Agnieszka Solska

The online processing of garden path utterances: accessibility-driven or relevance-driven?[*]

1. Introduction

In the pragmatic literature on utterance comprehension the derivation of utterance meaning is seen as involving a variety of distinct cognitive tasks including the recovery of a linguistically encoded sentence meaning, reference assignment, disambiguation and implicature derivation, to name just a few. The nature of these processes is the subject of a continuing debate. The position taken by relevance theorists (Carston 2002a, 2002b, forthcoming, Wilson and Sperber 2002) is that all aspects of utterance interpretation fall within the domain of a single pragmatic system, which is fundamentally inferential and whose operations do not require conscious reflection. This view is at variance with the model of utterance comprehension proposed by Recanati (1995, 2002, 2004), who argues that the processes involved in deriving the explicit content of an utterance, or 'what is said,' and the processes involved in the derivation of implicatures are essentially different and belong to distinct cognitive systems. Of these two types of processes only the latter are supposed to be inferential and consciously available to the hearer. Primary processes are said to be associative in nature, their application being governed by accessibility understood as the highest degree of activation in a conceptual network.

The debates on the processes at work in utterance interpretation focus mostly on what is involved in the derivation of implied meanings. In this paper, however, I would like to compare and evaluate the two approaches with respect to how they account for the processing failure caused by linguistic rather than pragmatic factors. The comprehension of the so-called garden path sentences, such as (1)–(7), is a case in point.

(1)   While Anna dressed the baby spat up on the bed.
        (i.e. 'The baby spat up on the bed, while Anna dressed.')
(2)   The horse raced past the barn fell.
        (i.e. 'The horse which was raced [by someone] past the barn fell [down].')
(3)   I convinced her children are noisy.
        (i.e. 'I convinced her that children are noisy.')
(4)   The old man the boat.
        (i.e. 'The boat is manned by the old people.')
(5)   Fat people eat accumulates.
        (i.e. '[The] fat [that] people eat accumulates [in their bodies]')
(6)   The man who whistles tunes pianos.
        (i.e. 'The man who whistles [all the time] tunes pianos [for a living].')
(7)   While John hunted the deer ran into the woods.
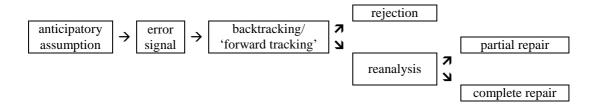   The deer ran into the woods, while John hunted.

The sentences in question mislead the comprehender, or lead her 'down the garden path,' in that they first lure her into selecting an interpretation which is not satisfactory, and then force her to abandon it and search for another. For example, sentence (1) invites the reader to treat the word *dressed* as a transitive verb followed by the object noun phrase *the baby*. Such an interpretation turns out to be incorrect when she reaches the apparently subjectless verb *spat*, which functions like an error signal belying the anticipatory assumption she has formed. At this point the reader backtracks and tries to revise her initial erroneous hypothesis. It is by no means certain that she will manage to correctly reanalyze *the baby* as the subject of the main clause preceded by a subordinate clause in which the verb *dressed* is used intransitively. It may happen that she will reject the sentence as ungrammatical or, as demonstrated by Christianson, Hollingworth, Halliwell and Ferreira (2001), she may even continue to hold the mistaken belief that Anna did in fact dress the baby. Apart from the rare cases when the addressee does not fall into the verbal trap and correctly interprets the sentence at first pass, the stages in the on-line recovery of the

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linguistic meaning of a typical garden path sentence may be schematically represented in the way shown in diagram (8):

(8) **Stages in the on-line recovery of the linguistic meaning of a garden path utterance:**

anticipatory assumption	→	error signal	→	backtracking/ 'forward tracking'	↗ rejection

with branches leading to "rejection", "reanalysis", "partial repair", and "complete repair".

In this paper I would like to outline the nature of the interpretive difficulties hearers encounter when confronted with garden path utterances and to add a voice to the discussion of the pragmatic system (or systems) involved in the recovery of the utterance meaning.

2. A cognitive perspective on garden path utterances

Both relevance-theorists and Recanati mention garden path utterances as examples of situations when the smooth running of communication is disrupted. However, of the two rival views, only the relevance theoretic model locates utterance comprehension within a broader cognitive framework, which gives the theory the explanatory power to predict not only the high degree of communicative failure in understanding garden path utterances but also the fact that they are relatively rare in discourse. On the relevance-theoretic view, utterance interpretation is primarily a cognitive phenomenon. In keeping with the First or Cognitive Principle of Relevance, given in (9), cognition is seen as search for relevance understood as deriving maximum cognitive effects at the lowest processing effort, as spelled out in (10):

(9) **Cognitive Principle of Relevance** (Wilson and Sperber, 2002: 254)**:**
Human cognition tends to be geared to the maximization of relevance.

