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Indicators and procedures: *nevertheless* and *but*[1]

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The paper aims to clarify the Relevance theoretic notion of procedural meaning (cf. Blakemore 1987, Wilson & Sperber 1993) through the analysis of *but* and *nevertheless*. I show, first, that a procedural analysis is able to account for differences between these expressions that cannot be explained in terms of the speech-act theoretic notion of non-truth conditional indicators, and, second, that these differences show that the conception of procedural meaning as a constraint on contextual effects (cf. Blakemore 1987) is too narrow and must be extended to include all information about the inferential processes involved in utterance interpretation, including context selection.

1. Introduction

The starting point for this paper is Grice's (1989) analysis of the non-truth conditional suggestions carried by expressions like *but* and *nevertheless* as they are used in examples like the following:

(1) I have received the e-mail, but it's in Dutch.
(2) I am sure he is normally very conscientious. Nevertheless the papers are missing.

Grice's idea that non-truth conditional meaning should be analysed in terms of conventional implicature follows in the speech act theoretic tradition in which linguistic meaning is analysed either in terms of its contribution to the descriptive content of utterances or in terms of its role in indicating how utterances are to be interpreted. Rieber's (1997) re-analysis of conventional implicatures as tacit performatives follows the same speech act theoretic tradition. In this paper I argue that we should abandon a speech act theoretic approach to the distinction between describing and indicating in favour of an

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For convenience, I have referred to the speaker as 'she' and the hearer as 'he'.

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approach concerned with the cognitive processes involved in utterance interpretation. The distinction that emerges from this change of perspective is a distinction between two ways in which linguistic meaning contributes to inferential pragmatic processes: on the one hand, it may encode constituents of CONCEPTUAL or propositional representations which undergo these processes, while on the other, it may encode PROCEDURAL information about these processes.

In earlier work (e.g. Blakemore 1987) I suggested that this distinction is co-extensive with the distinction between truth conditional meaning and non-truth conditional meaning. However, more recent research has shown that this is not the case. For example, Wilson & Sperber (1993), Ifantidou-Trouki (1993) and Blakemore (1996) have shown that while sentence adverbials, parentheticals and certain so-called apposition markers are non-truth conditional, they clearly encode concepts.

This raises the question of whether we should assume that the distinction between truth conditional and non-truth conditional meaning is indeed the fundamental distinction in a cognitively grounded theory of linguistic meaning. Within the Relevance theoretic approach to communication developed by Sperber & Wilson (1995) it has been argued that there is a gap between linguistic meaning and the truth conditional content of the assumption explicitly communicated (see in particular, Carston 1988), and hence that the linguistic meaning of an utterance does not deliver a proposition with truth conditions. This suggests that linguistic semantics is concerned not with the relation between linguistic form and the external world, but with the relation between 'bits of linguistic form and the cognitive information they encode' (Carston 1999). In this picture, truth conditionality is not central to a theory of linguistic semantics: the question that matters is not whether a linguistic expression contributes to something with truth conditions, but rather what kind of cognitive information an expression encodes.

If this is right, then it is important to be able to give a precise account of what it means for a linguistic expression or structure to encode cognitive information, and in particular, a precise account of what it means for a linguistic expression or structure to encode either a concept or a pragmatic procedure. This paper aims to clarify the notion of procedural meaning through the analysis of *but* and its less well-known relative *nevertheless*. In particular, I shall show, first, that a procedural analysis is able to account for differences between these expressions which are not explained by the speech act theoretic notion of a non-truth conditional indicator; and, second, that these differences demonstrate that the conception of procedural information as a constraint on contextual effects (cf. Blakemore 1987, 1989) is too narrow, and must be extended to include all information about the inferential processes underlying utterance interpretation, including, for example, constraints on contexts.

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2. Conventional implicature: Grice

The speech act theoretic distinction between describing and indicating was based on the claim that an utterance does not simply express a proposition, but is used to perform a range of speech acts. Thus although (3a–c) would be said to have the same propositional or descriptive content, they are used to express different speech acts.

(3) (a) Tom plays the trumpet.
(b) Does Tom play the trumpet?
(c) Tom, play the trumpet!

This was taken to suggest that the role of the mood indicators in (3a–c) is not to contribute to the propositional content of the utterances that contain them, but should be analysed in terms of their role in indicating or showing what kind of speech act is being performed. In other words, in this framework indicators are taken to encode ILLOCUTIONARY rather than LOCUTIONARY information.

This idea has been applied to the analysis of explicit performatives (Austin 1962), parentheticals (Urmson 1966), mood indicators (Bach & Harnish 1979), sentence adverbials (Bach & Harnish 1979) and evidentials (Palmer 1986). Clearly, the validity of these analyses depends on the validity of the underlying assumption that the interpretation of an utterance crucially involves the identification of the illocutionary act it performs.[2] However, this paper is not so much concerned with the speech act theoretic assumptions underlying these analyses as it is with the question of how they can be applied to the analysis of discourse connectives such as *but* and *so*. In what sense can expressions like *but* and *so* be regarded as communicating information about the illocutionary force of an utterance?

The answer according to Grice (1989) is that while mood indicators communicate information about the CENTRAL or GROUND-FLOOR speech act performed by an utterance, discourse connectives like *but* and *so* communicate information about a NON-CENTRAL or HIGHER-LEVEL speech act which comments in some way on the interpretation of the central speech act. For example, in (4) the speaker performs a central speech act by which she makes a ground-floor statement that Tom is here and he has forgotten his trumpet, and at the same time a non-central speech act by which she is drawing a contrast between the two conjuncts of the ground floor statement.

(4) Tom is here, but he has forgotten his trumpet.

The role of *but*, according to this analysis, is to signal the performance of this non-central speech act. Since the truth or falsity of the speaker's words is

[2] For further discussion, see Sperber & Wilson (1995); Wilson & Sperber (1988); Clark (1991, 1993).

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determined by the relation of the ground-floor speech act to the world, a misperformance of a higher-order speech act will not affect the truth value of the utterance, although it may constitute a 'semantic offence' (Grice 1989: 362).

