

Literal vs enriched meaning: *It's raining*

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1 Introduction

Many an utterance seems to have a content part of which is not expressed in overt words or morphemes; but the unexpressed material is part of the asserted content (*what is said*, in Grice's (1975) terminology) and is not merely an implicature. Furthermore, the sentences involved have enough overt morphemes to make them syntactically complete sentences; we are not dealing with cases of ellipsis (like VP-ellipsis, NP-deletion, sluicing, and so on) that render sentences syntactically incomplete on the surface. I will call unexpressed content of this kind *implicit content*.¹

Here are some examples of sentences plausibly involving implicit content:

- (1) Everyone is having a good time.
- (2) The table is covered with books.
- (3) It's raining.
- (4) Steel isn't strong enough.

In the case of (1), we are supposed to have asked how some event is going, a dinner party, say, and received this as a reply (Stalnaker 1970: 276, Neale 1990: 94–5). The speaker is intuitively understood to be saying that everyone *at the dinner party in question* is having a good time. The speaker is not understood to be claiming that everyone, *Punkt*, is having a good time.² This latter claim is presumably equivalent to the claim that everyone in the

¹For the term, see Elbourne 2008, 2013: 172. It is one of the many terminological foibles afflicting this field of study that there is no widely used theoretically neutral name for the kind of content under investigation. Perry's (1986) term *unarticulated constituents* is widely used, but it is not theoretically neutral, since it crucially incorporates something of his own theoretical viewpoint: Perry's use of it seems to rule out the possibility of 'unarticulated constituents' being the semantic values of phonologically null variables in the syntax (1986: 138), for example. Similarly, my impression is that the use of *explicature* (Sperber and Wilson 1986) and *implicature* (Bach 1994) has not crossed certain theoretical boundaries. The term *implicit content* is mentioned by Sperber and Wilson (1986: 182); they say that 'on a more traditional view' than theirs, the term is used more or less as I would like to use it; but for reasons of their own they call the kind of content in question 'explicit content'. The term might also recall Partee's (1984) talk of *implicit arguments*, but I intend 'implicit content' to cover a potentially wider range of phenomena than that term, since I do not want to presuppose that all implicit content plays some kind of argument role.

²In common with many other writers on this topic, I will adopt the pleasing convention of using the German word *Punkt* 'period, full stop' in order to indicate that no implicit content is present at a particular point.

world (or in the universe, if there are persons elsewhere) is having a good time; and our speaker, we can well imagine, is not so optimistic as to be claiming that. But there seems to be no overt morpheme whose semantic value is anything like ‘at the dinner party in question’; so this content qualifies as implicit content. This phenomenon, since it involves an apparent restriction on the entities that a quantifier is taken to quantify over, is called *quantifier domain restriction*.

Example (2) is rather similar, but here we need a bit more theoretical background. It is commonly, although not universally, assumed that use of a definite description *the ϕ* involves either presupposing (Frege 1892) or asserting (Russell 1905) that there is exactly one ϕ . In view of its distinguished early proponents, let us call the view that the semantics of definite descriptions involves uniqueness in one of these ways *the classical view*.³ The classical view runs into problems, as Strawson (1950) pointed out, since it is often perfectly felicitous to say (2), even though we all know perfectly well that there is more than one table in the world. There are many similar examples, of course. But defenders of the classical view, such as Neale (1990), maintain that we have implicit content in this kind of case, so that the content of a particular utterance of (2) might be something like ‘The table *in this room* is covered with books’; if there is exactly one table in this room, everything then goes well. Neale (1990) points out, in fact, that since this phenomenon, like the last one, involves a determiner, it might possibly be treated as a sub-case of quantifier domain restriction. But definite descriptions whose overt descriptive content applies to more than one thing are sufficiently important in the history of the field that they have their own name: they are called *incomplete definite descriptions*.

Example (3) is less reliant on presupposed theory. Suppose that John Perry, at home in Palo Alto, has plans for tennis one morning; but his son looks out of the window and says (3). Perry goes back to sleep (Perry 1986: 138). The reason, of course, is that he understands his son to be saying that it is raining at that moment *in Palo Alto*. But there are no overt words in the sentence uttered that seem to be capable of contributing this location, and so the location of the raining event, according to our definition, is implicit content. Note that Perry will not interpret his son as claiming that it is raining, *Punkt*. This latter claim presumably amounts to saying that is raining at some location or other in the universe; but this is relatively uninformative and would not necessarily make Perry resume his slumber.

