Francisco Jose Ruiz de Mendoza Ibanez

From semantic underdetermination via metaphor and metonymy to conceptual interaction*

Abstract

The question of semantic underdetermination is related to the distinction between what is said and what is implicated. In this paper we examine the relevance-theoretic notion of enrichment as a procedure for developing what is said into a fully specified proposition or explicature. We make the claim that there are two forms of such a procedure, viz. grammatically-motivated and conceptually-motivated enrichment, and discuss their role in communication. We further contend that the notion of enrichment and the other procedures of propositional development recognized in the relevance-theoretic literature are insufficient to account for all cases of explicated meaning. In this connection, we propose other cognitive mechanisms such as mitigation and more interestingly-metaphoric and metonymic mappings. This discussion allows us to cast some light on the implicature/explicature division line and to rank as explicatures some cases of inferences which have so far been considered as implicatures, including those where metaphor and metonymy are involved. Finally we examine the role of metaphoric and metonymic mappings - both in isolation and as part of conceptual interaction systems - in the production of explicatures, which allows us to understand better the communicative potential of these cognitive mechanisms.

1. Introduction

It is very generally known that -more often than not- there is a wide gap between what people say in interaction and what they mean. For some time, many theorists have assumed that getting from the meaning of the sentence to the proposition expressed is merely a matter of disambiguation and instantiation of indexical variables. However, the issue has proved to be rather more complicated. Among the theorists who have devoted attention -whether explicitly or not- to the difference between what is communicated and what is said, are Grice (1975) and Gricean pragmatists (e.g. Bach, 1994), speech act theorists (Searle, 1979, Morgan, 1978, Bach & Harnish, 1979), people studying reference (Kripke, 1977, Wettstein, 1984), and Relevance theorists following Sperber & Wilson (1986), most notably Carston (1988). In most studies part of the emphasis is placed on determining what pragmatic principles adequately account for how the frequent underspecification of sentential meaning has virtually no effect on the ultimate successful transmission of messages.

    A critical appraisal of some of the pragmatic principles proposed in the existing literature may be found in Recanati (1989). However, what is missing is a consideration of the role of semantics in establishing the communicative role of semantic underdetermination. In order to attempt to fill this gap, in this paper we shall contend that semantic underdetermination is not only a question of sorting out propositional inspecificity by means of pragmatic principles, but rather the result of a purposeful exploitation of the range of semantic choices which grammatical constructions offer to the speaker in connection with pragmatic principles. In the view here presented, semantic underdetermination is a linguistic resource used to make meaning in certain predictable ways. In order to prove this, we shall first discuss the old issue of the difference between what is said and what is communicated. This will require us to look into the implicature/explicature distinction, originally proposed by Sperber & Wilson (1986), and more specifically into the concept of enrichment, which we shall revise. Then we shall attempt to provide criteria for discriminating between implicated and explicated meanings and study the role of metaphor and metonymy in this connection. Finally, we shall look into some relevant aspects of conceptual interaction involving metaphor and metonymy in order to illustrate (i) the way some implicit and all explicit assumptions are motivated by specific semantic procedures, and (ii) how the conceptual development of a representation is produced in an orderly pre-arranged way to facilitate linguistic communication. In relation to this, we shall make use of some of the explanatory tools provided by the Cognitive Linguistics approach to metaphor and metonymy as ways of reasoning and making inferences (cf. Lakoff & Johnson. 1980; Lakoff & Turner, 1989; Lakoff, 1987, 1993).

2. What is said and what is communicated

As is well known, Grice (1968, 1975) made a distinction -crucial for his theory of conversational implicature- between what is said (which must correspond to the elements of the sentence including their syntactic character) and what is implicated. What is implicated may be either conventionally implicated (i.e. implicated by virtue of word or sentence meaning) or non-conventionally implicated (i.e. going beyond the normal meaning of the words used). Bach (1994) has interpreted that for this author the contents of what is said are structured propositions with a definite syntactic correlate in such a way that expressions with equivalent truth-conditions, like an active sentence and its corresponding passive (e.g. *John admires Mary* and *Mary is admired by John),* would be different cases of saying if only with different usage conditions. Bach observes that by this criterion what is said and what would be said in an expanded or completed version - what is conventionally implicated, to use Grice's own terminology - of the same utterance must be considered different. We may illustrate what Bach means by comparing the sentences *He is not good enough* and He is not good enough for Mary to many him. Imagine we have the same context for both and that the addressee is going to recover the same proposition in the two cases (that is, the expanded version). Still, even though what is communicated at a certain level of conventionalized meaning might be considered to be the same -a point which is arguable, as will be made evident below-, what is said is -strictly speaking- different.

We shall re-analyse Grice's distinctions later. Now, let us focus our attention on the utterance *He is not good enough,* which is semantically underdeterminate and requires completion to produce a full proposition. The notion of completion is an old and well-documented one in the philosophy of language and in pragmatics. One is reminded of Frege's "sense completers" in relation to his differentiation between "sense" and "thought", where the former could be incomplete (it was guided by the structure of language) while the latter had a truth value and was therefore complete (see Perry, 1977 for discussion). More recently, Sperber & Wilson (1986), Carston (1988), Recanati (1989), and Bach 11994), to mention a few, have addressed the issue of completion from different but highly thought-provoking perspectives. Sperber & Wilson and their followers (e.g. Carston, 1988, Blakemore, 1992) claim that three processes are involved in getting from (underdetermined) sentence meaning to what is said at the expanded level: disambiguation, fixation of reference and enrichment. The development of an utterance by means of these processes is what Sperber & Wilson (1986: 182) call its "explicature" (i.e. an explicitly communicated assumption), a concept

which is complementary of the (more traditional) concept of "implicature" (i.e. an implicitly communicated assumption").

While disambiguation and reference assignment are commonly discussed processes, the notion of "enrichment" requires special attention. Sperber & Wilson (1986) and Carston (1988) have treated enrichment by using similar examples. Consider Sperber & Wilson's (1986: 189) discussion of *It will take some time to repair your watch.* As the authors rightly observe, since watch repairing is an activity that takes time, if we only make use of decoding and reference assignment, the interpretation of this utterance is a truism and consequently it is irrelevant. But what people generally understand a sentence like this to mean is that repairing the watch will take longer than expected (say, by the customer at the jeweller's). Sperber & Wilson argue that this situation is predicted by relevance theory: the logical form of an utterance is an assumption schema which may be in need of completion; when completion is required, this is indicated by "the presence of semantically incomplete or manifestly vague terms" (ibid.). The expression some time in the sentence above is such a case; it might be one second, one hour, one week, and so on. Each of these interpretations is an enrichment of the preceding one since it contains the same information and more. Finally, Sperber & Wilson conclude that "the first accessible enrichment consistent with the principle of relevance is the one which specifies that the time it will take to repair the watch is at least more than would normally be expected" (ibid.).

The notion of enrichment as one way of accommodating the utterance to meet contextual requirements is an interesting one, as will become evident in the next section; however, it is problematic as it stands. First, let us ponder for a moment Sperber & Wilson's claim that interpreting "some time" is a matter of finding the first accessible enrichment of the concept which will be relevant. The first problem is that, the way it is explained by Sperber & Wilson, it suggests that the addressee needs to work all the way mentally through a (virtually) limitless series of specific time lapses until he finds one which is felt to be satisfactory. Or maybe he only needs to select just a few specific time divisions? But then, is his decision capricious or is it based on some criterion which has so far been left unspecified by the theory? Second, although enrichment is correctly described as a procedure by which an interpretation is made to contain the same information than a previous one and more, the process is claimed to be uniquely constrained by consistency with the Principle of Relevance (that is, with the idea that the hearer is entitled to assume that the utterance yields adequate meaning effects without this involving any gratuitous processing effort). However, other factors may be at work. Thus, it is usually the case that we use the expression take some time in the sense 'take longer than expected', which suggests a certain degree of conventionalization of the underlying grammatical construction, and

that consequently accounting for its use may also be a matter of semantics and not only of pragmatics. This may be readily seen if "take some time" is contrasted with "take time", the latter of which invariably means 'take a long time' (e.g. *It takes time to make such a difficult decision)* and which is also a truism (and vague) if interpreted literally[1]. Since - following Sperber & Wilson's own rationale- we must assume that take time, being vague and truistic, would also need enrichment we need to know whether the two expressions need to be enriched in the same or in a different way (that is, both "some time" and "time" might be at least one second, at least one hour, at least one week, and so on). But if the former were the case, why would "the first accessible enrichment" of both interpretations be different? Maybe we need to accept that there is some factor other than the principle of relevance - which we do not deny to have a very important role in communication - which also guides the enrichment process. Our discussion indeed suggests that such a factor is simply the presence in each expression of very generic conventionalized meaning which is parametrized differently according to contextual requirements. In this view, the notion of enrichment amounts to producing a stronger proposition but only in the sense that this proposition is more specific than the original assumption schema. However, we also want to argue for the existence of other factors which also have a role in our understanding of enrichment as a cognitive process, a possibility which will be explored in the next section.