In this way, Grice is able to distinguish between those aspects of linguistic meaning which contribute to WHAT IS SAID by a speaker in making an utterance U, and those aspects of linguistic meaning which do not. WHAT IS SAID is restricted to the propositional truth conditional content of the central speech act. The information carried by *but*, however, is a part of what is CONVENTIONALLY IMPLICATED rather than part of what is said, since it is information about the performance of a non-central speech act.

If *but* signals the performance of a non-central speech act, then this speech act, like all speech acts, must have a propositional content. And indeed, it seems that Grice would want to say that the speech act whose performance is signalled by *but* in an utterance like (4) has the content in (5), and hence that this is the conventional implicature carried by *but*.

(5) There is a contrast between the statement that Tom is here and the statement that Tom has forgotten his trumpet.

But then it is not clear exactly what the higher-order speech act signalled by *but* is. It cannot be the act of contrasting since the fact that there is a contrast is represented by the propositional content of the act. More generally, it is not clear whether 'contrasting', 'adding', or 'explaining', which, according to Grice, are associated with *but*, *moreover* and *so* respectively, are speech acts in the sense made familiar by classical speech act theory (cf. Austin 1962, Searle 1969). Perhaps one could say that this higher order act is simply an act of commenting. But then one would have to say that acts signalled by the non-truth conditional discourse connectives – for example, *but*, *so*, *moreover* and *after all* – are individuated not by their illocutionary properties but by their propositional content, or locutionary properties. That would mean that these expressions are not after all being analysed as illocutionary force indicators, but are being treated as indicators of something propositional. And this would leave us with the task of specifying what exactly the relationship between an expression like *but* and the proposition in (5) is. For it is not clear that whatever is encoded by *but* appears in this proposition in the same way that, say, what is encoded by *trumpet* or *forgotten* appears in the propositional content of the 'ground-floor' speech act performed by (4).

3. CONVENTIONAL IMPLICATURE: RIEBER'S TACIT PERFORMATIVE ANALYSIS

It seems that these questions might be answered by Rieber's (1997) modification of Grice's analysis of conventional implicature, which, he claims, addresses these questions. According to his analysis, expressions like

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but are TACIT PERFORMATIVES. Thus he argues that (6) should be analysed as (7).

(6) Sheila is rich but she is unhappy.
(7) Sheila is rich and (I suggest that this contrasts) she is unhappy.
(Rieber 1997: 54)

As we shall see, it is not clear that Rieber's assumption that all utterances containing *but* express a conjoined proposition can be maintained. This section, however, is not concerned with Rieber's analysis of *but* in particular, but with the general assumptions underlying his tacit performative analysis of conventional implicature. In particular, it aims to make sense of Rieber's account of what it means for a linguistic expression to indicate or signal information.

The classical speech act theoretic argument that performatives do not have truth values is no longer universally accepted. Thus according to Recanati (1987) they are self-verifying declarations and hence must be regarded as having a value 'true'. However, Rieber claims that his analysis is compatible with either analysis. Since, according to the classical approach, the performative in (7) has no truth value and simply 'indicates' that the propositional content has the force of a suggestion, the truth value of (6) does not depend on whether there is a contrast between wealth and unhappiness. At the same time, since according to Recanati's (1987) analysis, the performative in (7) is a self-verifying declaration that the speaker is suggesting there is a contrast, its truth is not affected by whether there is a contrast. Thus it would seem that on either approach Rieber's analysis 'gets the truth conditions right' (1997: 54).

However, the question is whether in getting the truth conditions right Rieber has also explained what expressions like *but* communicate and how they do it.

According to Rieber, his analysis is one in which 'what is non-truth conditionally expressed by the discourse connective is part of their CONVENTIONAL meaning' (1997: 55, my emphasis). At first sight it is not clear whether meaning can be both tacit and conventional. It would seem that to say that the conventional meaning of *but* is analysed in terms of a performative of the form *I suggest that P* is to say that there is a linguistically determined relation between *but* and the information that its utterance constitutes the performance of the act of suggesting that P. On the other hand, to say that this performative is tacit would seem to suggest that the utterance does not actually contain an expression which identifies the act being performed.

It seems that the apparent contradiction here stems from the assumption that TACIT means IMPLICIT, and hence that in the absence of an actual performative verb as in *I suggest*, the hearer must INFER the information that the speaker is performing the act of suggesting on the basis of the context and

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pragmatic principles in the same way as a hearer would infer that speaker of (8) is issuing a warning.[3]

(8) There's a bomb in that car.

In fact, it seems that Rieber does not intend TACIT to be construed in this sense, and that he is including *but* in that category of expressions which, according to speech act theoretic analyses, are conventionally performative, but which simply don't happen to contain a performative verb – for example, expressions like *thanks* or *pardon*, which would be analysed as performatives *I thank you* and *I apologize* respectively.[4]

From a speech act theoretic point of view saying that *pardon* is equivalent to the explicit performative *I apologize* is illuminating only in the light of the constitutive rules for performing a successful act of apologizing. Analogously, saying that *but* is equivalent in meaning to a performative of the form *I suggest that P* is illuminating only to the extent that we understand what it means to perform the speech act of suggesting. Rieber himself is doubtful whether *suggest* is the most appropriate verb here. However, this is not really the point, because it is clear that what he has in mind is something like signalling or showing or indicating. The fact that languages have expressions like *but*, claims Rieber, can be explained once it is recognized that not all linguistic communication consists in modifying the beliefs of the hearer: 'Sometimes a hearer simply wishes to call attention to something that the hearer would believe were it brought to her awareness' (1997: 61). This sort of communication, he argues, must be different from 'ordinary' communication since 'the speaker does not need to stand behind her words; all she needs to do is to induce the hearer to notice something' (1997: 61).

This would seem to suggest that the communicative act associated with the use of an expression like *but* is analogous to the non-verbal act of, say, deliberately opening the fridge door in order to show someone how empty it is. If it is recognized that this behaviour was intentional, then it can be assumed that the communicator was intending to draw the audience's attention to something, or, in other words, that the communicator intended by this behaviour to make it manifest that she intended to make certain assumptions manifest. Such behaviour, according to Sperber & Wilson (1995: 49) is a case of OSTENSION or OSTENSIVE COMMUNICATION.