(10) **Relevance of an input to an individual** (Wilson and Sperber, 2002: 252)**:**
(a) Other things being equal, the greater the positive cognitive effects achieved by processing an input, the greater the relevance of the input to the individual at that time.
(b) Other things being equal, the greater the processing effort expended, the lower the relevance of the input to the individual at that time.

The Cognitive Principle of Relevance together with the definition of relevance instantly predict that structures which make it necessary for the comprehender to reprocess information in order to correct previously taken assumptions must increase the cost of achieving cognitive effects. As a result, such structures are less relevant to the individual who is processing them, which in turn increases the risk of communication breakdown.
The main difference between utterances used in verbal communication and other cognitive stimuli lies in the fact that the overt demand the former make on the addressee's attention guarantees to the addressee that what is being said is going to be optimally rather than maximally relevant to her. This idea is encapsulated in the so-called Communicative Principle of Relevance, presented in (11), with the key concept of the presumption of optimal relevance given in (12):

(11) **Communicative Principle of Relevance** (Wilson and Sperber, 2002: 256)**:**
Every act of ostensive communication conveys a presumption of its own optimal relevance.

(12) **Presumption of optimal relevance** (Sperber and Wilson, 1995: 270)**:**
(a) The ostensive stimulus is relevant enough for it to be worth the addressee's effort to process it.

(b) The ostensive stimulus is the most relevant one compatible with the abilities and preferences.

Like other ostensive stimuli, garden path constructions automatically trigger the comprehension process and the language user assumes that they will be optimally relevant to her. Expecting to have a valid interpretation, she will continue to work on them despite initial problems. Yet unlike most other utterances, garden path structures thwart those initial expectations of relevance. The information load of a garden path sentence is no different from that of its unambiguous paraphrase and the comprehender will not be awarded for the extra cost she has expended by any communicative gains, except maybe the sense of amusement or satisfaction at having solved a little linguistic puzzle.

The Communicative Principle of Relevance is a criterion which not only determines which interpretations of an utterance hearers will accept or reject but which also regulates what sort of utterances are produced: the encoded element normally makes them easier to process and this explains why garden path utterance are relatively rare in discourse. The situations in which they appear by design rather than accident have little to do with natural language use and include experiments conducted by psychologists or psycholinguists attempting to gain insight into natural language processing or by scientists interested in designing computer programs that can emulate the syntactic and semantic capabilities of human language users. As a result, in the discussions of the garden path phenomenon, the terms 'comprehender' or 'language user' are used more often than the more typical 'hearer' or 'addressee'.

3. The two rival views on the derivation of utterance meaning

The processing of garden path utterances is disrupted at the subpragmatic level of linguistic decoding, which falls within the domain of a grammar competence system and which, according to both of the rival models, provides input to pragmatic processes. The relevance-theoretic view is that, while recovering the meaning of the linguistically encoded elements, hearers gain access to information about the concepts encoded by individual words and to procedural information about how to manipulate these concepts (Blakemore 2002). Concerned mainly with the pragmatic phase of utterance comprehension, Recanati is much less vocal on what is involved in the recovery of the linguistically encoded meaning. He mentions the activation of concepts associated with linguistic expressions and the cognitive schemata (i.e. scripts, frames or scenarios) which are activated by, or accessed through, linguistic expressions (Recanati 1995) and which play a role in the interpretation process.

The main difference between the two models lies in their vision of the pragmatic phase of utterance interpretation. On the Relevance Theory view, during this phase the hearer draws a number of inferences in order to construct hypotheses about the explicit content of the utterance (i.e. its 'explicatures'), about the intended contextual assumptions ('implicated premises'), and the intended contextual implications ('implicated conclusions'). In forming them she follows a single general comprehension procedure given in (13):

(13)   **Relevance-theoretic comprehension procedure** (Wilson 2000: 420-421):
         Follow a path of least effort in computing cognitive effects
         (a) Consider interpretations in order of accessibility.
         (b) Stop when your expectation of relevance is satisfied.

