphor if the extra process occurs simultaneously. Even if metaphoric and literal interpretations depend on processes that take the same time, in our opinion this is compatible with those processes not being identical. What there cannot be is an additional interpretation process once the literal proposition is processed, as implicature theory claims. And the fact that there is no subsequent conceptual process does not bar a different conceptual process being involved.

As the assumption that identical reaction times necessarily equates to identical modes of processing is clearly untenable, the argument for the conclusions deriving from it is unsound (even without considering that processing-time identity is also irregular). We, then, do not accept that metaphoric and literal interpretations demand exactly the same cognitive processes. Of course, if we take into account the weaker assumption of irregular rather than constant processing-time identity, its connection with identity in modes of processing is still weaker; they cannot be equated. The idea that at least in some cases there are identical reaction times supports the rejection of two propositional stages and also permits the rejection of any proposal arguing always for an additional and sequential conceptual process in metaphor *after* the literal one; but nothing else. What experiments demonstrate, in our opinion, is that metaphoric and literal interpretations must depend on processes that sometimes take the same time, be them identical or not. Then, if the results of reaction time experiments are considered, metaphor can be taken to be interpreted with a process different from the literal. In this case, it would make sense to search for identification criteria, which do not involve interpretation in two propositional stages and do not take additional processing time, as a trigger of an interpretation different from the literal. Any sub-propositional conception of anomaly is an irreproachable theoretical option as a triggering condition of metaphoric interpretation.

Psycholinguists have normally ignored the problem of the assumption that times identity equates to processes identity, but some of them recognize it. Curiously enough, Gibbs is one of them. Indeed, in the same work in which he states the assumption quoted above, he also says:

There is just no way to refute the possibility that some special comprehension process operates, ..., simply on the basis of equivalent total times to read figurative and literal expressions.

... It is possible, however, to provide a parsimonious account of figurative language comprehension that does not rely on special processes.

(Gibbs 1994: 112)



This quotation clearly shows that certain assumptions were postulated as conclusions from the experiments but that these do not necessarily follow. The problem is that although Gibbs in 1994 already recognized it, it has been, and still is, maintained that the rejection of a special-process account of metaphor is experimentally supported. This “experimental evidence” has been considered a good enough reason to reject any proposal that does not accept it. In an attempt to avoid this, we have argued that at least with regard to reaction time experiments, the standard rejection of a special-process account of metaphor cannot be championed.

#### 4. Metaphor comprehension

It is true that without resorting to a special mechanism in metaphor comprehension, a parsimonious account of figurative language comprehension might be provided but the question is whether the parsimonious account has the same explanatory power as its alternatives. The parsimonious account or the proposal that there is no difference between the interpretation of metaphoric and non-metaphoric uses of language has been held by many theorists and not merely by those that considered experimental results as evidence in favour of it. This proposal, for example, has been maintained by categorization theories such as Class-inclusion Theory (Keysar and Glucksberg 1992; Glucksberg and Haught 2006) and Relevance Theory (Wilson and Carston 2006), for which metaphor interpretation simply involves a process of ad hoc concept construction which may also be involved in non-metaphoric utterances. It was additionally maintained by defendants of the Conceptual Metaphor Theory who, using the assumption that language is essentially metaphoric, claim that expressions such as “That took a long time” are metaphorical and are interpreted in the same way as other literal expressions such as “He walked a long way” or metaphors such as “My boss is a pussy cat”.

This proposal by some defendants of the Conceptual Metaphor Theory is, however, not really consistent with Lakoff and Johnson’s initial proposal in which conventional metaphors are interpreted literally and novel metaphors (a type of imaginative metaphor) are interpreted metaphorically (Lakoff and Johnson 1980; Romero and Soria 2005). The distinction between these two types of interpretation is then encouraged by the initial Conceptual Metaphor approach and nowadays it is gaining renewed attention. As Evans says:

Conceptual Metaphor Theory is not primarily (if at all) a theory *about* metaphor understanding in language. ... Conceptual Metaphor Theory is a theory concerned with backstage cognition. What is required, in addition, is a theory of how language deploys and interfaces with these non-linguistic knowledge structures—the conceptual metaphors—in service of figurative language understanding.

