

Metaphors in Quaternio Terminorum Comprehension

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1. Semantic ambiguity and fallacious arguments

Many advertisements consist of a statement where a metaphor occurs. An example is the advertisement proposed by “Vacanze romane” Italian bar and restaurant chain: “Coffee is balm for the heart and the spirit”. This sentence is clearly false: coffee is not a balm. However its context of use might cause it to be perceived as true, or at least plausible. From a literal point of view, it is false, but from a non-literal point of view it seems true. This might be the reason why metaphor is used in advertising: for its highly persuasive nature. In an argument used to persuade someone, a sentence containing a metaphor might then facilitate the desired effect.

Following this intuition, we aim at understanding the effect of metaphor in arguments, such as those having the structure of a quaternio terminorum, where the nature of the middle term plays a fundamental role in the comprehension of the overall argument and might influence its persuasive force. Actually, this particular kind of fallacy can be considered in the class of the so-called lexical ambiguity fallacies (for another example, cf. Åqvist 1960). Fallacies of this sort inherit their ambiguity from the terms composing them, which can be polysemous in a broad sense, i.e. they may

permit several different meanings. Lexically ambiguous arguments are to be distinguished from structurally ambiguous ones, which contain no polysemic terms, but whose ambiguity stems from the argument syntax (Fearnside and Holter 1959).

Quaternio terminorum is indeed based on the intrinsic ambiguity of the middle term, which might have two different meanings. We will discuss four main cases of lexical ambiguity of a term: either the terms having two different literal meanings (the cases of *homonymy* and *polysemy*), or the terms having a literal meaning and a non-literal meaning, (the case of *lexicalized metaphor* and *live metaphor*). How might these cases of ambiguity influence the comprehension of a *quaternio terminorum*? Could they change its persuasive effect? In this paper, we aim at discussing in detail these four cases in order to understand whether lexical ambiguity actually plays a role in *quaternio terminorum* comprehension. In particular, we will try to figure out the ways in which the kind of lexical ambiguity of the middle term could influence the overall understanding of an argument having the structure of a *quaternio terminorum*. Indeed, we think that some disambiguation processes are required in identifying the meanings of the middle term in the two premises, and therefore their overall semantic value, i.e. their being true or false. Determining the truth or falsity of the premises represents an important step to the comprehension of arguments and we expect this might influence the overall understanding of *quaternio terminorum*.

2. Criteria for lexical ambiguity

A term is lexically ambiguous if it has more than one meaning. The most common form of lexical ambiguity is polysemy, in which a term presents one (or more) literal meanings linked by a semantic relation. When the different literal meanings of a term have no semantic relation, we run into a rarer case of lexical ambiguity: homonymy (Frath 2001, Lyons 1977, Taylor 1989/2003). Let us propose two examples:

Homonymy

The term *bank* has two completely different literal meanings (1) and (2):

financial institution;
riverside.

Polysemy

The term *letter* has two different literal meanings (3) and (4), having a semantic relation:

symbol of the alphabet;
written communication.

Many criteria for homonymy/polysemy distinction have been proposed: the most important ones could be considered the *etymological*, the *psychological* and the *translation criterion*. Unfortunately, each of these criteria suffers from some criticism (Lyons 1977, Nerlich 2003).

According to the etymological criterion, ambiguity is a mere historical accident, randomly causing a superposition of terms. For instance, the origin of one meaning of the linguistic form *file* is from the French word *fil*, meaning folder or box for holding loose papers, whilst the other comes from the Old-English word *féol*, which refers to a tool with roughened surface. On the other hand, the meanings of the term *letter* (“symbol of the alphabet” and “written communication”) are polysemous because they share the same etymological root (Falkum 2011, Lyons 1977, Taylor 1989/2003). While in the case of homonymy the meanings of a term, in general, do not share any property, in the case of polysemy a semantic overlap between the two meanings can be observed.

The *etymological criterion* is a valuable tool in analysing those phenomena, however, it should be assumed with some provisos. In fact, assuming an etymological perspective *tout court* would mean assuming a degree of subjectivity of the relations among meanings, because it is relative to the knowledge of the speakers. For instance, the term *cardinal* has two meanings historically related:

leader of the Roman Catholic Church;
a songbird.

