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Metaphors are events, not objects

This paper discusses the tension that exists between linguistic and psychological approaches to metaphor. It aims to demonstrate that interdisciplinary efforts are probably not all of equal value when it comes to serving the ends of any individual discipline. In the case of psychological research on metaphor, such interdisciplinarity may in fact be limited to a heuristic relation, in which linguistics offers useful constraints in defining an object of study that should allow psycholinguists to pursue their own general goal of mapping the architecture of the language processor. Thus, it may well be that the existing division of labor, between linguistics and psycholinguistics, that holds for the study of metaphor is a principled, instead of a merely contingent, reality. The paper's argumentation for this starts from the observation that the psycholinguistic study of meaning phenomena in natural language is being increasingly marked by a quasi-exclusive focus on properties of the brain, as the seat of the mental lexicon, and not on the interpreter holding that brain. I concentrate on methodological difficulties conjured up by the "heteronomic" aspect of metaphor understanding, as well as on theoretical problems with defining metaphor as an object of study in diverging disciplines.

Keywords: mental lexicon, metaphor, modularity, pragmatics, semantic processing

This paper discusses the tension that exists between linguistic (semantic) and psychological approaches to metaphor. It aims to demonstrate that interdisciplinary efforts, which have become so popular in the age of the cognitive sciences, are probably not all of equal value when it comes to serving the ends of any individual discipline. In the case of psychological research on metaphor, such interdisciplinarity may in fact be limited to a *heuristic* relation, in which linguistics offers useful constraints in defining an object of study, metaphor, that should allow psycholinguists to pursue their own general goal of mapping

the architecture of the language processor. Thus, it may well be that the existing division of labor, between linguistics and psycholinguistics, that holds for the study of metaphor is a principled, instead of a merely contingent, reality. This observation starts from the assumption, which will be maintained in the remainder of the present paper, that the psycholinguistic study of meaning phenomena in natural language is being increasingly marked by a quasi-exclusive focus on properties of the brain, as the seat of the mental lexicon, and not on the interpreter holding that brain. In what follows, I will concentrate on methodological difficulties conjured up by this “heteronomic” aspect of metaphor understanding (and its effects on studying different types of metaphor), as well as on theoretical problems with defining metaphor as an object of study in diverging disciplines.

The scope of the present survey is expressly limited to those psychological paradigms that make use of experimental, chronometric techniques to assess the processing status of figurative interpretations. I will use the terms “psychology” and “psychological” accordingly. After a brief introduction (section 1), I will first describe, in section 2, how the linguistic and the psychological conception of metaphor are bound to be distinct, and how this difference affects the respective formulations of research questions and the corresponding deployment of analytical techniques in both fields. Section 3 presents a number of problems underlying certain “representationalist” assumptions in the study of metaphor, as it is canonically conceived. In section 4, I look at the relationship between psychology and meaning, as an object of study, and propose that this relation only tends to be a heuristic one, where categories of meaning generally serve as shortcuts for getting to genuine psychological concerns that are ultimately nonsemantic. Section 5 spells out the implications of such a view for the investigation of metaphor processing and its online characteristics. I offer some closing remarks in section 6.

1. Introduction

Psychological research on metaphor comprehension can roughly be divided into two major strands of investigation. One type of analysis starts from the subjective experience of metaphor as a special kind of meaning, involving some “tension” that is thought to derive from the conflict between an utterance’s literal and its figurative reading. This tension is taken to account for a variety of experimental observations. Many contributions in this field stress the influence of generalized structures of metaphorical reasoning (sometimes called conceptual metaphors) on the interpretation of metaphor and characterize this process in terms of the mapping relations, from a source to a target domain, that typify metaphor as a mode of language *and* thought. (No similar mechanisms are posited for the processing of literal utterances.) Others focus on the conflicts that arise between properties (“features”) of the source and

target informing a metaphorical mapping, and aim at defining the relevant features for the resulting metaphor in relation to operations that are performed on the original meaning configurations of the lexical items (or concepts) involved. The second line of research, on the other hand, concentrates on the automatic processing mechanisms that underlie the comprehension of metaphor. This type of experimental work does not only seek to reveal the processes that are active during metaphor comprehension, but also the very architecture of the processor that activates them. As such, research that focuses on what is usually referred to as the time course of metaphor processing acknowledges the special status that metaphor has in terms of its meaning structure. However, it does not take this semantic structure as its proper object of study but uses it as a starting point for the investigation of unconscious processing mechanisms that reveal the general cognitive structures involved in interpretation work. In this tradition, metaphor itself is not the ultimate explanandum, but rather a heuristic tool that allows experimenters to probe the hidden features of our ability to understand instances of natural language use.

I will contend in this paper that it is the second strand of investigation that can arguably be claimed to constitute a genuinely psychological (as opposed to linguistic) research goal. Indeed, from a psycholinguistic perspective, there is very little, if anything at all, that chronometric work on metaphor can say about the substance of metaphorical meaning, i.e., about the actual content or structure of metaphorical “mappings” and the representation types that might be involved in them. Consequently, and specifically in regard to the psychology of metaphor, all instances of modeling and/or representing aspects of comprehension are disavowed here that refer, directly or indirectly, to the representation of meaning in whichever format (either as gestalts or as bundles of semantic features), primarily because these formats are effectively copied from more or less convenient representational conventions that seem to thrive in some of the neighboring disciplines, and notably in (linguistic) semantics. As such, they do not per se reflect the modalities that we can assume to hold for an essentially physical system like the language processor. Due to the many theoretical and methodological difficulties that are conjured up by transposing linguistic-semantic concepts and models to the field of psychological investigation, I therefore propose that a concern with the architecture of the semantic processor (and not with metaphor itself) would instantiate the kind of research question that is best suited for psycholinguistic study. This heuristic perspective on psychological metaphor research thus suggests serious limits to an interdisciplinary approach to these matters. While the relevance of semantic studies of various types of metaphor is certainly acknowledged within the domain of linguistic analysis, it remains to be seen whether any of these semantic observations, besides perhaps the very fact of identifying metaphor as a potentially special type of meaning, can contribute to the general understanding of interpretation as a psychological mechanism.