In his discussion of indicating, Rieber links his notion of showing to Sperber & Wilson's notion of ostension. However, it seems clear that what he means by SHOWING (or indicating) only covers the sort of case in which

[3] The assumption that hearers recover the information that the hearer is issuing a warning as part of the interpretation of the utterance is a speech act theoretic one rather than a Relevance theoretic one. See Sperber & Wilson (1995), Wilson & Sperber (1988) for further discussion.

[4] I am grateful to the anonymous referee whose comments helped me clarify this point.

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some of the assumptions that become manifest – for example, the assumption that the fridge is empty – might be manifest to the audience even if he had not recognized that the communicator had intended to make them manifest. In other words, it seems that what Rieber has in mind is the sort of case in which a communicative act provides DIRECT EVIDENCE for information rather than INDIRECT EVIDENCE. For example, while the act of opening the fridge door may have provided direct evidence that it is empty, the act of producing the utterance in (9) can make the communicator's intention to make an assumption manifest only if the audience has first recognized the communicator's intention to make this assumption manifest.

(9) There's nothing in the fridge.

For the relationship between the evidence produced (the utterance) and the assumptions conveyed is arbitrary, and it is only by discovering the communicator's intention to make particular assumptions manifest that the audience can discover, indirectly or inferentially, what these assumptions are.

This might seem to suggest that the distinction between showing (or indicating) and describing (or saying) IS the distinction between providing direct evidence for information and providing indirect evidence. However, Sperber & Wilson (1995: 53) have argued that there is not a sharp dividing line between showing and saying that, but rather that there is a whole continuum of cases ranging from cases of 'showing' to cases of 'saying that'. ALL of these cases are cases of ostension in the sense that they involve making one's intention to convey information manifest, and they ALL involve inference. Thus even if the act of opening the door provides direct evidence for the information that the fridge is empty, there are other assumptions which are made manifest only indirectly – for example, that I am trying to be relevant, that the communicator is aware that the fridge is empty. On this view, ostension is not just showing (to be contrasted with saying that), as Rieber seems to suggest, but a well-defined domain which covers all cases of human communication.

Nevertheless, it seems that one can distinguish between different types of ostensive communication, and that in particular, one can distinguish those cases in which the communicator provides evidence from which the audience is intended to derive assumptions inferentially from those cases in which the communicator's intention is to ALTER the saliency of information by making it more accessible to those inferential processes. An example of the first sort is the utterance in (10a), which – given the appropriate contextual assumptions and the hearer's recognition that the speaker has deliberately attracted his attention – would be taken as evidence for assumptions such as the ones in (10b) and (10c).

(10) (a) An 86 is coming.
(b) A number 86 bus is coming towards the speaker and hearer.
(c) We should get on the bus that is coming towards us.

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An example of the second sort is an act of pointing to an oncoming bus. This act cannot in itself be taken as evidence for assumptions like the ones in (10b) and (10c). However, it might make the bus more salient to the audience so that either it is accessible as a referent for the comprehension of a following utterance (for example, 'It's coming') or it is accessible as a referent in an assumption which the audience constructs for himself (for example, (10b) or (10c)).

Pointing is, of course, a NATURAL device rather than a linguistic one. The question is whether a linguistic expression like *but* might be said to 'point' in this sense. In the following section we will ask whether the use of *but* is consistent with Rieber's tacit performative analysis of its role as an indicator.

4. *But* as an indicator

Rieber himself points to one difficulty of his analysis of *but* as an indicator, namely, the fact that in attitude contexts like the one in (11) the speaker will not necessarily be taken to be suggesting that there is a contrast.

(11) Tom thinks that Sheila is rich but she is unhappy. However, I have always thought that all rich people are unhappy.

In a recent paper, Bach (1999) has argued that the fact that *but* can occur in the *that*-clauses of indirect quotations shows that it cannot be construed as an indicator in any sense, and that it contributes straightforwardly to what is said. As Bach says, while it is true that an expression like *but* can be used to make 'an editorial comment on what he is reporting as being said', it can 'also contribute to WHAT is being reported' (Bach 199: 339, my emphasis). Accordingly, he argues that an expression like *but* functions as an operator which combines with the rest of the sentence to yield a proposition which, although it is not part of the truth conditional content of the utterance, is nevertheless something which has truth conditions. The fact that *but* seems not to contribute to what is said, Bach argues, is due to the fact that this proposition, while truth conditional, is 'secondary to the main point of the utterance. Indeed, contrary to the common assumption of one sentence, one proposition, such utterances express more than one proposition' (1999: 328).

The idea that an utterance may express more than one proposition and that not every proposition expressed by an utterance contributes to its main relevance has also been explored in Relevance theoretic semantics (cf. Blakemore 1990, Ifantidou-Trouki 1993). However, paradoxically, this analysis was proposed for expressions like illocutionary adverbials, apposition markers and parenthetical verbs, which according to Bach (1999) are NOT like *but* since they do not contribute to the content of utterances. The differences between the ways these two approaches analyse expressions like illocutionary adverbials should be re-visited in the light of Bach's paper.

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However, the discussion here will be confined to the question of whether it is legitimate to assume that an element following the complementiser in an indirect quotation contributes to something propositional.

It is generally recognized that what Banfield (1982) calls represented speech and thought may include expressions and constructions which, although they can be attributed to the person whose thought is being represented, cannot be easily analysed as contributing to something propositional. Consider for example, *ah* in (12), and the reformulations and repetition in (13).

(12) **Ah**! that in itself was a relief, like being given another life.
(D. H. Lawrence, *Lady Chatterly's lover*, p. 311)

(13) That was the way to live – **carelessly, recklessly**, spending oneself. He got to his feet and began to wade towards the shore, pressing his toes into the firm, wrinkled sand. **To take things easy, not to fight against the ebb and low of life**, but to give way to it – that was what was needed. It was this tension that was all wrong. **To live – to live**!
(Mansfield, *At the bay*, p. 206)

It is true that the expressions and constructions which according to Banfield, characterize free indirect speech cannot be indirectly quoted in embeddded clauses as *but* can. However, the phenomenon of free indirect speech or thought does raise the question of what it means to say that a writer or speaker is representing a THOUGHT. If we say that *ah* in (12) or the repetition in (13) is being used to represent a character's thought, then it seems we cannot construe thoughts simply in terms of their (truth conditional) propositional content.