The pragmatic tasks the hearer has to perform while deriving explicitly communicated meanings include reference resolution, disambiguation, such mechanisms as loosening, broadening and metaphorical transfer of word meaning, as well as other pragmatic enrichment processes. In order to derive implicatures the hearer has to supply contextual assumptions, which allow her to form an appropriate hypothesis about the implicated premises and finally to combine the previous two in order to derive the intended contextual implications or implicated conclusions.

The schematic outline of the relevance-theoretic model of the utterance interpretation process and the specific tasks involved in the derivation of speaker's meaning is presented in (14). The curvy lines indicate that the processes operating at the interface between linguistically encoded meaning and explicitly communicated meaning and those operating at the interface between explicitly and implicitly communicated meaning occur in parallel and are subject to a mechanism of mutual adjustment. This parallel adjustment process is visible in the reprocessing phase of garden path utterances, when new

hypotheses are formed, tested and revised against the disambiguating input provided by the material occurring before and after the point of breakdown.

(14)   **Schematic outline of the utterance interpretation process—the RT model:**

SUBPRAGMATIC PHASE: DECODING	PRAGMATIC PHASE: DRAWING INFERENCES	
Recovery of the linguistically encoded meaning	Derivation of the explicitly communicated meaning, i.e. explicatures(s)	Derivation of the implicitly communicated meaning, i.e. implicature(s)
• recovery of conceptual representations • recovery of procedural information	• reference assignment • disambiguation • loosening/broadening/transfer of word meaning • free enrichment	• constructing appropriate contextual assumptions (providing an implicated premise) • deriving a range of implicated conclusions

In the binary view taken by Recanati (1995, 2002, 2004) the inferential phase of comprehension, governed by Gricean type norms, is restricted to the recovery of implicatures only. The derivation of the explicit utterance content, or 'what is said,' is carried out by primary pragmatic processes, which do not engage the reflective capabilities of the hearer. Among them we find such mechanisms as reference assignment, sense selection (i.e. disambiguation of individual words) and sense construction, understood as constructing a possible interpretation of a complex phrase. Other tasks that may have to be performed include specification, saturation (i.e. giving semantic value to a variable or a slot in a grammatical structure of a sentence) and (free) concept enrichment. The exact number and types of these processes is a matter that awaits further discussion (Recanati 2004: 26-27).

Recanati seems to be somewhat ambivalent on the issue of whether the primary processes are prior, both logically and temporarily to the secondary ones—the view he expressed in Recanati (2004: 74)—or whether they are subject to 'a mutual adjustment mechanism', which bridges the gap between them—the position he took in Recanati (2004: 47). In the schematic view of the utterance interpretation process in Recanati's model, given in (15), I also use curvy lines indicating the possible interaction between the various processes but, as pointed out by Carston (forthcoming), it is unclear how in Recanati's framework these two distinct kinds of processes are supposed to interact with each other and to effect the mutual adjustment of each other's content.

Another element whose place in the model seems not entirely obvious is the activation of abstract concept schemata. Since cognitive schemata, which can be described as abstract representations of a situation type, may be evoked by either the words used or by some salient features of the speech situations, it is arguable whether they belong to the linguistic or the pragmatic domain.

(15)   **Schematic outline of the utterance interpretation process—Recanati's model:**

SUBPRAGMATIC PHASE	PRAGMATIC PHASE	
DECODING	PRIMARY ASSOCIATIVE PROCESSES	SECONDARY INFERENTIAL PROCESSES
Recovery of the linguistically encoded meaning	Derivation of the explicitly communicated meaning, i.e. **what is said**	Derivation of the implicitly communicated meaning, i.e. **implicature(s)**
• activation of individual concepts • **?**activation of abstract concept schemata	• reference assignment • sense selection • sense construction • specifization • saturation • enrichment	• deriving implicated meanings

4. Problems for Recanati's model: reflection and inferences

The mental backtracking performed by the hearer in order to work out the explicit content of garden path utterances may seem to pose a problem to both models since it takes place before the autonomous system of unconscious syntactically driven mental computations has provided any input for the properly pragmatic phase, be it the inferential phase of the Relevance Theory or the associative level of deriving 'what is said.' Nevertheless, neither relevance-oriented linguists nor Recanati deny the possibility of reflective, consciously carried out interpretation in situations when the 'normal communicative flow' is disrupted. Carston (2002: 146) points out that "an effortful conscious search for an interpretation" might be required when dealing with certain instances of garden path utterances or some cases of complex figurative use. On his part, Recanati (2004: 38) speaks in very general terms of situations "when the unreflective, normal process involved in comprehension yields weird results." He claims, however, that the "genuine inference process" which takes place in such cases involves using "evidence concerning the speaker's beliefs and intentions." Considering garden path utterances, it is not instantly obvious what the speaker's beliefs and intentions might be unless we assume that the reasoning to be conducted by the hearer includes constructing such propositions as 'The writer mentions *the old people*, not *the old man*.' At any rate, the idea that in fleshing out meaning at the most basic level the hearer resorts to inference makes the model internally inconsistent. Such a problem does not arise in the relevance-theoretic model, in which "the distinction between normal communicative mechanisms and more reflective utterance processing crosscuts Recanati's distinctsion between primary processes and implicatures" (Carston, online statement).