2. One metaphor, two objects

The meaning of metaphor is one that invariably involves a “tension” of some kind, sometimes also referred to as a “dissonance” or plain “strangeness” and perhaps most adequately described by Black (1993), who introduces the original term in discussing what distinguishes a metaphorical statement from a literal one. One of the prime candidates for the kind of *prima facie* evidence that is needed to recognize a metaphor is indeed this characteristic feeling of tension arising between a metaphorical “focus” and its so-called literal frame. The literal meaning of a word that constitutes the focus of a metaphor, which is assumed to be tacitly known by the speaker and shared with the hearer, typically presents a paradigm case of the application or use of that word. If a meaning is not listed as figuring within this paradigm, it is consequently treated as nonliteral or figurative.

In spite of the relatively unambiguous wording in which this discussion is set, nothing should prevent us in principle from rejecting an apparently commonsensical distinction between literal and figurative meaning (or language use) “as superficial and ultimately indefensible” (Black 1993: 22). Indeed, Black, and certain others with him, can at the same time refer to a unique meaning property of metaphor, setting it apart from the rest of “language”, and still maintain that there is no deep rift separating metaphor from a larger set of meaning phenomena that cannot properly be regarded as metaphorical (and at least some of which would fall under what may be regarded as “literal meaning”). In fact, two levels of analysis should be considered when studying metaphor. We could start by saying that the tension at issue is not necessarily situated at the level of semantic processing (i.e., explicating the details of the mapping relation that is presented by a metaphor), but rather at that of identifying a stretch of language use as metaphorical, possibly after having processed (part of) its meaning (i.e., as a post-hoc reflection that can, in contrast with actual processing routines, be made more or less conscious). It is metaphor *recognition* that is at stake when characterizing the special nature of metaphor, but since this presupposes interpretive work, all statements regarding metaphor as a marked semantic type are necessarily hermeneutic and therefore crucially depend on the availability of existing meanings. Metaphor recognition is thus in no a-priori way linked to the cognitive mechanisms that are responsible for calculating the meaning of a metaphor, and which may just as well involve the same principles as are needed for the comprehension of literal language use. The tension which metaphor evokes, an undoubtedly “rational” phenomenon in the sense of being based on an underlying analysis of the “logical” proposition informing the metaphor, cannot but arise as the result of interpretation, and not as its prerequisite. A feeling of tension is the very point of using a metaphor, so that we can relegate this feeling to the province of pragmatic (“perlocutionary”) effects and leave the semantic prop-

erties of metaphor to the usual mechanisms of sentence processing. Such a perspective would be completely at odds with classic philosophical theorizing about the matter, where a metaphor needs to be recognized as literally false before any attempt at interpretation can even be made¹ (see [work based on] Grice 1975 and Searle 1993). Although such models are conceived of as providing standard pragmatic accounts of metaphor, they do emphasize the need to calculate the pragmatic meaning of an utterance next to a semantic one that is simply equated with its literal meaning (“or what is said”). What is more, they give substance to this pragmatic meaning, for example by directly connecting the meaning of metaphor to the speaker’s intentional structures and, ultimately, to a propositional representation that is assumed to be present in the speaker’s mind.

These issues have important consequences for experimental research on metaphor. First of all, they suggest that it may matter at which point in the comprehension process “meaning” effects are found, as well as what such effects have to say about the properties of metaphor as a process or a product of interpretation. As a result, Gibbs (1992) proposes a dynamic picture of metaphor comprehension, stressing the need to differentiate between various, qualitatively distinct, stages of metaphor processing. He also suggests that rival accounts of metaphor might conceivably be reconciled, if only the processing range is determined in which these accounts can be held to apply. It is this question of the range in which empirical observations hold true that is usually treated as an implicit assumption. For instance, conclusions drawn from tracking the first few hundred milliseconds of processing are bound to reveal properties that are relevant to concerns with immediate (incremental) processing, but not necessarily to the discussion of extended, reflexive analysis performed on metaphorical meaning (e.g., the appreciation of metaphor quality, issues of conventionality, etc.). Similarly, it is unlikely that any general statements can be devised that would cover the whole spectrum of processing phenomena associated with metaphors, because the entire time course of metaphor processing involves many different stages whose properties cannot all be scrutinized by means of the same measuring tools and methods of analysis. Together with the realization that there exists at least a limited number of different metaphor types — depending on whether a metaphor is felt to be established or new, of good or poor quality, and contextually motivated or not —, this leads us to conclude that the theoretical pluralism that marks metaphor research in psychology has little to do with the eclectic pluralism

¹ Although this is the classic view informing the Gricean analysis metaphor, it is by no means one that should be taken to reflect inescapable inferences of the paradigm at hand. For one thing, diagrams representing various layers of semantic and pragmatic processing that goes on during the comprehension of metaphor need not be mistaken for processing models. Instead, they may simply indicate “which kinds of information are prerequisites to which kind of assignment of meaning” (Levinson 2000: 187).

typical of more canonically interdisciplinary efforts. The pluralism turns out to be one that holds at different levels of analysis, and therefore an assumption of “monism” can in fact be entertained for each individual level, at least until it is empirically falsified. Thus, it is not self-evident that matters of automatic semantic processing can be brought to bear on qualities of metaphor as an object of conscious (e.g., esthetic) consideration, or vice versa. The interdisciplinary study of metaphor is restricted in its scope, in other words, primarily because the tools with which different disciplines work are not always mutually adaptable (and therefore their results aren’t either), but also because the nature of the object of study itself, metaphor, is changed by adopting different research questions and deploying different means of analysis.