Finally, example (4) will be understood, in context, as an assertion that steel is not strong enough for some specific contextually supplied task—resisting being bent by Superman, for example (Bach 1994: 127). But there is no overt morpheme in the sentence that contributes this task, making this another example of implicit content.

This latter example, simple as it might seem, raises two points that should be borne in mind from the outset. The first is that there is genuinely an issue here. Many linguists will look at (4) and conclude that there must be an unpronounced contextually sensitive element, a phonologically null pronoun, that combines with *enough* in the syntax and whose reference, on the kind of occasion envisaged, is something like the task of resisting being bent by Superman. End of story, linguists of this stripe might be tempted to add. Such linguists might be surprised to learn that many theorists, both linguists and philosophers,

³For dissent from the classical view, see Strawson 1950, Heim 1982, Szabó 2000, 2003, Fara 2001, and Roberts 2003.

resist such a move and maintain that there is nothing in the syntax whose semantic value is the task in question; certainly Bach (1994), whose example this is, is one of them. This latter kind of theorist is likely to maintain that the task only makes an appearance, as it were, in the language of thought, after a semantic representation of the syntactic structure has been derived. Choosing between these two approaches is very hard to do. (And this question of levels of representation is not the only theoretical issue in the neighbourhood, as I will shortly show.)

The second point raised by (4) is more theoretical. This example possibly differs from (1)–(3) in the following way. In the case of (1)–(3), it seems plausible that a proposition could be reached by taking the overt words and combining their semantic values in accordance with the syntactic structure and standard composition principles. Indeed, I provided such propositions in the above discussion under the rubric of ‘*Punkt* readings’. They would not be what the speakers in question were trying to say, in our examples, but they would be full propositions nonetheless. But in the case of (4), this does not seem likely. Combining the meanings of the overt words here will not give us a full, truth-evaluable proposition, because that procedure will not provide any indication of what steel is being claimed to be too weak for. Some theorists set store by this difference. Bach (1994), once more, is an example. He calls examples like (4), which do not yield up a full proposition from their overt elements, *semantically underdeterminate*; and he uses *completion* as a technical term to denote the filling in of content to produce complete propositions in such cases; and he uses *expansion* to denote the process of adding implicit content to full propositions to arrive at the proposition that the speaker is asserting (Bach 1994: 125–6). Both completion and expansion can be used in understanding a single sentence.

An important characteristic shared by all of the above examples is that they are *context sensitive*. Take any of one of (1)–(4) and imagine it being said in different circumstances to the ones I just sketched; it will be easy to see that it could be used to express a different proposition to the one I attributed to it above. These differences, moreover, would not necessarily depend on independent indexical elements like tense but could involve the aspects of the content designated as implicit: (3) could be used to assert that it is raining in Copenhagen, for example, not that it is raining in Palo Alto. Our subject matter is sometimes characterized as having as one of its main questions the question of how far context sensitivity extends: Cappelen and Lepore (2005: 1–2), for example, in their influential and controversial book on implicit content, take themselves to be defending a traditional position according to which context sensitivity is limited to a relatively small set of items like *I*, *you*, *now*, and *that*; it does not, they maintain, extend also to words like *penguin*. The allusion is presumably to those, like Boole (1854) and Stanley and Szabó (2000a), who analyse quantifier domain restriction as affecting the interpretation of nouns in quantifier phrases, so that *penguin* in *every penguin* might be variously interpreted, in context, as ‘penguin in Antarctica’, ‘penguin in London Zoo’, or what have you. Now I have no strong objection to framing the subject like this. But I have a slight qualm, which is the following: Stanley and Szabó (2000a), at least, would not, strictly speaking, maintain that *penguin* was context sensitive. Their position is roughly that *penguin* in *every penguin* has as its syntactic sister a phonologically null variable over properties, whose denotation is intersected in the semantics with the meaning of *penguin*; so if the variable picks up the meaning ‘in London Zoo’, the whole complex comes to mean ‘penguin in London Zoo’. So, according to this

position, *penguin* is not context sensitive at all; the phonologically null property variable is. This is to be contrasted with a position according to which the word *penguin* is itself context sensitive. There is a risk, then, that in framing the issue as basically being about what items are context sensitive we will elide distinctions like the one just made; but this is only a risk, and with appropriate precautions it can be avoided. I will sometimes in this chapter frame issues surrounding implicit content in terms of context sensitivity; but the caveat noted here should be borne in mind. In particular, it should be remembered that positions like Stanley and Szabó's, in many cases at least, would spell out talk of a word being context sensitive in terms of that word being the sister of a phonologically null variable that is context sensitive.