(Evans 2009: 281-282)

Even Gibbs, in his more recent work with Tendahl, now acknowledges the importance of characterising novel metaphor interpretation and accepts a *little* difference between the interpretation of metaphor and literal uses:

What motivates many novel metaphors that are not mere extensions or elaborations of conventional metaphors is a little more complicated than that. Cognitive linguists see the

existence of many novel metaphorical expressions as arising from complex blending processes that reflect ad hoc, creative, thought processes.  
(Tendahl and Gibbs 2008: 1834)

It is becoming increasingly recognised that novel metaphors are not interpreted in the same way as conventional metaphors (Bowdle and Gentner 2005) and, of course, in the same way as literal uses of language. Evans (2009: 298-299) claims, against the Pragglejaz Group (2007), that expressions such as “a long time” are concept collocations not appropriately thought of as involving metaphoric interpretation. He also claims that in metaphoric interpretation there is an “online process of *clash* resolution” not needed in the interpretation of the literal. In his approach, the target and the vehicle are established by context and the lexical concept that is established as the metaphoric vehicle is subject to clash resolution, that is, an adjustment of lexical meaning is required and no propositional literal stage is required. The pragmatic process of adjustment is *ad hoc* and sub-propositional.

This view of metaphor interpretation as involving a sub-propositional and ad hoc concept construction is also maintained by categorization theories in which it is claimed that the adjustment process is not different in nature in metaphor and non-metaphor. Glucksberg’s Class-inclusion Theory is the clear case and integrational linguists (Toolan 1996: 69-74) are sympathetic to this theory. Relevance theorists (Sperber and Wilson 1986/95; Wilson and Carston 2006) and other contextualists such as Recanati (2004) have also claimed that the meaning adjustment process in metaphor interpretation is just a case of loosening. Rather than giving an account of metaphor as involving a process peculiar to metaphor interpretation such as cross-domain mappings, they argue that, in the interpretation of metaphoric utterances, the denotation of the communicated concept becomes wider as a result of weakening the lexical encoded concept by dropping a logical or defining feature of it. For them this process is not peculiar to metaphor.

We agree with these views on the two important points related to online processing of metaphoric interpretation: the conceptual construction is sub-propositional and ad hoc. However, we reject the view of metaphor as loosening and defend the view of cross-domain mapping (for discussion, see Romero and Soria 2007, and Recanati 2007). We argue that in novel metaphor interpretation we need to specify a mechanism that works out how the resolution actually proceeds. In our opinion, the most explanatory theories of this mechanism are interaction theories. Black (1954, 1977) argued for the interaction of two subjects in metaphor interpretation, the primary subject (target) and the secondary subject (source). This interaction invites the hearer to select some of the secondary subject’s properties to construct a parallel “implicative complex” that can fit the primary subject (Black 1977: 442). Kittay (1987) developed this theory calling it “a perspectival theory of metaphor” and this idea of metaphor as presenting a new perspective is consistent with the current view of metaphor interpretation as a dynamic way of negotiating meaning from divergent perspectives (Cameron 2011). The Career of Metaphor Hypothesis of Bowdle and Gentner (2005) is also a development of the interaction view. Even new approaches of Conceptual Metaphor Theory, the best known development of interaction theory, have recently accepted that in novel metaphor we need to specify a metaphoric mechanism which differs from the literal:

we need to have a mechanism that works out the meaning of the utterance if a metaphorical utterance cannot be associated with a conceptual metaphor. (Tendahl and Gibbs 2008: 1843)

Theorists that only now accept that there is some specific mechanism in online processing of

metaphoric utterances (Tendahl and Gibbs 2008; Recanati 2007) resort to Blending Theory (Fauconnier and Turner 2002) to explain the most characteristic property of metaphor. When in Romero and Soria (2007) we tell Recanati that the sub-propositional process of meaning adjustment in metaphor necessarily involves some ad hoc cross-domain mechanism rather than loosening, he answers that in the interpretation of metaphor we need a “generic space” and:

... a ‘blended space’ in which features from both domains mix and emergent features show up (Fauconnier and Turner 2002). The extraction of generic structure is a form of loosening, but the apparition of emergent features is a form of enrichment, and the imaginary mixing of features from both the source and the target is the most characteristic property of metaphor. (Recanati 2007: 163)

It seems to us that this imaginary mixing of features (which is part of a sub-propositional pragmatic process) is an unavoidable part of any explanation of how novel metaphor is interpreted.