The linguistic conception of metaphor and the psychological are two distinct things, because linguistics looks at metaphor as a meaning phenomenon, whereas psychology is interested in this (meaning) phenomenon as a shortcut to its primary concern, the architecture of the language processor. Linguistics can offer metaphor as a relatively well-defined domain of natural language use, which turns it into a convenient object of study for psychology (in contrast with many other, often considerably vaguer linguistic categories). Linguistics, or more properly semantics, cannot, however, aspire to impose its own substance (in the form of semantic features, domains, or “rules”) on the psychological approach to metaphor, because such substance is just nowhere to be located in the mental lexicon, where metaphor meaning is supposed to reside. Such a stance is inspired by what is known in the philosophy of science as the thesis of “weak supervenience”, stating that the objects recognized by discipline *A* (i.e., metaphors) are, or are wholly constituted out of, objects in the domain of discipline *B*, yet the standards for adequate explanations dictated by *A*, say semantics, are not shared by *B*, psychology (see also Davidson 1980). In particular, the psychological study of metaphor tends to concentrate on physical properties of the processing system confronted with a metaphorical input, which manifest themselves as automatic principles of semantic comprehension, while semantics deals with metaphor as the product of a rational “person”. Insofar as a specific type of semantics presents itself as “cognitive”, metaphor can still be defined linguistically as a mental (psychological) object, but not in the sense of providing direct access to some physical (neural) correlate in the brain. In psycholinguistic research on metaphor, this issue is most outspoken in the distinction between online and offline experimentation. The distinction directly reflects Gibbs’ concern with the processing stages that can be identified in metaphor understanding, in that offline methods of measuring are by their very nature more suited for the study of post-hoc, reflexive aspects of metaphor understanding. Online methods, in contrast, are typically needed to investigate features of automatic, incremental sentence processing, especially if these features are to be situated in early stages of processing.

I will now turn to aspects of processing that exemplify the emphasis on meaning (or representational) properties of metaphor and demonstrate that the methods used to track them typically belong to the “offline” regions of the psycholinguistic spectrum.

3. Metaphor as an object of meaning

As an object of meaning, metaphor primarily presents a problem of representation. In their useful overview of psychological approaches to metaphor processing, Cacciari and Glucksberg (1994) offer three possible modes into which different models of metaphor interpretation can be cast. What these have in common is that they adopt or presuppose a linguistic/semantic perspective (see also Levinson 1983: 147–162), and it is because of this property that they will do good service in our survey of how semantics can and cannot contribute to the psychological study of metaphor. (More strictly conceptual approaches, notably Glucksberg’s own class-inclusion model, are thus kept out of the picture here, even though they probably represent some of the more interesting and fruitful research venues in this respect.) One of these modes is the so-called “incoherence view”, which concentrates on the actual time course of metaphor processing and to which I will return in section 5. The other two are intrinsically linked with positions that are taken up on the nature of metaphorical content.

The first of them, the “comparison” view, starts from the Aristotelian conception of metaphor as the transfer of a name (and of features associated with that name) from one object to another, with Richards (1971) providing the relevant modern terminology for discussing the structure of metaphor, as it emerges from Aristotle’s discussion. This structuring in itself is not theory-neutral. For instance, a conception of the “ground” for a metaphor, one of Richards’ terms, will invariably involve deliberations concerning the specific features, or positions in “semantic space” (Katz and Fodor 1963; Lyons 1968), that are taken to make up a set of shared properties between the metaphorical “topic” and “vehicle”. Yet to assume the possibility of attaining such analytical specificity is to deny the fundamentally negotiable character of linguistic meaning and, a fortiori, of figurative meaning. It boils down to the presupposition, which is still popular in certain segments of the cognitive community, that a finite and more or less fixed set of features can be found or inferred that reveal the “point” of a used metaphor in an unequivocal way. Here, the special nature of metaphorical language use (its tension) is localized in the idea of the ground it evokes, whereby the ground should be seen as the essential component of a special, metaphorical meaning. In terms of measuring the time course of metaphor comprehension, however, this model has little to offer, since it predicts quite straightforwardly that “metaphorical comparisons”

are understood in exactly the same way as literal ones, thus effectively claiming that a metaphor is a shortened literal statement. Under certain experimental conditions, differences in processing times may of course still hold between literal and metaphorical utterance types, but this is not due to a qualitatively different strategy of semantic processing but rather to the additional work needed to transform a metaphorical statement into a fully explicit literal comparison. In this view, metaphor is a semantic, not a processing, oddity, which would be in line with the original nominalist ambitions of this paradigm.

The comparison view of metaphor has yielded a number of linguistic processing models that can be characterized in terms of feature or attribute matching (see Weinreich 1966; Van Dijk 1972; Levin 1977; etc.). In the case of a referential metaphor like *The stone died*, these models typically analyze its meaning by replacing a feature in the specification for the subject with a feature that is transferred from the predicate (or vice versa).² Thus, the meaning of at least one of the constitutive expressions in a metaphor (be it the subject or the predicate) will effectively be “neutralized” with respect to the transferred feature in question. Insofar as the transformation of a metaphor into an explicit comparison is not a hypothesis that is crucial to the basic notion of feature matching, such matching models are in fact quite comparable to the “mapping” accounts that have emerged from the cognitive-linguistic preoccupation with metaphor. Matching the properties of metaphorical topics and vehicles is indeed an analytic process that bears a great resemblance to its (at times quite sophisticated) topological variant in the so-called “contemporary theory of metaphor” (Lakoff 1993), where topics and vehicles are represented in the form of conceptual domains that may overlap (or even “blend”; cf. Turner and Fauconnier 2000) to a greater or lesser extent.³ Still, any theory

² Not just any feature, of course. The main problem with models that employ semantic features to calculate the meanings of metaphors is that they seem to rely on more or less automatic principles of calculation, based on sets of features that have been antecedently and independently assigned to lexical expressions. However, talk about semantic transfer and neutralization cannot hide the fact that even feature models need some (pre-theoretical) understanding of “similarity” in order to decide which features are actually available for transfer in any given context. We must, in other words, still assume that the speaker is attributing to an entity some feature or features with respect to which the entity resembles the metaphorical target.