Nonetheless, it may well be the case that native speakers could ignore such a relation and the term *cardinal* could seem homonymous (Falkum 2011; Lyons 1977).

The *psychological criterion* precisely states that the polysemy/homonymy distinction is up to native speakers’ intuitions: if native speakers judge a linguistic form as having unrelated semantic representations, then such a form is homonymous, whilst if native speakers judge a linguistic form as having different but related semantic representations, then such a form is polysemous (Cruse 1995, Pinkal 1995).

The difficulties with a complete agreement of a psychological criterion relate to the fact that it is not easy to identify the role of speakers' intuitions. For instance: there are no clear intuitions on 1) the "causal ancestors" of a word and 2) the "new usage" of a word (Lepore and Hawthorne 2011). As an example, for a *dance*, a linguistic community could have 1) performance standards of the dance, but also 2) an evolution of that dance, performed in different times, and 3) no agreement on what to consider as a new dance. After all, as Wittgenstein stated, this is anyway compatible with having an image of that dance: "in order to *want* to say something one must also have mastered a language; and yet it is clear that one can want to speak without speaking. Just as one can want to dance without dancing. And when we think about this, we grasp at the *image* of dancing, speaking, etc." (Wittgenstein 1953: § 338).

Finally, the third criterion considers ambiguity as a matter of *translation*: if the translation of a term into a different language obliges one to choose among different translation equivalents, or if there is no one-to-one equivalence in translation (Ervás 2008), then that term is homonymous. Indeed, as Kripke noted, ambiguity is usually not preserved in translation: "We can ask empirically whether languages are in fact found that contain distinct words expressing the allegedly distinct senses [...]. There is no reason for the ambiguity to be preserved in languages unrelated to our own" (Kripke 1979: 19). For instance, the meanings of the English term *bark* – which denotes either the characteristic abrupt cry of a dog or the outer layer of a tree – could be disambiguated in the translation into Italian respectively with "latrato" and "corteccia". The term *bark* is indeed polysemous, as well as the Italian term *credenza* which can be translated into Spanish with "creencia" (when the meaning is "belief") and with "aparador" (when the meaning is "piece of furniture").

As with the other criteria, the translation criterion presents some drawbacks too (Zwicky and Sadock 1975). Against the claim that homonymy can be identified because it forces a choice among different equivalents in the translation process, there are also polysemous words which are translated into different terms in other languages. Consider, for example, the expression: "I like fish". This could be faithfully translated in Spanish in either "Me gusta el pez" ("pez" is a live fish) or "Me gusta el pescado" ("pescado" is an already caught fish): the English term *fish* is indeed polysemous and other languages, such as Spanish, can codify subtle nuances of meaning not codified in English. The same could be said for some Italian polysemous words, such as *nipote* in the Italian statement "Era la nipote di Angiolieri", which can be translated in French by either "C'était

la nièce d'Angiolieri" or "C'était la petite-fille d'Angiolieri", according to the family relationship of the female subject with Angiolieri (Ervas 2012).

3. Pragmatic processes in lexical ambiguity

It makes sense to wonder whether the difference between these two kinds of lexical ambiguity, homonymy and polysemy, is based on the fact that they involve different pragmatic processes which rely on the distinction between *narrow and broad contexts* (Bach 2012, Carston 2002, Perry 1997, 2001, Recanati 2004). As regards homonymy, the selection of the relevant meaning works by default on the basis of the pre-semantic context, the so-called *narrow context*. Conversely, for what concerns polysemy, the selection of the relevant meaning involves a process of pragmatic enrichment on the basis of the post-semantic context, or the *broad context*. In a narrow context using anaphora, both the meanings of a homonymous term, such as *bank*, would have the effect that "something does not work" as in the following sentence:

He put some money in a bank and then he swam to it.

Sentence a. puts together unrelated semantic fields and at best it could be interpreted as a joke. The joke is created by the paradox of referring to completely different readings of the term, as in case of syntactic ambiguity: "One morning I shot an elephant in my pajamas. How he got into my pajamas I'll never know" (Groucho Marx).

On the other hand, a polysemous term such as *window* can be used via anaphora and can be read in both its meaning ("window of a house" and "window on the computer screen") preserving the impression that the overall sentence works in both cases, as in the following sentence:

He opened the window and then went through it.