In addition, the idea that conventional metaphor understanding is more similar to literal than to metaphoric interpretation is consistent with empirically supported theories of meaning such as Giora’s Graded Salience Hypothesis and the Career of Metaphor Hypothesis (Bowdle and Gentner 2005). Giora asserts the priority of salient meanings, rather than literal meaning. The salient meaning of a word or an expression is its lexicalized meaning, a meaning retrievable from the mental lexicon rather than from the context. Factors contributing to (degrees of) lexical salience are conventionality, frequency, and familiarity. Giora’s findings support the idea that non-conventional meaning is not derived directly and thus give support to the asymmetric dependence of non-conventional metaphoric meaning on conventional meaning. The second model, which builds on the structure mapping approach to metaphor, is a current version of interaction theory that explains metaphor online interpretation by means of analogical reasoning.

In this way, current accounts of metaphoric comprehension (Gibbs 2006; Bowdle and Gentner 2005; Evans 2009; Cameron 2011), accept either explicitly or implicitly that metaphor interpretation involves some peculiarity such as “the imaginary mixing of features” (Recanati 2007), “the clash resolution” (Evans 2009) or the dynamic negotiation of meaning (Cameron 2011). The explanatory power of these views of metaphor interpretation is manifestly higher than the parsimonious account by means of which no difference should be recognised when interpreting metaphoric and non-metaphoric utterances. This brief exposition of some of the current explanations of the metaphoric mechanism allows us to support from a different angle the objective of this article: to point out that an elaboration of identification criteria for metaphor is not an unnecessary theoretical task. In so far as Kittay’s incongruity and our contextual abnormality are sub-propositional versions of anomaly and thus cannot be rejected by arguing that they should entail more processing time, they are irreproachable theoretical options as we explain in the next section.

## **5. Sub-propositional conceptions of anomaly**

From a rational rather than a psychological point of view, anomaly as categorial falsity was also considered problematic. Indeed, as we said at the beginning, not all metaphors need a categorial falsity, something the speaker believes to be false. For example, the metaphoric

utterance (12)

(12) [About the aging of professor emeritus, A utters:] The rock is becoming brittle with age.

does not exhibit a categorial falsity by means of their verbal expression.

Another problem that affects this criterion is that not all metaphors can fix a literal propositional content. The apparent violation of the first maxim of quality of the Cooperative Principle, “Do not say what you believe to be false” (Grice 1975: 34), entails that there is some false and literal propositional content as a first step, but the speaker of (13)

(13) [In wondering whether to take an umbrella or not, A asks B what the weather is like today and B utters:] The sky is crying.

does not make as if to say any literal proposition at all because (13) cannot be interpreted literally as far as our linguistic competence is concerned. Interpreting literally consists in obtaining a literal propositional content for the utterance, not only decoding the conventional meaning of lexical items. Categorial falsity is opposed to well-formedness and not to true proposition. Categorial falsity, thus, could be understood as a type of what Evans (2009: 274) calls “semanticality failure”. Semanticality relates to well-formed utterances and well-formed utterances are those that give rise to propositions. By contrast, utterances that fail to give rise to propositions are semantically anomalous, their semanticality failure is a consequence of a failure to successfully undergo fusion, thereby resulting in a string of meanings, but no proposition. Categorial falsity as a semanticality failure bars the deriving of a false proposition. There is no false proposition that acts as a first stage.