³ I will refrain from discussing this theory of metaphor at length. Instead, I refer to the complex of counterarguments to this theory adduced by Murphy (1996), who notes that the conceptual metaphors identified as the underlying representations of linguistic metaphors may in fact come out of post-hoc (and thus offline) analysis. Various articles by Glucksberg and some of his associates (most recently, see Keysar et al. 2000) have also repeatedly proposed that people need not rely on the types of conceptual mapping postulated by Lakoff’s theory, at least not to understand conventional figura-

that presumes the availability of semantic features as valid psychological objects and maps these onto structures of the brain is problematic on two counts. First, it must hold, like most semantic models that work with features, that they are in fact real objects with real neural correlates. This is a representational claim, and, regardless of whether it applies to metaphorical meaning as an undifferentiated Gestalt or to components of metaphorical meaning (like features), it must maintain that there exists a clear-cut correlation between the products of semantic investigation (as carried out on the part of the analyst) and the constraints that shape the language user's behavior in processing metaphors. However, the act of situating semantic objects in the brain is a highly questionable one, to which I will return below. Secondly, predictions of matching or mapping models regarding the dynamics of interpretation can vary considerably. A variety of these models have concentrated on metaphor as an implicit comparison (e.g., Tourangeau and Sternberg 1981), producing unclear claims with respect to the possible causes of differential processing behavior in literal vs. metaphorical conditions. Others have objected to this biased treatment of metaphors as shortened comparisons and insist that a metaphor should be seen as a special meaning object in its own right, with typical semantic and processing properties. Thus, Ortony's (1979) salience imbalance hypothesis starts from an important distinguishing feature of such "comparisons", viz., that they are asymmetrical, without however formulating the implications of this position for processing time.

Glucksberg and his colleagues, on the other hand, have repeatedly stressed the lack of attention, within metaphor models based on a notion of comparison or similarity, that is paid to pragmatic standards of well-formedness, contending that the strength of a metaphor lies in its *informativeness*. Therefore, a metaphor that projects highly salient features of a vehicle onto the topic is at least potentially felicitous, but it is not this configuration that can produce a defining hallmark of metaphoricality (Glucksberg and Keysar 1990). The same configuration for literal categorizations or comparisons, as in *Chaises longues are (like) sofas*, is only perceived as informative if we assume that the hearer is not aware of the salient properties of a 'sofa'. So, if it is not the feature matching that separates metaphors from literal statements, the distinction must reside in what people do with the outcome of this "matching". According to Glucksberg (1991), language users do not necessarily abandon or reject the literal implications that a metaphorically construed "categorization" presents, so that metaphorical meaning is more typical in what it suggests (i.e., in the inferences based on it) than in what it is as a putative semantic object. Incidentally, Glucksberg's is one of the few experimental approaches where actual predictions are made concerning the time course of metaphor processing that do not assume the automatic priority of literal over metaphorical mean-

tive expressions (which is exactly the kind of expression on which this theory builds most of its case).

ing. The reason for this is that the literal meanings activated by the mere selection of lexical items to form a metaphor may still play a guiding role in the computation of the actual metaphorical point. Consequently, metaphorical meanings are not necessarily optional either and can in fact be apprehended next to a nondefective literal meaning (Glucksberg, Gildea, and Bookin 1982). This diverges, of course, from what an explicitly modular account would have to say about this, viz., that metaphorical meanings can only begin to be computed if a literal interpretation fails.

The second approach listed in Cacciari and Glucksberg (1994), following Black's interaction view, also assumes the relevance of features for processing metaphor but defines these features in terms of emerging, not necessarily existing, similarities. Thus, the interaction view avoids the trap of postulating both the givenness of finite sets of features that can be assigned to individual words, and the specificity and cognitive availability of the "union" that is said to result from mapping such sets onto one another. It respects, in other words, the *creative* function of metaphor, assigning an essentially pragmatic meaning to it and thereby acknowledging the quintessential role of speech participants in negotiating meanings, instead of just coding and decoding them. Here, too, the work of Richards (1971) seems crucial, if only in its articulation of the two interacting "subjects" (topic and vehicle) that are involved in the workings of metaphor. What this theory implies for psychology is that meanings can be found to play a part in metaphor comprehension that cannot be ascribed to either the topic or the vehicle, at least not outside the implicative complex created by the metaphor itself. Similarity is, again, a key issue in this type of research, but this time the similarity is new, dynamic, and possibly indeterminate.

Waggoner (1990) offers some reasons why the interaction view has generally failed to arouse much interest within experimental psychology. One of the main factors in this respect, one that was also noted by Tourangeau and Sternberg (1982), is its philosophical orientation, which insists on the indeterminate nature of metaphorical meaning and therefore tends to refrain from formulating processing procedures that are too specific. Still, some empirical work has been done in this framework over the past years, which has produced a limited number of complex hypotheses concerning the structure of metaphor, including Indurkha (1992), as well as Tourangeau and Sternberg's (1982) domain interaction theory and Gentner's (1983) structure mapping theory. More recently, various studies have addressed certain online characteristics of metaphor processing from the interaction angle, using a combination of reaction-time tests, judgment tasks, and imagery protocols⁴ (Camac and Glucksberg

⁴ Incidentally, this emphasis on mental imagery corresponds to what Paivio and Walsh (1993) have indicated as the third hypothesis concerning the "essential" communicative functions of metaphor, next to that of "inexpressibility" (à la Davidson

1984; Walsh 1990; Tourangeau and Rips 1991; Gineste and Indurkha 1993; Gibbs and Bogdonovich 1999; Gineste, Indurkha, and Scart 2000).