Indeed, in statement b., a definitely broader context is required to understand which meaning of *window* is relevant, otherwise both readings would be equally possible (Frazier and Rayner 1990, Garrod, Freudenthal and Boyle 1994). We could interpret this phenomenon as a different form of contextual dependence. While homonymy has a finite list of meanings and we do not need an extremely broad context to understand the relevant meaning used in the sentence, this is not really the case for polysemy. In

polysemy, indeed, the word contributes to an indefinite number of other meanings, which are the results of the modulation process of such a word (Recanati 2004, 2010). In homonymy, the use of context in the selection of the relevant meaning is pre-semantic: we need it to choose the relevant meaning among the others in the list. In polysemy, the use of context in the modulation process is post-semantic, because it involves finer knowledge of language and world, as well as subtle nuances of the communicative encounter (Simpson 1994).

The phenomenon of polysemy cannot indeed be solved simply through disambiguation. There is a clear gap between what is literally expressible and what speakers may need to express, between the encoded concepts and the intended ones (Hirst 1987). Modulation is a pragmatic process that fills this gap by pragmatically inferring the intended (“ad hoc”) concepts on the basis of the encoded concepts “in response to specific expectations of relevance raised in specific contexts” (Carston 2002: 322). The adjustment that produces the “ad hoc” concepts consists of narrowing or broadening the encoded concepts, namely in suppressing the information these concepts encode when they are not relevant in the context. In the case of narrowing, the semantic field of the encoded concept is reduced to a sub-set, as in the following sentence, where “drink” is narrowed down to “drink alcohol”:

I do not like to drink when I have to work.

The speaker clearly does not mean that she does not drink water or non-alcoholic drinks: this piece of information is then suppressed. In the case of broadening, the semantic field of the encoded concept is enlarged to a super-set, as in the following sentence, where “crazy” is loosened to “strange”:

This guy is crazy.

The speaker clearly does not mean that the guy has a psychiatric disease, but that he is a little bit bizarre. This explanation of the explicit meaning of sentences challenges the traditional distinction between literal and non-literal uses of language, as what is considered “literal” is the result of a pragmatic process of modulation (Carston 1997, 2002, 2010a).

4. Pragmatic processes in metaphor interpretation

Similar pragmatic processes have been hypothesized in case of non-literal language, such as metaphors, where – in a way similar to polysemy – some semantic properties of the source (literal) domain are shared with a target (non-literal) domain. It has been shown that suppression would be involved in both homonymy disambiguation and metaphor interpretation (Gernsbacher and Faust 1991). In both cases, a piece of information is suppressed, however, in the process of disambiguation the irrelevant meaning disappears significantly more quickly, when compared to the process of metaphor interpretation, which requires more demanding attentional resources to suppress the corresponding literal meaning (Gernsbacher, Keysar, Robertson and Werner 2001, Rubio Fernandez 2007). In homonymy disambiguation, the irrelevant literal meaning indeed has no semantic relation with contextually relevant meaning, while in metaphor interpretation the literal meaning of the source domain shares some semantic properties with the intended, non-literal meaning.

The case of metaphor interpretation is then similar to the polysemy case, where there is a semantic overlap between the semantic domains of the different literal meanings of a term. As in polysemy, metaphor interpretation is a context-sensitive pragmatic meaning-adjustment process whose result is an “ad hoc” concept (Carston 2002, 2010b, Vega Moreno 2004). To understand the sentence “Coffee is balm for the heart and the spirit” in the advertisement, we should modulate the term “balm” and the corresponding encoded concept:

Coffee is balm for the heart and the spirit;

Coffee is balm* (“ad hoc” concept) for the heart and the spirit.

Apparently, coffee is not a topical medical preparation, nor a repairing pomade for hair, but it shares other properties with balm, as for instance the properties of being relieving and restoring, and so on, according to the contextual use of the term “balm”. When many properties are shared, there is a wider semantic overlap between the two readings of the term “balm” (the literal meaning in e. and the non-literal one in f.).

The pragmatic process involved is then similar to polysemy, especially in the case of *dead (lexicalized)* metaphors. Frequent use has brought them to a status similar to that of polysemous terms, i.e. literal terms. In dictionaries, these terms are classified as frequent uses of language, as modulations similar to the lexical entries of polysemous terms.