Ortony’s criterion of metaphoric identification, the contextual anomaly, solves the first problem. According to Ortony (1980), there is a contextual anomaly when a literal interpretation of an expression (word, phrase or sentence) fails to fit the context. Contextual anomaly arises from the apparent violation of the “Sincerity Postulate” and the “Relevance Postulate” instead of the flouting of the first maxim of quality, but these postulates also require a first propositional stage. His contextual anomaly account, framed within the theoretical view of metaphor as implicature, entails two propositional stages and thus it suffers not only from the problem that irregular rather than constant processing-time identity reveals for this type of proposal but also from the problem of having to accept that all linguistic units can be interpreted literally. However, as we have shown with the semanticality failure in (13), this task is not always possible.

Not all approaches on metaphor as implicature assume the two propositional stages thesis. Kittay’s proposal on metaphor, for example, involves the idea that metaphoric meanings form part of implicated content but her sub-propositional conception of the identification criterion is compatible, as is any sub-propositional conception, with the empirical results from reaction times experiments; it is compatible with the rejection of the two propositional stages thesis. What is interesting here is that Kittay’s (1987) criteria of metaphoric identification solve the above problems in a theoretical frame in which metaphor is explained as an implicature since she does not commit herself to the metaphoric interpretation in two propositional stages. Her criteria are the Incongruity Principle (IP) and the Independence of Applicability Conditions Principle (IACP). According to IP, there is some constituent of the metaphoric utterance which is incongruous when that utterance is given a literal (or first-order) interpretation. According to IACP, the applicability conditions of a sentence (truth conditions included), or a phrase, etc. can be different on a literal interpretation and on a metaphoric (or second-order)

interpretation. The incongruity in metaphor differs from incongruity sourced in error, incompetence, opting out and the like because there must be also a flouting of one of the maxims of quality or one of manner or the maxim of relation (Kittay 1987: 85) so that a conversational implicature can arise.

Now, the first problem is solved showing that there is an incongruity in (12). Kittay appeals to the Expressability Principle (EP), according to which the situational context can be expressed linguistically. So, in order to unveil the violation of the semantic combination rules (sc-rules) involved in a metaphor such as (12), (12) becomes (12\*)

(12\*) The old professor is a rock becoming brittle with age.

to exhibit the incongruity explicitly. The second problem showed with (13) is directly solved by her IP. Incongruity does not depend on processing a literal proposition but on processing literally the sub-propositional constituents to derive the second-order meanings that will allow non-incongruous composition of meaning.

Nevertheless, the incongruity must be understood as a flouting of one of the maxims of quality or one of manner or the maxim of relation. This is a case of implicature theory of metaphor without postulating the necessity of the two propositional stages thesis.<sup>3</sup> Kittay's proposal on metaphor as implicature does not necessarily involve interpretation in two propositional stages not just because her identification criterion is sub-propositional but also because, according to her, the cognitive process characteristic of metaphor interpretation is also sub-propositional. In this respect, Kittay's view of metaphor as implicature is different to the standard one. In order to clarify this difference, it is important to bear in mind that, if the cognitive process characteristic of metaphor interpretation is sub-propositional, it is possible to give an explanation of the asymmetric dependence of metaphoric meaning on literal (conventional) meaning without resorting to the two propositional stages view and that this standpoint can be defended viewing metaphor as an implicature.

Our solution (Romero and Soria 1997/1998) to the problems mentioned comes from the notion of *contextual abnormality*, which involves the proposal that categorial falsities should be described as categorial oddities (pragmatic or not) that do not depend on processing a literal proposition. In contrast to Kittay's IP, contextual abnormality is not accompanied by an implicature theory of metaphor, and thus we do not have to consider this criterion as a flouting of a maxim. Contextual abnormality must be merely understood as the use of an expression in an unusual linguistic or extra-linguistic context. Thus, there are two modes of appearance of abnormality. Sometimes, there is an oddity between the terms uttered, as in (13). In (13), the normal interpretation of "is crying" as the predicate of "The sky" is not allowed. Sometimes, the oddity occurs between the utterance of an expression in the actual unusual context and the implicit context associated to a normal use of this expression, like in example (12). (12) presents a categorial oddity as a result of using "rock" in a context in which the speaker does not refer to a rock.

