Truth-conditional content and conversational implicature[*]

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Abstract

According to some pragmatists, certain conversational implicatures of an uttered sentence may be composed into the truth-conditional content of more complex constructions (e.g. conditionals or comparatives) in which that sentence is embedded. I present two arguments against this view, the one based on the intuitive (in)validity of arguments couched in natural language, the other on the (in)cohence of conversational exchanges; the view in question makes some wrong predictions in both cases. My positive position is that processes of pragmatic enrichment of linguistically encoded meaning (as distinct from conversational implicatures) affect the truth-conditional content of utterances of not only the complex constructions but also of the simpler embedded sentences.

1 Background and overview

1.1 Grice on implicature

Grice made a distinction between what is said by a speaker of a verbal utterance and what is implicated. What is implicated might be either conventional (that is, largely generated by the standing meaning of certain linguistic expressions, such as 'but' and 'moreover') or conversational (that is, dependent on the assumption that the speaker is following certain rational principles of conversational exchange). What appears to have bound these rather disparate aspects of utterance meaning together, and so motivated the common label of implicature, was that they did not contribute to the truth-conditional content of the utterance, that is, the proposition it expressed, or what the speaker of the utterance said.

This truth-conditional/non-truth-conditional distinction was essential to Grice in his concern to defeat the 'illegitimate use' arguments of a certain group of ordinary language philosophers (Grice 1967, lecture 1). I won't review those arguments here, but the utility of the distinction and the line of argument it enabled can be demonstrated with the following example. It is odd to produce an utterance of the sentence 'This looks red to me', referring with 'this' to a patently red pillar-box

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directly in front of one and in good lighting conditions. However, this oddness need not militate against the use of such statements in a theory or analysis (in this case, of perception), as some philosophers had argued, because the statement made (the proposition expressed/said) by the utterance is perfectly true and that is all that matters for the theory or analysis. The oddness or infelicity lies outside the truth-conditional content of the utterance; it is due (merely) to the conversational implicature that such an utterance would be likely to convey: that there is some doubt about the redness of the pillar-box, an implication which, in the given circumstances, is false. A similar story can be run for a case of conventional implicature which gives rise to some conversational infelicity (e.g. 'This looks red to me but it is red'). The general situation is summarised as follows:

(1)	what is said	vs.	what is implicated
	truth-conditional		non-truth-conditional
	if false, utterance is false		*if false, utterance is merely odd*

According to the standard interpretation of the Gricean account, what is said (the truth-conditional content of the utterance) is very closely related to the conventional meaning of the linguistic expression employed. Of course, that linguistic expression may include ambiguous or indexical elements, so that contextual considerations have to be brought to bear for a full determination of 'what is said' (Grice 1975, 44-45). However, it seems that Grice conceived of the role of his Co-operative Principle and system of conversational maxims (quality, quantity, relevance and manner) as confined to the determination of conversational implicatures; that is, these maxims come into play in resolving the issue of why a speaker, who is assumed to be a rational agent, has said what she has said, or, in other words, what she means (intends to communicate) by having uttered a particular linguistic expression. This then leaves open the questions of *how* it is that the referent of a use of 'she' or 'that' is determined and *how* the intended sense of an ambiguous form like 'coach', 'bank' or 'bug' is determined. On this matter, Grice was essentially silent, mentioning just a vague criterion of best contextual fit.[1]

[1] However, Neale (1992) suggests that Grice may have envisaged some kind of relevance maxim as playing a role in disambiguation and reference resolution; this hinges on the interpretation of a passage in Grice's early paper on meaning, reprinted in Grice (1989b, 222). For discussion, see Neale (1992, 530) and Carston (2002, 105-6).

1.2 Semantic underdeterminacy and Grice's circle

The issue of how context-sensitive aspects of truth-conditional content are determined by an addressee/interpreter has become more pressing in recent years, as more and more pragmatists have come to accept the 'semantic underdeterminacy' view of verbal utterances. According to this view, the discrepancy between the explicit content (what is said) of an utterance and the conventional (or 'encoded') meaning of the linguistic expression employed is far greater than that presented by ambiguous words and overtly indexical expressions, and pragmatic inference (that is, maxim-guided inference) is required to make up the shortfall. Some of the cases discussed in the literature as instances involving this underdeterminacy are listed in (2)-(6):

(2) a. I slept well. How about you?
    b. I haven't eaten yet.

(3) a. It'll take time for your knee to heal.
    b. Your application requires some processing.

(4) a. Everyone left early.
    b. There's nothing on.

(5) a. You're not going to die.
       [uttered by mother to small child wailing over a scratched elbow]
    b. She gave him the key and he opened the door.
    c. The road layout had changed and she lost her way.

(6) a. Only 22,000 miles. Like new.
       [uttered by a used car salesman]
    b. Ann: Mary is refusing to answer my emails.
       Bob: Typical.

Let me briefly indicate some of the elements of the propositional content of these utterances which seem not to be linguistically specified: in (2), the relevant temporal spans of the sleeping and the not eating are considerably narrower than that encoded in either the simple past or the past perfect (*I slept well last night*, *I haven't eaten dinner yet this evening*); similarly in (3), the 'taking time' and the 'some processing' are not understood as involving just any quantity but as an amount relevant to mention in that context (perhaps more time/processing than the addressee appears to expect in each case); in (4), the domain of the quantifiers, 'everyone' and 'nothing' has to be determined (perhaps: *everyone at such and such a party*, *nothing worth watching on*

television); in (5a) (example due to Bach 1994) and (5b), meaning expressible using prepositional phrases seems to be recovered: *from that scratch* and *with that key*; (5b) is further enriched with a temporal ordering relation so the event in the first conjunct is understood as preceding that in the second, and in (5c), as well as the temporal order, a cause-consequence relation is understood as holding between the first and second conjuncts, though there is no linguistic element encoding either of these relations; finally, the (nonelliptical) subsentential utterances in (6) require substantial recovery of contextually available material in determining the proposition expressed.

Among those who support the underdeterminacy view are relevance theorists, such as Sperber & Wilson (1986/1995) and Carston (1988, 2002), and philosophers and linguists, who follow Grice to varying degrees, including Recanati (1989, 1993, forthcoming/2003), Bach (1994, 2000), Stainton (1994), Levinson (1988, 2000) and Neale (forthcoming), though some of them might not agree that all the examples given in (2)-(6) are pertinent cases. There is a fair amount of variation in the proposals that different theorists make for a semantic/pragmatic account of the underdeterminacy phenomena and in their analyses of particular cases. In this paper, I shall take start by looking at some of Stephen Levinson's recent observations about the problem underdeterminacy poses for the classical Gricean account and go on to consider the direction in which he looks for a solution, comparing it with the approach pursued within relevance theory.

According to Levinson, this situation gives rise to a kind of circularity, an untenable interdependence, between saying and implicating (as Grice conceived of them):

> Grice's account makes implicature dependent on a prior determination of "the said". The said in turn depends [on implicature: it depends] on disambiguation, indexical resolution, reference fixing, not to mention ellipsis unpacking and generality narrowing. But each of these processes, which are prerequisites to determining the proposition expressed, [may] themselves depend crucially on [processes that look indistinguishable from] implicatures. Thus what is said seems both to determine and to be determined by implicature. Let us call this *Grice's circle.*
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> .... Then truth-conditional content depends on most, perhaps all, of the known species of pragmatic inference; or the theory of linguistic meaning is dependent on, not independent of, the theory of communication.
>
> (Levinson 1988, 17-18; 2000, 186-187)
> [Square brackets in the quote indicate disparities between the 1988 and 2000 versions.]

As given here, there seem to be two distinct charges of circularity: (a) that between saying and implicating; (b) that between semantics and pragmatics. Of course, for those who equate linguistic meaning with what is said, as Levinson seems to do here, there is no such distinction to be made. However, there is a perfectly respectable sort of theory of linguistic meaning for which this equation does not hold and which does not depend on a theory of communication, at least not synchronically. This is the account of the meaning or information encoded in linguistic expression *types*, which provides the scaffolding on which processes geared to the recovery of communicated meaning (speaker meaning) build. The linguistic meaning of a phrase or lexical item is obviously not propositional, and the linguistic meaning of a sentence is also not generally, if ever, fully propositional. What it provides is a template or schema, that is, clues to, or constraints on, the process of recovering the proposition the speaker intended to express. It is, plausibly, the output of an encapsulated language processor, hence free from the modifications that come with access to extra-linguistic context and speaker intentions. This kind of semantics is, by definition, independent of the account of communication; thus there is no circularity between semantics so construed and pragmatics.