One natural thought to have about all the above cases is that they involve implicature. Implicature, after all, is another level of content apart from what is said; and it is one that we already have reason to adopt. Would it not be possible to explain cases like (1)–(4) as involving implicatures rather than a separate category of implicit content? Well, no, probably not. As Sperber and Wilson (1986: 181–2) and Bach (1994: 140) point out, there are certain important differences between the two types of case. Most importantly, perhaps, the interpretation of a sentence with implicit content included is in a certain sense similar to the interpretation that the sentence would get if it did not come fitted with implicit content: the difference between everyone at one dinner party having a good time and everyone, *Punkt*, having a good time; the difference between its raining in Palo Alto and its raining, *Punkt*; and so on. There is a certain sense in which the implicit-content interpretation and the *Punkt* interpretation talk about a considerable range of overlapping objects, properties, and events (presumably, those objects, properties, and events contributed by the overt words and morphemes); in fact, as Sperber and Wilson (1986: 181) say, the implicit-content interpretations (what they call *explicatures*) 'include as sub-parts one of the logical forms encoded by the utterance' (i.e. one of the possible *Punkt* interpretations, allowing that the utterance might be ambiguous at that level). By contrast, the relation between a sentence and an implicature drawn from an utterance of that sentence allows for wide differences in the things talked about: as we recall from one of Grice's (1975) famous examples, an utterance of *Jones has beautiful handwriting* might implicate (what we would express by) *Jones is no good at philosophy*. Note how all mention of beauty and handwriting seems to have gone overboard when we get to the implicature; this pattern is not characteristic of cases of implicit content. Furthermore, it is possible in many cases to show that a single sentence, on a particular occasion of utterance, might be accompanied by two apparently different processes, one of which seems like what we have so far characterized as implicit content, while the other allows for the wide semantic discrepancies that often characterize implicature. Suppose, to vary one of our examples slightly, that John Perry's son, in Palo Alto, asks Perry if he's about to go and play tennis, and that Perry replies with (3); then we would interpret Perry as having said that it was raining *in Palo Alto*; and we would further interpret him as having implicated that he was not about to play tennis. We would be missing something if we analysed these two processes as being of exactly the same kind. Note, to start with, that it is necessary that the first one have taken place in order for the second one to arise, since it would be difficult if not impossible for Perry to indicate that he was not playing tennis on the basis of the proposition that it was raining somewhere or other. And note further that one process arrives at a proposition that is

similar to the *Punkt* reading, in the sense described above; while the other one produces a proposition ('John Perry is not about to play tennis') that contains hardly anything in common with the *Punkt* reading of the sentence uttered or indeed with the reading that that sentence obtains by understanding implicit content. It is widely accepted, then, that implicit content and implicatures are two different kinds of things.

One further note is necessary in order to clarify the nature of our subject matter. The limitation to syntactically complete sentences in the opening paragraph was imposed, of course, in order to prevent instances of VP-ellipsis and similar constructions counting as examples of implicit content. But we should note the controversy that has arisen over the proper analysis of so-called *fragments*, which are subsentential phrases used in isolation to convey propositional content. Suppose you are at diplomatic party and see a distinguished-looking guest whom you do not know. You might, very subtly of course, point out the person to an acquaintance and give a quizzical look. Your acquaintance might then say the following:

(5) The Swiss ambassador to France.