Moreover, it seems that there are devices which do not contribute to propositional content that can be indirectly quoted in an embedded construction. Thus while the marked stress on *walking* in (14) would be understood as an editorial comment on the thought being reported, it seems that (15a) can be interpreted in much the same way as (15b) and hence that the emphasis on *needed* is being attributed to someone other than the speaker/narrator.

(14) She says she is WALKING to the station, for God's sake. It'll take at least an hour and the train leaves at 8.

(15) (a) John pointed out that they couldn't really afford a holiday. But no, she said that she NEEDED to get away.
(b) John pointed out that they couldn't really afford a holiday. But no, she NEEDED to get away.

These sort of phenomena suggest that Bach's argument that the use of *but* in indirect quotations is evidence that it contributes to the (propositional) content of utterances can be maintained only if either it can be shown that expressions like *ah* and devices like repetition and emphasis do not encode

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any aspect of a represented thought at all or it can be shown that they contribute to something with truth conditions. It would seem that the first option is difficult to reconcile with the way that examples of represented thought and speech are interpreted, while the second is difficult to reconcile with the notoriously vague (and sometimes poetic) effects of these stylistic devices. In Relevance Theory these devices are viewed as means for directing or guiding the hearer/reader towards a particular line of processing, or in other words, towards a particular range of contextual effects, or inferential strategy or context.[5] On this approach such devices may be used in the representation of an attributed thought not just in the sense of a thought CONTENT, but rather in the sense of a thought STATE. In particular, they can be used in the attribution of interpretation processes so that the hearer/reader is shown how the person whose thought is being reported sees its relevance.

As Bach stresses, non-truth conditional analyses of *but* assume that the conjunctive import of *but* is expressed in a proposition which is distinct from the conjoined proposition asserted. Rieber's (1997) tacit performative account maintains this assumption in the sense that the contrastive import of *but* is expressed in a conjoined but parenthetical performative, *and I suggest that this contrasts*, which is 'comma'd off' from the conjoined proposition which is asserted. Bach's argument is that we do not need this extra proposition if we treat *but* as an operator on the rest of the sentence and hence as contributing to what is said. However, although his analysis does not treat the contrastive import of *but* as something expressed in an implicated proposition (cf. Grice 1989) or a conjoined parenthetical proposition (cf. Rieber 1987), it does nevertheless treat it as a constituent of a proposition.[6] That is, Bach assumes that the hearer of an utterance containing *but* recovers a proposition with something like CONTRAST as a constituent. My argument in the rest of this section is that this assumption cannot be maintained and that the use of *but*, including its use in examples like (11), can be better explained if *but* is treated as a linguistically encoded means for constraining the interpretation process.

First, let us consider Rieber's assumption that the utterances containing *but* express CONJOINED propositions whose conjuncts contrast. This assumption is difficult to maintain in examples like (16)–(18), where *but* is used to 'conjoin' two different types of speech act.

(16) There's a pizza in the fridge, but leave some for tomorrow.
(17) I know that this bus goes to town, but does it go to Picadilly Gardens?
(18) He's finished the decorating, but what a mess.

[5] For further discussion, see Sperber & Wilson (1995: 202–224) and Blakemore (1993).

[6] This analysis could be compared with Mann & Thompson's (1987) rhetorical structure theoretical treatment of coherence relations in which it is claimed that the interpretation of an utterance includes a relational proposition about the coherence relation which it bears to the preceding segment in the discourse.

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Similarly, it is not clear how *but* could be understood to be part of a conjoined utterance when it is used to introduce an objection, as in (19), or when it is used discourse initially, as in (20).

(19) A: If we get off the bus at St Peter's Square, it's only a few minutes' walk to Kendalls.
B: But I wanted to go to Debenhams first.
(20) [The speaker has just found the hearer eating the last slice of pizza.] But I told you to leave some for tomorrow.[7]

The assumption that an utterance containing *but* expresses a conjoined proposition is also difficult to maintain given the interpretive discrepancy between *and* and *but* noticed by Kitis (1995). Thus whereas in her example in (21) below, the speaker will be understood to be communicating an emotional attitude of outrage or surprise, the utterance in (22) can only be taken to be suggesting that the inference which is assumed to have been drawn on the basis of the first segment (for example, that the woman isn't having a lot of fun) is illegitimate.

(21) Her husband is in hospital and she's seeing other men.
(22) Her husband is in hospital but she's seeing other men.

Kitis claims that examples like (21) show that *and* functions as an emotional device that registers the speaker's involvement. Her aim is to explain not only how *and* comes to have this function, but also why it is used in preference to *but* which is the 'prototypical adversative or contrastive connective' (Kitis 1995: 6).

The fact that (21) can be interpreting an emotional attitude does not necessarily show that *and* encodes emotional involvement. As Blakemore & Carston (1999) show, it is possible to explain the contrast between (21) and (22) without abandoning a minimal truth-functional semantics for *and*. According to their argument, an *and* conjunction like (21) is processed as a single unit of relevance so that its relevance hinges on the fact that the two conjuncts are true TOGETHER. In other words, it is the CONJUNCTION that is understood to give rise to attitudinal effects. In contrast, *but* can only have what Kitis describes as a 'back-tracking' function in (22) because it is processed as two individual units of relevance, or, in other words, because the hearer first processes the segment in (23a) and draws an inference such as the

[7] I do not want to suggest here that *and* is always used in utterances which express conjoined propositions. In some cases, where it is stressed, for example, *and* can be used discourse initially in the same way as *but*. In such cases, it plays a similar role to *moreover* or *furthermore*, and the proposition it introduces is expected to achieve relevance individually. For further discussion of discourse initial uses of discourse connectives, see Blakemore (1998).