3. Semantically vs. grammatically-motivated enrichment

On trying to clarify Sperber & Wilson's concept of "enrichment" Recanati (1989) has made a useful distinction between two types of enrichment, namely "saturation" and "strengthening". Saturation occurs when the meaning of an incomplete sentence (what Sperber & Wilson would call an "assumption schema") sets up a slot that must be filled with the help of the context. For example, an expression like He's not good enough would demand saturation. Strengthening, on the other hand, applies in cases like the expression some time, where a rather

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[1] Sometimes speakers feel that "take time" and "take some time" may be used indistinctly. For example *It will take time to repair your watch* may also convey the meaning that the repairing process will take longer than he expected. However, this extra meaning has to be obtained by implication (an implicature) in a context in which the customer expects his watch to be repaired in a reasonable period of time since what the sentence actually codes is the idea that the repairing process will be long, at least as long as needed. The expression "take time" is preferred in such utterances as *These things take time* and *You should take time to explain fully,* where it simply means 'a long time, as much as necessary' and the implication 'longer than expected' is unnecessary.

vague conceptualization needs to be turned into a more specific one in such a way that the latter -which is "richer"- entails the former.

We have already noted the possibility of assigning different status to the incomplete and expanded versions of some utterances (recall *He's not good enough* and *He's not good enough for Mary to marry him)* in terms of what is said versus what is communicated. According to Recanati's terminology, expanded versions of utterances are cases of saturation and what is said in each case differs from what is truly communicated. The same differentiation would seem to apply to cases of strengthening, as has become evident from our discussion of the value of indeterminate expressions "like it takes some time". However, the process is not exactly the same: in cases of saturation the information which will complete the intended thought is to be found in the context (whether this is the previous discourse, the present situation or the knowledge shared by speaker and addressee); in cases of strengthening, on the other hand, making the available information specific enough to satisfy our communicative needs (i.e. making it 'relevant' in Sperber & Wilson's sense) is not a matter of retrieving complementary information from the context but of adding information which is prompted by the linguistic expression itself. In this sense, we are entitled to relate strengthening to linguistic conventionalization and to speak of semantic or conceptual motivation for this specific form of enrichment.

It may be suggested that, in contrast to what happens with strengthening, saturation is not semantically but grammatically motivated. Bach (1994) has made a fairly detailed study of cases of what Recanati would call saturation and which Bach simply treats as cases of underdetermination which call for "completion". Consider the following examples given by Bach (1994: 128): *The princess is late (for the party), Tipper is ready (to dance), Al has finished (speaking),* which he compares to the incorrect sentences **The king has reached,* and **Al has completed.* Bach argues that the reason why the latter are ungrammatical is not semantic or conceptual but "lexical" (or, perhaps it would be better described as "lexicogrammatical" since in fact it has to do more -in Bach's own way of thinking- with the grammatical than the conceptual restrictions imposed by the lexical item in question). This seems to imply that the reason why a sentence like *The princess is ready* needs completion is not exclusively semantic either. It has to do with the grammatical construction associated with "be ready". That is to say, the grammatical 'be-ready' construction may optionally be used with or without a prepositional object, while the verbs "reach" and "complete" do need the presence of a grammatical object. Since completion is sometimes grammatically optional, it makes sense to think that this may be communicatively exploited by the language user. For example, if it is evident from the context that the princess is scheduled to attend a party at a certain time and that she is getting delayed, the sentence *The princess is late* may be preferred for reasons of economy

of production since it is just as effective as the expanded version. However, if the princess was scheduled to attend two social events and nobody knows for sure which was first, using the same incomplete sentence may turn communicatively unsuccessful.

The reader may have got the wrong impression, from the analysis we have given of Sperber & Wilson's example, that all cases of enrichment by strengthening are conventional. However, our claim is simply that strengthening is a phenomenon which does not exclusively belong to the domain of pragmatics and that it has a conceptual rather than a grammatical motivation. In fact the context may require the use of enrichment without there being any (conceptually) conventional clue as to the way it has to happen. But the role of the context in strengthening is not -unlike what happens with cases of saturation- to provide with information to fill in a number of propositional gaps. Instead, what the context does is render an expression vague enough for strengthening to be required.

By way of illustration of this claim, contrast the following two utterances: *John has not told me the truth* and *John has never told me the truth.* It is obvious that since we know that people may either tell the truth or lie about something, the two utterances might call for saturation in this connection. We might want to say that we need an additional conceptual constituent to complete each of the propositions. It is evident that John has not told the truth about something. The required specification, which is to be drawn from the context, would have the effect of saturating -and thereby enriching- the initial assumption schema. Saturation here is motivated -as expected- by the set of grammatical expectations created by the lexicogrammatical structure of the expression *tell the truth* and is derived from the context. Imagine that John is under suspicion of being unfaithful to his wife Mary. This allows us to derive, for each respective example, the fuller propositions 'John has not told me the truth about his infidelity to his wife' and 'John has never told me the truth about his infidelity to his wife', respectively. There is an important semantic difference between the two resulting propositions, though. The former implies that John has been asked about his infidelity probably only once, while the latter suggests that he has been repeatedly questioned about it (these implications are derived from the absence or presence of the frequency adverb). However, the other mode of enrichment called by Recanati "strengthening" may have a role to play here provided the context calls for it. Imagine that Mary has revealed to a close friend of hers that she believes she has definite evidence about John's infidelity but that despite continual interrogation John still refuses to admit his guilt. In that context, the difference between *John has not told me the truth (about his infidelity)* and *John has never told me the truth (about his infidelity)* becomes smaller. This is so because in the first of these two sentences the explicit negation is rendered vague enough to

match the contextual requirements, a problem which is sorted out by strengthening the explicit negation into 'not ever' or 'never' (with respect to the specific conjugal fidelity matter).

In order to appreciate better the role of the context in the two modes of enrichment, think of the two sentences above without a (well-defined) context. For example, imagine you have overheard the conversation and know nothing at all about Mary's problems. In that situation, the sentence *John has not told the truth* is still to be completed with the very generic (grammatically-motivated) information that John has not been truthful "at least on one occasion" and "on a certain matter", while the sentence *John has never told the truth* would be completed only with "on a certain matter" since the explicit "never" is stronger than "not on one occasion". Strengthening of the negation 'John has not told the truth' would be impossible in the absence of a context. This discussion tends to substantiate the idea that strengthening is motivated conceptually or semantically, and that the process is triggered off either as a result of semantic convention or of a contextual requirement which has to be met for the utterance to be relevant. This discussion also suggests that enrichment by strengthening and enrichment by saturation may sometimes be balanced against each other in the sense that whenever an assumption is strengthened it may require a smaller degree of saturation for it to become a full proposition and conversely, the more relevant an assumption schema becomes by saturation, the lesser amount of strengthening may be needed. Thus, while the sentence *John has not told me the truth* could potentially be expanded into 'John has not told me the truth on a certain matter at least on one occasion', as pointed out above, in a context in which "has not" is strengthened into 'has never', saturation by means of 'at least on one occasion' is ruled out. On the other hand, in the absence of such a context, the saturated form of the proposition may be relevant enough to convey the intended meaning.

At this stage, we hope to have made clear the specifics of grammatically- motivated and conceptually-motivated enrichment; our next move should be to apply these distinctions to cast light on some aspects of conceptual interaction involving metaphor and metonymy where the latter plays a crucial role as a mechanism of explicature generation. But before we do so, it becomes necessan to devote some space to the problem of implicature since in general it has been argued both by Gricean pragmatists (e.g. Martinich, 1984) and by relevance theorists (Sperber & Wilson, 1986; Blakemore, 1992) that the interpretation of metaphor and metonymy (see also Papafragou, 1995, 1996) is a matter of deriving implicatures rather than explicatures. What we shall argue is that, although Sperber & Wilson's distinction is essentially correct, the dividing line between implicature and explicature has in some cases been wrongly drawn and that some phenomena -particularly those resulting from the action of metaphoric and metonymic mappings- which are considered by relevance theorists to be

implicatures (or implicit assumptions) are in fact explicatures (or explicit assumptions). It is the insights derived from this discussion that we shall attempt to apply to our understanding of conceptual interaction involving metaphor and metonymy.

4. Types of implication and "the functional independence criterion"

Carston (1988) has proposed a test for implicatures in terms of conformity with what she calls "the functional independence criterion". In order to make her point, she discusses the sentence *The park is some distance from where I live,* which is usually interpreted in an enriched way as 'The park is farther away from where I live than you think'. Many philosophers and pragmatists would argue that the only explicit information in this sentence is that there is some distance between the park and the speaker's house; any other meaning would be an implicature. However, Carston notes that there is no "functional independence" between what is said and its putative implicature (the enriched version), since the latter entails the former. She concludes that the enriched interpretation cannot be an implicature[2].