Insofar as these studies examine the strategic potential of metaphor, focusing on offline matters of appreciation and evaluation, they are probably right in claiming, along the lines of Black's original insights, that metaphor creates new meanings and new similarities and thus does not assume the a-priori exploitation of existing similarities between topic and vehicle. However, when these strategic claims are translated into statements concerning online characteristics of metaphor processing, the predictions become less than clear again. What does the interaction theory have to say, for one, about the relationship between an utterance's literal and metaphorical meanings (and about their processing priorities), especially if we recall Black's observation that the special semantic status of metaphor in no way turns it into a "singular" processing phenomenon? In this respect, interaction theory often refers to Black's analogy of metaphor as a smoked glass, a kind of filter that gives special prominence to certain features of the topic while hiding others. But where is the creativity in this analogy, when compared to the more dramatic descriptions, also available in interaction theory, of metaphor juxtaposing the topic and the vehicle and creating, out of this juxtaposition, a new representation, i.e., a metaphorical representation? This, in fact, must be the ultimate semantic, nonpragmatic perspective on metaphor, where a metaphorical meaning is also a representation and thus an actual object. Too often does the interaction view, as it is implemented in empirical research, conflate the online and offline levels of metaphor interpretation, thereby adding to the confusion surrounding the exact location of the tension that characterizes metaphor. The duality to which such a semantic view generally leads is rendered more explicit in Ricoeur's (1975) explanation of metaphorical meaning (cited in Gineste, Indurkha, and Scart 2000), which sees metaphor as a *semantic event* whose tension derives from, or resides in, both its processing properties (qua event) and its object-like status as a representation (of shared or created similarities). Now, while we may agree that metaphor is an event that bears meaning, it is not necessary that it creates a representation of that meaning and much less that this meaning comes out of language itself, as a semantic "system". Metaphor, we might say, is a symbolic activity, not a symbol. Given that it is language users who infer metaphorical meanings from certain utter-

1978) and the transfer of a vehicle's *salient* features to the metaphorical topic. The imagery hypothesis states that metaphor primarily creates something of an image, a vivid (nonlinguistic) representation that is firmly grounded in perceptual experience. Such a stance would certainly allow researchers of metaphor to avoid the inherent difficulties with semantic representation, which will be discussed below. At the same time, however, any talk about metaphor's communicative function betrays an interest in the interpretive nature of metaphor (what it does to people), rather than in its online characteristics. This emphasis is also apparent from many of the titles that are cited here, which repeatedly refer to aspects of metaphor "evaluation" and "appreciation".

ances (or sometimes consciously imbue them with something of a metaphorical “twist”), a pragmatic stance might be more suited to the issue of metaphor interpretation, as suggested, though perhaps for slightly different reasons, by Davidson (1978). Semantically, in terms of true or false propositions, there is indeed nothing extraordinary to say about metaphor: they are simply false (see also Vicente 1992).

4. Meaning as an object of psychology

Whether the hallmark of metaphorical meaning resides in the feature matching involved, in the emergence of an implicative complex, or in the mapping of conceptual structures associated with the metaphorical terms, in each case there is a presumption that measuring effects allows us to open up the mental lexicon and see how meanings are stored and organized inside. Remarkably, this presumption has been questioned only rarely, probably because a critique of (semantic) representationalism in today’s “cognitive revolution” would mainly come from philosophers, not linguists or cognitive scientists. Yet the philosophical claims at issue here cannot readily be reduced to a caricature — for instance, that of a strictly behaviorist position —, in that the relevance of meaning phenomena in natural language (processing) is not simply negated. Instead, a division of labor might be proposed between a cognitive (non-truth-conditional) semantics, as an essentially interpretive analytic endeavor, and those disciplines in the cognitive sciences that model processing in terms of (quite mechanistic) types of information management. As a result, semantic categories of natural language are viable theoretical constructs for semantics, “obeying” the internal “rules” that define this field, whereas they are first and foremost useful heuristic tools for the psychologist who wants to describe the architecture of the language processor. Thus, nobody is denying the “right” of psychologists to make use of semantic categories in their exploration of the mental regions that make up the “lexicon”. It has been done before, and quite successfully (cf. the literature on ambiguity resolution, e.g., Simpson 1994), and psychologists do need to jump at anything they can lay their hands on, lest they run out of heuristic procedures to feed their extremely indirect measuring techniques. Still, the use of semantic categories in psychological research does not imply that all of the qualities ascribed to them should simply be transferred as well. After all, for a psychologist interested in the mental lexicon, there are really not that many options. Either semantically complex categories (like ambiguous words or figurative utterances) point to extra processing efforts, or they do not. Now, while it would be a shame to reduce the set of possible research questions on metaphor to such binary concerns outside the field of experimental psychology, it would be equally regrettable in turn to expect psychologists to provide *reasons* why metaphor creates this effect, if at all. Language processors do not have reasons.

A few psycholinguists dealing with metaphor have occasionally brought up some of the more daunting problems to which the psychological study of meaning may lead. Katz (1992), for instance, is right to observe that all processing models in psychology, whatever the subject matter they apply to, force the analyst to take a stand on the issue of representation (in long-term memory, or the lexicon): which types of representation can be assumed, how do they relate to the computation of metaphorical meaning, and in which computational processes are they involved? Katz is not inclined, on the other hand, to let this stop him from articulating a seemingly given representational scheme anyway and examining it on its psychological implications. The scheme in question happens to be a variant on the traditional cognitive stance in this matter, the “physical symbol system” (Newell 1980), which holds that “to understand metaphor comprehension (and any other intelligent activity) one has to have a model of the representation of knowledge in permanent memory” (Katz 1992: 609). This knowledge is said to consist of concepts, which may be further subdivided into features. Perhaps, though, the problem is not that theories of representational schemes cannot be falsified, for they can, but rather that there is nothing we could possibly conceive of that should correspond to the theoretical entities posited in such schemes, even if (some of) these were proven “true”. Crucially, there is also a “social” aspect of rule following (or, in the case of metaphor, rule exploiting) that is essential to any meaning-oriented conception of language, yet it is one that is almost completely missing from the field of psycholinguistics proper. At this point, I would suggest that this is not a problem as long as the psycholinguistic enterprise concentrates on the mechanics, so to speak, of the language processor. This implies a strong abstinence from any claims concerning the availability of mental symbolic representations, because concepts and meanings — the stuff that linguistic representations are allegedly made of — are objects related to persons who use language, not to processors that process language, and they do therefore not “fit” the vocabulary of psycholinguistics. Any psychological theory of metaphor, insofar as it wants to model regions of the brain and their interactions, will thus need to provide an explanatory account of metaphor comprehension that does *not* refer to symbolic representations, either at an explicit or at an implicit level of analysis.