The relevant difference between Kittay's position and ours is that we solve the problems without resorting to the flouting of maxims and thus without committing to the view of metaphor as implicature.<sup>4</sup> Kittay resorts to the flouting of maxims in order to establish a difference between the incongruity in metaphor and the incongruity in error, incompetence, opting out and the like. In order to trace that distinction, we prefer to posit that in a metaphor not only there is a contextual abnormality but also a conceptual contrast (Romero and Soria 1997/1998).

The conceptual contrast is the recognition of a source domain (the domain literally

unrelated to the topic of the utterance) and a target domain (the topic of the utterance) or the recognition that some terms that belong to a domain, called “source domain”, are used to indicate some characteristics which can be adapted to be applied to another domain, called the “target domain”, characteristics which are typically, or even only occasionally, associated with the source domain terms. Like the contextual abnormality criterion, the conceptual contrast criterion is a sub-propositional one. It permits us to discriminate not only between metaphors and nonsense but also between metaphor and other figures of speech such as metonymies, something that is not possible with Kittay’s explanation of the metaphoric identification.

Metonymies are non-metaphoric utterances that like metaphors present an incongruity or a contextual abnormality (Romero and Soria 2010). In (14),

(14) [In a restaurant, looking at the customer of the ham sandwich, a waitress tells another:]  
The ham sandwich is waiting for his check.

the speaker makes a referential metonymy. The normal interpretation of the predicate, “is waiting for his check”, is incompatible with the normal interpretation of the noun phrase “the ham sandwich”, an incongruity or contextual abnormality is involved. We exclude this type of example as a case of metaphor since we do not identify a conceptual contrast. In (12), we recognize that the speaker is talking about an old professor (target domain) using a term which is normally used to talk about a rock (source domain). In (14), there is no conceptual contrast; both the customer and the ham sandwich belong to the target domain. By contrast, in (12) the speaker is not talking about a rock or about an old professor who has a relation with a rock as would apply in a case of metonymy, but about an old professor who is rock-like. In (14), instead, the customer is not sandwich-like and the ham sandwich is not the source concept; it is only what the customer ordered.

More recently, Evans claims that in metaphoric interpretation there is an “online process of *clash* resolution” not needed in the interpretation of the literal. This view is highly consistent with a sub-propositional notion of *anomaly*. In Evans’ theory of Lexical Concepts and Cognitive Models, the “clash” can be seen as a new reformulation of the notion. Like our contextual abnormality, Evans’ clash, when accompanied by the identification of distant source and target domains, can be taken as a trigger of metaphoric interpretation. A clash appears when a match (successful interpretation) is not achieved across the primary cognitive model profile (the set of cognitive models included in the access site of lexical concepts) and/or informational characterization undergoing matching. As matching is needed for lexical concept integration, a clash demands resolution so that the lexical integration and interpretation finally takes place. As in the case of contextual abnormality, the clash can also be induced contextually, that is, “[i]n some cases, context serves to determine which lexical concept is the site for clash resolution, captured by the Principle of Context-induced Clash Resolution ...” (Evans 2009: 301). In this approach, the target and vehicle are established by context and the concept that is established as the metaphoric vehicle is subject to clash resolution, that is, an adjustment of lexical meaning is required and no propositional literal stage is required. The pragmatic process of adjustment is *ad hoc* and sub-propositional.

In this way, we show not only that there are several sub-propositional versions of anomaly but also that some of them appear precisely because the criterion of anomaly as categorial falsity is useless: it fails to occur in all cases of novel metaphor and with it, it is wrongly assumed that all metaphors can fix a literal propositional content. The first problem should be the main reason, in our opinion, to reject semantic anomaly and the second should be the

main reason to reject the two propositional stages that go with semantic anomaly. Both rejections are possible without considering experimental tests, merely with theoretical arguments. Still, reaction times experimental evidence also serves to abandon both proposals. This evidence is compatible both with the proposal that utterances may be identified with sub-propositional criteria and with the proposal that literal and metaphoric utterances can be interpreted with different sub-propositional mechanisms. The time of the interpretation might be the same or higher because in both cases there is just one propositional stage although sometimes the different procedures of interpretation may involve more processing time. Neither incongruity nor contextual abnormality entail the additional processing time that would be involved to get a literal proposition before the metaphoric one; any of these sub-propositional versions of anomaly are compatible with reaction time experiments and must be conceived as one of the conditions to trigger a different sub-propositional process that intervenes at the level of what is implicated for Kittay and of what is said for us. In addition, our criterion is favoured over the other sub-propositional versions of anomaly because contextual abnormality is a necessary identification condition of metaphor only if it is accompanied by a conceptual contrast that allows the distinction between metaphors and other figures of speech.