Be that as it may, I shall concentrate here on the alleged saying/implicating circle, leaving aside for now the issue of whether that distinction is to be usefully equated with a semantics/pragmatics distinction. This interdependence is, I think, an inescapable issue once one accepts that the proposition expressed (what is said) is heavily dependent on pragmatics (the underdeterminacy thesis) and puts this together with the standard Gricean assumptions given in (7a) and (7b):

(7) a. All pragmatically-derived (maxim-dependent) meaning constitutes conversational implicature.
    b. Conversational implicatures arise from the application of conversational maxims to 'the saying of what is said' and so require the *prior* determination of what is said.

The point is that these Gricean assumptions are not compatible with there being pragmatic (maxim-driven) input to what is said, and as the truth of the latter seems indisputable (anyway, it is not disputed by any of the theorists I am discussing here), something has to give in the Gricean account.

1.3 Outline of some possible solutions

The solution favoured by semanticists such as Jason Stanley, Zoltan Szabo and Jeffrey King involves a revision of (7a): 'broadly Gricean mechanisms' do play a crucial role in determining what is said (Stanley & Szabo 2000, 236). However, this role is kept

clearly distinct from their role in determining implicatures. The maxims have only a 'weak' pragmatic effect on 'what is said', that is, they merely supply values to indexicals that occur in the linguistic form of the utterance (a process known as 'saturation'). Implicature derivation is a 'strong' pragmatic effect in that it is 'free' from linguistic mandate or control. The Gricean assumption in (7b) can be maintained on this view; the maxims can first perform their role of determining the semantic content of the utterance (what is said), which is then input to the next phase, that of implicature derivation.

Among the various solutions to the problem at hand, this one is the most 'semantic' and the most preservatory of the original Gricean story. As Stanley (2000, 391) puts it: 'all truth-conditional effects of extra-linguistic context can be traced to logical form'. The cost of the approach, however, is the positing of a great many covert indexical elements in linguistic form, one for every instance of a pragmatically derived contribution to explicit utterance content, each of which requires independent justification. I won't address this account in any detail in the rest of the paper, though certain details of King & Stanley's (forthcoming) work along these lines will be mentioned when they bear on the analyses I do want to discuss; see Breheny (forthcoming) for an assessment of their account).[2]

Levinson, on the other hand, accepts that there are 'strong' (as well as 'weak') pragmatic effects on truth-conditional content. He doesn't offer any sort of overall solution to the circularity problem that he has emphasized as arising from this, but suggests that his independently motivated theory of default (or generalized) conversational implicature can make substantial inroads on it, reducing its dimensions.

He draws a theoretical and empirical distinction between two kinds of conversational implicature: generalized (GCI) and particularized (PCI). The following exchange exemplifies the two kinds of implicature, each of which, in his view, is derived by a distinct kind of inferential process, governed by distinct pragmatic maxims or heuristics:

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[2] On the face of it, indexical saturation accounts seem more plausible for certain cases of pragmatic effects on propositional content than for others, for instance, the case of quantifier domain restriction as opposed to, say, the case of causal connections between the conjuncts in cases of 'and'-coordination. However, on the one hand, both Bach (2000) and Neale (2000) argue against Stanley & Szabo's (2000) indexical account of quantifier domains, and, on the other, King & Stanley (forthcoming) argue for an indexical saturation account of the pragmatic contribution to 'and'-conjunctions in particular linguistic contexts (see section 3 below). For more general arguments against the indexicalist approach and in favour of 'strong' pragmatic effects on propositional content, see Carston (2000) and Recanati (2002).

(8) A: Did the children's summer camp go well?
B: Some of them got stomach 'flu.
GCI: Not all the children got stomach 'flu.
PCI: The summer camp didn't go as well as hoped.

While the PCI of B's utterance depends on the context provided by A's question and would not arise in a different context (e.g. a context in which the issue is whether all the children were able to sit their exams), the GCI arises quite generally across contexts and only drops out if it encounters a context with which it is inconsistent.

The claim, then, is that this sort of generalized pragmatic inference can contribute to the propositional content of certain kinds of utterance, such as that in (9). The second part of the utterance, the comparative, makes a perfectly coherent statement, but this is only possible if we interpret 'some' (of your exams) as *some but not all* (of your exams).

(9) You shouldn't be too upset about failing some of your exams; it's much better than failing the whole lot.

On this approach to the phenomenon of pragmatic contributions to the proposition expressed by an utterance, the Gricean assumption in (7a) appears to be preserved, though, in fact, only by virtue of an extreme loosening of the sense of the term 'implicature' (this point will be pursued later), while (7b) is modified so that a restricted kind of pragmatic inference (local, default) can apply without the prior determination of 'what is said'. This sort of inference is generated by a system of default rules which are attached to particular lexical items and constructions, the word 'some' in the case of (8) and (9). These rules are implemented in parallel with the process of linguistic decoding, so in (8), for instance, the inference to *not all the children* will have been made before the predicate 'got stomach 'flu' is processed.

However, as Levinson acknowledges (2000, 236-39) some PCIs also seem to affect truth-conditional content and, as I'll claim later, a substantial subset of cases that fall in his class of GCIs do not, so in fact this approach makes quite limited headway with the task of accounting for the underdeterminacy phenomena and the issue of Grice's circle.

A third approach also recognizes strong (as well as weak) pragmatic effects on truth-conditional content, that is, pragmatic contributions that are not triggered by the requirement of indexical saturation but are entirely pragmatically motivated, but does not construe these as a kind of implicature. Rather, it makes a distinction between these 'free' pragmatic contributions to content, on the one hand, and conversational implicatures, on the other, which as Grice maintained, lie outside truth-conditional content. This position, which is known as 'truth-conditional pragmatics', is held by

pragmatists across a range of otherwise different frameworks, including Francois Recanati (1989, 1993, 2003), Kent Bach (1994, 2000), Anne Bezuidenhout (1997, 2002b), and Stephen Neale (2000, forthcoming). It has been central to the relevance-theoretic framework since its inception (Sperber & Wilson (1986/95), Carston (1988, 2002)), and it is this particular manifestation of the truth-conditional pragmatic position that I'll call on in the rest of the paper. The relevance-theoretic term for the pragmatically imbued level of truth-conditional content is 'explicature', while Recanati, Levinson, King & Stanley and others continue to use the term 'what is said'; in what follows I'll use the terms interchangeably depending on whose work I'm discussing, but it is worth bearing in mind that this conception of 'what is said' is quite different from Grice's original conception (which was independent of considerations of speaker intentions, hence of maxim-driven inference).

Relevance theorists make no distinction of any theoretical import between generalized and particularized implicatures. Of course, implicatures vary in their generality, some being very general, others less so, and some being essentially one-off (nonce), but this is a continuum situation. No implicatures are a matter of default inference but rather all must be warranted by context. The Gricean assumption in (7a) is dropped since one and the same pragmatic principle (based on the concept of 'optimal relevance') is responsible for both all cases of conversational implicature and all pragmatic contributions to truth-conditional content. The assumption in (7b), that 'what is said' is determined prior to the derivation of conversational implicatures, is also relaxed and the two levels of communicated content are taken to be derived in parallel via a mechanism of 'mutual adjustment', so that, for instance, an interpretive hypothesis about an implicature might lead, through a step of backwards inference, to a particular adjustment of explicit content. For detailed justification and exemplification of this account, see Wilson & Sperber (2002) and Carston (2002, section 2.3.4).

By way of brief illustration, omitting all technical detail, let's consider B's utterance in the following exchange:

(10) A: Will John get any support from accident compensation?
B: Someone left a manhole cover off and John broke his leg.
Implicature: John will get accident compensation payments.

(11) A: I was planning to climb Mt Snowdon next week.
B: Your knee needs time to heal properly.
Implicature: A should not go mountain-climbing next week.

In (10), the answer to A's question is indirect; B conversationally implicates that John will get financial compensation. We know that such financial compensation depends

on the cause of the incapacity to work being negligence in the workplace, hence the statement here is not just that the two events expressed by the conjuncts took place, nor just that they took place in the given order, but the richer proposition that there is a cause-consequence relation between them. Given that A's question narrowly circumscribes the expected relevance of B's response (essentially to a 'yes' or 'no'), it is fairly easy to see that this expectation warrants the derivation of the implicature, for which the explicature (what is said) has to be appropriately enriched, thereby ensuring an inferentially sound interpretation. A similar explanation can be given for B's utterance in (11); the quantity of time involved must be understood as extending some way into the next few weeks if the proposition expressed is to provide a proper inferential basis for the implicature. Note that, in both cases, the contextual contribution to the explicature (what is said) has been motivated by pragmatic considerations alone.

My main concern in this paper is to consider the relative merits of the second and third approaches to the underdeterminacy issue (Levinson's and relevance theory's). In particular, I will take a close and critical look at Levinson's account of what he describes as the 'pragmatic intrusion' of generalized implicatures into certain complex constructions, including conditionals, comparatives, negations and disjunctions. Before that, though, I'll consider a question that arises for the 'truth-conditional pragmatics' approach, including relevance theory, and a response to it which involves this same set of complex constructions.