In doing so, the speaker would be conveying that the person to whom you have drawn their attention is the Swiss ambassador to France. But this has happened without a full sentence being used and with no evident linguistic context that might provide an antecedent for an ellipsis process. Some theorists maintain that, in spite of the obstacles just noted, we do in fact have a full sentence and some kind of syntactic ellipsis process in cases like this (Merchant 2004, 2010, Merchant et al. 2013). Others, however, say that subsentential phrases can be used by themselves, in the absence of surrounding sentential structure, in order to make assertions (Stainton 1995, 1997, 1998, 2005, 2006, Elugardo and Stainton 2004). Now fragments do not count as implicit content by the definition with which I started, no matter which group of theorists is correct, since we are not dealing with syntactically complete sentences on the surface in either case. But we cannot help noticing the similarity between fragments and implicit content; and indeed it may turn out to be artificial to draw a line between them. I will not attempt to go any further into this topic in the present chapter, however.

With the existence of implicit content established, an array of questions arises. In order to get a picture of the extent of the field, one might first ask what kinds of words or constructions have been claimed, in the literature, to give rise to implicit content. I will offer a brief survey along these lines in Section 3. Then, in a more theoretical vein, one might ask how many words, constructions, or other circumstances actually do give rise to implicit content. There will be an issue about the levels of representation at which implicit content is present. Is it the value of constituents in the syntax, for example, or does it first arise, as it were, only in the language of thought? And how is implicit content combined with the content derived from the overt constituents of the relevant sentence? Is it intertwined with elements of that content or can it only come in from outside and modify the whole? These theoretical issues, and more, will be discussed in Section 4. Section 5 concludes.

But first I will make a few remarks on the history of the field.

2 History of Research

This essay is not primarily a historical survey; but it might nevertheless be of interest, before we go on, to note a few landmarks in the history of the field. As far as I know, the earliest theorizing that relates directly to our topic concerned the notion of the *universe of discourse*, familiar from logic. In contemporary logic, a *universe* or *domain* is the set of individuals that a logical system can name or quantify over. It can be as small or as large as we like (although sometimes a ban on empty domains is imposed). One sees, of course, the possible application to at least two of the examples of implicit content discussed above: if, in example (1), there is a tacitly imposed universe of discourse consisting of the people at the dinner party, we might have at least the beginning of an explanation for the interpretation that we noted; and similarly for (2) and a universe consisting of things in the room containing the speaker and hearer. More will be said about this strategy below. But for current purposes it is interesting to note that early discussions of universes or domains in logical treatises are straightforward in positing their existence in natural language. Here, for example, is Augustus De Morgan, the inventor of the universe of discourse⁴, in his *Formal Logic*, (1847: 55):

For the most part, the objects of thought which enter into a proposition are supposed to be taken, not from the whole universe of possible objects, but from some more definite collection of them. Thus when we say "All animals require air," or that the name *requiring air* belongs to every thing to which the name *animal* belongs, we should understand that we are speaking of things on this earth: the planets, &c., of which we know nothing, not being included. By the *universe* of a proposition, I mean the whole range of names in which it is expressed or understood that the names in the proposition are found. If there be no such expression nor understanding, then the universe of the proposition is the whole range of possible names.

We must understand that a *name*, for De Morgan, is roughly what we would call a predicate. It seems odd to us to find, in what is otherwise a familiar-seeming treatment of quantifier domain restriction, that the universe is described not as a set of individuals but as a 'range of names'. But inspection of the use that De Morgan makes of this device reveals that he does intend to use these names in this context to designate sets of individuals. For example, immediately after the passage just quoted, he continues (De Morgan 1847: 55):

If, the universe being the name U, we have a right to say 'every X is Y,' then we can only extend the universe so as to make it include all possible names, by saying 'Every X which is U is one of the Ys which are Us,' or something equivalent.

And a few lines below this passage he gives an example in which the universe is 'man' (De Morgan 1847: 55), clearly intending by this to limit the universe to the set of men.

⁴Although De Morgan (1847: 55) seems to have been the first to write about what we now call 'universes of discourse', he did not call them by that name, which was coined by George Boole (Boole 1854: 42). See Hobart and Richards 2008: 307 for discussion.

What to us seems like an oddity of phrasing in fact seems to stem from a broader conception of the nature of logic, since De Morgan states earlier in his treatise that ‘names... are exclusively the objects of formal logic. The identity and difference of things is described by asserting the right to assert, or the right to deny, the application of names’ (De Morgan 1847: 54).