In any case, the changes in the notion of *anomaly* are appropriate once we have neutralized, in section 3, the conclusion that any anomaly must be avoided, and once we have seen, in section 4, that nowadays many authors elaborate a special-process account of metaphor that could be triggered by means of the renewed notion of *anomaly*. Furthermore, some neuropsychologists have looked for other sources of evidence to test if the processing of metaphoric utterances involves any difference if compared to otherwise similar literal utterances. If we assess their experiments, related with anomaly specifically, the task to elaborate a notion of *anomaly* that solves problems of demarcation becomes essential to provide an adequate theory of metaphor.

## **6. Neuropsychological experiments support contextual abnormality**

Although, as we have quoted at the beginning of this paper, it is not easy in pragmatics to find crucial experimental evidence that clearly confirms one claim and disconfirms another (Sperber and Novek 2004), at least in the topic we are considering not everything is lost. Reaction time experiments have some relevance and do serve some of the initial purposes that were pursued. Indeed, if it is admitted that some reaction time experiments do provide evidence for the weaker assumption that at least some expressions are interpreted as metaphoric without any increase in processing time, it seems that the two propositional stages thesis must be abandoned as a psychological account of how metaphoric utterances are understood. As semantic anomaly, according to psycholinguists, entails two sequential propositional stages, it is not an adequate identification criterion. What this evidence cannot substantiate is the dismissal of the sub-propositional conceptions of anomaly that we have expounded in section 5, in particular, of contextual abnormality. In this sense, we may raise the question of whether empirical evidence can help in the task of deciding if an identification criterion that does not depend only on theoretical reasons can be supported.

There is an emergent body of experimental evidence which is not behavioural but neural that can help to discern that question (Tatter et al. 2002; Coulson 2004; Ahrens et al. 2007; Stringaris et al. 2007). Contextual abnormality can be preserved, from an empirical point of view, taking into account these more recent studies on metaphor processing designed

specifically to test hypotheses related with anomaly and metaphor processing.

By using functional Magnetic Resonance Imaging (fMRI), some neuropsychologists (Ahrens et al. 2007) study the neural activity to test specifically if there is anomaly in novel metaphor and their results show that there is and that it is marked in the brain with a larger amount of neural activity. In other works (Pynte et al. 1996; Tatter et al. 2002), neurologists study the location of metaphor processing by means of a technique called “event related potential” (ERP) recording and their results show again that anomaly appears in metaphor processing. These neuropsychological studies have several advantages over reaction time experiments. An important one is that they “can be collected in the absence of an explicit task (other than that of language comprehension itself)” (Coulson 2004: 196-197). Subjects do not need to be asked about their conscious awareness on particular points (e.g. if metaphoric utterances are true or false).

Let us consider first the studies using fMRI. By the use of an fMRI Scanner, signal changes in the brain that are due to changing neural activity are measured. Ahrens et al. (2007) try to find out if different areas of the brain are activated in conventional and non-conventional uses of language. Their studies demonstrate that novel metaphors (which they call “anomalous metaphors” since, for them, they always involve anomaly) recruit a larger amount of bilateral frontal and temporal cortex as compared with literal sentences and highly conventional metaphors. If a larger amount of brain resources is recruited in the interpretation of metaphor, it is not possible to maintain that the same effort and the same procedures are used for the literal and the metaphoric interpretation. Indeed, in another fMRI investigation, Mashal et al. (2007: 115) study the neural correlates underlying the processing of metaphor and the results also reveal that there is a special neural activity in processing it.