Recanati (1989) has critically discussed both Sperber & Wilson's formal definition of explicature as the development of the logical form encoded by an utterance and Carston's functional independence criterion for telling implicatures from explicatures. Against Sperber & Wilson, Recanati argues that an implicature might accidentally bear a formal relation to the logical form of a sentence. The example he gives here is based on the utterance *It will rain tomorrow,* which may have an explicature like 'Mary believes that it will rain tomorrow'. Then Recanati contends that this explicature may imply 'it is not the case that it will rain tomorrow', which would be an implicature in a typical relevance-theoretic characterization[3]. However, the putative implicature, Recanati argues, should be treated as an explicature if we apply the formal definition since 'it is not the case that it will rain tomorrow' is formally a development of 'it will rain tomorrow'.

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[2] We might additionally note, in consonance with our discussion of the expressions "take time" and "take some time" in the second section above, that the explicature in this case is also the result of convention. However, here it is hardly possible to contrast "some distance" with another expression without the quantifier (note the oddity in *? The park is a distance from where I live)',* as a result "some distance" expands its meaning to include the idea of 'a long distance' (cf. *He was seen some distance away).*

[3] Recanati does not give any context in which such an implicature may be derived but it is not difficult to find one. For example, speaker and hearer may share the belief that Mary always makes wrong guesses about the weather.

The problem with Recanati's argument here is that 'it is not the case that it will rain tomorrow' rather than a formal development of 'it will rain tomorrow' is a contradiction of it as one of the possible explicatures of the utterance *It will rain tomorrow*. There is nothing in Sperber & Wilson's theory that prevents the information derived by means of an implicature to contradict an explicated assumption.

Then we have Recanati's argument against the validity of Carston's "functional independence criterion", which Recanati renames the "independence principle". Although it is not clear what Carston means by "functional", at least it is clear that functional independence entails logical independence, since an implicature may not entail or be entailed by what is said. Recanati is willing to concede that Carston's criterion is capable of making a correct distinction between true conversational implicatures, in the Gricean tradition, and what he calls the "pragmatic aspects" of the proposition expressed. He gives the following example. The utterance *John has three children* can be used to communicate that John has exactly three children but it cannot be said to express the proposition that John has at least three children on account of the fact that, if this were the case, then the richer proposition (i.e. 'John has exactly three children') would be an implicature that entails the proposition expressed, which violates the independence criterion.

Except for cases like this one, Carston criterion fails, according to Recanati, because it makes the mistake of using a formal property of propositions (i.e. entailment) to define explicatures as opposed to implicatures. While we believe that Recanati's insight in this respect is essentially correct, we find that his subsequent argumentation against the "independence principle" is not really damaging to it for reasons which will become apparent below, as we try to provide an alternative criterion to distinguish implicatures from explicatures. In order to make his point, Recanati constructs a dialogue between two people about a party in which there were certain damages that they could ask someone rich, like Jim, to pay for but only provided he had attended the party. Speaker A enquires as to whether Jim was present at the party, and the dialogue ends as follows:

B: I don't know, but I can tell you that if anybody was there, Jim was there.
A: Somebody was there -this I know for sure (I saw John going there). So it looks as if the damages will be paid for, after all.

Recanati's argument is as follows. In the context of B's intervention, A's reply "somebody was there" implicates that Jim was there and therefore that someone rich who might be asked to pay for the expenses was there. But the implicature that Jim was at the party is seemingly also an explicature since it entails what is said (i.e. that somebody was there) and consequently cannot be

considered a genuine implicature. Also, Recanati points out that Carston's test according to which implicatures never entail what is said- does not seem to be capable of dealing with a case like this. Nevertheless, there is a problem with his counterexample. Consider the utterance *If anybody deserves the prize, John does.* It may be suggested that here we have a conventionalized type of 'if construction' (among many other types) which, just like the one in Recanati's dialogue, is taken to mean that if there are reasons for the content of the protasis to be true, then there are even stronger reasons for the content of the apodosis to be true too. So, a likely explicature for our example would be 'if it is true that someone deserves the prize, then John deserves the prize rather than anyone else'. In a similar fashion, we may paraphrase the part of B's intervention which we are concerned about as 'if it is true that someone was at the party, then Jim is more likely to have been at the party than anyone else'. It is on the grounds of this explicature that speaker A bases his intervention to produce the implicature that Jim was at the party since A explicates that somebody was indeed at the party, thereby allowing one to derive the implicated conclusion that Jim is sure to have attended the party. By validating the if-part (i.e. the antecedent) of B's explicature, A is implicating that the then-part (the consequent) is also valid[4]. Of course, A's implicature would seem to entail B's explicature. However, it does not entail the whole explicature but only part of it (the then-part of the conditional). An additional problem for his argument is that A's implicature entails what is developed from someone else's assertion but the entailment test was proposed to distinguish between implicatures and explicatures derivable from one speaker's utterance, not from the interplay between different speakers' utterances.

It is evident from our discussion above that both Sperber & Wilson's distinction between implicatures and explicatures (including their definition of explicature in terms of the development of what is said) and Carston's so-called "functional independence" criterion are not vulnerable to Recanati's counterexamples. Still, we agree with Recanati that Carston's criterion is problematic, not because it only deals with formal properties of utterances but because it does not account for the way inferences are recovered in the

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[4] It might be suggested that this validating process, within the semantic context created by the explicature, is metonymic in nature, since stating the condition stands for asserting the validity of the whole conditional schema generated by the specific 'if construction' used, including the consequent. This observation is consistent with work carried out by Thornbug & Panther (1997), and Panther & Thornbug (1998), which demonstrates that metonymic relations within a scenario facilitate the inferential work of conversational participants. Our discussion again points to a strong conventional component in the derivation of explicatures and to a reduction of the role of pragmatic activity, in this process, to one of mere adaptation to the context.

interpretation process. Thus, Carston's test is insufficient to cover all cases of what may be regarded as explicatures. For example, it would be incapable of dealing with some cases of enrichment by saturation. Consider again the case of the relationship between the incomplete proposition 'he is not good enough' and its expanded version 'he is not good enough for the job'; contrary to the predictions made by Carston's test, it would be odd to state that the expanded version (the explicature) entails the incomplete proposition precisely because of the unspecific character of the latter. In the same way, it would be strange to say that the expanded proposition 'John is too old to enlist in the army' necessarily entails 'John is too old'.

Our discussion suggests that what matters to identify one proposition as an explicature is not a logical property but the way in which it has been obtained. Thus, true functional independence of a proposition -obtained after an inferential operation- from another is simply the result of the hearer calling up some intervening *supplementary* information which is relevant to the situational context and which helps him to derive a number of implicated conclusions. For example, in a conversation between John, the customer, and the jeweller, if we know that John is a very impatient person, the jeweller's remark *It will take some time to repair your watch* may lead us to conclude that John will surely try and find another jeweller or that he will buy a new watch. These more or less tentative inferences cannot be derived unless some supplementary information is called upon. This kind of information is different from the one needed to simply develop an expression into an explicated assumption. In this case, the information is not an independent proposition or a set of propositions which contribute to the inferential activity as part of a reasoning process which works on a premise- conclusion basis. On the contrary, it is either complementary information which helps the hearer fill in the missing parts of the original assumption schema -as is the case with saturation- or it provides some clues as to how the schema has to be adapted to contextual parameters. With this in mind, it becomes evident why Recanati's counterexamples do not affect either Sperber & Wilson's formal explanation of the notion of explicature or Carston's entailment test. The point of Renati's argumentation is that sometimes an implicature derived from a sentence may accidentally have the same form as an explicature obtained from the same sentence, so the distinction would become useless. But we have manager to show that this is never the case when strengthening is involved because strengthening actually has the formal properties which Sperber & Wilsor or Carston ascribe to explicatures. However, not all cases of saturation display such formal properties, as we have seen. So it is the nature of the inferencing process itself and not a formal property of the resulting proposition that is truly definitional to understand the distinction between implicatures and explicatures.

5. Mitigation

We also believe that Sperber & Wilson's notion of explicature should be extended to cover some other phenomena apart from disambiguation, fixation of reference and enrichment. This means that it may go beyond solving problems of semantic underdetermination (which require strengthening and saturation), such as the ones examined above, to account for cases of intentional incongruity in the linguistic expression. The proposal we are going to make is in full accord with the spirit of Sperber & Wilson's distinction, but treats as explicatures some cases of what Sperber & Wilson and their followers have ranked as implicatures. Moreover, we shall show that doing this has relevant consequences for the understanding of some conceptualization mechanisms. We start with the following exchange:

> A: Look at the best driver in the world.
> B: Sam certainly is an excellent driver.