The discussion of the same subject by George Boole just a few years later, in his *An Investigation of the Laws of Thought* (1854: 42) is lucid and theoretically interesting. After defining ‘universe of discourse’ as ‘the extent of the field within which all the objects of our discourse are found’ and noting that these ‘limits of discourse’ need not be explicitly expressed, he goes on to say the following:

The office of any name or descriptive term employed under the limitations supposed is not to raise in the mind the conception of all the beings or objects to which that name or description is applicable, but only of those which exist within the supposed universe of discourse. If that universe of discourse is the actual universe of things, which it always is when our words are taken in their real and literal sense, then by men we mean *all men that exist*; but if the universe of discourse is limited by any antecedent implied understanding, then it is of men under the limitation thus introduced that we speak. It is in both cases the business of the word *men* to direct a certain operation of the mind, by which, from the proper universe of discourse, we select or fix upon the individuals signified.

Contemporary scholars will be interested in the reservation of the term ‘literal’ for the use of descriptive terms with no restriction on the universe of discourse. And it is also noteworthy, given later debates about how exactly implicit content is related to content derived from overt morphemes, that Boole envisages the universe of discourse affecting the interpretation of individual descriptive terms like *men*; this contrasts with a view sometimes articulated (e.g. by von Stechow (1994: 29)) according to which quantifier domain restriction carried out by means of a universe of discourse leaves the meanings of individual words alone.

Frege’s views on universes of discourse are complex and subject to differing interpretations (Heck 2012: 94–5); I will not discuss them here. But there is a fascinating discussion in ‘On sense and reference’ which veers very close to implicit content from another direction. Here is the beginning of the passage in question⁵ (Frege 1892: 46):

Almost always, it seems, we connect with the main thoughts expressed by us subsidiary thoughts which, although not expressed, are associated with our words, in accordance with psychological laws, by the hearer. And since the subsidiary thought appears to be connected with our words of its own accord, almost like the main thought itself, we want it also to be expressed. The sense of the sentence is thereby enriched, and it may well happen that we have more simple thoughts than clauses. In many cases the sentence must be understood in this way, in others it may be doubtful whether the subsidiary thought belongs to the sense of the sentence or only accompanies it.

⁵I quote from the translation by Max Black in Geach and Black 1980: 75.

This passage is not altogether easy to interpret. Until we read ‘In many cases the sentence must be understood in this way...’, it seems that Frege is being completely sceptical about the possibility of these ‘subsidiary thoughts’ actually being expressed. But at that point Frege suddenly seems to allow that many sentences *must* be understood to express a subsidiary thought; the sense of the sentence is thus ‘enriched’ (German: ‘dadurch wird der Sinn des Satzes reicher’). This latter expression reminds the contemporary reader of the pragmatic ‘enrichment’ posited by Sperber and Wilson (1986) in their theory of implicit content. Unfortunately, however, Frege does not give us any examples of a subsidiary thought actually being expressed; nor does he give us any systematic idea of what, exactly, a subsidiary thought is. The one example of a subsidiary thought he gives is in connection with the following example:

- (6) Napoleon, who recognized the danger to his right flank, himself led his guards against the enemy position.

Here he points out that, in addition to thoughts about Napoleon recognizing the danger to his right flank and leading his guards against the enemy position, one is also tempted to think that a third thought is being expressed, namely that the recognition of the danger was the reason behind the leading of the guards. He rejects that temptation in this case, probably rightly. (Partee (1984) remarks that, with hindsight, it is easy to see the third thought in this case as being a Gricean implicature based on the maxim of relevance.) But still Frege makes a distinction between ‘belong[ing] to the sense of the sentence’ and ‘only accompan[y]ing it’; if we choose to express ourselves in Fregean terms, implicatures are surely examples of subsidiary thoughts that *accompany* the sense of the sentence upon which they are based, since they can be wholly distinct from it, as we have seen. The exact nature of these other subsidiary thoughts that *belong* to the sense of the sentence, having enriched the sense originally arrived at for the sentence, is left unclear; but this sounds very much like an anticipation of the notion of implicit content. I am joined in suspecting this, I am pleased to note, by Neale (1999: 49). One wishes that Frege had expanded on this point.