5. Accounting for the garden path effect

5.1. Local ambiguities

Researchers point out that a classic garden path sentence contains in its structure the so-called local ambiguity, i.e. a place of indeterminacy "in which some locally tenable choices will ultimately lead to global ungrammaticality and resultant processing failure" (Pritchett, 1992: 6). Thus in sentences (1) and (7) the fronted subordinate clause creates a place of indeterminacy in which a noun phrase can be given either an object or a subject reading. Sentence (2) is locally ambiguous between the main clause reading and the relative clause complex noun phrase reading, while sentence (3) is locally ambiguous between verbal complement reading of a pronoun and the complement clause reading of a noun phrase. In (4) and

(5) the garden path effect arises due to the lexical ambiguity of two elements and in (6) the ambiguity concerns the possible verbal or nominal interpretation of the key word.

While it is clear that in undertaking the repair the reader has to disambiguate homophonous items and revise her decisions regarding the subcategorization frame of the verbs used, it must be noted (Solska forthcoming) that local ambiguities alone cannot be what triggers the garden path effect. For instance, sentences (16)–(22), modelled on the examples under analysis, do not seem to entrap the hearer in the processing failure even though they have exactly the same syntactic structures and the same, or at least similar, ambiguous items as their garden path counterparts.

(16)   While Anna dressed the bomb went off in the basement.
(17)   The horse raced at the Belmont died.
(18)   I convinced her viruses are dangerous.
(19)   The old rock the boat.
(20)   Fat food contains accumulates.
(21)   The man who whistles shoes horses.
(22)   While the man hunted a meteorite crashed into the woods.

Since the processing failure takes places at the subpragmatic level of interpretation, at which the comprehender accesses or activates simple or complex concepts encoded by words or phrases, it seems plausible to assume that this is where we should look for what leads to the garden path effect.

5.2. The two accounts on what linguistic expressions encode

As was mentioned in section 3, on the relevance-theoretic view, words and phrases may encode concepts which become activated in the comprehender's mind providing access to three types of information:
   (i)   lexical information, i.e. information about the natural language counterpart of the concept,
   (ii)   logical information consisting of a set of deductive rules which apply to logical forms of which that concept is a constituent,
   (iii)   encyclopaedic information, i.e. information about the extension and/or denotation of the concept; in other words, information about the objects, events and/or properties that instantiate the concept.

In the process of utterance comprehension we draw from the encyclopaedic and possibly from the logical entries of the concepts which serve as raw material for the logical form we are trying to construct. In doing so, as always, we apply the relevance-theoretic comprehension strategy of following a path of least effort in the search for the most accessible interpretation which yields satisfactory contextual effects.

According to Recanati's model, linguistic expressions encode representations which become active in the hearer's mind when the expression is uttered. The semantic value of these representations can undergo semantic composition with other representations. The comprehender typically chooses the most accessible semantic value, i.e. the one which is the most prominently activated in a conceptual network (Recanati 1995). Such a potential semantic value often has to be provided by the knowledge of the world or the concept schemata which are activated by linguistic expressions and which make certain elements in the situation they evoke more prominent in the comprehender's mind. The factors which lower the "activation threshold of a representation" (Recanati 1995, 212), thus making it more accessible, include (i) the recency of processing, (ii) frequency of processing and (iii) close associative links to accessible representations, e.g. through schemas or world knowledge.

5.3. The two accounts on what triggers or blocks the garden path effect

In order to determine how the two models account for the garden path effect let us take a close look at what they can tell us about the recovery of the linguistically encoded meaning of the sentences under analysis. What can we learn from the accessibility-based model about the concepts and schemata which are activated by such words as *baby*, *raced or bomb*? What kind of predictions can the relevance-theoretic model make about the inferences that can be drawn from the encyclopaedic entries of such concepts as DEER as opposed to METEORITE, THE BARN as opposed to THE BELMONT? How do the two models explain why the comprehender of sentence (4) is more likely to access the structured string of

concepts THE OLD MAN than MAN THE BOAT? What kind of information is made accessible by the logical address of such words as *hunted* or *dressed*?