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one in (24) and THEN processes the segment in (23b) which contradicts and leads to the elimination of (24).[8]

(23) (a) Her husband is in hospital.
(b) She's seeing other men.
(24) She is not seeing other men.

This analysis of (22) is based on the analysis of *but* developed in Blakemore (1987, 1989), according to which the segment introduced by *but* communicates (explicitly or implicitly) a proposition that contradicts and leads to the elimination of a proposition which the speaker believes is manifestly inferrable from a mutually manifest phenomenon, which may be coded communicative behaviour, as in examples (16)–(19) above, or simply something in the physical environment, as in (20).

In discussing this analysis, Rieber (1997) claims that it simply does not make sense for a speaker to intentionally communicate a proposition (say, (23)) which she does not want the hearer to derive. However, that is not what is really going on here. A hearer who recognizes that he is expected to abandon (24) will also recognize that the inference from (23a) to (24) is illegitimate and hence that he is expected to abandon the contextual premises which were needed for its derivation, for example, (25).

(25) If someone's husband is in hospital, then she will not be seeing other men.

Indeed, it is possible that the speaker's intention in producing the utterance in (22) was to get the hearer to abandon this assumption, or to communicate that this assumption, which might be regarded as a particular instance of a social or cultural generalization, is in fact false.

The suggestion, then, is that in uttering the *but* segment, the speaker is communicating that she is attributing to the hearer the derivation of an assumption that is not justified. In some cases, the speaker's grounds for attributing the hearer with having derived this assumption may be mistaken. The speaker of (16), for example, might have been mistaken in thinking that the hearer would have wanted to eat the whole pizza. Nevertheless the hearer will have understood the utterance if he recognizes that he is being attributed with this assumption.

[8] Carston (1993, forthcoming) has shown that a similar (pragmatic) explanation can be given for a range of interpretive discrepancies between conjoined and non-conjoined utterances, for example, the discrepancy in (i) first noted by H. Clark (cited in Gazdar 1979) and cases like those in (ii) discussed by Bar-Lev & Palacas (1980).

(i) (a) John broke his leg. He slipped on the ice.
(b) John broke his leg and he slipped on the ice.
(ii) (a) Language is rule governed. It follows regular patterns.
(b) Language is rule governed and it follows regular patterns.

For further discussion, see Blakemore & Carston (1999).

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There are cases, however, in which the speaker uses *but* in the denial of an assumption which she manifestly does NOT attribute to the hearer. For example, a speaker may produce (26) on the understanding that the contextual assumption necessary for the derivation of the assumption of (27a), namely (27b), is not held either by herself or the hearer. Nevertheless the relevance of the *but* segment (and the success of the joke) clearly depends on the hearer's recognition that both these assumptions are being communicated as representations of thoughts which are being attributed to someone else.

(26) She's a linguist, but she's quite intelligent.
(27) (a) She's not intelligent.
(b) All linguists are unintelligent.

According to Rieber (1997) *but* is an indicator in the sense that what it causes the hearer to notice – namely, that there is a contrast between the two propositions asserted – is something that he can see for himself. However, according to the analysis outlined in this section, a hearer 'sees' that there is a contrast between two propositions only in the sense that he recognizes that he is expected to perform certain kinds of inferences, or that he is expected to have followed a particular inferential route – a route which ends with the abandonment of an assumption derived by inference from an assumption which is presumed to be highly accessible. In other words, *but* causes the hearer to notice something that he can see for himself only in the sense that it leads him to this inferential process.

This analysis does not assume, as Rieber's does, that the contrastive import of *but* is expressed in a distinct proposition whose truth is indicated or suggested rather than asserted. At the same time, it does not assume, as Bach's (1999) analysis does, that the contrastive import of *but* is part of what is said. Identifying what Bach calls the contrastive import of *but* is simply a matter of making the right sort of inferences and deriving the right kind of effects. This means that Rieber's example in (11) (repeated below) can be explained in terms of the attribution of an inferential process to Tom rather than the attribution of a propositional content.

(11) Tom thinks that Sheila is rich but she is unhappy. However, I have always thought that all rich people are unhappy.

5. Procedural meaning

According to the view of linguistic meaning suggested in the preceding section, there are two different ways in which linguistic meaning can act as the input to the inferential processes involved in utterance comprehension. On the one hand, expressions may encode CONCEPTS which are the constituents of the conceptual representations that undergo inferential

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computations. And on the other hand, they may encode PROCEDURES, or the means for increasing the salience of a particular kind of inferential computation.

Bach (1999) has argued that this distinction is in fact vacuous since 'after all, in some way or other anything one utters "constrains" the inferential phrase of comprehension' (1999: 361). It is true that the inferences a hearer derives from an utterance depend on its conceptual content in the sense that this is what interacts with the context in the derivation of contextual effects. However, the contextual effects the hearer derives also depend on the contextual assumptions which he uses in their derivation and on the type of inferential computation he performs. For example, the (b) segment in (28) (adapted from Hobbs 1979) can be interpreted either as evidence for the proposition that Tom can open Bill's safe or as an implication of the proposition that Tom can open Bill's safe.

(28) (a) Tom can open Bill's safe. (b) He knows the combination.

In the first case, the proposition expressed by (b) is functioning as a premise in an inference which has the proposition expressed by the (a) segment as a conclusion. In the second case, it is understood as a conclusion in an inference which has the proposition expressed by the (a) segment as a premise. The claim that linguistic meaning can encode constraints on the inferential phase of comprehension means that there are linguistic expressions (*you see* and *so*, for instance) which encode information about which of these inferential procedures yields the intended interpretation.[9]

As I have shown in earlier work (Blakemore 1987, 1989), the distinction between these two kinds of linguistic meaning can be justified in both cognitive and communicative terms.[10] The cognitive justification follows from the assumption, fundamental to Relevance Theory, that utterance interpretation involves performing computations over conceptual representations. This means that a language can be expected to encode not only the constituents of the conceptual representations which undergo computations, but also information about the computations or inferential procedures in which these representations are involved.