Here what A says entails what B says. Imagine that speaker A has uttered his assertion rather loosely (that is, he does not really believe that Sam is literally the best driver in the world, but by exaggerating he shows his fascination for him). If we follow the standard relevance-theoretic treatment of hyperbole (cf. Sperber & Wilson 1986: 235), A's utterance would be taken to convey a strong implicature in the sense that Sam is an excellent driver plus other weaker implicatures (for example, that the speaker admires Sam's driving abilities, his style, etc.). In our example, it is this so-called central implicature that must have seemed most relevant to B, who shows his agreement by explicitly asserting what is inferred from A's utterances[5]. While it is evident that there is a distinction to be made between the central implication recovered and made explicit by B from A's utterance and other 'weaker' (or less central) ones, it is not so evident that the central implication is an implicature. First, let us apply Carston's functional independence test. In terms of this test, it is immediately clear that -in normal circumstances[6] - what A says entails B's response. So, according to this criterion,

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[5] Incidentally, note that A's assertion may somehow be said to entail B's assertion and that following Recanati's line of reasoning against Carston's principle, one would have to say that the implicature that Sam is an excellent driver is equivalent to what is said and therefore that there is no implicature at all. This is incorrect since a hyperbole is to be interpreted non-literally to make sense in contexts in which it cannot be literally true, which necessarily involves the production of a number of implicatures. In our example, it is clear that B is only corroborating A's belief and that A has not explicitly stated his belief.

[6] Of course, we could conjure up a world in which all drivers are bad and Sam is the best among them, but we are dealing with normal everyday understanding. In that abnormal context,

B's response would be an explicature of A but not an implicature, contrary to Sperber & Wilson's treatment. The other less central implications, however, are not entailments of A's utterance and may be considered implicatures.

Since in the standard relevance-theoretic account of explicatures, these are the result of developing the initial assumption schema provided by what is said, we may wonder in what sense B's response may be thought of as an explicature. So far, the procedures of disambiguation, fixation of reference and the two forms of enrichment (saturation and strengthening) which we have discussed seem to add to the initial assumption schema. However, by all appearances, B's utterance works the opposite way: it mitigates the force of the original assertion. In order to make these observations compatible with the implicature/explicature distinction, we need to think of explicatures not only in terms of growth or expansion, as relevance theorists have done so far, but also in terms of mitigation or reduction. This should come as little surprise to us if we bear in mind that strengthening works on the basis of scalar concepts, like frequency, as in *John has not told the truth* vs. *John has never told the truth,* or quantity as in *It will take some time to repair this watch.* Examples of hyperbole based on these two scales are *I have told you a thousand times not to touch that wire* and 77zz's *suitcase weighs tons,* which require mitigating frequency and quantity respectively.

Now imagine a different situation in which it is mutually manifest to A and B that Sam is a rather poor driver and Sam, who is unaware of this, has made one of his usual disappointing performances. In this situation A remarks *Look at the best driver in the world.* This utterance cannot mean that Sam is actually the best of all drivers, not even that he is an excellent driver who deserves to be admired. It is rather an ironical utterance which conveys the central implication that Sam is extremely bad at driving. It also conveys other less central implications. Of course these which will vary according to the nature of A and B's shared assumptions (including their value judgements) about Sam's usual behaviour and what should have been done in the situation in question. For example, A's utterance might implicate that the poor driver has again brought ridicule upon himself, that he should have stopped his driving performances, and so on. Since this implication neither entails nor is entailed by what is said, according to Carston's test, it is a case of implicature.

If we ponder this carefully, we realize that a central implication may come either as an implicature or as an explicature, and that often weaker implications qualify as implicatures. It also adds strength to our treatment of functional independence in terms of invoking relevant supplementary information to construct a reasoning schema of the antecedent-consequent type. It is interesting

however, A's assertion would have to be interpreted literally and there would be no inferred meaning, which makes it irrelevant for our discussion.

to note that this view of implicature seems to be very similar to Sperber & Wilson's, who explain the process of non-demonstrative inference involved in the derivation of implicatures in terms of a reasoning process based on implicated premises and implicated conclusions (see Sperber & Wilson, 1986: 195). However, there are some important differences since we have drawn the boundary between implicature and explicature at different places. The initial part of B's expected reasoning process can be illustratorily spelled out as follows:

> Sam is a bad driver; A knows this and A knows that I also know this, but he contradicts this information by implying that Sam is an excellent driver, which he is not; so A is ostentatiously stating the opposite of what he believes to be the case; so what A probably means is that Sam is a very bad driver, and something else -or otherwise A would have not put me to the effort of getting involved in this reasoning process by being inexplicit.

It may prove useful to contrast the way the interpretation process might proceed if A, in the same situation after Sam's disastrous performance, said *Look at the worst driver in the world!*. Since it is obvious to the hearer that it is hardly likely that Sam is the worst driver in the world -at least it would be extremely difficult for anyone to produce conclusive evidence that such an assertion is literally true-, the hearer will mitigate the strength of A's assertion to produce the explicature 'Sam is a very bad driver'. Since this information coincides with B's assumptions about Sam, there is no ironical overtone, but a number of implicatures may follow, some of which may coincide with the implicatures for *Look at the best driver in the world;* for example, and depending much on A's tone of voice, B may think that A feels pity for Sam, that A thinks that Sam should stop giving public performances, that Sam should become aware of all this, and so on; but what is most important is that the strength of A's utterance conveys an attitude which would be absent from a literally true assertion like *Look at Sam; he's a very bad driver,* and which justifies the extra processing cost to which the hearer is put.

It must be noted that the inferential procedure to produce both implicatures and conceptually motivated explicatures, although based on an premise-conclusion pattern, are not exactly alike. For example, in *Sam is the best driver in the world,* the explicature that Sam is an excellent driver follows from the hearer's understanding that it is impossible for the speaker to produce evidence that Sam is actually the best driver. The hearer need not retrieve a supplementary proposition from the context, but only contrast what is said with what is known and make the necessary adaptations in what is said to produce a relevant explicature.

It may be possible to illustrate B's inferential activity to produce the explicature and subsequent implicatures as follows:

Sam cannot possibly be the best driver in the world, but A knows and I know - and A knows that I know- that Sam is an excellent driver. So A must mean that Sam is an excellent driver and something else - or otherwise A would have not put me to the effort of getting involved in this reasoning process; maybe A is fascinated by Sam's driving style; or maybe A is envious of Sam; or maybe A would like to be like Sam; or maybe A wants me to imitate Sam's style; or maybe A is setting Sam's qualities and endeavour as an example for me to follow, and so on.

The proposition 'Sam cannot possibly be the best driver in the world' is a reasonable deduction made by the hearer on the basis of his world knowledge which here acts as a context against which he has to match the information provided by the speaker. In order to make the assertion and the contextual information compatible the hearer has to mitigate the strength of the former. Since this involves an extra mental operation, he is entitled to assume that there are other implications which it is up to him to derive and for which he needs to call upon supplementary information, which makes them qualify as implicatures.

While explicatures and central implicatures are easily derivable hypotheses, weaker implicatures are more tentative. The latter require the hearer to invoke further contextual assumptions for the message to become fully relevant. Implicatures are also built on the grounds of what has been explicitly communicated; they cannot be derived unless the relevant explicatures have been worked out. This is true even for the most central cases of implicature. In our example above in which Sam is ironically treated as a very good driver, the implicature that he is in fact a very bad one requires the previous understanding by the hearer that Sam is treated as a very good driver, while it is obvious that he is not.

Finally, it should be noted that hyperbolic statements also have a conventional element in them. In fact, they are very consistent in conveying the idea that whatever is described by their mitigated propositional content is judged by the speaker to be either excessive or somehow worthy of notice. Thus, *Sam is the best driver* conveys the idea that the speaker considers Sam's excellent skills to merit attention. In *Mary is always complaining,* the speaker cannot mean that Mary has never stopped complaining, but that she does it too frequently from the speaker's point of view. In *This case weighs tons* the speaker means that the case is very heavy, too heavy for him. The sentence *I have told you a thousand times not to touch that wire* can be roughly paraphrased as T have told you many times, more than I believe it necessary, not to touch that wire'. Once these meanings have been worked out by the hearer, each of these utterances may take on other implicated meanings. For example, our last example here may be taken as a serious warning from a mother to her little child not tc disobey again.

6. Conceptual mappings

We have already mentioned and discussed some of the procedures for explicature production, such as reference fixation, disambiguation, saturation, strengthening, and mitigation. In this section, we shall argue that conceptual mappings in the form of metaphor and metonymy are one more procedure to add to this list. Our understanding of metaphor and metonymy here will be in line with current thinking in the Cognitive Linguistics literature following seminal work by Lakoff and his collaborators (see, for example, Lakoff & Johnson, 1980; Lakoff & Turner, 1989; Lakoff, 1987, 1993). It is our hope to show that the relevance-theoretical treatment of inference can greatly benefit from a serious consideration of work in this field by cognitive linguists. In a similar fashion, it will also become evident that Relevance Theory provides excellent insights into some phenomena which, being part of our reasoning activity, have not been given particular attention in Cognitive Linguistics yet.