As suggested above, semantic categories may still be resorted to by the psycholinguist, but not in order to find their psychological or neural correlates, *qua* mental representations. The picture in such an alternative line of research is a slightly bigger one, namely, the viability of assuming a complete separation between conceptual and linguistic knowledge, which is a variation on the theme of modularity that pervades cognitivist thinking until today. In the case of lexical ambiguity research, for instance, it is important to note that so-called homonymous items react differently to the availability of disambiguating context from other classes of lexical items. While all meanings of a

homonymous word appear to be activated independently of such context, it is also suggested that the activation level subsequently drops dramatically for those meanings that are not relevant to the local processing concerns at hand (in contrast with lexical types instantiating other semantic relations, notably polysemy; see Brisard, Van Rillaer, and Sandra 2001). This pattern of (activation) behavior really defines a separate class of psychological phenomena, and it is the merit of linguistic semantics to have pointed out a category of words that can thus be used by psychologists interested in the influence of context on processing. It does not, however, automatically lead to the acceptance of a storage format (the symbolic representation of individual meanings or senses for a word) that presents meanings as static, given objects in the heads of language users. Even though standard accounts of lexical ambiguity do talk in terms of “activation levels”, presupposing that there is a representation to access and activate in the first place, we need not accept this format at face value just because the original hypotheses into which this type of research was cast did so. In fact, we can abandon all beliefs regarding the availability of symbolic representations in the mental lexicon and still accept the empirical validity of the research findings. While there is a psychologically relevant class of homonymous words that behaves differently with respect to other types in the lexicon, we cannot conclude from this (at least not until further notice) because homonymous words have their meanings “stored” separately and that other (polysemous or vague) words do not. Just so with metaphor, we could now propose. There are some indications, given by semantics, that metaphor is indeed a type of utterance that warrants special treatment. But whatever the specific reasons given for this in semantics, these should not lead psychologists in their investigation of the matter. It could still be, in principle, that metaphor is a special kind of object in semantics and in psychology, but for very different reasons. Thus, it might turn out that metaphor yields typical effects that can be measured in experimental settings, even though there are no independent reasons to assume that the language processor differentiates between such general categories as literal and figurative language use. Alternatively, it could be that metaphor is not a special psychological category at all, and that effects found in the study of metaphor actually point to a different variable, be it conventionality, contextual fit, or any other dimension that cuts across the dichotomy between the literal and the figurative. In both cases, psychologists thank semanticists for providing them with a potentially interesting object of study but research the issue quite independently, that is, without being bothered by the original hypotheses that have led to the identification of this object (or rather, of its correlate) in semantics.

The reasons for critically evaluating the conclusions that have been drawn from the research on lexical ambiguity might differ slightly from those involved in the assessment of the experimental study of metaphor in psychology, although an important region of overlap is bound to remain. Though metaphor is not primarily a matter of word meaning, in that it is created out of

the juxtaposition of at least two referents, it does rely on the availability of word meanings to construe an utterance meaning that can arguably be called metaphorical. In addition, the frequency and familiarity of certain metaphorical expressions may eventually cause the metaphorical use of a term to become so entrenched that it might rightfully be considered an extra meaning (or sense) of that term, so that we may now recognize that, in English, the expression *block of ice* can refer to a cold watery substance *or* to a person. Certainly, current online techniques would allow the exact localization of potential metaphorical effects on individual words, if such need should arise. But that would not solve the problem with symbolic representations noted for ambiguous words, and there is consequently no reason to assume that we should posit metaphorical senses or meanings as real psychological objects, even in cases of extreme conventionalization. From a philosophical angle, again, the emphasis on metaphor as a juxtaposition, and thus as an act or event, makes a lot more sense in the light of the previously noted critique of representationalism. It is not only problematic to assume the availability of symbolic representations within the mechanistic field of psycholinguistics. Ultimately, any object-like view of metaphor in particular is bound to meet with serious conceptual and theoretical difficulties, even in semantics. For what else is a metaphor but a certain type of usage event grounded in a communicative situation? Here, Wittgenstein's (1953) contextualism implies a radical critique of any type of meaning or intentional content as objects of inquiry. Now, to compute the meaning of a metaphor is not necessarily to reconstruct the intentions of the speaker, nor are meaning differences necessarily reflexive of differences in mental contents. Meanings lie in their contexts of use, and this is true a fortiori for metaphor, which calls for a pragmatic, or at least praxis-centered, approach by virtue of the very indeterminacy of metaphorical meaning. In short, no individual action, feeling, thought, or experience can be said to constitute *the* substance of metaphor (since all are part of a metaphor's vast range of "effects"). At a sufficiently abstract level, metaphor can still rightfully be considered a meaning phenomenon, but in this capacity it merely behaves similarly to other, nonmetaphorical instances of meaning. Whether we see this meaning of metaphor linguistically, conceptually, or in terms of imagery, the fact remains that no one object, mental or otherwise, can contain its significance within itself. In general, meaning differences are to be located in language games (or contexts of use), and not in the real objects denoted. This, of course, goes against a standard Fregean account of reference, since (metaphorical) sentences are not thought to denote objects in the requisite philosophical sense at all (that is, no objects can fix their meanings). But if meaning is not determined by an object, this goes for those semantic objects posited by the comparison and interaction views as well (cf. section 3). These models may not have succumbed to the temptations of a purely logical account of metaphor, but they too remain stuck in the belief that properties of metaphor (processing) can be *explained* by referring to representational objects in the mind (i.e., that they are *caused* by them).