2 Truth-conditional pragmatics and the Scope Criterion

Suppose we have an element of utterance meaning which is clearly pragmatically derived (i.e. we can show that it is not encoded in the linguistic expression used but depends on pragmatic principles/maxims geared to the recovery of the speaker's communicative intention). This raises the following question(s): is it an implicature or does it, rather, contribute to what is said (explicature)? How do we know? What distinguishes the two?

Various criteria for distinguishing the two kinds of pragmatic meaning have been proposed in the literature. In the end, they all rest, I think, on speaker/hearer intuitions. However, there is one that has been used to sharpen up intuitions and which has a bearing on the assessment of positions in the following sections, so I want to spend a little time looking at it. Within relevance theory, this is known as the 'embedding test' and was introduced by Deirdre Wilson as a useful tool for deciding whether some element of utterance meaning is or is not a component of the truth-conditional content of an utterance; Recanati (1989, 1993) called it the Scope Principle or criterion, and formulated it explicitly as follows:

A pragmatically determined aspect of meaning is part of what is said (and, therefore, not a conversational implicature) if - and, perhaps, only if - it falls within the scope of logical operators such as negation and conditionals.

The general idea seems to have begun with Cohen=s (1971) use of an embedding procedure in order to demonstrate that Grice couldn=t simultaneously maintain the truth-functionality of 'and' and of 'if'. On a Gricean account, the meaning of 'and' is identical to its truth-functional logical counterpart '&', so that the two conjunctive utterances in (12) have the same truth-conditional content (they 'say' the same thing). The difference in what they communicate, concerning the order in which the events described took place, arises at the level of conversational implicature (based on the manner maxim of 'orderliness'):

(12) a. The old king has died of a heart attack and a republic has been declared.
b. A republic has been declared and the old king has died of a heart attack.

The problem with this analysis that Cohen pinpointed becomes apparent when the conjunctions are embedded in the antecedent of a conditional as in (13):

(13) a. If the old king has died of a heart attack and a republic has been declared, then Tom will be quite content.
b. If a republic has been declared and the old king has died of a heart attack, then Tom will be quite content.

Given the alleged truth-functionality of 'and', the antecedents of the two conditionals must be truth-conditionally equivalent, and given the alleged truth-functionality of 'if', to which Grice was equally committed, it follows that the two conditionals in (13) must be truth-conditionally equivalent. However, this does not seem to be so: the temporal relation understood to hold between the conjuncts seems to be an integral part of the antecedents, so that the two conditionals are truth-conditionally distinct and could well differ in truth-value, Tom being happy with one sequence of events but unhappy with the other. The same result can be achieved by embedding the sentences, or similar ones, in the scope of other operators, including negation, disjunction, and comparatives:

(14) They didn't steal the money and go to the bank; they went to the bank and stole the money.

(15) Max and Mary have a terrible relationship: either he gets drunk and she screams at him or she screams at him and he gets drunk.

If the only options in accounting for the non-truth-functional connections were a Gricean implicature or a richer sense for 'and', there would be good reason to favour the latter, as Cohen did. Relevance theorists, however, have used the results of this embedding test, together with a pragmatic account of how the temporal ordering and cause-consequence meanings arise, to support an account on which they are seen as pragmatic contributions to the proposition expressed (explicature, 'what is said'); see Carston (1988; 2002, chapter 3).

However, Manuel Garcia-Carpintero (2001) swiftly dismisses this scope embedding procedure as providing any sort of useful test or criterion for distinguishing between pragmatic contributions to the proposition expressed, on the one hand, and distinct implicated propositions, on the other. His claim is that there are clear cases of conversational implicature for which the criterion makes the wrong prediction. He takes Grice's well-known 'gas station' example, where B's utterance, in the situation laid out in (16), is claimed to conversationally implicate that the garage is open and selling petrol:

(16) A is standing by an obviously immobilised car and is approached by B; the following exchange takes place:
A: I am out of petrol.
B: There is a garage round the corner.
(*Gloss*: B would be infringing the maxim 'Be relevant' unless he thinks, or thinks it possible, that the garage is open, and has petrol to sell; so he implicates that the garage is, or at least may be, open, etc.)

Garcia-Carpintero then presents examples in which the sentence uttered by B in (16) is placed in the antecedent of a conditional, as in (17a), or in the scope of a negation, as in (17b), and points out that the implicated content of B's utterance is, as he puts it, also 'inherited' here; that is, it contributes to the truth-conditional content of these more complex utterances.

(17) a. If there is a gas station around the corner, I do not need to worry any more.
b. There is no gas station nearby.

He says that (17b) 'can be regarded as not falsified by the existence of a closed gas station around the corner' (Garcia-Carpintero 2000, 113). Let us suppose that he is right about this, and that we are strongly disposed to take it that the truth-conditional content of (17a) is something like 'If there is a currently operative gas station around the corner, then I don't need to worry any more', and of (17b) is 'There is no currently operative gas station around the corner'. Then, according to the Scope Criterion, what this indicates is that, contrary to the standard Gricean analysis, the pragmatic inference

here is not one that eventuates in an implicated proposition but rather one that contributes to the explicit content of the utterance (the explicature or 'what is said'). Garcia-Carpintero takes this to be an 'uncontroversial case of an implicature', as is also another Gricean example, given in (18), on which he runs the same argument:

(18) I saw John with a woman.
Implicature: I saw John with a woman different from his wife, sister or mother.

But once one embraces the view that there is an appreciable pragmatic input to the truth-conditional content of an utterance, whether or not this pragmatic content is a function of the same maxims/principles as those responsible for implicature derivation, then it is not obvious that these are uncontroversial cases of conversational implicature. The status of these elements of pragmatic inference is exactly what is brought into question by the semantic underdeterminacy thesis. In his recent work, Recanati (2003) reconsiders the gas station example and denies that it is a case of conversational implicature. He claims that the content of B's utterance in (16) is enriched into a proposition which could be made more linguistically explicit by an utterance of the sentence in (19):

(19) There is a garage around the corner which sells petrol and is open now.

He goes on to point out that this is entirely at one with the current idea within relevance theory that there are pragmatic processes of *ad hoc* concept construction which fine-tune encoded linguistic meaning and contribute to the explicit content of utterances. Possible examples involving this process are given in (20a) and (20b):

(20) a. Bill opened the curtains.
BILL OPENED* THE CURTAINS
b. France is hexagonal.
FRANCE IS HEXAGONAL*
c. THERE IS A GARAGE* ROUND THE CORNER.
d. I SAW JOHN WITH A WOMAN*

[Small caps are used for communicated propositions/thoughts, as distinct from the linguistic expressions (sentences, etc) employed in the utterance; an asterisk attached to a conceptual constituent of the proposition expressed indicates that it has been pragmatically constructed from a linguistically encoded concept.]

In (20a), the pragmatically inferred concept OPEN* has a narrower denotation than the general concept encoded by the word 'open' and is quite distinct from other concepts that might be expressed by the word 'open' in different linguistic and extra-

linguistic contexts (the dentist who says 'Open wide', the concept of opening a conference, etc.) In (20b), the denotation of the concept HEXAGONAL* is broader in some respects than that of the concept encoded by the word 'hexagonal'. Similarly, the use of the word 'garage' in (16) can be taken to contextually express the *ad hoc* concept GARAGE*, roughly paraphrased as 'a garage that is currently open and has petrol to sell', a concept whose denotation is rather narrower than that of the encoded concept GARAGE. It is this narrower GARAGE* concept that, arguably[3], is a constituent of the proposition expressed by B's utterance, as shown in (20c).

Of course, the scope embedding test is useless if it leads to the prediction that all and any elements of pragmatically derived meaning are constituents of the truth-conditional content of an utterance, but it does not. Consider the following cases:

(21) a. Ann: Does Bill have a girlfriend these days?
Bob: He flies to New York every weekend.
Implicature: Bill (probably) has a girlfriend in New York.
b. He doesn=t fly to New York every weekend.
c. If he flies to New York every weekend he must spend a lot of money.

From Bob=s answer to her question, Ann can infer that Bill probably does have a girlfriend (who lives in New York). But this pragmatic inference does not affect the propositional content in the scope of the corresponding negation in (21b), nor does it fall in the scope of the conditional in (21c); the consequent (that Bill must spend a lot of money) depends just on the proposition that Bill flies to New York every weekend and not also on his having a girlfriend there.

Similarly, a typical utterance of (22a) communicates that the speaker doesn=t know where in the south of France Chris lives, but, as Green (1998, 73) points out, that is not understood as contributing to the proposition expressed by the more complex (22b) in which the original sentence is embedded. If it did, an utterance of (22b) should be found tautologous (or, as he puts it, '*prima facie* plausible'), which is not the case:

(22) a. Ann: Where does Chris live?
Bob: Somewhere in the south of France.
Implicature: Bob doesn't know where in the south of France Chris lives.
b. If Chris lives somewhere in the south of France, then I do not know where.