In the relevance-based account, the conceptual address for the verb *dress* in sentences (1) and (16) contains an inference rule yielding the information 'put clothes on someone,' which can invite the language user to search for the possible recipient of the action. Only the encyclopedic entry for *baby*, not for *bomb,* contains information about being dressed. This may account for comprehenders making plausible yet wrong assumptions about the baby being dressed, which in turn leads to the garden path effect in (1) but not in (16). Alternatively, in the accessibility-driven model of verbal understanding, the garden path effect arises because only the lexical item *baby* would activate the schema of caring for a baby, which would include such activities as dressing the infant. No such schema would be activated by the word *bomb*.

Concerning the garden path effect in sentence (2), but not in (17), the explanation following from the Relevance Theory is that, unlike the phrase *at the barn,* the phrase *at the Belmont* can give access to information connected with a horse-racing event at which horses do not merely race but are raced against each other. This is why the locally ambiguous sentence (17) is unproblematic while sentence (2) triggers the garden path effect. Similarly, the explanation following from Recanati's account is that the phrase *at the Belmont*, unlike the phrase *at the barn*, activates the script connected with the type of competition in which horses are made to race against each other.

In both accounts the phrase *her children* in sentence (3) makes a more likely candidate for being the PATIENT of the predicator *convinced* than the phrase *her viruses* in sentence (18). Besides, women having children is part of our knowledge of the word, hence the string *her children* is more likely to form a complex concept (or, to use Recanati's terms, to be activated in the process of sense construction) than the string *her viruses*. This may account for the garden path effect in (3) and the absence thereof in (18).

According to both accounts, the strings *the old man* in sentence (4) and *the old rock* in sentence (19) both form tenable concepts. However, the string *rock the boat* is more of a collocation than the string *man the boat*. Consequently, the former is more frequent in discourse, hence more accessible and more likely to be interpreted as a verb phrase. In other words, the relative frequency of the occurrence of the expressions used is the factor which precludes the garden path effect in (19) and triggers it in (4).

Similarly, due to its sense and the frequency of occurrence, the phrase *fat people* in sentence (5) is highly likely to form a complex concept, which makes it more likely to trigger the garden path effect than the phrase *fat meals* in sentence (20).

On the Relevance Theory account, the encyclopaedic entry for *whistle* in sentence (6) must include information about the kind of things that can be whistled, for example *tunes* but definitely not *shoes*, which may explain why the garden path effect arises in (6) but not in (21). Alternatively, the accessibility account would invoke a script in which the activity of whistling is associatively linked to *tunes* but not to *shoes*.

Finally, in the relevance-based model, the conceptual address for the verb *hunt* in sentences (7) and (22) gives access to the logical entry specifying the inference 'When a person hunts he or she engages in the pursuit, capture or killing of a prey.' Of the two concepts: DEER and METEORITE, only the encyclopaedic entry for the former contains information about being a potential quarry in a hunt. This may account for comprehenders making justified yet wrong assumptions about the deer being hunted, which triggers the garden path effect in (7), but not in (22). On the other hand, the hunting script invoked by the accessibility model would be associated with an animal being hunted, the only likely candidate being the deer.

5.4. The inevitability of the garden path effect

As can be seen, in each model the mechanisms that trigger the garden path effect are the same as those which allow effortless comprehension of ordinary sentences. In the accessibility model differently phrased sentences associatively activate different schemata in the comprehender's mind and make the irrelevant reading of a key word more accessible than other readings. In the relevance-based model the comprehender draws inferences based on the contextual assumptions made accessible by the logical and the encyclopaedic entries of the linguistically encoded concept. As always, in drawing these inferences she is guided by her expectations of relevance. This time, however, the inferential processes which normally help resolve interpreting difficulties make her go astray and hamper the correct understanding of the sentence at first pass.