This is the reason dead metaphor comprehension requires linguistic knowledge of the ways the specific linguistic/cultural community uses the term. Consider the following example:

Dead metaphors

The term *star* has two different meanings, the literal meaning (7) and the non-literal meaning (8):

- celestial body;
- famous actor.

Their semantic fields partially overlap for some properties: being bright, unachievable, etc. As in the case of polysemy, the two meanings have a semantic relation represented by the shared properties. The shared properties are so fixed in the cultural/linguistic knowledge of native speakers, and so well-established in their mental lexicon, that they are easily grasped even when just a sentential context is given. Moreover, dead metaphors often represent so widespread a schema of property associations that it is possible to find them in other languages and/or cultures, in exactly the same form (Bazzanella 2011, Handl 2011). For example, the English term “star” has a translation equivalent in Italian (as in “stella del cinema”) and in French (as in “étoile du spectacle”).

The case of *live metaphors* is somewhat different from the case of lexicalized ones. In fact, metaphors from this class involve a completely new and creative use of language, not referable to a frequent use of language (and already classified in dictionaries). Consider the following example:

Live metaphors

The term *dinner* could have two different meanings, the literal meaning (9) and the non-literal meaning (10):

- evening meal of the day;
- (10) old age.

Their semantic fields partially overlap for some properties, connected by the speaker in a new and creative way. This is the reason why live metaphor comprehension requires a more demanding effort to find out the shared properties intended by the speaker and a finer knowledge of the context and its features (Glucksberg and Estes 2000). Live metaphors usually appear in literary contexts and depend on a very deep understanding of the cultural-specific environment. This is the reason no well-established

schema or patterns of shared properties are found in other languages and/or cultures (Callies and Zimmermann 2002).

The continuity among literal/non-literal uses of language is also testified to by the existence of a third case of metaphors, i.e. the class of *moribund metaphors*. The distinction dead/live metaphors faces some difficulties, involving, in some sense, the “death” and the “resurrection” of a metaphor. Lexicalization is indeed a necessary but not a sufficient condition for the death of metaphors, because: i) different dictionaries do not recognize the use, or ii) they could “come alive again”. An etymological criterion opens a vivid perspective in those cases. Consider the case of terms such as *silly*, *pedigree*, or *daisy*, whose origins trace back to middle and old English. Those terms possess meanings classified as literal, have a metaphoric etymological root! *Literalization* could then be the “real death” of a metaphor (Alm-Arvius 2003, 2006, Goatley 1997). These cases show that the process of literalization can follow three main directions. In the first case the corresponding literal meaning is dead, as in the case of the term “silly”, in the sense of deserving pity or sympathy, is an alteration of the dialect *seely*, happy, and later *innocent*, *feeble*. In a second case there is a fusion of a metaphorical compound at both a phonological and a semantic level; this is what happens with the term “daisy”, whose old English origin is *dæges ēage*, *day’s eye*, because the flower opens in the morning and closes at night. Finally, in the latter case, literalization could be due to translation or linguistic loan from another language, as for the term “pedigree”, whose origins are from late Middle English, from Anglo-Norman French *pé de grue* ‘crane’s foot,’ a mark used to denote succession in pedigrees (Alm-Arvius 2006, Onions, Friedrichsen and Burchfield 1966/1994). Therefore, differences among cases are somehow blemished and seem a matter of degree. In some sense, against the classical view, we could speak of a literal/non-literal *continuum* instead of a literal/non-literal *divide*.

5. Quaternio terminorum understanding

As noted above, the fallaciousness of *quaternio terminorum* stems from a semantic ambiguity of the middle term, which assumes distinct meanings in the two premises. Of course, such ambiguity may depend on different types of reasons. Namely, the middle term could be ambiguous because either it is a homonym, or polysemic, or else metaphoric. Moreover, our term could be metaphoric in two ways: either lexicalized, or living. So, the context of the

quaternio terminorum is absolutely appropriate, from our point of view, for investigating the degrees of the persuasiveness of an argument as the middle term varies through such a spectrum.