In the standard relevance-theoretic literature the interpretation of metaphors and metonymies is related to the production of strong and weak implicatures. In this metaphor and metonymy are no different from hyperbole and other traditional figures of speech. Thus, in Sperber & Wilson's (1985/86) explanation of the metaphor Jeremy is a lion, the main point of this utterance (i.e., the strongest implicature) is the stereotypical assumption that Jeremy is brave; however, even though this metaphor is cheap to process, there is an extra processing cost which is to be justified by the production of other weaker implications, some of which may have to do with the type of bravery which characterizes Jeremy and with his physical appearance. There are other more creative cases of metaphor (as in literary metaphor); these require greater processing effort which is made up for by the larger number of implicatures which they may give rise to. It is in these cases where different hearers will typically derive different implicatures depending on the nature of their background knowledge and imagination.

Sperber & Wilson's treatment of metaphor has the virtue of making evident the communicative similarities existing between this and other figures - such as hyperbole, litotes, and metonymy - as creative ways of exploiting the interpretive dimension of language use[7]. However, as was the case with their treatment of

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[7] Sperber & Wilson (1986) have distinguished between interpretive and descriptive dimensions of language use. In the descriptive use (e.g. assertion) a representation is used to depict a state of affairs in virtue of its propositional form being true of that state of affairs. In the interpretive use a representation represents some other representation in virtue of a resemblance between the two propositional forms, in such a way that the former interprets the latter (as in reported speech).

hyperbole, Sperber & Wilson's account is incomplete in that it does not deal with the mental mechanisms which underlie this phenomenon. As a result of this, Sperber & Wilson have failed to note that the connection between metaphor and metonymy is stronger than that between metaphor and hyperbole.

It is this special connection between metaphor and metonymy that has been highlighted by cognitive linguists. Thus, Lakoff (1987) has argued that knowledge is organized in the form of *idealized cognitive models* or ICMs. There are propositional, image-schematic, metaphoric and metonymic ICMs. While propositional ICMs are conceptual descriptions in terms of argument-predicate relationships, and image-schemas are abstractions over spatial relationships, metaphors and metonymies are the result of conceptual mappings across or within domains respectively. In a metaphor or in a metonymy there is a source domain whose structure is mapped onto that of another domain called the target domain. In the case of the lion metaphor, which has been discussed in detail by Lakoff & Turner (1989: 195-196), the source domain has to do with our cultural understanding about lions and their attributed behaviour, i.e., our belief that lions are brave and fierce. The target domain is the person that we are talking about, whose behaviour and appearance we are required to understand in terms of a stereotyped attribute of lions. As a result of the mapping, one culturally prominent feature of lions (their courage) is cued as the most relevant for interpretation; other features are less central but may add to our understanding of the target domain. This account is compatible with the relevance-theoretic approach in that there is a distinction between stronger and weaker implications. But it has the advantage of telling us why some implications are more central than others: in the case of the lion metaphor, it is a matter of strong conventionalization. However, relevance theorists might argue that there are many cases of non-conventional metaphors which cannot be explained this way. Let us examine two cases of "more creative" metaphors which have been discussed by Sperber & Wilson (1985/86). One is the expression *You're a piglet,* uttered by a mother to a child. The other is a metaphor is Prospero's words to his daughter Miranda in Shakespeare's *The Tempest* (I ii):

> The fringed curtains of thine eyes advance
> And say what thou see'st yond.

Let us take the first of Sperber & Wilson's examples. They argue that calling someone a pig is a conventional metaphor and requires little processing effort, whereas calling someone a piglet is not so conventional and therefore

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Since a metaphorical utterance is not literally true of a state of affairs, it involves an interpretive relation between its propositional form and the thought it represents. The same applies to hyperbole and metonymy.

requires some extra processing effort, which should be offset by added effect. The child may thus feel encouraged to derive not only the obvious central implication that he is dirty but also that he is endearing, since young animals are endearing. Indirectly, Sperber & Wilson agree that metaphor interpretation requires the hearer to look into cultural conventions to interpret *You 're a piglet (*e.g. little animals are endearing), which is the same as saying that there is a degree of conventionality underlying this metaphor, too. It is not standard, but what is standard is that metaphors in which people are made to correspond to animals are usually interpreted in English in terms of behavioural attributes rather than physical attributes if they take the equative form (e.g. *John is a pig)* or if they use the name of the animal as a verb (e.g. *He dogged me all day).* In non-equative constructions, as in *John has an eagle eye,* the animal metaphor may refer to abilities. What is interesting to note is that animal metaphors applied to humans are not used to talk about physical apperance, at least primarily. For example, in *John is a lion,* there may be something about John's physical appearance that makes us think of a lion, but only if this attribute is associated with his instinctive, courageous behaviour. In much the same way, the metaphor *Her husband is a bull of a man* focuses primarily on the husband's clumsy, inconsiderate behaviour towards other people's feelings, but makes us also think of his big, clumsy appearance. It must be additionally observed that the meaning of animal metaphors depends not only on cultural convention but also on specific grammatical constructions typically associated with such a convention.

   Now, let us consider the second example. In Prospero's words the metaphor is based on the correspondence between each of Miranda's eyelids and a fringed curtain. Metaphors like this have been explained by Lakoff (1990, 1993) in terms of the Invariance Hypothesis. According to it, metaphoric mappings preserve the cognitive topology of the source domain in a way which is consistent with the image-schematic structure of the target domain; this way, parts correspond to parts within a general structure which shares enough similarities with another structure to make the correspondence possible[8]. In Prospero's metaphor, Miranda's eyes are like a stage which is closed by fringed curtains which resemble her eyelids. It may be reasoned that by opening her eyes, Miranda will allow Prospero

The Invariance Hypothesis has been the subject of some debate. In general, it may be extended include not only consistency with the image-schematic structure of the source domain of a metaphor, but also with all kinds of generic structure. In fact, as pointed out in Ruiz de Mendoza (1998a 263), this extension is necessary to account for the fact that the essence of the metaphor PEOPLE ARE AMMALS is that behaviour - which is not interpretable in topological terms - is mpped onto behaviour, as we have just seen in the discussion of the lion example. For another
reformulation of the principle which bears some resemblance to this one, see Turner (1993).

to see himself reflected on them as if on stage. In this highly creative case, in which the hearer needs to explore the resemblance between source and target without the help of a cultural convention, the hearer is still aided by the cognitive topology of the domains involved and his knowledge of them. The central implication, i.e., that Prospero wants Miranda to open her eyelids, is directly dependent on the central correspondence (eyelids are curtains). Other implications are obtained by exploring further correspondences between the source and the target (e.g. Miranda's eyes are a stage).

It must be noted that the central implication in all these cases of metaphor is the result of a cued mapping process. The cue is not always purely conceptual, but it may sometimes also be related to the grammatical construction used to express the metaphor. A related issue is whether central implications in metaphoric mappings have implicature or explicature status. Carston's test does not seem to be very useful in this case. It is difficult to see in what sense saying *John is a pig* can be said to entail or not to entail 'John is dirty' since the meaning of this expression is highly standardized and it might be argued that the proposition that John is dirty follows straightforwardly from the expression in an unmarked interpretation[9]. In less conventional metaphors like the one concerning Miranda's eyelids and the theatre curtains, it is more difficult to see any sort of entailment. However, it would not be unreasonable, in the light of our preceding discussion, to argue for a form of entailment which is not logical in the traditional sense in which this notion has been used in semantics. It may be called *discourse entailment* and it would cover examples of actual language use in specific contexts like the one created by the metaphor, not only generic (and therefore merely denotational) statements. That is to say, it makes sense to say that if Miranda's eyes are like a stage, then the eyelids are like the curtains on that stage, the eyelashes are like the fringes, and so on. In a sense, these implications would be a development of the blueprint provided by the metaphorical expression and would qualify as explicatures.

However, according to relevance theorists, metaphor and metonymy interpretation exclusively involves the production of implicatures. Of course,

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[9] As is well known, entailment tests have usually been applied by semanticists to discover sense relations, as in hyponymy, and meaning components in componential analysis and truth- value semantics. Generally speaking, X entails Y when if X is true, Y is true, and if Y is false, X is false (cf. Leech, 1981: 74, 134-136). For example, *John is a bachelor entails John is unmarried* since it makes sense to say "if John is a bachelor, John is unmarried"; *or She smelt a rose* entails *She smelt a flower,* since it is possible to say "if she smelt a rose, then she smelt a flower". The question is to find in what sense it is possible to say something like "if John is (called) a pig, John is dirty". It may be argued that entailments may hold within a cognitive model of the type proposed by Lakoff (1987) without the need to make reference to truth values. If that is correct, there would be no problem in saying that being a pig (figuratively) entails being dirty.

this treatment of the two phenomena is in keeping with their restricted view of explicatures as the development of the logical form encoded by utterances (see Wilson & Sperber, 1993: 12-16). But their position is - as we have seen - faced with problems which may only be avoided if we consider implicatures as deriving from the application of reasoning formulas of the antecedent-consequent type, and let explicatures cover other cases of implication. In this view, metaphoric and metonymic mappings would be regarded as procedures for producing explicatures.