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[3] In fact, this treatment of the example is not very secure. First, not everyone shares Garcia-Carpintero's intuitions about the embedded cases in (17), which I accepted for the sake of the argument. Second, as Grice presented it, this is an epistemically qualified implicature (*as far as the speaker knows* the garage is open and selling petrol, etc) and it seems unlikely that this kind of pragmatic meaning can or should be seen as part of the proposition expressed. For discussion of such 'speaker's grounds' aspects of utterance meaning, see Breheny (forthcoming).

So, by the embedding test, the pragmatically inferred elements of meaning in (21) and (22) are non-truth-conditional aspects of utterance meaning, i.e. implicatures (conversational ones).

To conclude this section, the view is that pragmatic inference can contribute constituents to the explicature of an utterance or make adjustments to constituents of linguistically encoded meaning, and that this may be undertaken on purely pragmatic grounds, without any indication in the linguistic form, such as an indexical, that it is required. The embedding tests (and perhaps other criteria not discussed here) provide us with a useful means of checking intuitions on when this is happening.[4]

3 'Intrusive' constructions and the 'embedded implicature' hypothesis

Let's take a closer look at Levinson's account of generalized implicatures, which are his primary focus; he says very little about particularized implicatures, or 'nonce' pragmatic inferences, which, in his view, are the domain of a distinct kind of pragmatic theory.

The idea is that generalized implicatures contribute to 'utterance-type' meaning, a species of meaning which is distinct from both linguistic-type (sentence) meaning and speaker meaning. It is pragmatic in that it involves an element of meaning which is ultimately communicatively based, that is, dependent on certain principles of appropriate communicative behaviour. However, it has become established as the preferred or default interpretation of a linguistic expression so that it bypasses familiar Gricean processes of pragmatic reasoning, and considerations of the speaker's intended meaning, and arises through the automatic activation of default inference rules which are attached to particular expression types. These are, of course, defeasible rules, so that if their results are inconsistent with an entailment of the expression or with some particular salient contextual assumption, then they are defeated/cancelled. So, for each of the examples in (23)-(27) below, the meaning designated a generalized

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[4] I don't mean to suggest that this is a definitive test. I don't suppose there is any foolproof test or criterion that can be applied in this mechanical manner. Levinson (2000: 195-198, 238) is highly critical of relevance theory in this regard, since it provides no way, he says, of distinguishing pragmatic aspects of explicature from 'other' conversational implicatures. There are two lines of response: (a) as briefly indicated in section 1.3 above, at the heart of the RT approach is a concrete proposal for a cognitive system (a module) that does the pragmatic work of utterance interpretation and which, through its mechanism of pragmatic mutual adjustment, delivers the two distinct communicated assumptions, and (b) Levinson himself faces this problem in an acute form, as we'll see, since even if there is a delineated set of GCIs, distinct from other implicatures, this set is neither necessary nor sufficient (it both overgenerates and undergenerates) to account for the phenomenon at issue (that is, pragmatic contributions to truth-conditional content).

implicature is generated in this default sort of way by a rule associated with a particular expression in the utterance: 'some' in (23), 'three' in (24), 'and' in (25), 'drink' in (26), 'bring to a standstill' (and the other variants) in (27):

(23) Some of the students passed the exam.
Generalized implicature: Not all of the students passed the exam.

(24) The home team scored three goals.
Generalized implicature: The home team scored at most three goals.

(25) Tim turned the key and the engine started.
Generalized implicature: Tim turned the key thereby causing the engine to start.

(26) I'd love a drink.
Generalized implicature: U would love an alcoholic drink.

(27) Sue caused the car to stop.
Sue brought the car to a standstill.
Sue was instrumental in stopping the car.
Generalized implicature: Sue stopped the car in an unorthodox manner.

Three pragmatic heuristics are taken to underlie the generation of these implicatures: *the Q-heuristic* (what isn't said is not the case) is responsible for the scalar inferences in (23)-(24); *the I-heuristic* (what is said in a simple (unmarked) way represent as stereotypical situation) is responsible for (25)-(26); *the M-heuristic* (what is said in an abnormal (marked) way represents an abnormal situation) is responsible for (27). Detailed discussion of these would take me too far away from the main issues of this paper; for critical assessments of the overall GCI programme, see Bezuidenhout (2002a) and Carston (1998, forthcoming).

My concern here is with just one characteristic of Levinson's account, which is the way in which the content of generalized implicatures can, according to him, enter into what is said. This is probably best approached by comparing some of the examples just given with the more complex cases in (28)-(30), all taken from Levinson (2000):

(28) a. If each side in the soccer game got three goals, then the game was a draw.
b. IF EACH SIDE IN THE SOCCER GAME GOT *EXACTLY* THREE GOALS, THEN THE GAME WAS A DRAW

(29) a. Because the police have recovered some of the gold, they will no doubt recover the lot.
b. BECAUSE THE POLICE HAVE RECOVERED SOME *BUT NOT ALL* OF THE GOLD, THEY WILL NO DOUBT RECOVER THE LOT.

(30) a. Driving home and drinking three beers is better than drinking three beers and driving home.
b. DRIVING HOME AND *THEN* DRINKING THREE BEERS IS BETTER THAN DRINKING THREE BEERS AND *THEN* DRIVING HOME.

In each case, an utterance of the sentence in (a) expresses the proposition (has the truth-conditional content) given in (b), where the italicised element of meaning has been pragmatically derived. Now, according to the Scope Criterion discussed in the previous section, what these examples show is that the element of pragmatic meaning contributes to truth conditions - not just to the truth conditions of these complex utterances but also to those of utterances of the unembedded sentences: 'Each side in the soccer game got three goals', 'He drove home and drank three beers', etc. So these elements of pragmatic meaning are not usefully (or, indeed, coherently) to be thought of as conversational implicatures.

However, Levinson's take on the situation seems to be a bit different. For him, each of the examples in (28)-(30) involves what he calls an 'intrusive' construction (this class of constructions includes negations, conditionals, disjunctions, comparatives, etc). He calls them intrusive because they have the property that '*the truth conditions of the whole expression depend on the implicatures of some of its constituent parts*' (Levinson 2000,198, 213-214)[5]. The idea here seems to be that, while the unembedded sentences containing a scalar term ('some', 'three') in (23) and (24), and the unembedded conjunction in (25), each conversationally implicates the pragmatically inferred meaning, when they are embedded in one of the 'intrusive constructions', that implicated meaning gets composed into the semantics (the truth-conditional content, the 'what is said') of the larger structure and so is an implicature no longer. This point is made several times over and seems to imply that these implicated elements of meaning are NOT composed into the truth conditions of utterances of the simple unembedded sentences.[6]

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[5] The label 'intrusive construction' seems an odd usage to me, since the point surely is, not that these constructions are themselves intrusive, but rather are 'intruded upon' by pragmatically inferred meaning, that is, they are 'pragmatically penetrable'. However, I'll continue to use the label when alluding to Levinson's views.

[6] Here's another quote that points in the same direction: 'Thus the default properties of GCIs account for their intrusive abilities: such inferences can and will be made on the fly and, if not canceled … , will

I hedge, since whether this is really what Levinson intends is not perfectly clear to me. He talks briefly of generalized implicatures also playing a role in 'ellipsis unpacking' and 'generality narrowing', giving examples of simple (non-intrusive) constructions, and saying that without these processes 'the proposition expressed by many sentences will be general to the point of vacuity' (Levinson 2000: 183-86). But whether the implicatures he has in mind here merely play a role in these processes comparable to the role of bridging implicatures in determining reference, for instance, or their content is actually composed into the truth-conditional content of the utterance, is not explained.

Anyhow, a large chunk of the book is taken up with the 'intrusive' constructions and he clearly takes them to be the key data in establishing as fact that pragmatics plays an essential role in determining truth-conditional content. So, in setting out to convince 'the obstinate theorist' (that is, the semanticist who resists the idea of pragmatics playing any role in semantic interpretation), he concentrates on these constructions, along with the role of pragmatics in reference fixing (Levinson (2000, 232-236). And, indeed, in their recent rejoinder to Levinson's claims for what they call 'strong pragmatic' effects on truth conditions, King & Stanley (forthcoming) focus entirely on the intrusive constructions. They appear to take it that their task of refuting his position consists of tackling these structures one by one and showing that in each case there is a parameter in the linguistic semantics of the construction which is responsible for triggering the pragmatic process in question.

For instance, they discuss the conditional in (31), which has an 'and'-conjunction as its antecedent, and which seems to express the proposition that if Hannah insulted Joe and Joe resigned *as a result of Hannah's insult*, then Hannah is in trouble.

(31) If Hannah insulted Joe and Joe resigned, then Hannah is in trouble.