Secondly, we consider ERP recording. ERP recording is a technique to study the temporal and spatial patterns of cortical electrical activity during stimulus processing. The ERP recordings were obtained using a 31-channel electrode cap. A component in these experiments is the N400 spike, a negative-direction peak about 400 ms after the target word which generally has a central parietal maximum, which is sensitive to semantic relatedness and expectancy. Typically, the N400 elicited by a specific word is bigger when the word is less expected and less related to the context. The N400 is smaller when an expression is “expected and related to the semantic context than when it is less expected and less related to the context” (Tartter et al. 2002: 490). The hypothesis is that if in metaphor processing the vehicle is seen as anomalous, there should be a stronger N400 than for a literal sentence (an N400 effect).

There are several experiments in this vein. The results of Pynte et al. (1996)’s experiments, that were designed to record possible N400s in novel metaphors after validation of examples for meaningfulness and figurativeness, proved a larger N400 effect and they attributed the difference to the N400 as a whole. Momentarily, they give evidence that novel metaphors appear anomalous. However, according to Tartter et al. (2002), these initial results were biased by some problems with respect to the way the studies were carried out. Indeed, the results of their experiments are more precise because they distinguished two epochs in the N400. In the first epoch (N200), the results showed that novel metaphors and anomalies have a similar behaviour, while novel metaphors and literal uses show a significant difference. In the second epoch (N400), metaphors and literal uses have parallel trajectories. Thus, the difference is really at an N200 window rather than at N400. As the window in the vicinity of N200 reflects a primarily syntactic process and the window around N400 is attributed to lexical-semantic processing, this difference at an N200 suggests that some aspect of this syntactic process is sensitive to selectional constraints among words, and this, as Tartter et al.



say:

is a possibility consistent with Chomsky's (1965) Extended Standard Theory of syntax [sic]. Thus the early window also reflects a form of lexical processing, with perhaps a fuller semantic analysis indicated by the latter window activity, where, in our study, metaphor converges with literal interpretation and diverges from anomaly. (Tartter et al. 2002: 499)

Tartter et al. add

It is quite possible that a structure could be *completely* assigned in the early epoch only for the literal sentences, not for the others. (Tartter et al. 2002: 503)

These results are consistent with the need of triggering conditions for the interpretation of metaphor and contextual abnormality can be one of them. Still, the recognition that there is abnormality does not prove that the interpretation process is different. More specific tests should be used to argue for this. There are not very many empirical works on this yet but those available clearly show that the processing of the metaphoric use differs from that of the literal. A very good example is the work by Stringaris et al. (2007). They use a combination of the two techniques, that is, they use event-related functional magnetic resonance imaging (ER-fMRI). In addition, they took into account reaction time. Their results show that grasping the meaning of an utterance, far from being a unitary process, depends on the type (literal/metaphoric) of utterance involved. They say:

In this study, sentences were carefully matched for the MET and LIT condition, and as we had predicted and as was to be expected from the relevant literature, reaction times between these conditions were not significantly different. However, the imaging results indicate that the neural substrates underlying metaphoric and literal sentence processing do differ. How can this antimony be resolved? Clearly, behavioural experiments and fMRI scanning measure different things. (...) In other words, the finding that two cognitive tasks have similar reaction times does not necessarily imply that they are served by common brain pathways. (Stringaris et al. 2007: 159)

In sum, the imaging results indicate that the neural substrates underlying metaphoric and literal sentence processing do differ. In addition, the results of ERP suggest that anomaly is present and that there are not two propositional stages, given that novel metaphors and literal uses show parallel trajectories in the second epoch, in which the semantic processing is reflected. Furthermore, imaging results show that metaphoric and literal interpretations do not follow common brain pathways and this allows a defence of abnormality as one of the triggering conditions for the metaphoric mechanism.