The nuances of literal meaning and the various cases of metaphor explored could influence the ways we understand an argument and, in particular, *quaternio terminorum*, which is exactly based on the intrinsic ambiguity of the middle term. To identify the fallacy of *quaternio terminorum*, we should disambiguate the middle term, which means something in the first premise and something else in the second one. Disambiguating a homonymous middle term would require suppressing one of its two literal meanings, the irrelevant one (Gernsbacher 1990). *Quaternio terminorum* comprehension requires then the suppression of one of the two meanings in the first premise and *vice versa* in the second premise. However, middle terms might be lexically ambiguous in many ways: for instance, middle terms used in a metaphorical sense have figurative meanings that depart from their literal ones. How might *quaternio terminorum* comprehension be when metaphors are involved?

In order to answer this question, we should understand how the different pragmatic processes discussed up to now influence the detection and the comprehension of the fallacy. We could hypothesize that *quaternio terminorum* comprehension should mainly depend on the nature of the middle term, and therefore on the corresponding cognitive-pragmatic process required to disambiguate the two meanings and to the degree of partial semantic overlap created by the different readings of a middle term (degree of shared semantic properties). Arguments, having the structure of *quaternio terminorum*, could contain either a lexically ambiguous or a metaphorical middle term. Moreover, some arguments could contain homonymous or polysemous middle terms (i.e. having two literal meanings) and other arguments could have middle terms corresponding to lexicalized or live metaphors (i.e. having a literal meaning and a non-literal meaning).

There could be then at least four groups of middle terms, classified as follows: homonymy (H), polysemy (P), dead (lexicalized) metaphor (DM), live metaphor (LM). From now on, with H, P, DM, and LM, we shall denote the classes of arguments containing homonymous terms, polysemous terms, dead (lexicalized) metaphors, and live metaphors, respectively. Examples of *quaternio terminorum* (true premises/false conclusion) with H, P, DM and LM are the following:

H Example:

[P1] Banco di Sardegna is a bank;

[P2] A bank is a financial institution;
[C] Banco di Sardegna is a financial institution.

P Example:

[P1] L is a letter;
[P2] A letter is written;
[C] L is written.

DM Example:

[P1] Clooney is a star;
[P2] A star is a celestial body;
[C] Clooney is a celestial body.

LM Example:

[P1] The old age is a dinner;
[P2] A dinner is quite long;
[C] The old age is quite long.

Disambiguating a homonymous word like “bank” would involve the selection of one of its two meanings, i.e. financial institution or riverside (Gernsbacher 1990, Gernsbacher and Faust 1991). Processing the lexical form “bank” requires the activation of two different and unrelated lexical entries, and the suppression of the irrelevant one. As recently shown (Rubio Fernandez 2007), there is indeed a mechanism of suppression, which seems to operate faster in the resolution of lexical ambiguity than in dead metaphor, for the suppression of metaphor-inconsistent information. Therefore we expect different processes of *quaternio terminorum* understanding: we do expect that arguments containing homonymous words (e.g. “bank”) as middle terms will be more readily recognized fallacious than arguments containing dead metaphor words (e.g. “star”) as middle terms.

We expect to find a difference in the processing of arguments containing polysemous words (e.g. “letter”) as the middle term too. Several recent psycholinguistic studies investigating the processing of polysemy and homonymy have indeed pointed out a differential representation of homonymy and polysemy (Frazier and Rayner 1990, Williams 1992, Pickering and Frisson 2001, Klepousniotou 2002, 2007, Beretta, Fiorentino, and Poeppel 2005, Klepousniotou, Titone, and Romero 2008, Brown 2008). In particular, Beretta, Fiorentino, and Poeppel (2005) empirically supported the single entry account of polysemy and the separate entries account for

homonymy, and Klepousniotou, Titone and Romero (2008) suggested that the degree of sense relatedness of polysemous words influences their processing. We do expect that this difference in homonymy and polysemy processing influences the disambiguation of the middle terms and thus the comprehension of the overall *quaternio terminorum*.