The authors I have just been discussing are very seldom cited for their views on implicit content in contemporary debates. The modern era of work on this topic might be said to begin with the remarks of Quine (1940), Reichenbach (1947), Strawson (1950), and Sellars (1954) on incomplete definite descriptions, in that these works are still referred to in connection with that topic. These works differ in how suggestive they are with regard to theories of implicit content. Strawson (1950), for example, avoided the problem of incomplete definite descriptions, and hence the problem of implicit content, by simply assuming that there was no uniqueness condition in the semantics of definite descriptions. Quine (1940: 146), on the other hand, after giving some examples of incomplete definite descriptions, says the following:

Everyday use of descriptions is indeed often elliptical, essential parts of the condition ‘...*x*...’ being left understood; thus we may say simply ‘the yellow house’ (i.e. ‘($\exists x$)($x \in$ yellow . $x \in$ house)’) when what is to be understood is rather ‘the yellow house in the third block of Lee Street, Tulsa.’

It is probably safe to assume that Quine here did not mean ‘elliptical’ to suggest operations like VP-ellipsis or NP-deletion, but he gives no hints as to exactly what is involved in essential parts of the descriptive content of definite descriptions being ‘understood’.

The work of Sellars (1954) has played a relatively prominent role in recent discussions of implicit content, due to its use in Neale’s influential (1990) discussion of incomplete definite descriptions. But unfortunately it too lacks the detail necessary to count as a fully fledged theory. Sellars (1954: 199) begins by presenting the following example:

- (7) Jones: Seven is divisible by three.
Smith: Seven is not divisible by three.
Jones: Seven is.
(*pause*)
Jones: Seven is divisible by four.
Smith: Seven is not divisible by four.
Jones: Seven is.

He then contrasts this with a sentence containing an indexical (1954: 200):

- (8) This is red.

He continues (1954: 200):

Correctly made utterances of the latter sentence are *complete* even though they say what they do by virtue of their context. A context of a certain kind (e.g., the occurrence of a pointing gesture) is part and parcel of the grammar of the referring word “this.” On the other hand, the two utterances of “Seven is” are as such *not* complete and are only made complete by the context in which they are uttered... Let us call this type of ambiguity *ellipsis* and say that in ellipsis the context completes the utterance and enables it to say something which it otherwise would not, different contexts enabling it to say different things.

The application to incomplete definite descriptions uses the example *The table is large* (Sellars 1954: 200):

a given utterance of it is elliptical and states what would be nonelliptically stated, for example, by “The table *over here* is large.”

The context makes it clear that ‘elliptical’ here is to be understood in the technical sense introduced shortly before. But this then presents us with a conundrum. Is Sellars maintaining that the same kind of deletion process that makes *Seven is* a syntactically incomplete sentence is at work in *The table is large*? People have balked at this ever since (Strawson 1954, Stanley 2002a), for the simple reason that *Seven is* seems syntactically incomplete in a way that *The table is large* does not. But it is, I believe, not necessary to read Sellars that way. He could possibly have in mind a distinction along the following lines: *This is red* plausibly yields up the proposition that we associate with it solely on the basis of its overt words, whereas *Seven is* and *The table is large* plausibly do not. But this thought, if it is indeed what Sellars had in mind (and he does not tell us), only takes us so far: we still want to know whether *Seven is* and *The table is large* yield up their propositions in exactly

the same way, and, more generally, how the relevant meanings are arrived at in each case. I will say no more about Sellars's remarks now; but they have recently been the topic of a lively discussion between Stephen Neale and Jason Stanley (Neale 2000, Stanley 2002a, Neale 2007a).

Moving into a still more recent era, we see an increase in the number of words and constructions that are claimed to give rise to implicit content, in contrast to the previous concentration on quantifier domain restriction and incomplete definite descriptions; and we also notice a larger number of theoretical questions being broached. The next two sections are devoted to issues that arise in the recent literature, and so I will make only a few historical remarks on it here; I will concentrate on the number of linguistic entities that are claimed to give rise to implicit content and on the issue of the level of representation at which implicit content first makes its presence felt.

Bach 1982 is the first work I know of in which it is claimed that a large number of words or constructions give rise to implicit content (which is treated of by Bach under the rubric of *semantic nonspecificity*). In particular, Bach (1982: 593) says the following:

I believe there to be many forms of sentence whose semantic representation (or whatever you want to call that which gives its meaning) does not possess, even modulo indexicality, a definite logical form or even a determinate truth condition.