They argue for a (syntactically covert) parameter (requiring the selection of the 'most relevantly similar worlds in the context set') which is simply part of the semantics of 'if' and which, in this case, is pragmatically fixed as those worlds in the context in which a causal relation between the events described in the conjuncts holds. The details of the analysis don't matter here. My point is that, even supposing it works as they say and so renders the pragmatic effect on the truth conditions of (31) weak rather than strong, it patently does not apply to the cause-consequence meaning as it affects the unembedded conjunction. For this, King & Stanley are content with a standard Gricean account, according to which the proposition expressed (i.e. the truth-

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end up within the propositional content of complex sentences whose parts are semantically evaluated with respect to each other (as in comparatives and conditionals, and in the case of denials, evaluated with respect to the corresponding affirmative.)' (Levinson 2000, 259; my emphasis).

conditional content) is the truth-functional conjunction and the cause-consequence connection, derived via a maxim of manner, is implicated:

(32) Hannah insulted Joe and Joe resigned.
Proposition expressed: HANNAH INSULTED JOE & JOE RESIGNED.
Implicature: HANNAH'S INSULT CAUSED JOE'S RESIGNATION

They assume, and assume that Levinson assumes, that in the case of the unembedded 'and'-conjunction the pragmatically derived meaning does not compose into the truth conditions, does not enter into 'what is said'.

This position, whether or not it is the one that Levinson is really committed to, was taken by a number of people, often reluctantly, in the early days of work in the Gricean framework. For instance, after discussing a variety of cases, including some essentially the same as (31), Wilson (1975, 153) concluded:

> […] these non-truth-conditional aspects may figure truth-conditionally when simplex positive sentences in which they occur become embedded or negated. … This simply means that negating, embedding, disjoining or hypothesising may be based on more than a simple computation over the truth-conditions of the related positive sentences, and the projection rules must accordingly be complicated to allow for this. Clearly an enormous amount of work still needs to be done in this area.

Similarly, Posner (1980: 195), also discussing 'and'-conjunctions embedded as conditional antecedents, says:

> A homogeneous treatment of the sentence connectives seems possible only if we weaken the thesis that in natural language the truth-value of the entire sentence is a function of the truth-value of the constituent sentences. … Rather, after each step in the truth-functional deduction, it must be considered whether the resulting conversational suggestions alter the derived truth-value. Each deduction in the value distribution of the complex sentence on the basis of the value distributions of two constituent sentences must be open to reintepretation according to the context in which the sentence has been uttered. This is certainly not a very elegant solution.

Despite these reservations, he felt compelled to accept this approach in the absence of anything better.

Grice himself confronted the issue in his discussion of negated conditionals (1967, lecture 4). In certain cases, it seems that what is denied is not the conditional itself but

a (quite general) conversational implicature of the conditional. He was troubled by this but could see no solution to it (Grice 1989b: 83). Given his unwillingness to allow conversational principles any direct role in determining truth-conditional content, there was little option but to concede to the view that what are implicatures of simple sentences (hence non-truth-conditional aspects of utterance meaning) can become aspects of the truth-conditional content of embedding constructions such as negations and conditionals. By the time of his 'Retrospective Epilogue' Grice had made this move: 'It certainly does not seem reasonable to subscribe to an absolute ban on the possibility that an embedding locution may govern the standard nonconventional implicatum rather than the conventional import of the embedded sentence ...' (Grice 1989a, 375). Levinson (2000, 260) puts this quote from Grice at the end of his chapter on pragmatic intrusions into truth-conditional content, saying that it shows that Grice foresaw the very problem that he (Levinson) has been grappling with in the chapter. Again, then, it looks as if the central issue for Levinson is that what are conversational implicatures of simple sentences can become components of the truth-conditional content of more complex constructions in which the simple sentence is embedded.

I have spent some time (too much perhaps) trying to establish for sure that this is Levinson's position. Anyway, it is certainly a position that has had, and still has, quite a number of adherents. Perhaps its most explicit recent rendering is that given by Mitchell Green (1998, 77), who labels it the *>Embedded Implicature Hypothesis'*:

(33) If assertion of a sentence S conveys the implicatum [implicature] that p with nearly universal regularity, then when S is embedded the content that is usually understood to be embedded for semantic purposes is the proposition (S & p).

Green gives (34a) as an example which falls under the hypothesis. It standardly ('with nearly universal regularity') conversationally implicates that the contact lens belonged to the speaker (or, more generally, to the person who has lost it). When this same sentence is embedded in the syntactic scope of a negation, as in (34b), or a disjunction, as in (34c), this 'implicature' is judged to fall within the semantic scope of those operators:

(34) a. I lost a contact lens in the accident.
b. I didn't lose a contact lens in the accident, but Mary did.
c. Either Mary lost a contact lens in the accident or Bob did.

I want to take issue with this embedded implicature hypothesis of Green and (probably) of Levinson. Their examples provide plenty of evidence that pragmatic inference plays a fundamental role in determining the proposition expressed; but this does not have to be taken as entailing that what is an implicature (a propositional form

distinct from the proposition expressed) of a simple sentence/utterance changes its status when that simple sentence is embedded, becoming then part of the proposition expressed (the truth-conditional content). I would claim that we have a pragmatic contribution to the proposition expressed in both cases (unembedded and embedded) and an implicature in neither. The interesting fact, established in the previous section, is that some pragmatically derived meaning does fall in the scope of logical operators and some does not, so that we have a test for distinguishing pragmatic contributions to the proposition expressed from conversational implicatures.

4 Arguments and counter-arguments

In this section, I'll offer two kinds of argument that the only coherent position to take is that pragmatically derived meaning contributes to truth-conditional content in both the simple and the complex cases, and that these pragmatic inferences are not to be thought of as cases of conversational implicature.

4.1 The valid argument argument

Consider the following line of argument:

(35) Premise 1: If someone leaves a manhole cover off and you break your leg, you can sue them.
Premise 2: Someone left a manhole cover off and Meg broke her leg.
Conclusion: Meg can sue them.

I take it that the average person (perhaps not a logician) presented with this line of reasoning would assent to it; in other words, it is an intuitively valid argument. We easily derive the instantiation of the universal in premise 1 which involves Meg and, given that, the inference seems to be a straightforward case of modus ponendo ponens (MPP). But if the Levinson/Green description of the phenomenon is correct, it should not be valid because the truth-conditional content of the antecedent of the conditional and the truth-conditional content of the second premise would not be the same, so the MPP deduction could not go through. On that sort of account, while the cause-consequence relation between the conjuncts is an element of what is said by the conditional (an 'intrusive' construction), it is merely an implicature of what is said by the unembedded conjunction in the second premise. On the explicature account, on the other hand, the validity of the argument is explained, since the conclusion follows deductively from the premises, both of them having been pragmatically enriched in the same way.

The same holds for the scalar case in (36), where, on the Levinson/Green view, the truth-conditional content (what is said) in the second premise is just that the teams both scored at least three goals, so that again the conclusion cannot be validly drawn, contrary to strong intuitions.

(36) Premise 1: If both teams scored three goals then the result was a draw.
Premise 2: Both teams scored three goals.
Conclusion: The result was a draw.

This seems to me to provide quite a compelling reason for rejecting the embedded implicature hypothesis and adopting an account which recognises that pragmatic inference contributes to the truth-conditional content of utterances quite generally (not just to a small set of complex 'intrusive' constructions). On this latter sort of account, these pragmatically inferred 'enrichments' of linguistically encoded content are distinguished from conversational implicature, which are those pragmatically derived assumptions communicated by an utterance that do not affect truth conditions. However, Alessandro Zucchi has suggested that, contrary to what I have just claimed, it *is* possible to capture the intuitive validity of the argument in (35) while preserving Levinson's "embedded implicature" assumptions[7]. His argument is presented next.

4.2 A defence of the 'embedded implicature' position

For ease of reference, here again are the sentences at issue:

(37) a. Someone left a manhole cover off and Meg broke her leg.
b. If someone leaves a manhole cover off and Meg breaks her leg, she can sue them.

Zucchi's claim is that the intuitive validity of the argument in (35) can be demonstrated even while maintaining that: [i] an utterance of (37a) conversationally implicates (but does not entail) that Meg broke her leg because someone left a manhole cover off, and [ii] the conditional in (37b) is true only if Meg can sue people in case they leave a manhole cover off and she breaks her leg *because of that*.