Within Relevance Theory the fact that languages HAVE developed coded means for encoding inferential procedures can be explained in communicative terms. According to Sperber & Wilson's (1995) communicative principle of relevance, a hearer who recognizes that a speaker has made her intention to convey information manifest is entitled to assume that that speaker is

[9] These are not the only interpretations for this sequence. For instance, a speaker may have intended to communicate not only that (28b) is evidence for the truth of the proposition expressed by (28a), but also that this proposition is an assumption which the speaker knows to be true. This interpretation would be indicated by the use of *after all*. For further discussion, see Blakemore (1987).

[10] For a full discussion of the distinction, see Wilson & Sperber (1993).

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being OPTIMALLY RELEVANT. In other words, in making her intention to communicate manifest the speaker is communicating her belief that, first, the utterance will achieve a level of relevance high enough for it to be worth processing, and, moreover, that this level of relevance is the highest level that she is capable of given her interests and preferences. Since the degree of relevance increases with the number of effects derived but decreases with the amount of processing effort required in deriving them, the use of an expression which encodes a procedure for identifying the intended contextual effects would be consistent with the speaker's aim of achieving relevance for a minimum cost in processing.

The idea that linguistic meaning may encode constraints on relevance has been applied to the analysis of a range of non-truth conditional discourse connectives.[11] At the same time, however, the investigation of the role of inference in comprehension has suggested that the role of procedural meaning is not, as I suggested in my earlier work, restricted to the recovery of implicit content. As both Sperber & Wilson (1995) and Carston (1988) have demonstrated, the recovery of the explicit propositional content of utterances involves inferential computations constrained by pragmatic principles, and thus that explicit content is 'much more inferential and hence worthy of pragmatic investigation' than is assumed by pragmatists in the Gricean tradition (1995: 183, 256). If there are linguistic expressions and structures which constrain the inferences hearers make in deriving the implicit content of utterances, then it is possible that there are also linguistically encoded constraints on the inferences involved in the identification of explicit content. And indeed, as both Wilson & Sperber (1988, 1993) and Clark (1991, 1993) have shown, both non-truth conditional expressions, for example, illocutionary adverbials and mood indicators, and truth conditional expressions, for example, pronouns, can be analysed in terms of constraints on explicit content.[12]

The present paper represents a return to the subject of my earlier work – linguistically encoded constraints on implicit content. On the other hand, it aims to go beyond this work by showing that the notion of a semantic constraint on implicit content that I developed in this work is too narrow.

According to Relevance Theory, the inferential processes involved in assessing relevance involve performing deductive inferences over conceptual representations (that is, the proposition expressed together with contextual assumptions) in the derivation of contextual effects. Contextual effects can be classified according to the kind of inferential process involved when newly presented information P is brought together with, or CONTEXTUALIZED IN, old information C. Thus on the assumption that the human deductive device is

[11] See, for example, Blass (1990, 1993); Haegeman (1993); Itani (1993); Higashimori (1994).

[12] See also Rouchota (1994a, b, c) on mood indicators, and Ifantidou-Trouki (1993) and Blakemore (1996) on parentheticals.

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as described by Sperber & Wilson (1995: 83–117), we can distinguish three types of contextual effect:

(i) *The derivation of contextual implications*: the derivation of a new assumption in a deduction which crucially involves the synthesis of P and C.
(ii) *Strengthening existing assumptions*: the effect derived when an assumption in C is independently derived from a new set of premises that includes P, or in other words, when P is involved in a 'backwards' inference.
(iii) *Contradiction & elimination*: the effect derived when a contradiction between P and C is resolved by eliminating C.

This might suggest that if there are linguistic means for constraining these processes, then they could be expressions or structures which directly specify the kind of contextual effect that is intended – for example, the elimination of an existing assumption or the strengthening of an existing assumption. On the other hand, since the particular effect achieved will depend on the contextual assumptions used as premises in this deduction, it is equally possible that a linguistic expression or structure could constrain relevance by directly specifying the properties of the contextual assumptions which are intended to be used.

It seems that the term 'semantic constraint on relevance', as it is developed in my earlier work (Blakemore 1987, 1989), would have to be construed in the first of these ways. Consider, for example, my analysis of *so* as it is used in (29).

(29) Tom can open Bill's safe. So he knows the combination.

According to this analysis, *so* encodes the information that the hearer should perform an inference in which the utterance it prefaces is a conclusion derived from an assumption which is made accessible by processing information assumed to be mutually manifest (in this case by the preceding utterance). Thus described *so* constrains relevance by directly specifying the kind of effect that is intended – in this case, the derivation of a contextual implication. It is true that a hearer recognizes that he is expected to access a particular set of contextual assumptions for the interpretation of the *so* utterance, namely, one which includes the assumption in (30).

(30) If someone can open somebody else's safe, then they must know the combination.

However, according to my (1987) analysis, this is a consequence of the constraint *so* imposes on contextual effects. The hearer of (29) is expected to access those contextual assumptions which enable him to interpret the second segment as a conclusion derived from the proposition expressed by the first.

Similarly, it would seem that according to the analysis I have outlined in the preceding section, *but* is a constraint on contextual effects and imposes a

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constraint on contexts only derivatively. Thus the hearer of (26) (repeated below) is expected to access those contextual assumptions which allow him to interpret the second segment as communicating (that is, explicating or implicating) a proposition that contradicts a proposition derived from the first, and thus leads to its elimination.

(26) She's a linguist, but she's quite intelligent.

The question is whether every expression which constrains implicit content does this by encoding a constraint on contextual effects. In an earlier paper (Blakemore 1998) I argued that the use of *nevertheless* in fragmentary utterances suggests that it should be treated in procedural rather than conceptual terms. In the following section I compare the role of *nevertheless* with that of *but*, and show that the differences between these expressions can be explained only if the notion of a constraint on relevance is broadened so that it includes constraints on context as well as constraints on contextual effects.

6. Procedures: nevertheless

But, *nevertheless* and *still* are often classified together as markers of contrastivity. However, the fact that *still* and *nevertheless* can be combined with *but* would seem to suggest that their contribution, while consistent with the meaning of *but*, is at the same time distinct from it.[13]

(31) A: She's quite intelligent.
B: But nevertheless she's not really what the department needs at the moment.