Let us add one final piece of evidence which points in the direction of our own position. Sperber & Wilson claim that expressions may also be enriched by embedding them under higher-level descriptions involving speech acts or a propositional attitude. Consider the following example, taken from Wilson & Sperber (1993: 5):

Peter: Can you help?
Mary (sadly): I can't

According to them, if by her answer Mary expected Peter to ask himself why she was sad and come to the conclusion that she is sad because she cannot help Peter, this conclusion would be an explicature. Sperber & Wilson then list other possible explicatures of which (b), (c), and (d) are higher-level explicatures, another form of development of the blueprint provided by an utterance:

(a) Mary can't help Peter to find a job.
(b) Mary says she can't help Peter to find a job.
(c) Mary believes she can't help Peter to find a job.
(d) Mary regrets she can't help Peter to find a job.

Now think of a common metaphorical expression like *John is a chicken,* meaning 'John is a coward' (of course, as with other animal metaphors, in the way suggested by the type of behaviour stereotypically attributed to chickens). For standard relevance theorists, this would be an implicature. We may now wonder what are the higher-level explicatures of this utterance. If we were to admit that 'John is a chicken' is an explicature and 'John is a coward' an implicature, we would have to say that in 'The speaker says that John is a chicken' an implicature is embedded in - rather than derived from - a (higher-level) explicature. This would be a weird situation since for implicit assumptions to be retrieved we need to have worked out the explicit information in the message. Or take another putative (attitudinal) explicature like 'The speaker regrets that John is a chicken'. In it, the presuppositional predicate cannot apply to the explicature 'John is a chicken' without creating an important incongruity (i.e. the assumption that John is an actual chicken) and the implicature would have to be derived before the explicature. In contrast, in our interpretation the metaphor

John is a chicken has to be developed into its conventional explicated meaning 'John is a coward' before it may be embedded with a speech act description or before any further implications are derived.

7. Metaphoric types and explicatures

Not all metaphors are like the ones discussed in the previous section, which are those typically studied by relevance theorists (and until very recently by linguists in general). In fact, work carried out in cognitive linguistics has found metaphor to be a much more complex and pervasive phenomenon in everyday language and conceptualization than has usually been recognized. In what follows we shall make a proposal for a classification of metaphors into two broad types, according to the richness of their conceptual structure, and explore their different communicative potential in terms of their capability to produce explicatures.

Lakoff & Johnson (1980) initially made a distinction between three broad metaphorical types: structural, orientational, and ontological. Structural metaphors are cases where one concept is understood in terms of another, as in ARGUMENT IS WAR, where a portion of the conceptual network of battle characterizes the concept of an argument: people arguing are contenders who plan tactics, attack, defend, and counterattack, who gain or lose ground, and ultimately who win or lose. Orientational metaphors have to do with spatial orientations like up-down, in-out, front-back, on-off, central-peripheral, etc., and have a basis in our physical and cultural experience. For example, from the fact that humans and most other mammals sleep lying down and stand up when they awaken, we obtain the metaphors CONSCIOUS IS UP, UNCONSCIOUS IS DOWN (e.g. *Get up, He fell asleep, He rises early in the morning, He sank into a comma).* Finally, our experience with physical objects provides the basis for ontological metaphors which allow us to view non-physical entities such as events, activities, emotions, ideas, and the like, as physical entities and substances *(e.g. He's only looking for fame, It'll take a lot of patience to do that, There is so much hatred in the world)* or to understand some feature of a physical entity in terms of another (e.g. the metaphor THE MIND IS A MACHINE, as in *I'm a little rusty today).* In later work (Lakoff & Turner, 1989; Lakoff, 1993) orientational metaphors have been studied as structured on image-schematic patterns like the ones proposed by Johnson (1987) (cf. also Lakoff, 1989) of which two outstanding examples are the notions of PATH and of CONTAINER. In this connection, we want to suggest that the up-down or front-back orientations may be regarded as subsidiary to a PATH schema involving verticality or horizontality. Consider the following metaphor:

(a)   Our association is moving ahead

The PATH schema has a source and a destination; there may be entities which travel along the path, impediments to motion, landmarks, and so on. As is evident from (a), in which many of these elements are present, metaphors based on image-schemas share with structural metaphors the fact that both have a rich internal structure. But they crucially differ in that image-schematic metaphors have a very generic source some of whose elements are to be fleshed out by incorporating other less abstract domains, which may be carried out by means of an ontological metaphor. Thus, in (a) an association (which is a non-physical entity) is seen as the travelling entity (which is physical) and the expression moving ahead involves a metaphorical front orientation of it, which suggests successful progress towards a goal (the destination).

Consider now:

(b)   He sank into a coma
(c)   He was led into a depression

A coma is a negative state which here is envisaged as a CONTAINER in which a person is trapped (cf. the idea of a person sinking into quicksands). There is an implicit PATH schema, which is subsidiary to and enriches the CONTAINER schema, whose destination is the "down" position, which correlates experientially -as mentioned above-with the idea that down is unconscious. Here, the up-down schema is subsidiary to the PATH schema. In (c), in contrast, the CONTAINER is seen as the (negative) destination at the end of a path and there is a front orientation of the moving entity, which makes both image-schemas subsidiary to the PATH schema.

If this analysis is correct, we find not only that some image-schemas (like front-back, and up-down) may be subsidiary to others, but also that the greater their degree of subsidiarity the simpler their conceptual structure and the more they resemble ontological metaphors in this respect. Thus, while metaphors like *I'm feeling up* or *I'm really low* seem to work only on the basis of one relevant correspondence (HAPPY IS UP, SAD IS DOWN), others like (b) and (c) above make use of a larger number of conceptual elements thereby providing us with a larger number of meaning effects. In this sense, an image-schematic metaphor like HAPPY IS UP is comparable to an ontological one like THE MIND IS A MACHINE, where there is also just one relevant correspondence (the way the mind works is the way a machine works). Thus, in *He's a thinking machine* we see the person as an untiring thinker; expressions like *I'm rusty* and *We're running out of steam* are used to indicate why the mind does not work well. In contrast, in the richer system ARGUMENT IS WAR, different metaphorical expressions make use of different correspondences. For example, in *Your claims are indefensible* the

person's poor reasoning is seen as a place which is vulnerable to attack. In His criticisms were right on the target, the person's reasoning is seen as the arrows or bullets shot at either the contender or the contender's own fighting position (the target). In ARGUMENT IS WAR we may have several correspondences at work simultaneously in order to make sense of a metaphorical expression. In the MIND IS A MACHINE, there is only one correspondence at work at a time. Metaphors like HAPPY IS UP or the MIND IS A MACHINE may thus be aptly called *one- correspondence* metaphors, while the others, which bring to bear a richer conceptual structure may be called *many-correspondence* metaphors.

From the point of view of the pragmatic notion of explicature, it is obvious that while one-correspondence metaphors only develop one structural element of the target domain, many-correspondence metaphors develop more than one. Consequently, the latter have a greater potential for explicature generation. Consider the case of the expression *You 're getting nowhere that way,* uttered by an angry father to a rebellious teenage son. This metaphor invokes a PATH schema and has at least one central explicature:

(d)   The addressee is not going to achieve any goal if he keeps acting the same way;

and then other less central ones:

(e)
The addressee is not making the expected progress in life,
The addressee's way of doing things is an erroneous one,
The addressee may make progress if he changes his way of doing things,
The addressee may not have clear goals,
etc.

In order to be produced explicatures only need adaptation or development of the inspecificities in the expression in order to make them match the information in the context. The most central explicature is cued by the central correspondence in the mapping (goals are destinations); the other are the result of the hearer exploring internally the logic of the conceptual domains involved. Then, other possible implications may come as implicatures which make use of supplementary information derived from the context. For example, *You 're getting nowhere that way* may be taken as warning that the parent may withdraw financial support to his son. Or in a context in which the father does not really care much about what his son does but knows that his wife will be extremely upset, which bothers him a great deal, the sentence may be interpreted as an expression of the father's annoyance and an injunction for the son to change just for his mother's sake.

In one-correspondence metaphors, on the other hand, there is only one possible explicature, since there is but one correspondence, but as many

implicatures as the hearer feels entitled to retrieve on the grounds of the contextual information available.

8. Metonymic types and explicatures

As Lakoff & Turner (1989: 103) have pointed out, metonymies are used primarily for reference, while metaphors are not. This does not mean that metonymies cannot be used predicatively, as in *John is a brain* (meaning that he is particularly intelligent), or that metaphors cannot be used referentially as in *The pig is coming* (referring to a particularly unpleasant person). It may be suggested that the frequent referential use of metonymies is connected to the fact that they constitute domain-internal mappings. It is economical to be able to refer to a whole domain by using part of it, or to refer to a difficultly identifiable part of a domain by using the name of the whole domain. However, there is little economy in using one whole domain to stand for another separate domain, which may be a crucial factor in the tendency to rule metaphor out of referential uses. As a consequence, metaphoric mappings have the effect of creating sets of explicatures which are relatively independent of the assumption to be developed, while explicatures produced by metonymic mappings involve either an expansion or a reduction of the conceptual material which makes up the initial assumption schema.