To show this, Zucchi adopts Stalnaker's (1974, 1999) account of context: a context is the information shared by the conversational participants (their common ground)

[7] Zucchi presented this argument in his role as discussant of my talk 'Semantics and conversational implicature', which was the precursor to this paper (at the Workshop on Context, Genoa, October 2002). He should not be taken, on this basis, to endorse either the Levinsonian position or the embedded implicature hypothesis more generally.

and it is represented as a set of possible worlds or situations, that is, the possible worlds in which the shared assumptions are true. The assumptions shared by the interlocutors (hence the context) change as the conversation progresses. When someone asserts that P, and provided the participants accept it, P becomes part of their common ground, that is, the context is updated so as to consist only of worlds where P holds. Zucchi suggests, reasonably, that when an utterance conversationally implicates something, the implicature, as well as the asserted propositional content, becomes part of common ground. So, as a result of uttering (37a) both of the propositions given in (38) are added to the common ground (assuming they are accepted by both participants and do not give rise to any inconsistency):

(38) a. SOMEONE LEFT A MANHOLE COVER OFF & MEG BROKE HER LEG
b. MEG BROKE HER LEG BECAUSE SOMEONE LEFT A MANHOLE COVER OFF

The approach taken here to the (in)validity question is semantic (rather than formal/syntactic/proof-theoretic), hence given in terms of truth: an argument is valid only provided that the truth of the premises (relative to a context c) ensures the truth of the conclusion (relative to the same context c); that is, all those possible worlds in which the premises hold are worlds in which the conclusion holds. Since the major premise of the argument at issue is a conditional, much hangs on the semantics of conditionals. Zucchi suggests the following truth conditions for indicative conditional statements:[8]

(39) "If A, then B" is true in a context c iff B is true in all the worlds in c in which A and what A implicates are true.

So (37b) is true provided that all the worlds in which Meg can sue are worlds in which someone left a manhole cover off, Meg broke her leg, and the former is a cause of the latter. The content of a conditional statement is added to the conversational participants' common ground (assuming it is accepted by both of them) so the context is updated as follows:

(40) c' = c + [if A, then B] = the set of worlds in c in which either A and what A implicates are false or B is true.

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[8] Zucchi's definition is a bit different from the semantics for indicative conditionals given by Stalnaker (1975): 'an indicative conditional is true iff the consequent is true in all the worlds in which the antecedent is true and which are the most similar, in relevant respects, to the actual world'. There is no mention here of implicatures of the antecedent; however, as mentioned in section 3, King & Stanley (forthcoming) develop an account of 'pragmatic intrusions' into conditionals using Stalnaker's definition, which turns out to be quite similar to Zucchi's (see also note 11 below).

For instance, when a context c is updated as a result of an utterance of (37b), the new context c' differs from c in that it contains no worlds in which Meg has broken her leg because someone has left a manhole cover off and Meg cannot sue them.

The main point here is that this approach meets the challenge of accounting for the intuitive validity of the argument in (35), repeated here (with the appropriate instantiation of the universal in premise 1), while maintaining Levinson/Green's embedded implicature assumptions:

(41) Premise 1: If someone leaves a manhole cover off and Meg breaks her leg, she can sue them.
Premise 2: Someone left a manhole cover off and Meg broke her leg.
Conclusion: Meg can sue them.

As a result of uttering premise 1, the context c is updated to a new context c' that contains only worlds in which either it is false that Meg breaks her leg because someone leaves a manhole cover off or it is true that Meg can sue them. Then, utterance of premise 2 brings about an update of c' yielding a context c", to which both the content of the assertion AND of the conversational implicature have been added, so worlds in which it is false that Meg has broken her leg because someone has left a manhole cover off have been removed. The result is that c" consists of just those worlds in which Meg can sue; that is, the conclusion is true in c". So we have an account, given in truth-conditional semantic terms, which both reflects Levinson's ("embedded implicature") assumptions about conversational implicatures and the truth conditions of the conditional, and shows why we are inclined to accept (35)/(41) as a valid piece of reasoning.

This is a neat result, apparently solving the problem I raised for the embedded implicature hypothesis[9]. However, I believe it introduces new problems, which make it ultimately untenable, problems arising from the means by which the positive result above is achieved, that is, the implicature-incorporating truth conditions for conditionals and the straightforward untagged adding of implicatures to the common ground. Given the nature of conversational implicatures (their pragmatic, defeasible nature), the account seems bound to overgenerate; that is, to give implicature-infected truth conditions for conditionals when the implicature at issue is, if present at all, independent of the propositional content, and to give predictions of validity for arguments which are intuitively not valid.

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[9] Couched as it is in (externalist) semantic terms, I am unsure how closely we should expect this account to mesh with an essentially internalist (syntactic) account of cognitive processes of utterance understanding and mental reasoning. However, in what follows I try to address it on its own terms.

4.3 An overgeneration argument against the defence

First, consider the truth conditions of the conditional given in (39) above. It simply cannot be that any and every implicature of A (the sentence embedded in the antecedent) enters into the truth conditions of a conditional "If A, then B". Consider the following conversational exchange:

(42) X: Does Sam like John and Mary?
Y: He likes Mary.
Implicature: Sam doesn't like John

The implicature of Y's utterance depends on essentially the same conversational maxim or heuristic as the scalar cases on which Levinson focuses much attention, that is, the Q-heuristic: what isn't said (and would be relevant) is not the case. Now, if we apply the truth-conditional schema given in (39) to the conditional sentence in (43a) we get the truth conditions in (43b):

(43) a. If Sam likes Mary, then he'll ask her to his party.
b. (43a) is true in the current context iff it is true that Sam will invite Mary to his party in all the worlds in the context in which it is true that Sam likes Mary and Sam doesn't like John.

But these, surely, are not the right truth conditions for (43a). Whether Sam does or doesn't like John is irrelevant to the truth of the conditional; the conditional is true provided that it is true that Sam will invite Mary to his party in all the worlds in the context in which Sam likes Mary, a potentially broader set of worlds than those specified in (43b).

The next move here would be to qualify the truth-conditional schema in (39) and change 'what A implicates' to 'what A *generally*, or normally, implicates' in an attempt to rule out the more context-sensitive sort of implicature in (42). This would bring the definition more fully into line with the embedded implicature hypothesis as Green (1998) defines it (see (33) above). This is not a possible move for those of us who don't believe that there is any absolute distinction to be made between two kinds of conversational implicatures (context-independent and context-sensitive). However, let's suppose for the moment that the distinction can be drawn and there is a clearly delineated subclass of implicatures (the generalized ones) that play this role in the truth conditions of conditionals. Still, I think, there is a problem of overgeneration, that is, of including in the truth conditions of conditionals certain instances of (generalized) implicature which, according to fairly robust intuitions, result in the wrong truth conditions.

Let's consider several well-established cases of generalized conversational implicature, starting with the example in (44a):

(44) a. John isn't drunk today.
b. *Implicature:* John might be (expected to be) drunk today.

A number of authors treat utterances of the form 'Not P' as generally implicating 'Possibly P' (Searle (1966), Grice (1967/89b, chapter 1)). Presumably, the conversational maxim responsible for this is that concerning relevance. The standard reason for issuing a denial, what makes such an utterance relevantly informative, is that one or other of the conversational participants entertains the possibility that the corresponding affirmative holds. Furthermore, the conditional in (45) with the negative sentence in its antecedent also clearly carries the same implicature:

(45) If John's not drunk today, the lecture will be good.
Implicature: John might be drunk today.

However, I think most people would agree that the implicature does not contribute to the truth conditions of the conditional; that is, (45) is true iff the consequent (the lecture will be good) is true in all the worlds in which the antecedent (John is not drunk on the day of utterance) is true. The truth or falsity of the generalized implicature, that John might be drunk today, simply has no bearing on the truth or falsity of the conditional.[10]

Disjunctive utterances provide further widely accepted instances of generalized implicature. So an utterance of (46a) has the implicatures in (46b) and (46c), which, as Levinson puts it (2000, 108), are general but defeasible, hence have 'the hallmarks of GCIs':

(46) a. Sue is a linguist or an anthropologist.
b. *Scalar implicature:* Sue isn't both a linguist and an anthropologist.
c. *Clausal implicatures:*
The speaker doesn't whether or not Sue is a linguist.
The speaker doesn't know whether or not Sue is an anthropologist.

The implicature in (46b) (together with the proposition expressed) gives rise to the common exclusive understanding of a disjunction and is derived by familiar quantity-driven pragmatic reasoning on the basis of the scale <or, and>: choice of a semantically weaker item on the scale is taken to imply the negation of higher items.

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[10] I owe this example to discussion with Deirdre Wilson.

The so-called 'clausal' implicatures in (46c) express the speaker's uncertainty about the truth value of each of the disjuncts. These latter cases are discussed by Grice (1978/89b, 44-45), where he considers the idea that the word 'or' has a strong sense, such that the meaning of 'A or B' consists of the truth-functional A v B plus a further component to the effect that 'there is some non-truth-functional reason for accepting A v B'. He argues that this second component is a conversational implicature rather than part of the conventional sense of the word 'or', but the fact that the issue of conventional meaning arises at all is indicative of the very general (cross-contextual) nature of the implicature. Again, however, it seems clear that when the disjunction in (46a) occurs as the antecedent of a conditional, as in (47), the truth or falsity of these implicated propositions has no bearing on the truth or falsity of the conditional, which is true provided just that either it is false that Sue has at least one of the properties: being a linguist, being an anthropologist, or it is true that she is familiar with the linguistic relativity hypothesis.