6. Inconsistencies of Recanati's approach

Since both accounts work well in predicting the garden path effect, it comes as a surprise that Recanati does not welcome what seems to be the logical outcome of his framework. He emphatically denies the possibility that accessibility may lead to anything but success in deriving interpretations. He objects to Sperber's observation that there are cases when accessibility leads the comprehender astray and argues that the garden path effect is best explained by positing the notion of an accessibility shift and the distinction between successive stages of interpretation:

> "Sometimes the first interpretation that comes to mind (the most accessible one) turns out not to be satisfactory and forces the hearer to backtrack. According to Sperber, the possibility of such garden-path effects shows that success, for a candidate semantic value, cannot be equated with sheer acceptability. The objection is misguided, I think. The most acceptable interpretation at some stage *s* in the interpretation process may well turn out to be unsatisfactory at some later stage *s'*, thereby resulting in a garden path effect and the need to backtrack. This does not show that interpretational success cannot be cashed out in term of accessibility. At any given stage, the most accessible interpretation will be the winning one (at that stage). In garden path utterances we have *two* successive stages to consider. Some interpretation is the most accessible one, hence winds, at *s*, but that interpretation fails to fit some schema, hence loses, at a later stage *s'*." (Recanati 1995: 227, 2004: 32)

Although there can be no doubt that understanding garden path sentences is a two-step process, the fact remains that if the addressee has to reject her initial analysis and search for another it is precisely because choosing the most accessible candidate for a semantic value was what caused the processing failure at step one.

Another inconsistency that can be found in Recanati's approach concerns the nature of the schemata driven interpretation process. Recanati (1995: 226) admits that the "role played by schemata explains why the process of utterance interpretation is to such a large extent top down and driven by world knowledge." However, it seems doubtful that the salient information provided by a concept schema is always merely associatively activated in the hearer's mind. Especially sentence (17) seems to require the comprehender to draw the inference (or, to use relevance-theoretic terminology, to form a contextual assumption) that the prepositional phrase *at the Belmont* has something to do with horse-racing. For many comprehenders, including the author of the present article, this is something they will in fact learn or have learnt from the sentence, not something they would know beforehand. Obviously, allowing inferences into the picture would belie the key notion of the accessibility model in which the primary processes of deriving 'what is said' are free from inferences.

7. Concluding remarks

The inconsistencies in the accessibility-driven model which this paper has revealed do not necessarily invalidate the whole framework but they indicate that it might be necessary to revise some of its key elements. The examination of the online processes of interpreting garden path sentences shows that there is some reason to doubt whether the conscious availability or unavailability of various cognitive processes runs along the lines proposed by Recanati. The analysis also seems to undermine the claim that the derivation of the explicit content of the utterance is never inferential.

Compared with the accessibility-based account, the unified relevance-theoretic model is internally consistent. Moreover, grounded in a broader cognitive framework it is better equipped to account for the interpretive difficulties, be they pragmatic or subpragmatic in nature.

References:

Blakemore, Diane. 2002. *Meaning and relevance: The semantics and pragmatics of discourse Connectives*. Cambridge: Cambridge University Press.
Carston, Robyn. 2002a. *Thoughts and utterances: The pragmatics of explicit communication.* Oxford: Blackwell.
——. 2002b. Linguistic meaning, communicated meaning and cognitive pragmatics. *Mind and Language* 17, nos.102:127-148.

––––. (forthcoming). How many pragmatic systems are there. In *Saying, meaning, referring: Essays on the philosophy of François Recanati*, edited by M-J. Frapolli. London: Palgrave Macmillan.

––––. 2003. Conversational Implicatures and Pragmatic Mechanisms. *European Society For Philosophy And Psychology,* 2003, http://www.eurospp.org/2003/papers/Doc2003/Carston206%20LIN%20.doc (30 May 2006)

Christianson Kiel, Andrew Hollingworth, John F. Halliwell and Fernanda Ferreira. 2001. Thematic roles assigned along the garden-path linger. *Cognitive Psychology* 42:368-407.

Pritchett, Bradley L. 1992. *Grammatical competence and parsing performance.* Chicago: University of Chicago Press.

Recanati, François. 1995. The alleged priority of literal interpretation. *Cognitive Science* 19:207-232.

––––. 2002. Does linguistic communication rest on inference? *Mind and Language* 17, 105-126

––––. 2004. *Literal Meaning.* Cambridge: Cambridge University Press.

Sperber, Dan and Deirdre Wilson. 1995. *Relevance: communication and cognition.* 2nd ed. Oxford: Blackwell

Solska, A. (forthcoming). A relevance-theoretic perspective on garden path sentences. *Proceedings of the Fifteenth Annual PASE Conference.*

Wilson, Deirdre. 2000. Metarepresentation in linguistic communication. In *Metarepresentations: A multidisciplinary perspective*, edited by D. Sperber. Oxford: Oxford University Press.

Wilson, Deirdre and Dan Sperber. 2002. Relevance theory. *UCL Working Paper in Linguistics* 14:249-287.