5. Metaphor as a meaning event

A significant portion of the extant psycholinguistic research on metaphor processing concentrates on tracking the time course of processes of “retrieval” and comprehension (for a good overview, see Gibbs 1994). This is usually accomplished by assuming a set of variables whose influence on these mechanisms is to be empirically established for a range of metaphor types. These variables include the interpretive quality of metaphors (how easy or hard they are to make sense of), their degrees of conventionality, and the presence/absence of preceding context motivating the ground that is conjured up in a metaphor. In this respect, we may refer to a limited set of processing models that predict specific response patterns for metaphorical expressions set against a baseline of literal matches. Frisson and Pickering (2001) offer a useful list of models that have been proposed to account for the online comprehension of figurative language. Theirs is a somewhat unorthodox classification of models in the psychological literature on metaphor, because they focus on single word ambiguities, i.e., more or less restricted regions of a sentence where its literal or figurative status becomes clear in the course of incremental processing. This is a true online perspective on metaphor research, though, because it asks exactly *when* participants in an experimental setup need to “decide” whether they are dealing with a figurative utterance, and what to do with it. It does not ask what participants think of the metaphor they are confronted with, how they assess its meaning, or whether they can appreciate any of its esthetic or otherwise reflexive qualities.

The resolution of “sense ambiguity” (i.e., the ambiguity displayed by figurative expressions) may resemble that of true lexical ambiguity (homonyms) or, alternatively, it may be more in line with a polysemous organization of parts of the lexicon. A number of different theoretical options are available, then, to discuss the nature of the processing architecture that has to deal with figurative expressions. In its most modular form, the processor may be said to access meanings in order of frequency (regardless of the literal-figurative distinction), as in the case of lexical homonymy. Frisson and Pickering (2001) are quick to argue against this option for the case of figurative language, mainly on the basis of online research on sentence processing (see Frazier and Rayner 1990; Frazier 1999; Frazier, Pacht, and Rayner 1999) and assuming that the semantic link that can be postulated between an expression’s literal and figurative readings points to polysemy more than to homonymy.

Two conceptually related models, differing only in the processing priorities they assign, are “Literal First” and “Figurative First”. The former comes from the well-known linguistic-pragmatic tradition of thinking about metaphor, initiated by Grice and Searle. Literal First, at least theoretically, is a rea-

sonable model, because many experimental results suggest that figurative language is indeed processed more slowly than literal utterances. Crucially, however, context seems to affect this derived status of figurative meaning, in that the availability of enough contextual information preceding the metaphor will typically result in the disappearance of any metaphor effect. In addition, Literal First has difficulties explaining the automatic availability of metaphorical meanings in contexts where they are strictly speaking not called for (i.e., contexts that allow literal readings to make sense; see Glucksberg, Gildea, and Bookin 1982). Figurative First, on the other hand, posits the primacy of figurative meaning in contexts where that meaning would make sense (or rather, where it would make more sense than its literal counterpart). This is for the most part a purely theoretical option in the range of models that can be hypothesized for metaphor processing, but it has also been presented as a real, that is empirically documented, possibility. In that case, however, it looks as if the workability of Figurative First depends on an expression's high degree of conventionalization (as with idioms; cf. Gibbs 1980), so that it is in fact the collocational status of such constructions that is being described, and not per se their figurative nature. As a general model of metaphor processing, therefore, Figurative First seems highly unlikely. A more acceptable variation on this, also exploiting the theme of figurative readings that are accessed at least as fast as literal ones, is the "Direct Access" model, entertained by Gibbs (1994: 421) to account for the immediate availability of metaphorical readings in "realistic social contexts". Thus, Direct Access can explain both why metaphorical utterances are processed more slowly in environments where they do not benefit from any contextual support for their comprehension, and how the presence of sufficient contextual material may level out this processing difference. This model is, incidentally, several steps removed from the orthodoxy of any modularity hypothesis, which would state that context can only help processing after an initial, literal stage of comprehension.

There are two more models that serve as theoretical options in explaining the psychological mechanisms involved in the comprehension of metaphor. One of them, "Underspecification" (Frisson and Pickering 1999; Pickering and Frisson 2001), does not assume the initial activation of any specific meaning in processing a figurative expression, but posits instead that a schematic meaning is first accessed that is subsequently fleshed out according to contextual specifications and the progressive interpretation of the figurative utterance in which the target expression appears. Thus, it is not competition between various stored senses or meanings that is responsible for the processing difficulties found in a number of metaphorical conditions, but the possible delay caused by a processor that is, at a certain point in time, given insufficient information to settle on an appropriate meaning. Note that Underspecification only holds for established metaphorical senses, as there can be no available schematic meaning for a term that is used metaphorically in a creative, novel way. In that case, it is better to speak of sense creation (Gerrig

1989), which is expected to take more processing time than retrieval anyway. And so the contrast between figurative and literal utterance types may well turn out less useful than that between a number of other processing variables that have nothing to do with the discussion of literal truth and pragmatic inference. Novel metaphors may simply be instances of creative language use, next to many other forms of coining, extending, and exploiting meanings, and take up more processing time because of this, not because they are metaphorical. Conversely, established metaphors may come out as strict cases of polysemy, where the semantic link between a term's literal and metaphorical meanings prompts a type of processing behavior that befits other polysemous (as opposed to homonymous) expressions as well, figurative or not.