(47) If Sue is a linguist or an anthropologist, she is familiar with the linguistic relativity hypothesis.

Third, as mentioned at the beginning of section 3, there is a whole host of cases of what Levinson (2000, 38-39; 135-153) calls M-implicatures, that is, generalized implicatures which result from a manner maxim to the effect that if what is said is expressed in an abnormal or marked sort of way then the event described is abnormal in some way. The example in (48) is a standard instance of this phenomenon.

(48) John's action caused the car to stop.
Implicature: There was something abnormal or indirect about the way in which John stopped the car.

However, again, it doesn't seem that this implicature contributes to the truth conditions of a conditional in which the original sentence occurs in the antecedent:

(49) If John's action caused the car to stop then he is responsible for the crash.

John's responsibility for the crash seems to rest just on his having been the person who was instrumental in stopping the car, not on this together with the implication that the stopping of the car was achieved in some unusual way.

So, even with the class of implicatures restricted to the (allegedly) generalized variety, it looks as if the truth conditions given for the conditional in (39) still result in the prediction of pragmatic effects on the truth conditions of conditional statements

where there are none[11]. It's also worth noting that Levinson, who is probably the staunchest advocate of the generalized/particularized distinction, could not consistently support this restriction, since he has pointed out that there are in fact *some* particularised implicatures that can enter into the content of such 'intrusive' constructions as the conditional (see Levinson 2000, 237-39). If this is right, the distinction between those pragmatic inferences that affect truth conditions and those that do not, crosscuts the distinction between generalized and particularized implicatures, so it looks as if there is no way of amending the definition of the truth-conditional content of conditionals so as to capture just those instances of implicature that do intrude.

Let's consider now the issue of (intuitive) argument validity. As we've seen, Zucchi's account does capture the intuitive validity of the argument in (41), while maintaining the 'embedded implicature' view of the utterances in the premises. However, given that there appear to be no constraints (apart from a consistency requirement) on the adding of implicatures to common ground, the account seems bound to overgenerate, that is, to predict some lines of argument as valid when they are not. My strategy here is to take a putative argument which is plainly not valid and show that the aspect of the context-update account which does the work of capturing the validity of (41) leads to erroneous validity predictions in these other cases. Consider the following apparent line of reasoning:

(50) Premise 1: If Sam doesn't like John, he won't invite him (John) to his party.
Premise 2: Sam likes Mary.
Conclusion: Sam won't invite John to his party.

I take it that we would not assent to this, that we intuitively find it to be not a valid argument. Crucially for my point, this seems to be so even in a context resulting from the exchange in (42) (repeated here for convenience):

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[11] King & Stanley (forthcoming) attempt a somewhat similar account of pragmatic contributions to the truth conditions of conditionals, their main concern, however, being to show that these pragmatic effects are 'weak', that is, are mandated by elements of linguistic form. This depends on the assumptions (a) that there is some formal/syntactic reflex in linguistic form of the 'contextually relevant similarity relation' component of Stalnaker's semantics for conditionals (see brief discussion in section 3 above), and (b) that the (allegedly) linguistically triggered search picks up just those elements of pragmatic meaning that do in fact affect truth conditions. Breheny (forthcoming) argues that the account fails in both these respects; in particular, with regard to the second point, it faces essentially the same problem of overgeneration as the account I am discussing.

(42) X: Does Sam like John and Mary?
Y: He likes Mary.
Implicature: Sam doesn't like John

It just seems that when it comes to arguments (what some might term 'adversarial discourse') we do not allow the intrusion of even quite salient implicatures.

Let's see how (50) works on Zucchi's approach, bearing in mind that the implicature(s) as well as the asserted content of an utterance become part of the common ground. Premise 1 updates the context so that it contains only worlds in which either it is false that Sam dislikes John or it is true that Sam won't invite John to his party. Premise 2 causes an update in which both the proposition expressed *and the implicature* are added to the context, so that all those worlds in which it is false that Sam likes Mary and (crucially) all those worlds in which he dislikes John are thrown out, leaving just worlds in which it is true that Sam won't invite John to his party. So the argument is predicted to be valid.

Now it might reasonably be objected that, just as with the truth conditions of conditionals discussed above, there have to be restrictions on the class of implicatures that enter into judgments of argument validity, that is, the implicatures at issue must be of the generalized variety (occurring regularly across contexts unless specifically blocked). So let's take an argument with the same structure as the previous one but which involves a much less context-sensitive implicature, the inference from a use of 'some of the x' to 'not all of the x', which is, as discussed earlier, usually given as the textbook case of a generalized conversational implicature:

(51) Premise 1: If not all the students pass the exam the teacher will be upset.
Premise 2: Some of the students will pass the exam.
Conclusion: The teacher will be upset.

My own intuitions and those of everyone I have consulted are that this putative argument is not valid; there is a strong sense of a missing premise. However, on the Zucchi account it will come out as valid, since the occurrence of the sentence in the second premise carries a default implicature that not all of the students will pass the exam, and this implicature enters into the common ground (updating it so that worlds in which all students pass the exam are removed) along with the asserted content. Thus the antecedent condition is met (not all the students will pass the exam) and the conclusion (that the teacher will be upset) is true in that context.[12]

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[12] Breheny (forthcoming) argues convincingly that scalar implicatures never intrude on propositional content, contrary to Levinson's (2000) claims. Since scalar implicatures, in particular those associated with the use of 'some of the x', are the paradigm case of generalized conversational implicatures,

Consider another example, one which turns on the generalized implicature carried by a denial of P, namely that it is possible that P:

(52) Premise 1: If it's possible that John is drunk today we should cancel his lecture.
Premise 2: John is not drunk today.
Conclusion: We should cancel his lecture.

As a line of reasoning, this is quite bizarre; the 'conclusion' seems to be virtually the opposite of the one that we would be inclined to draw from these two premises. However, again, validity is predicted if the implicature that generally accompanies denials (hence the sentence uttered in premise 2) is added to the common ground, thus ruling out worlds in which the antecedent of the conditional is false and leaving those in which the consequent is true.

The strategy here has been to choose as the antecedent of the conditional premise a proposition whose content is the same as that of a generalized implicature of the minor premise and then trade on the fact that the implicature does not enter into our validity judgements. The procedure could be repeated for any number of other cases involving alleged generalized implicatures (for example, the disjunction cases and the M-implicatures mentioned above).

To conclude this section, although the Zucchi account successfully captures the validity of the particular argument in (35)/(41) while preserving the 'embedded implicature' assumptions, it is liable to make a range of wrong predictions, both about the truth conditions of conditionals and about the (intuitive) validity or invalidity of other arguments. So it looks as if this account cannot be adopted in any general way as a means of saving the embedded implicature position of Levinson, Green and others.

4.4 The coherent exchange argument

Some people are uneasy about the use of natural language in framing logical arguments, considering it to be too imprecise and connotation-ridden for this job, which requires a regimented logical language. There's a worry too about just what intuitive judgements of validity are really judgements of. Although I don't think this is a problem for the arguments above, let's anyway turn to a consideration of more obviously conversational exchanges, where the judgement to be made is not one of

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Levinson's claim (2000, 259) that their special properties (as allegedly local default inferences) provide us with at least a solid chunk of the solution to the problem of pragmatic intrusion into what is said (Grice's circle) is severely undermined.

(in)validity but of conversational (in)coherence. To get a feel for the property in question, consider C's contribution to the conversation in (53):

(53) A: Does Bill have a girlfriend these days?
B: He visits New York every weekend.
C: No, he doesn't. He goes there to see his ill mother.

There is something noticeably odd/less than fully coherent about C's response. Arguably, the oddness lies with C's disagreeing not with what B has said but with an implicature of B's utterance (that Bill does have a girlfriend). It seems that the implicature does not fall in the scope of the denial.

Consider next the exchange in (54):

(54) A: Mary fell over and hurt her knee.
B: No, she didn't. She hurt her knee and fell over.

This seems to be a coherent exchange; there is no oddity comparable to that in (53), though, as with (53), there is a pragmatically derived element of meaning, this time concerning the temporal order and the cause-consequence relation of the two events under discussion and it is this that B is disagreeing with. We can explain the difference between the two cases if we assume that B intends the content falling within her negation to be the same as the content of A's utterance, that is, that Mary fell over and *as a result* she hurt her knee. On a relevance-theoretic account, a pragmatic enrichment of the linguistically encoded content of A's utterance (hence an aspect of its truth-conditional content) is being denied by B; this is what distinguishes the example from (53), where it is an implicature that is being denied.

For Levinson, the cause-consequence relation in (54) is a generalized implicature of A's utterance, while the implicature in (53) is particularized. However, he can't use his GCI/PCI distinction to account for the difference in coherence between the two cases, as the following exchanges show:

(55) A: The teacher's going to be upset unless we pass all the exams.
B: Yes, that's right. If we pass some of the exams she's going to be upset.