The fact that there are cases like (26) where *but* can be replaced by *nevertheless* (or *still*) suggests that the distinction is a difficult one to draw.

(26) She's a linguist, but she's quite intelligent.
(32) She's a linguist. Nevertheless she's quite intelligent.

At the same time, there are utterances containing *but* where the use of *nevertheless* (or *still*) would be unacceptable or odd, and these give us a clue as to where the difference lies. Compare the (a) and the (b) examples in (33)–(35).

(33) (a) [The speaker has just found the hearer eating the last slice of pizza.] But I told you to leave some for tomorrow. (= 20)
(b) [The speaker has just found the hearer eating the last slice of pizza.] ?Nevertheless/Still, I told you to leave some for tomorrow.

[13] Although many of the observations which I make about *nevertheless* also apply to utterance initial *still*, I shall confine the discussion to *nevertheless*.

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(34) (a) A: We're ravenous. Can we have that pizza in the fridge?
B: Sure. But there's not very much left.
(b) A: We're ravenous. Can we have that pizza in the fridge?
?B: Sure. Nevertheless/Still there's not very much left.

(35) (a) I've been sent a copy of the grant proposal. But it's in Dutch.
(b) I've been sent a copy of the grant proposal. ?Nevertheless/Still it's in Dutch.

As we have seen, the inferential route signalled by *but* in an example like (34a) leads the hearer to a contradiction between a proposition communicated by the segment it introduces, in this case (36a), and a proposition made mutually manifest by the interpretation of the preceding utterance, that is (36b).

(36) (a) There is not enough pizza for A and her friends.
(b) There is enough pizza for A and her friends.

And the hearer is expected to recognize that the contradiction should be resolved by abandoning (36b). This may itself lead the hearer to entertain other assumptions – for example, that it is relevant to know whether there is any other food in the house, or who was responsible for eating the pizza. However, it is clear that the intended relevance of the *but* segment lies in the elimination of the assumption that there is enough pizza for A and her friends, and hence in the suggestion that the inference from the utterance of 'Sure' to (36b) is illegitimate.

Now, in the scenario described B's assumption that it is relevant to contradict the assumption in (34b) is based on her understanding that A would have otherwise taken her utterance of 'Sure' as evidence of its truth. In other words, it is assumed that for A, there would have been no question about the factuality of (36b), and that the *but* segment would not be relevant as an answer to a question about the amount of pizza left.

Consider, in contrast, (37), where *nevertheless* is used to introduce an utterance which is relevant as an answer to the question posed by the previous speaker.

(37) A: There's going to be quite a crowd tonight. Is there going to be enough food?
B: Well, there's lots of salad and bread, and plenty of cheese. **Nevertheless I think I might make another pizza.**

The highlighted utterance contextually implies that the answer to this question is, 'No, there isn't enough food'. However, its relevance as an answer to the question of whether there is enough food is computed in the context of an utterance which contextually implies that the answer is 'There is enough food'. This is not to suggest that the point of the utterance lies in the elimination of this assumption (cf. the *but* example in (34a)). On the contrary, the relevance of the answer given in the *nevertheless* segment

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depends on the assumption that there is a legitimate inference to the contrary answer (from the preceding utterance). In other words, in producing the *nevertheless* segment, the speaker is suggesting that the answer to the question raised by the utterance in (37A) is an issue, or something to be negotiated, and that the evidence for her answer has to be weighed against the evidence for the contrary answer given in the preceding segment. This is not to say that after weighing the evidence the hearer will not eliminate the contrary answer. However, this is not as a result of the information encoded by *nevertheless*.

It is not always the case that the utterance introduced by *nevertheless* is relevant because it communicates a proposition that is relevant to an answer raised explicitly in the preceding discourse. For example in (38), the utterance prefaced by *nevertheless* is relevant as an answer to the question of whether strategies for dealing with the unexpected should be part of the curriculum for inexperienced language learners. However, this is not actually posed by the writer, but will be inferred by the reader on the basis of contextual assumptions and the principle of relevance.

(38) Inexperienced language learners often express fears about jumping into conversations in a foreign language because they fear the unexpected. It is natural that learners in the early stages of learning should feel a need to stay firmly in familiar territory. **Nevertheless**, the unpredictable nature of much communication is a feature of naturally occurring language, and teachers have a responsibility to gradually expose learners to such language and enable them to develop strategies which will help them cope.[14]

The answer communicated by the *nevertheless* segment is, 'Yes'. However, the reader is expected to recognize that its relevance will be computed in a context which suggests that the answer is 'No'. Once again, then, the function of *nevertheless* is to establish that there is an answer to a question made relevant by the opening segment of the passage which is contrary to an answer already given.

More generally, it seems that *nevertheless* encodes two bits of procedural information. On the one hand, it encodes the information that the utterance is relevant as an answer to a question whose relevance has been established in the preceding discourse, and on the other, it encodes the information that these contextual effects are to be derived in a context which provides evidence for a contrary answer. The uses of *nevertheless* in examples like (34–35) are odd because these conditions are not met. In contrast, *but* is acceptable in these examples because it simply encodes the information that the hearer is expected to identify a contradiction which is resolved by the elimination of an assumption.

[14] I am grateful to Stephen Thomas for this example.

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As we have seen, the information encoded by *but* is information about the intended contextual effects of the utterance it prefaces. The question is whether the information encoded by *nevertheless* can be construed in the same way.

According to Relevance Theory, a question is an utterance whose propositional form is an interpretation of a proposition which would be desirable (that is, relevant) to someone.[15] This suggests that to say that an utterance *U* is relevant as an answer to a question is simply to say that there is a mutually manifest assumption in the context whose propositional form is an interpretation of some proposition communicated by *U* and which would be relevant (to someone). As we have seen, questions are not always posed explicitly: the fact that a proposition is an interpretation of an answer that someone would find relevant sometimes has to be worked out inferentially on the basis of the context. Moreover, as Sperber & Wilson (1995, 1988) show, answers are not always relevant to the speaker who actually asks the question: consider rhetorical or expository questions, for example. The point is, if an utterance, *U*, is an answer to any kind of question, it is interpreted as such only if there is a mutually manifest assumption in the context whose propositional form is an interpretation of some proposition communicated by *U*. In other words, it seems that this information must be regarded as information about the type of contextual assumptions the hearer is expected to use in the interpretation process.