As far as processing established metaphors is concerned, then, and assuming that they behave like other polysemous items, it is hard to distinguish between the predictions of Underspecification and those of a "Parallel Activation" model, in which *all* available senses are activated regardless of their entrenchment or semantic status. What Underspecification adds to such a parallel model is the processing relevance of an emerging schema capturing all of the semantic commonalities of the instantiations in which it is immanent. But is it really necessary to conceive of such a schema once more as a separate semantic object, which can be accessed and whose contents can be retrieved? I suggest, in line with the general critique of representationalism, that it is not, in that the psychological relevance of a schema interfering with semantic processing may also be seen in terms of an emergent property of the language processor, without any physical status and therefore not localizable in the brain. Obviously, the same goes for all the other models that have been mentioned here, though I have presented them so far as if the respective formulations of their explanatory accounts, in terms of "accessing representations", were unproblematic. Insofar as these models assume the reality of symbolic mental representations, they run into the same theoretical and philosophical difficulties as identified for the comparison and interaction views on metaphor processing. Still, there is something critically distinctive, and worth entertaining, about models that investigate questions of modularity (or "incoherence"), and that is the fact that each of them addresses true online problems of metaphor processing, in the sense of focusing upon the sequential organization of semantic computation and pragmatic inferencing (i.e., the influence of context). The reason why, in contrast with comparison and interaction views, these various models, as a complex of hypotheses, do manage to produce a psychologically relevant research program in the study of metaphor is that they ask pertinent questions, and not necessarily because they provide the right answers to these questions. Even if we reject the explanatory power of mental representations in any account of metaphor processing, we can still proceed *as if* (one or several of) the models developed by these different theories describe the actual behavior of the language processor, as probed under very precise conditions, in an accurate way (provided, of course, that their

predictions are empirically borne out). Without attributing attested effects to the presence of representations, the very same effects can still give us useful clues as to the relevance or meaninglessness of cutting up the language processor into different modules that do or do not relate to each other in more or less interactive ways. For psychology, the real question is not which kinds of representation are involved in metaphor processing or what their internal structure is like, but how processing units, regardless of the specific formats they may assume, function with respect to each other, and in particular how their sequential organization is managed.

Taken together, the models discussed in the present section can, in principle, provide us with valid research questions for a psychological approach to online metaphor comprehension that does not treat the availability of symbolic representations in the mind as a given. In this sense, their focus on the dynamics of semantic processing outweighs any kind of representational claim that might be made by them at the same time. There is one more caveat, though. It is a methodological one, with serious consequences for the interpretation of experimental results. Such models, whether or not they presume a literal bias in mechanisms of semantic processing, call for a genuine and fine-grained online measuring technique, since they focus on locally activated patterns of comprehension that could remain undetected when only global processing times are considered. Moreover, they cannot rightfully resort to indirect measures of processing, such as asking participants to determine whether a sentence is true or acceptable or to rate sentences offline, and still claim to be asking the same types of question. This requirement contrasts with previously adopted techniques in metaphor research, which often rely on measures that are too crude or tasks that are too far removed from natural interpretive behavior to assess online characteristics of metaphors (see also Frisson and Pickering 1999 and Brisard, Frisson, and Sandra 2001). More specifically, if the dynamic nature of metaphor processing is to be examined, the process of reading (or listening to) metaphors must be tapped online, i.e., during the word-for-word presentation of the metaphorical stimulus sentence. If reaction times are measured for complete metaphorical sentences only, other components of metaphor interpretation, like the actual appreciation of the metaphor in question (Gibbs 1992), will have already had a chance to interfere in the course of processing. Thus, measures for entire sentences or large sentence fragments may well miss early effects of metaphor processing. What is more, even the very presence of an effect in such experimental designs that are too crude would still not allow its exact localization (i.e., where it begins to emerge and how long it persists), while its absence (the null effect) may be due to the fact that the effect has been drowned in the sum of all individual data points. In order to make statements on the processing routine itself, one must therefore track the course of comprehension more meticulously, as has also been argued by Dascal (1989). This is what can be achieved by using a variety of online techniques, such as self-paced reading and moving-window

tracking, as well as a host of neurolinguistic measurement and imaging paradigms. The point of using any one of these techniques would be twofold: (i) to allow participants to deal with metaphors in a more or less natural way, that is, without any interference from some experimental task that is imposed upon them in addition to simply processing the metaphors; and (ii) to track the ensuing interpretive behavior of participants on a word-by-word basis, making sure that the distinction between conventional and novel metaphors, as well as other relevant factors, are systematically controlled for in the design of the stimuli.

6. Conclusion

I suggest that, from a psycholinguistic perspective, architectural concerns are among the few valid research questions that can be tackled with the help of chronometry. As a result, there is very little room for interdisciplinarity in the field of metaphor research in psychology, as the question of metaphor within the structure of the language processor does not necessarily relate to its status in semantic or pragmatic theories of meaning. At best, linguistics can contribute to the psychological study of metaphor in providing descriptions of categories that may or may not address issues of interpretive autonomy and/or interaction by tapping into distinct processing routines (on analogy with ambiguity research in semantics and syntax, which offers a similar way into the study of semantic processing). In this case, psychology makes use of linguistic categories, but only as heuristic devices that motivate the application of an explicitly psychological line of research (modularity) to various domains of language use, instead of defining a separate object of study in its own right. This implies that metaphor is not seen as a semantic object with a real correlate in the mental lexicon, but rather as a type of event that may trigger different processing strategies, depending on the architecture of the brain.

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METAFORE SU DOGAĐAJI, A NE PREDMETI

U članku se raspravlja o sukobu lingvističkog i psihološkog pristupa metafori. Cilj je pokazati da svi interdisciplinarni naponi ne donose jednaku korist gledaju li se ciljevi pojedinih disciplina. U slučaju psihološkog istraživanja metafore interdisciplinarnost se zapravo svodi na heuristički odnos, tj. lingvist ustanovljava parametre korisne pri definiranju predmeta proučavanja te tako omogućuje psiholingvistu da se približi svom općenitom cilju, proučavanju arhitekture jezičnog procesora. Iz toga slijedi da je postojeća podjela rada između lingvistike i psiholingvistike nužna realnost, a ne slučajnost. U prilogu se u argumentaciji polazi od opažanja da proučavanje semantičkih aspekata prirodnih jezika sve više i više karakterizira navodno sužavanje pažnje isključivo na osobine mozga kao sjedišta mentalnog leksikona, te tako isključuje interpretativnu moć jedinke u čijem je sklopu taj mozak. Posebna se pažnja posvećuje metodološkim problemima do koji dovodi heteronomni aspekt razumijevanja metafore, kao i teoretskim problemima pri definiciji metafore kao predmeta proučavanja u divergentnim disciplinama.

Ključne riječi: mentalni leksikon, metafora, modularnost, pragmatika, semantička obrada