The examples he gives are the ambiguities arising from association with focus in (9), from scope and distributivity in examples like (10), and from the interpretation of the definite descriptions in (11):

(9) I love you too.

(10) Two examiners marked six papers.

(11) Van believes that the most famous American linguist admires the greatest living American philosopher.

None of these would perhaps be cited as paradigm examples of implicit content nowadays, but it is easy to see how they could be analysed that way: (9) is ambiguous between readings that might be paraphrased 'I love both you and someone else' and 'I feel love for you, as well as some other emotion' (among others), and the disambiguating material in each case is not obviously the value of any overt morpheme; the same can be said for the disambiguating material in possible paraphrases of (10), among which are 'Two examiners marked six papers each' and 'Two examiners marked six papers between them'; and the same, yet again, can be said of the disambiguating material in possible paraphrases of (11), such as 'Van believes that the most famous American linguist, whoever he or she might be, admires the greatest living American philosopher (whoever he or she might be)'. A few years later, a wide variety of more familiar examples was adduced by Sperber and Wilson (1986)

Moving on to the question of levels of representation, we see that Bach's (1982) paper played a pioneering role here too. Bach (1982) claimed that the sentence itself, in his cases of 'semantic nonspecificity', did not yield up a proposition. (We can see, then, that the cases he was dealing with are what he later (1994) called cases of 'completion'.) This should

be fairly clear from the quotation above and it is made explicit in the following (Bach 1982: 598):

To regard sentences like ([9]), ([10]), and ([11]) as semantically nonspecific is to recognize the possibility that the semantic representation or logical form (if we allow nonclassical logical forms) of a sentence does not completely specify a proposition.

Bach (1982: 593–4) elsewhere talks about the ‘various understandings’ of sentences like these being derived ‘pragmatically’. The picture we obtain, then, is that applying semantic interpretation procedures to sentences of this type yields a semantic representation that then has to have additions made to it to yield up a (representation of a) proposition; this latter process takes place after the semantic interpretation of the syntax, presumably (though this is not made explicit) in the language of thought or some other conceptual representation. A few years later, Sperber and Wilson (1986: 71–5, 85–93, 176–82) made an explicit and detailed claim to the effect that the proposition expressed in cases of implicit content was produced by supplementation or ‘enrichment’ in a conceptual system.⁶

The most prominent alternative to the claim that provision of implicit content happens in the language of thought, with no prompting from syntactic representation, is, of course, the position according to which it is the content of appropriately typed phonologically null variables in the syntax. The first theorist to make a claim along these lines may have been von Stechow (1994: 30), who made the claim that quantifier domain restriction, a paradigm case of implicit content, was accomplished by phonologically null variables in the syntax. But nowadays this position is perhaps most closely associated with Jason Stanley, who was the first to suggest that implicit content was *quite generally* provided in this way (Stanley 2000). This claim has been the stimulus for much recent discussion (Bach 2000, Neale 2000, 2007a, Stanley and Szabó 2000b,c, Carston 2002, Stanley 2002a,b, Elbourne 2008, Hall 2008).

3 Survey of Example Types

This section contains an incomplete survey of the many kinds of examples that have been claimed to involve implicit content.⁷ And there are doubtless many examples that could be used in the relevant literature that have not actually been used in it. How many? Well, given the nature of implicit content, any construction for which generative syntacticians and semanticists have posited phonologically null structure could plausibly feature in these debates. I cannot even come close to enumerating all of those. I will stick to those that have featured fairly prominently in the relevant literature, then.

For reasons of time and space, the treatment in each case is generally limited to exemplifying the construction, explaining why it qualifies (or has been thought to qualify) as implicit content, and providing a bibliography that interested readers can consult for

⁶In giving page references for Sperber and Wilson’s *Relevance*, I use the pagination of the revised second edition of 1995.

⁷There is another such survey, only partially overlapping, in the second chapter of Cappelen and Lepore 2005 and yet another in Stojanovic 2008.

further discussion. For the sake of grouping all the examples conveniently in one section, example types already discussed in Section 1 will be repeated briefly (but with extra bibliography).

3.1 Quantifier Domain Restriction

(12) Everyone is having a good time.