We may argue for the existence of two basic types of metonymic mappings: in one, the source of the mapping is a subdomain of the target; in the other, it is the target that is a subdomain of the source[10]. We have elsewhere labelled these two kinds of metonymy as *source-in-target* and *target-in-source respectively* (see Ruiz de Mendoza, 1998b, for details on the relevance of this distinction)". Compare *The White House is trying to avoid another scandal* and *Hamlet has given a remarkable performance.* In the former, the White House (the source of the metonymy) stands for some of the officials working there (the target), so the target

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[10] Our typology here is carried out - as the one for metaphor- on the basis of formal aspects of the relationships between conceptual domains. There are other possible points of view for taxonomies which will yield different results. For example, Dirven (1993) provides a taxonomy based on the various kinds of syntagmatic association between conceptual domains. Kovecses & Radden (1998) make a distinction between *sign, reference* and *conceptual* metonymies on the basis of the possibility of conceptualizing all ontological domains and of carrying out metonymic shifts across them.

" The reader may feel these are but alternative labels for the more traditional ones *part-whole* and *whole part* (synecdoche). However, there are two reasons why we have chosen these labels. First, they take into account the fact that metonymies are conceptual mappings with a source and a target. Second, they also account for the fact that in understanding the cognitive import of metonymic operations domain-inclusion takes precedence over part-whole relationships, as will be evidenced by the subsequent discussion.

is a subdomain of the source. It is a case of target-source inclusion. In the latter, Hamlet (the source) stands for the actor who performs Hamlet's role (the target), the source being a subdomain of the target (i.e. an actor's role is part of the knowledge we have about him). This is a case of source-target inclusion. Now, it is evident that the 'White House'-'White House officials' mapping is communicatively different from the 'Hamlet'-'actor performing Hamlet's role' one, since in the former the target is a rather vague domain, while in the latter clear (but cognitively more economical) identification of the target is the main aim. This communicative potential difference argues in favour of the division into these two metonymy types. It also helps us determine the difference between metaphor and metonymies of the target-source inclusion type as generators of explicatures since in metaphor vagueness in the the target would hinder understanding.

Further evidence for the division between two metonymy types may be found in the domain of anaphoric reference. Consider the following examples:

(a) Hamlet has given a remarkable performance but he looked a bit strained.

(b) ?Hamlet has given a remarkable performance but I don't understand why he repudiated Ophelia.

Anaphoric "he" refers back to Hamlet as an actor, that is, to the target domain of the metonymy. It is for that reason that sentence (b) is less acceptable.

Now consider:

(c) The White House was trying to avoid another scandal but it couldn't.

(d) ?The White House was trying to avoid another scandal but they couldn't.

In the case of (c), it is the source of the metonymy that serves as the antecedent for the anaphoric pronoun. That explains why (d), which attempts to use the target domain as the antecedent, is not as correct.

This seems to point in the direction of a relationship between source-target inclusion and anaphoric reference to the target, whereas target-source inclusion would be associated with anaphoric reference to the source. More generally, we may observe that anaphoric reference to an expression involving a metonymic mapping is always made to a whole domain (which we may call the *matrix domain)* rather than to a sub-domain. This is probably due to the fact that while a source-in-target metonymy needs to be developed into its matrix domain to be interpreted, a target-in-source metonymy involves a reduction of the domain, which is often rendered vague enough to be dispreferred by anaphoric procedures.

Finally consider:

(e) The pig is coming, so just ignore *him.*

In the same way as with metonymies where the source is a subdomain of the target, referential uses of metaphor only allow anaphoric reference to the target.

This is precisely due to the fact that the target of a metaphor provides a well- developed domain of reference, which is obtained by mapping onto it the conceptual structure of the source.

So, from the point of view of the generation of explicatures, metaphor and source-in-target metonymies share the same properties, since both involve expansion of the source domain, which produces well-defined explicatures. On the other hand, target-in-source metonymies are constructed on the basis of reduction, sometimes giving rise to rather vague explicatures. These are enough for communicative purposes, though, since they may be used to convey the intended amount of effects for little processing effort.

Finally, it may be suggested that the fact that anaphoric reference can be made to one of the conceptual domains involved in metaphor and metonymy also lends further support to out view that these cognitive mechanisms only generate explicatures, since referential operations do not seem to work with implicatures. Consider the case of the following case of implicature:

Peter: Have you bought John Grisham's latest book?
Paul: I never read thrillers.
Peter: I regret it.

The implicated conclusion is obviously that Paul has not bought the book. The most obvious candidate for an antecedent for "it" in Peter's second intervention is the explicit information that Paul never reads thrillers but not that he has not purchased the book. There are various other anaphoric devices which can be used in Peter's reply, like saying *I didn't know* that or simply *I didn't know,* but they would also refer to the explicit information given by Paul.

9. Metaphor and metonymy in interaction

The division between source-in-target and target-in-source metonymies has important consequences for cases of interaction between metaphor and metonymy. There are two interactional possibilities: one, in which the output of a metaphoric mapping provides the source for a metonymy, and another in which a metonymic

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[12] Our account simplifies the one provided by Goossens (1990). In broad outline, this author distinguishes three interaction types, metaphor from metonymy, metonymy within metaphor, metaphor within metonymy, plus the possibility of demetonymization within a metaphorical context. However, we believe that since metaphor is capable of providing a much richer conceptual framework than metonymy, in terms of the number of correspondences which it may exploit, metonymy simply acts either within the metaphoric source or within its target by developing it or by highlighting and giving the relevant interpretation of one aspect of one of the metaphoric correspondences; see Ruiz de Mendoza (1997) for details.

mapping provides the source for a metaphor[12]. In both cases, the metonymy works either inside the source or the target of the metaphoric mapping but with different purposes, as will become evident below.

By way of illustration of the first possibility, take the expression *He is the life and soul of the party* ('the person who, by being lively and entertaining, will make the party more lively or cheerful'). In it a party is metaphorically seen as a person (who has life and a soul). The life and soul of a person stand metonymically for the person's lively behaviour. Then, there is one further metonymic mapping from lively behaviour to the ability to produce entertainment. In both metonymic mappings the target is a subdomain of the source: in the first one, a person's lively behaviour is seen as a consequence (and therefore as a subdomain) of the person's having 'life and soul', in the second one, it is the ability to entertain others that is a consequence (then, a subdomain) of the person being cheerful. Each of these metonymic mappings has the function of highlighting a relevant part of the domain to which they belong. In so doing, the metonymic mapping cues the central correspondence in the metaphoric mapping and consequently the most central explicature.
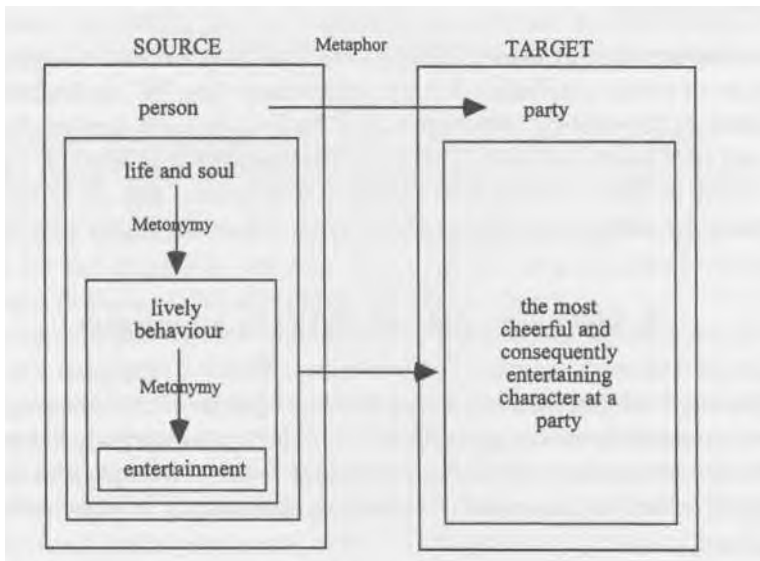

Figure 1. Metonymic reduction of a metaphoric source

Another example which illustrates the first interactional possibility is the following. Consider the sentence *She has broken my heart,* which we diagram below as Figure 2:
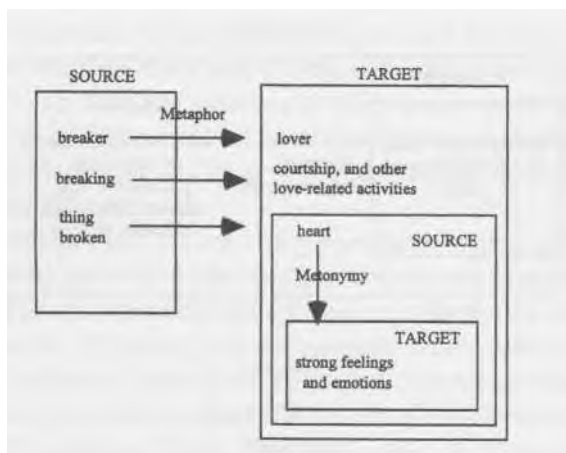
Figure 2. Metonymic reduction of a metaphoric target

This is a case of metonymic reduction of the 'heart' domain. This cognitive operation has a twofold effect: on the one hand, a referential one in that it allows us to refer to a rather vague subdomain culturally associated with the heart (emotions, which are envisaged as contained in the heart); on the other hand, an intensifying one, i.e. by using the whole container for the part, one stresses the damaging effect of the protagonist's actions on the affected entity. From the more formal perspective of the interaction process itself, the metonymy has the additional function of highlighting that part of its source domain (the feelings) which is relevant for the understanding of the metaphoric correspondence on which it operates (thing broken-heart).