(56) A: John caused the car to stop.
B: No, he didn't. He stopped the car by breaking in the usual way.

Neither of these seems to be a fully coherent exchange. The second part of B's utterance in (55) does not satisfactorily endorse his just expressed agreement with A, even though 'some of the exams' has the very default implicature which should match

the content of the antecedent of A's conditional. In (56), B disagrees with the generalized implicature carried by A's use of the phrase 'caused the car to stop' (as opposed to the simple unmarked 'stopped the car'), that is, the implicature that there is something unusual about the way John stopped the car. But it seems that this does not fall in the scope of his explicit denial.[13]

Thus we see that intuitions about conversational (in)coherence, like those concerning argument (in)validity, are not captured by the hypothesis that the generalized conversational implicatures of simple structures fall within the semantic scope of more complex constructions in which the simple sentences are embedded.

5 Conclusion: pragmatic enrichment and conversational implicatures

The arguments in the previous section, concerning (a) the validity (or invalidity) of arguments framed in natural language, and (b) the coherence (or incoherence) of conversational exchanges, favour an account of the pragmatically derived meaning of the examples under consideration as aspects of their truth-conditional content, both when they are embedded in the scope of a logical operator and when they are free-standing.

What the so-called 'intrusive' constructions do is provide us with a means for sharpening and corroborating our intuitions about the truth-conditional content of simple sentences. They do this because they prompt us to make truth-conditional evaluations of one constituent part with respect to another (the antecedent and the consequent of a conditional; the two states of affairs being compared in a comparative; the state of affairs expressed by the affirmative counterpart of a denial, etc). Hence the usefulness of the Scope Criterion.

Viewed as an application of this criterion, the examples in (55) and (56) show that at least two of Levinson's central cases of generalized implicatures do not contribute to truth-conditional content. Given also that some cases of particularized pragmatic inferences do contribute to truth-conditional content, it seems that we won't get much purchase on the question of what distinguishes the two kinds of pragmatic inference at issue (those that affect truth conditions and those that don't) by buying into the generalized/particularized implicature distinction. On the relevance-theoretic approach, the distinction is between pragmatic enrichments of encoded meaning, on the one hand, and genuine conversational implicatures, on the other, a distinction which is reflected in our intuitions about the content falling in the scope of logical operators, and which the mechanisms of utterance interpretation posited by the theory

[13] This argument turning on considerations of conversational coherence is based on similar points made by Breheny (2003, forthcoming).

are intended to model.[14] This approach preserves the original Gricean position that the distinguishing characteristic of implicatures (wherever and however they arise) is that they are non-truth-conditional components of utterance meaning.

References

Bach, K. 1994. Conversational impliciture. *Mind and Language* 9, 124-162.

Bach, K. 2000. Quantification, qualification, and context: a reply to Stanley and Szabo. *Mind and Language* 15, 262-283.

Bezuidenhout, A. 1997. Pragmatics, semantic underdetermination and the referential/ attributive distinction. *Mind* 106, 375-409.

Bezuidenhout, A. 2002a. Generalized conversational implicatures and default pragmatic inferences. In Campbell, J. K. et al. (eds.) *Meaning and Truth: Investigations in Philosophical Semantics*. New York: Seven Bridges Press.

Bezuidenhout, A. 2002b. Truth-conditional pragmatics. *Philosophical Perspectives* 16, 105-134.

Breheny, R. 2003. On the dynamic turn in the study of meaning and interpretation. To appear in Peregrin, J. (ed.) *Meaning: The Dynamic Turn*. Elsevier.

Breheny, R. forthcoming. On pragmatic intrusion into semantic content. RCEAL, University of Cambridge.

Carston, R. 1988. Implicature, explicature and truth-theoretic semantics. In Kempson, R. (ed.) *Mental Representations: the Interface between Language and Reality*, 155-81. Cambridge: Cambridge University Press.

Carston, R. 1998. Informativeness, relevance and scalar implicature. In Carston, R. & Uchida, S. (eds.) *Relevance Theory: Applications and Implications*, 179-236. Amsterdam: John Benjamins.

Carston, R. 2000. Explicature and semantics. *UCL Working Papers in Linguistics* 12, 1-44. Reprinted in: Davis, S. & Gillon, B. (eds.) 2004. *Semantics: A Reader*. Oxford University Press.

Carston, R. 2002. *Thoughts and Utterances: The Pragmatics of Explicit Communication*. Oxford: Blackwell.

Carston, R. forthcoming/2004. Review of Stephen Levinson *Presumptive Meanings. Journal of Linguistics*.

Cohen, L. J. 1971. Some remarks on Grice's views about the logical particles of natural language. In Bar-Hillel, Y. (ed.) *Pragmatics of Natural Language*, 50-68. Dordrecht: Reidel.

Garcia-Carpintero, M. 2001. Gricean rational reconstruction and the semantics/pragmatics distinction. *Synthese* 128, 93-131.

Green, M. 1998. Direct reference and implicature. *Philosophical Studies* 91, 61-90.

Grice, H.P. 1967. *Logic and Conversation*. William James lectures. Harvard University. Reprinted in Grice, H.P. 1989b, 1-143.

[14] It may be that a deeper account of the distinction is possible and desirable. Using relevance theory and situation semantic theory, Breheny (forthcoming) suggests that what underlies our intuitions about what is, and what is not, part of semantic (truth-conditional) content is a capacity to distinguish between what a communicator directly indicates through her utterance act and what she only indirectly indicates.

Grice, H.P. 1975. Logic and conversation. In Cole, P. & Morgan, J. (eds.) *Syntax and Semantics 3: Speech Acts*, 41-58. New York: Academic Press. Reprinted in Grice, H.P. 1989b, 22-40.
Grice, H.P. 1978. Further notes on logic and conversation. In Cole, P. (ed.) *Syntax and Semantics 9: Pragmatics*, 113-127. New York: Academic Press. Reprinted in Grice, H.P. 1989b, 41-57.
Grice, H.P. 1989a. Retrospective epilogue. In Grice, H.P. 1989b, 339-385.
Grice, H.P. 1989b. *Studies in the Way of Words*. Cambridge, Mass.: Harvard University Press.
King, J. & Stanley, J. forthcoming. Semantics, pragmatics, and the role of semantic content. In Szabo, Z. (ed.) *Semantics vs. Pragmatics*. Oxford: Oxford University Press.
Levinson, S. 1988. Generalized conversational implicatures and the semantics/pragmatics interface. Ms. University of Cambridge.
Levinson, S. 2000. *Presumptive Meanings: The Theory of Generalized Conversational Implicature*. Cambridge, Mass.: MIT Press.
Neale, S. 1992. Paul Grice and the Philosophy of Language. *Linguistics and Philosophy* 15, 509-559.
Neale, S. 2000. On being explicit. *Mind and Language* 15, 284-294.
Neale, S. forthcoming. *Linguistic Pragmatism*.
Posner, R. 1980. Semantics and pragmatics of sentence connectives in natural language. In Searle, J., Keifer, F. and Bierwisch, M. (eds.) *Speech Act Theory and Pragmatics*, 168-203. Dordrecht: Reidel.
Recanati, F. 1989. The pragmatics of what is said. *Mind and Language* 4, 295-329.
Recanati, F. 1993. *Direct Reference: From Language to Thought*. Oxford: Blackwell.
Recanati, F. 2002. Unarticulated constituents. *Linguistics and Philosophy* 25, 299-345.
Recanati, F. forthcoming/2003. *Literal Meaning*. Cambridge: Cambridge University Press. Available at website: http://www.institutnicod.org
Searle, J.R. 1966. Assertions and aberrations. In William, B. & Montefiore, A. (eds.) *British Analytical Philosophy*. 41-54. Routledge Kegan Paul.
Sperber, D. & Wilson, D. 1986/95. *Relevance: Communication and Cognition*. Oxford: Blackwell.
Stainton, R. 1994. Using non-sentences: An application of Relevance theory. *Pragmatics and Cognition* 2, 269-284.
Stalnaker, R. 1974. Pragmatic presuppositions. In Munitz, M. & Unger, P. (eds.) *Semantics and Philosophy*. New York: New York University Press. Reprinted in Stalnaker, R. 1999, 47-62.
Stalnaker, R. 1975. Indicative conditionals. *Philosophia* 5. Reprinted in Stalnaker, R. 1999, 63-77.
Stalnaker, R. 1999. *Context and Content*. Oxford: Oxford University Press.
Stanley, J. 2000. Context and logical form. *Linguistics and Philosophy* 23, 391-434.
Stanley, J. & Szabo, Z. 2000. On quantifier domain restriction. *Mind and Language* 15, 219-261.
Wilson, D. 1975. *Presuppositions and Non-Truth-Conditional Semantics*. Academic Press.
Wilson, D. & Sperber, D. 2002. Truthfulness and relevance. *Mind* 111: 583-632.