Moreover, we suppose that the comprehension of arguments with live metaphors (e.g. “dinner”) as middle terms will be slightly different. This is because live metaphor comprehension involves elaborated pragmatic processes – as for instance iconic representations of concepts or imagery (Rubio Fernandez 2005, Carston 2010c, Indurkha 2007). Understanding a live metaphor is an extremely context-dependent action, involving a full perception of the intended meaning of the entire statement (Lai, Curran, Menn 2009). It has indeed been argued that additional semantic information coming from the context may produce more stable representations, i.e. an advantage called “context availability effect” (Schwanenflugel, Harnishfeger and Stowe 1988, Glucksberg and Estes 2000). Therefore, our hypothesis is that the disambiguation of an argument whose middle term is a live metaphor should be definitely dependent on the broadness of the context provided. In contrast, a narrower context would be sufficient for the case of dead metaphors, because of their high familiarity and frequency. As already experimentally proved, “the amount of attentional resources involved in interpreting a metaphorical expression would be determined by the combination of these two factors: the degree of familiarity of the metaphorical interpretation and the strength of the contextual bias” (Rubio Fernandez 2007: 366).

6. Literal and non-literal truths

A preliminary study on the role of metaphors in *quaternio terminorum* comprehension (Ervass, Gola, Ledda and Sergioli 2012) shows that the majority of sentences with dead metaphors (83%) are perceived as *true*, even though they are literally false, whilst the majority of sentences with live metaphors (79%) are perceived as *false*, even though they are non-literally true. How could these preliminary data be interpreted?

According to the classical pragmatic view (Grice 1989, Camp 2004), sentence e. would be literally false, because of the literal, conventional meaning of “balm”. Metaphor is indeed an implicature generated by the flouting of the maxim of Quality: “Do not say what you believe to be false”. In Grice’s view, the fact that coffee is balm is “patently false”, so the

interpreter should find another possible, implicit meaning that better fits the context. In a similar way, Searle summarized the interpretive procedure in this way: “where an utterance is defective if taken literally, look for an utterance meaning that differs from sentence meaning” (Searle 1985: 105). However, this thesis seems to be “an old wives’ tale”: as Joseph Stern noted, “we now recognize the prevalence of twice-true (Cohen 1976) and twice-apt (Hills 1997) metaphors and, in general, the explanatory vacuity of what we might call the “literal deviance” thesis (Stern 1983; cf. also White 2001)” (Stern 2006: 249-250).

According to Contextualism and Relevance Theory (Recanati 2004, 2010, Sperber and Wilson 1986/1995, Wilson and Carston 2006, Carston 2002), there is instead no literal meaning in people’s head: when they read a sentence containing a metaphor, people usually assign intuitive truth conditions to the sentence, thus directly modulating the metaphorical term and considering the sentence containing it as true, or at least plausible. The “falsehood” of metaphor is then seen as a “myth” (Scheffler 1988) and as a tendency to judge metaphor with some kind of truth conditions, the literal ones, that cannot explain the very nature of metaphor itself (Clark 1994). According to the classical view, the principle of compositionality is applied to the conventional meaning of the constituents of a sentence, whilst according to the contextualistic view, the principle of compositionality is applied to the already modulated meaning of the constituents of a sentence (Recanati 2010). Therefore, the outcomes of compositionality are expected to be possibly different.

In particular, relevance scholars question the psychological plausibility of previous theoretical hypotheses, putting forth the “tribunal of experience” of Gricean philosophy of language (Noveck and Sperber 2004). They argued in favour of a difference between truth conditions of a sentence and the intuitive truth conditions assigned by a speaker in contextual uses of language. It is well known that Grice did not intend to explain these phenomena in terms of actual psychological processes. His theory is normative and has no psychological aims. His view of metaphor as an implicature directly came from his argumentative conception of rationality (concerning the whys of human linguistic behaviour), rather than the instrumental conception of rationality (concerning the hows of human linguistic behaviour) used by relevance scholars. Some scholars (Verbrugge and McCarrell 1977, Ortony, Schallert, Reynolds and Antos 1978, Janus and Bever 1985) have anyway used his theory to predict a two-stage process of metaphors: according to the account of meaning comprehension known as the “literal first hypothesis”, literal meanings are processed first, faster,

and more easily than figurative meanings. The process of understanding figurative language is indirect because it is necessarily dependent on a previous literal interpretation and would take longer than the understanding literal language exactly because of this previous mandatory step.