Now consider the other interactional possibility, i.e. one in which a whole metaphor is constructed on the basis of a metonymy, as in the sentence *He left with his tail between his legs.* Here there are two stages in the development of the explicature: one is metonymic and the other is metaphoric. The metaphor suggests that a person has been defeated and humiliated. This implication is based on the stereotypical representation of a dog leaving with its tail between its legs after being defeated or otherwise punished. Figure 3 below tries to capture the development of the explicature.

In this case, the metonymy is one of source-target inclusion and serves the purpose of providing all the conceptual material for the metaphoric mapping to develop the central explicature.

It should be noted that the two possible effects of highlighting or developing a domain are independent of the basic interaction type. However, they are correlated with the mapping type in the metonymy. Consider, in this respect, the metaphor *My lips are sealed* (Figure 4).
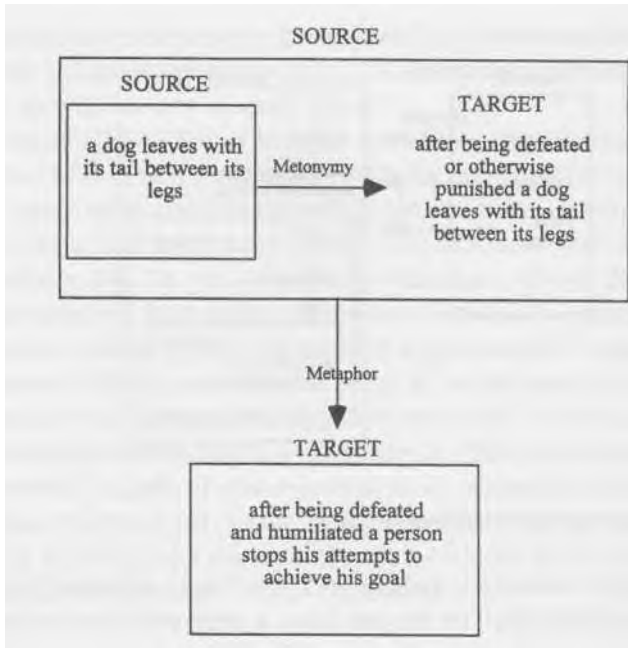
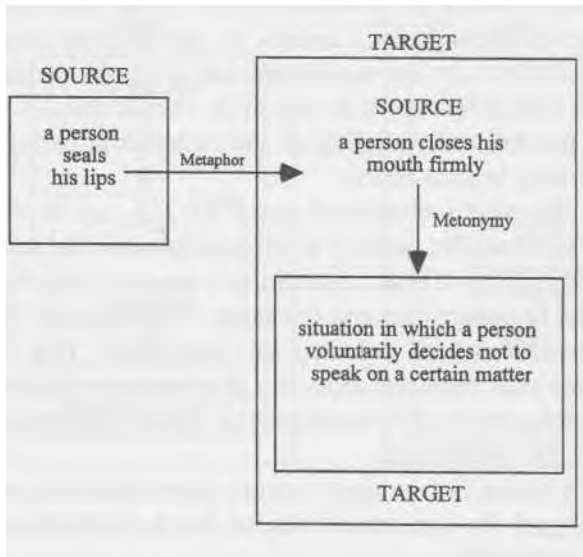Figure 3. Metonymic expansion of a metaphoric source

Figure 4. Metonymic expansion of a metaphoric target

With this metaphor the speaker makes a binding promise that he will not reveal a secret. The act of sealing his lips is only a figurative indication that he

will in no way open his mouth. This indication is part of a more general situation in which the speaker voluntarily decides that he will behave with discretion and utter confidentiality[13]. This general situation is the explicature of the expression. Interestingly enough, as with the previous case of metonymy-metaphor interaction, the explicature is developed on the basis of the metonymic mapping where the source is a subdomain of the target.

The mapping processes just outlined only provide us with a glimpse of what really happens in conceptual interaction between metaphor and metonymy. So far, we have only looked at the role of the metaphoric and metonymic mechanisms in generating explicatures. A more refined account would need to take into consideration the principles of conceptual projection which have been the object of enquiry in fairly recent work by Mark Turner and Gilles Fauconnier (see, for example, Turner & Fauconnier, 1995, 1998; Fauconnier & Turner, 1996, 1998; Turner, 1996; Fauconnier, 1997). According to Turner & Fauconnier, a mental space is a small conceptual packet which draws relevant structure from a conceptual domain. In a number of recent studies these authors have proposed that metaphors are better accounted for in terms of the activation of multiple input mental spaces (which replace the traditional source and target domains) plus two middle spaces termed the *generic* and the *blended* space. Thus, following this processing model, for the interpretation of *She broke my heart* we do not need to make use of all our knowledge about breaking activities and about hearts, to construct the metaphoric source and target, but only of the relevant correspondences as diagrammed above. A generic space contains skeletal structure which licenses the correlation between the source and target input spaces. In our example the source breaker and the target lover are both doers, breaking and courtship are activities, the thing broken and the heart are both affected entities. Finally a blended space recruits information from the various input spaces and combines it in its own idiosyncratic way.

We may apply the basic insights from this model to our previous discussion about metaphor, metonymy and their role in the production of inferences. Thus, the role of the metonymic mapping in cases of expansion is to provide all the relevant material for the construction of an initial metaphoric mapping which will yield a generic space. Imagine for the sentence *He left with his between his legs* a situation in which a budding but still inexperienced lawyer has been

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[13] This is in fact a simplification of a rather more complex situation. Sealing something usually evokes the idea of absolute secrecy which must not be violated, an idea which is probably correlated with the part of the metonymic expansion where we understand that a secret will be kept and which would probably call for the activation of one more input metaphoric source. This explanation is consistent with Turner & Fauconnier's account of conceptual projection, which will be outlined below. However, our focus here is only on the general effect of the metonymy in generating the most central explicature in a case of metaphor-metonymy interaction.

defeated when attempting to win a lawsuit against a big company. This situation becomes the target for a metaphor whose source is the expanded metonymic target in which a dog leaves with its tail between its legs after being punished. Both input spaces share the generic structure provided by the target domain of the initial metaphoric mapping. This structure consists of a set of explicatures and licenses the correlation between the elements of the dog scene and the specific situation of the lawyer being defeated in court. The inferences generated by this correlation are part of the blended space where we see the lawyer's reaction in terms of the animal's reaction, and by further implication we view the winning opponent's attitude (presumably boastful, cruel and sarcastic) in terms of the attitude of the more powerful person that has beaten the dog. These are implicatures and seem to be part of the blended space. Of course, other input spaces may be invoked - on the basis of contextual information - and combined with the metaphoric target in the blend, which will yield further implicatures. For example, the expression *He left with his between his legs* might be, among other possibilities, either a sarcastic or a pitiful remark, or even a warning that one has to be careful when opposing powerful people.

The situation is different when we have a case of metonymic reduction. The generic space, as we have seen, is built independently of the interaction, and the metonymy helps derive the relevant set of explicatures as part of the metaphoric target. The explicatures are not generic but specific (a certain lover, engaged in certain love-related activities which are harmful for a certain person). Here, the implicatures generated in the blend will depend exclusively on the activation of additional input spaces which combine with the metaphoric target.

10. Conclusion

In this paper we have examined the question of semantic underdetermination in connection to the relevance-theoretic implicature/explicature distinction and have argued that, while this distinction spells out the correct insight that not all implicit information has the same status, its range of application is different from what has been assumed by its proponents. In order to substantiate this claim, we have supplied evidence deriving from problems within its canonical treatment by relevance theorists as well as from the observation of the role of metaphor and metonymy in fleshing out the meaning of utterances. In this respect, we hold the view that metaphoric and metonymic mappings are cognitive mechanisms which yield sets of explicatures. Such explicatures then become available for condition-consequence reasoning templates which are the origin of implicatures. Finally, we have proposed that metonymic mappings are divided into two basic types according to whether the source of the mapping is a subdomain of the target or

the target a subdomain of the source. In the former case, the metonymy is used to economically provide an well-defined domain of reference, while in the latter it is either used to refer in a economical and clear way to a domain which is hard to identify or to highlight a relevant part of a domain in a set of metaphoric correspondences. In either case, the result of the metonymic development becomes part of the explicated meaning of the utterance which contains the metonymy.

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