According to the analysis just given, the answer communicated by an utterance introduced by *nevertheless* is contrary to an answer which is already given – or, in other words, contrary to an answer in the immediately accessible context. On the face of it, it would seem that this information is exactly the same as the information encoded by *but*: the hearer is expected to identify a contradiction. However, as we have seen, this is not a contradiction whose resolution is an intended contextual effect (as it is in the case of *but*). Rather it is part of the CONTEXT for establishing the relevance of the utterance, which, as we have seen, lies in the answer it gives to a relevant question. In other words, it seems that this information is information about the CONTEXT in which the utterance is to be interpreted rather than information about its intended effects.

If this analysis of *nevertheless* is right, then it should follow that utterances in which *but* and *nevertheless* are used together are appropriate only if both the constraint imposed by *nevertheless* and the constraint encoded by *but* are satisfied. The dialogue in (31) (repeated below) might be recognized as the kind of utterance which is produced in the course of a discussion about the

[15] To say that a proposition is an interpretation of another is to say that it represents that proposition in virtue of the fact that it resembles it in content (logical, semantic, conceptual). For further discussion of the interpretive use of propositions, see Sperber & Wilson (1995: 225–231). For a fuller analysis of interrogatives, see Sperber & Wilson (1995: 251–253) and Wilson & Sperber (1988).

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suitability of someone for a position in a department, and hence that the *nevertheless* utterance can be understood as an answer to a question such as 'Should we appoint X?' in a context which suggests a contrary answer.

(31) A: She's very intelligent.
B: But nevertheless she's not really what the department needs at the moment.

In contrast, it seems that (39) is no more acceptable than (34b).

(39) A: We're ravenous. Can we have that pizza in the fridge?
?B: Sure. But nevertheless there's not very much left.
(34b) A: We're ravenous. Can we have that pizza in the fridge?
?B: Sure. Nevertheless/Still there's not very much left.

This is not surprising since, as we have seen, it is difficult to see how the proposition that there's not very much pizza left could be construed as an answer to a question about the amount of pizza in the fridge. For this question will not be understood to have been raised explicitly or implicitly by the preceding discourse.

Examples like (39B) raise the question of how the meanings of *but* and *nevertheless* interact. We have seen that the *nevertheless* utterance can be interpreted as an answer to a question such as 'Should we appoint X?' in a context which suggests a contrary answer. The question is, then, what is the point of the *but*?

Wilson & Sperber (1993) have argued that one of the properties which distinguishes expressions that encode procedures from those that encode concepts is that they do not undergo regular semantic compositional rules. Thus whereas the VP adverbial *well* can occur in complex structures such as the ones in (40), it is difficult to see how the *well* in (41) can enter into the kind of relations that result in a syntactically and semantically complex discourse connective.[16]

(40) (a) He did surprisingly well in the exams.
(b) He did well in the exams, though not as well as his brother.
(41) A: How did you get on in your exams?
B: Well, I passed.

This is not to say that procedural discourse connectives like *well* or *but* cannot co-occur with other procedural discourse connectives. The point is that the result is not a semantically complex connective whose meaning is somehow built out of the meanings of its components.

[16] Wilson & Sperber cite this difference as evidence for their argument that non-truth conditional sentence adverbials like *frankly* encode concepts (rather than procedures). Consider their examples:

(i) Frankly speaking, he has negative charisma.
(ii) Speaking frankly, though not as frankly as I'd like to, he isn't much good.

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If this is right, then examples like (31B) cannot be analysed by treating *but nevertheless* as a complex expression in the same way as *surprisingly well*. In fact, this is what my analyses of these expressions would predict. For while *but* requires the elimination of the proposition which contradicts a proposition communicated by the utterance it introduces, *nevertheless* simply requires the presence of the contradictory proposition in the context. It would seem that if the speaker's intention in producing an utterance prefaced by *nevertheless* is to encourage the hearer to weigh the evidence for his answer to a question against the evidence for a contrary answer, then she would not want to first use an expression which encodes the information that this answer is to be eliminated. For clearly, if this answer has been eliminated, then there can be no comparison.

Now, we have been assuming that the proposition contradicted and eliminated by the use of *but* in an example like (31B) is identical to that proposition whose contradiction is supported by the utterance prefaced by *nevertheless*. That is, we have been assuming that *but* encodes the information that it is the proposition in (42) which should be eliminated.

(42) We should appoint her to the position.

In fact, it seems that the proposition that is contradicted and eliminated by *but* might be something like the one in (43).

(43) This is the only evidence relevant to the question.

If (43) were true, then there would be no question about the truth of (42). However, the use of *but* indicates that the relevance of the utterance it prefaces, namely (44), is relevant by virtue of contradicting and eliminating (43).

(44) Nevertheless she's not really what the department needs at the moment.

And indeed, as we have seen, the use of *nevertheless* in an example like (39) indicates that the relevance of the utterance it prefaces lies in its role in establishing that there is evidence for a different answer, and hence that there IS a question about the truth of (42).

7. Conclusion

Clearly, there needs to be much more detailed investigation of co-occurring discourse connectives before we can fully understand how the procedures they encode interact. The aim of this paper has been to improve on the theoretical foundation for this work by trying to say more exactly what kind of information procedural information is, and hence showing more clearly how the distinction between conceptual and procedural encoding provides a cognitive basis for the distinction between saying and indicating. The

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comparison between *nevertheless* and *but* has demonstrated that the notion of procedural meaning is considerably more complex than the one suggested by my earlier work. However, it is complex in a way which is consistent with the cognitive theory of communication it derives from. In fact, it is quite possible that the further investigation of other types of phenomena will show that the notion of a constraint on relevance has to be made more complex in order to capture all the ways in which linguistic meaning can constrain the inferential procedures involved in utterance interpretation.

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