The “direct access view” argued instead that understanding figurative language, such as metaphor, does not necessarily imply the literal interpretation mandatory step supposed by the “literal-first hypothesis” (Gibbs 1994, 2001, Gibbs and Gerrig 1989, Glucksberg 2003). Experimental findings have shown that reaction times for the understanding of utterances containing metaphors are not always longer than reaction times for the understanding of literal utterances (Gildea and Glucksberg 1983, Glucksberg 2001). In fact, understanding depends on the salience and frequency of the metaphors used, or in other words, on their being dead or live (Giora 2003, Gibbs 1994). In this perspective, metaphors can no longer be explained in terms of an implicature arousing after the comprehension of literal meaning.

Appealing to a “unified approach” to literal and non-literal uses of language, the process of modulation has been proposed by Carston (2002) and Recanati (2004, 2010) among others to explain not only the cases of polysemy but also metaphors. On the literalist side, it has been claimed that the *ad hoc* concept mechanism produces a non-controlled proliferation of interpretations: “the pragmatic operation of loosening over-generates metaphorical interpretations, differences of interpretation that are not reflected in our intuitive judgments” (Stern 2006: 255; cf. Stern 2000; Stanley 2002). They also criticized the contextualistic side because the same solution, the *ad hoc* concept mechanism, seems to be adopted for all “loose uses” of language, all kinds of metaphors included, without paying attention to the specific differences of all those phenomena and thus losing explicative power.

Robyn Carston partially answered this kind of criticism by distinguishing different processing in the class of metaphors. Metaphors would still be explained as a local, on-line pragmatic adjustment of the encoded lexical meaning resulting in an *ad hoc* concept. However, in the case of live metaphors, an alternative, “imaginative” route is hypothesized (Carston 2010, Carston and Wearing 2011): the literal meaning would not be suppressed; it would be maintained in a more global pragmatic process resulting in a range of communicated affective and imagistic effects. This hypothesis has been confirmed by experimental studies, which showed that in the process of metaphor interpretation, the corresponding literal meaning is not suppressed straightforward (Glucksberg, Newsome and Goldvarg

2001, Gernsbacher, Keysar, Robertson and Werner 2001, Rubio Fernandez 2005, 2007) and remains to evoke further imagistic effects: “images are not communicated but are activated or evoked when certain lexical concepts are accessed and may be further imaginatively developed (by, for instance, shifting mental focus or perspective, zooming in on detail, or forming a connected dynamic sequence) as the conceptual content of the utterance is recovered” (Carston 2010c: 319). This “second route” to understanding metaphors does not exclude the *ad hoc* concepts mechanisms, i.e. a more conceptual way to metaphor understanding. However, the literal meaning endures in evoking an image with more important effect with respect to the first route. In Carston’s view, literal meaning plays a fundamental role for metaphor understanding. In the same vein, but on the non-contextualist side, Stern noted: “No account of metaphor will be adequate without explaining the fact that something about the meaning of the literal vehicle remains active in metaphorical interpretation” (Stern 2006: 250).

However the main difference between the contextualist and the non-contextualist views is exactly on the nature of literal meaning and its contribution to the truth conditions of a sentence. According to the contextualists’ view, the pragmatic process involved in dead metaphor comprehension takes the encoded concept and generates an “ad hoc” concept in the proposition the speaker intends to communicate, i.e. a proposition corresponding to the intuitive truth-conditions assigned by speakers. They assign thus the intuitive truth-conditions to the explicit proposition, respecting speakers’ semantic intuitions: understanding a statement means knowing the concrete circumstances of its truth (Carston 2002). The contribution of a metaphor to the overall truth-condition of a sentence is then its intuitive truth-conditions, which is already done in the modulation process. This could be the reason why speakers judged most sentences containing a dead metaphor as true. Live metaphors instead would imply too complicated a process and contextual information given in a sentence would be too narrow to produce the desired imagistic effect. However, on the non-contextualist side, it could be claimed that dead metaphors are just perceived as true because they are lexicalised, similar to the case of literal meanings, such as in polysemy. Proper, live metaphors are still perceived as false, as the classical view stated (Grice 1989).