## 7. Conclusion

In this article, we have argued that although, from the results of psychological experimental tests, it has often been thought that any identification criterion can be rejected, a closer inspection of these tests and of the argument made taking these results into account reveals that, with the exception of semantic anomaly (a version of anomaly that involves the

two propositional stages thesis), virtually any sub-propositional version of anomaly can be saved. Reaction time experiments are not conclusive in this respect. Thus, sub-propositional versions of anomaly such as incongruity, contextual abnormality or clash are irreproachable theoretical options that are also supported by the proposal that a parsimonious account of metaphoric language comprehension does not have the same explanatory power as a special-process one. We have also argued that our contextual abnormality account provides a better explanation to solve the problems of semantic anomaly and that, for that reason, it is a better theoretical option. The contextual abnormality would be a part of the metaphoric processing. In addition, this proposal is experimentally supported if we take into account more specific and apparently reliable experimental findings that come from neurolinguistics. These findings confirm several testable consequences of the claim that contextual abnormality is an identification criterion of metaphor. The testable consequences of this claim (that, if contextual abnormality is involved in the cognitive process typical of metaphor interpretation, the brain activity must be different in some way and it might be measured through some neurolinguistic method) have been spelled out and verified with the experiments told in Section 6. In this way, our proposal combines theoretical generality with all the possibilities of testing provided by the careful use of linguistic intuitions, observational data, and the experimental methods of neurolinguistics. Thus, we conclude that there is evidence both non-experimental and experimental to think that contextual abnormality is a necessary, although not sufficient, identification criterion for novel metaphor.

Now that there are specific empirical results that support special neural activity in the derivation of metaphoric content and given that we do have empirical evidence indicating that a larger amount of brain resources is recruited in the interpretation of novel metaphor, a rather more promising hypothesis to work with is that a special mental process (for example, some sort of mapping from source to target domain or conceptual blending of source and target) is involved in metaphor interpretation. This is something that the most explanatory theories of metaphor have always maintained (Black 1954, 1977; Indurkha 1986; Gineste et al. 2000; Bowdle and Getner 2005; Fauconnier and Turner 1998, 2008; Evans 2009).

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## Notes

\* The proposals presented here have benefited from comments and discussions in the Mental Phenomena course (Dubrovnik, 2009), in the 6<sup>th</sup> Conference of the Spanish Society for Analytic Philosophy (Tenerife, 2010) and in the 4<sup>th</sup> International Conference on Intercultural Pragmatics and Communication (Madrid, 2010). We are very grateful to the JLS reviewers for their helpful comments on a previous version of this article; they have given us much to think about. We must also acknowledge our debt to Michael Toolan for his very useful suggestions and comments. This paper is part of the project FFI2011-26418, funded by the Spanish Ministry of Economy and Competitiveness.

1. By “novel metaphor”, we mean utterances requiring a metaphoric interpretation, what Lakoff and Johnson (1980) call “imaginative (or non-literal) metaphors” which oppose literal or conventional metaphors. For a more detailed explanation, see Romero and Soria (2005). From now on, we will use the term “metaphor” to mean novel metaphor unless we indicate otherwise.

2. In Romero and Soria (2013), we give more reasons, independent of the results of empirical tests, for arguing against the two propositional stages thesis. We claimed that, with metaphors, what the speaker says is metaphorically said. Both the metaphoric identification criteria and the metaphoric mechanism are sub-propositional.
3. This means that psycholinguists cannot use their argument against interpretation in two propositional stages as a reason to attack her proposal, but her idea of metaphoric meaning as second-order meaning and her understanding of incongruity as literal falsity have lead some authors (e.g. Gibbs 1982: 9) to consider her theory as a version of the “Literal first model” that can be attacked by using empirical findings from psycholinguistics (Gibbs 1994: 235). But this depends on an unfair reading of her proposal.
4. Not all theories of metaphor as implicature include the flouting of some maxim. Sperber and Wilson (1986/95) already argued that metaphors communicate implicatures derived from the Principle of Relevance without any flouting. Nowadays, these authors argue that metaphors also express explicatures and that metaphoric utterances can simultaneously contribute to explicatures and implicatures as a result of their mutual adjustment. In any case, they also deny that anomaly must be included in the theoretical proposal about metaphor given that it must not be identified as such by an audience in order to be understood (Wilson and Sperber 2002).

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