Live metaphors might also be perceived as true when a broader context is presented. Experimental literature has shown that the interpretation process of novel metaphors diverges from conventional metaphors (Blasko and Connine 1993, Thibodeau and Durgin 2008), and because of the unfamiliarity with live metaphors, more context is needed to understand

them. A broader context is indeed useful to identify the relevant properties of the literal meaning used on a specific occasion. However, if aristotelic standards of syllogisms are respected, in *argumentative* contexts such as those represented by the concatenation of premises/conclusion in a *quaternio terminorum*, live metaphors have a very narrow context in which to be interpreted. This could be the reason why they are usually interpreted as literally false and thus they should not be problematic for the comprehension of the (in)correctness of the overall argument. In our view, there is indeed a link between the evaluation of the premises' truth conditions and the overall comprehension of the correctness of the whole argument. In a narrow context, dead metaphors are instead perceived as true even though they are literally false. The encyclopaedic knowledge linked to the everyday use of our mother language is sufficient to recognize the relevant properties carried by the conventional metaphor and a broader context is not necessarily required (Glucksberg and Estes 2000). The case of lexicalized metaphors is indeed very interesting because, as experimental literature testifies, they are processed as fast as literal meanings (Giora 2003), and people had difficulty in rejecting metaphors as literally false (Glucksberg 2003), even though they remain figurative meanings and literally false as such. This might be the reason why "common", dead metaphors make the arguments more persuasive than others. It is plausible that difficulties in attributing literal or non-literal truth conditions to premises containing metaphoric ambiguity influence the detection of the (in)correctness of the whole argument, as in case of *quaternio terminorum*.

7. Concluding remarks

The core idea of the present article can be captured by two simple questions:

1. How much can metaphors influence the truth-condition perception of a statement?
2. How much can the type of ambiguity of a term influence the perception of the soundness of an argument?

In order to answer those questions, we discussed the main features of lexical ambiguity in both its literal forms (e.g. homonymy and polysemy) and non-literal forms (e.g. dead and live metaphors), arguing in favour of an "ambiguity spectrum" which could influence the perception of an argument,

such as *quaternio terminorum*, when the middle term is ambiguous. We discussed the pragmatic processes involved in lexical ambiguity and metaphor comprehension, focusing our attention on the experimental literature showing the ways disambiguation and metaphor interpretation work. We then proposed our hypotheses on the comprehension mechanism of sentences, such as premises of *quaternio terminorum*, containing such ambiguous terms. Also, we discussed some preliminary results of an empirical study (Ervas, Gola, Ledda and Sergioli 2012), designed to measure the influence of lexical ambiguity and metaphor on *quaternio terminorum* understanding. To answer the first question, we discussed the preliminary outcomes which reveal, up to now, that most sentences with dead metaphors are considered true; while a large proportion of the sentences containing live metaphors are perceived as false. To answer the second question, we hypothesized that these results should have an influence in the perception of the soundness and persuasiveness of the overall argument, making a difference for arguments containing dead *versus* live metaphors.

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On a Few Convergences between Metaphor and Thought Experiments¹

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Introduction

In what follows, I intend to provide an indirect approach to a few epistemological issues raised by the wide use made in philosophy of figurative language in general, and of metaphors in particular. One of the many consequences of the progressive dismissal of the original logical-empiricist program, and of the corresponding disillusionment concerning the possibility of drawing a clear-cut distinction between *literal* and *figurative* language², has certainly been the explicit acknowledgement of the fundamental cognitive role played by metaphors within our intellectual life as a whole. The view according to which metaphor, far from being a mere stylistic device used mainly for rhetorical purposes, should be thought of as deeply and essentially entrenched in human thought processes has indeed become increasingly popular during the second half of the last century. “Our ordinary conceptual system”, some have gone as far as claiming, “is fundamentally metaphorical in nature” (Lakoff and Johnson 1980: 3). The

¹ These considerations are the result of stimulating conversations had with Pierluigi Graziani, Massimo Sangoi, and Vincenzo Fano, to all of whom goes a special thank. Thanks also to the two anonymous referee, whose valuable comments contributed to improve the initial draft of this paper.

² The separation between *figurative* and *literal* seems to be deeply rooted in western culture, and can be traced back as far as Aristotle. See Johnson (1981: 6). Amongst the contemporary approaches to metaphor which deny the existence of a clear-cut distinction between literal and figurative uses of language, it may be worth mentioning Lakoff and Johnson 1980, Hesse 1993, and Sperber and Wilson 2008.