As explained in Section 1, this might be a response to a query about how a dinner party is going. The speaker is understood to be saying that everyone at the dinner party is having a good time, not that everyone, *Punkt*, is having a good time.

Bibliography: De Morgan 1847, Stalnaker 1970, Westerståhl 1985, Soames 1986, Neale 1990, von Stechow 1994, Recanati 1996, Stanley 2000, 2002b, 2005b, Stanley and Szabó 2000b,c, Matthewson 2001, Pelletier 2003, Cappelen and Lepore 2005, Schwarz 2012.

3.2 Incomplete Definite Descriptions

(13) The table is covered with books.

As explained in Section 1, the nearest thing we have to a consensus on the subject maintains that the definite article incorporates into its semantics an assertion or presupposition to the effect that there is exactly one thing that fits the descriptive content given by the following NP. But there is obviously more than one table in the world. So theorists have claimed that the proposition expressed here is something more like ‘The table in this room is covered with books’, where there is no overt source for the restriction to this room. This kind of case might be a subclass of the last kind of case, depending on what one thinks definite articles are.

Bibliography: Quine 1940, Reichenbach 1947, Strawson 1950, 1954, Sellars 1954, Neale 1990, 2000, 2004, 2007a, Szabó 2000, 2003, Stanley 2002a, Elbourne 2008, 2013.

3.3 Weather Predicates

(14) It’s raining.

As mentioned in Section 1, a sentence like this (including variants about snow, sleet, mist, and so on) is most likely to be used to make a claim about a particular place. The proposition expressed by (14) might be ‘It’s raining in Palo Alto (at the time of utterance)’. But there is no overt morpheme contributing a place.

Bibliography: Perry 1986, Stanley 2000, Recanati 2002, 2007, 2010, Martí 2006, Cappelen and Lepore 2007, Neale 2007b, Taylor 2007.

3.4 Relational Adjectives

(15) Every sports fan was at a local bar.

Local to East Village, or some other one particular place? Or is the idea that each sports fan x was at a bar local to x ? Either way there is no overt morpheme telling us what place or places are in question.

Bibliography: Partee 1989, Stanley 2000, Vallée 2003.

3.5 Predicates of Taste

(16) The new cat food is very tasty.

For the cat, that is. Probably less so for you. So we seem to be in the presence of a judge whose tastes are being reported; but there is not obviously an overt morpheme contributing this personage. These examples should probably be classed under ‘Relational Adjectives’, but there is a small literature devoted specifically to them.

Bibliography: Kölbel 2003, 2009, Lasersohn 2005, Stephenson 2007, Stojanovic 2007, Huvenes 2012.

3.6 Relational Nouns

(17) Every man faced an enemy.

The most natural reading here is that according to which every man x faced an enemy of x . Referential readings are also possible. In neither case is there an overt morpheme whose value might be the person or persons who have incurred the enmity in question.

Bibliography: Partee 1984, 1989, Stanley 2000, Vallée 2003.

3.7 Adjectival Modifiers

(18) Steel isn’t strong enough.

As explained in Section 1, on any occasion of utterance of (18), we understand that steel is being claimed not to be strong enough for some task in particular. But there is no overt morpheme whose value could be that task.

Bibliography: Bach 1994.

3.8 Relative Adjectives

(19) Jumbo is a small elephant.

Small for an elephant, that is. But pretty big by the standards of animals in general. And when compared to the other things in Granny’s drawing room... Observations like this have prompted a widespread feeling that adjectives like these come equipped with a comparison class that figures somehow in the proposition expressed. But there is no overt morpheme contributing such a thing. Adjectives like this are also called *comparative adjectives*, *gradable adjectives*, and *non-intersective adjectives* (although Recanati (2010: 51), for example, denies that they are really non-intersective).

Bibliography: Sadock 1981, von Stechow 1984, Lahav 1989, Heim and Kratzer 1998, Szabó 2001, Kennedy and McNally 2005, Hawthorne 2007, Kennedy 2007, Recanati 2010.

3.9 Temporal and Causal Restriction

(20) You're not going to die.

Well, actually...sorry to break it to you...But as Bach (1994: 134) says in introducing this example, if a mother says this to her young son who is crying from a cut finger, it is likely to mean something like 'You're not going to die from that cut'. Bach takes it that the implicit content has to do with the cause of dying, then. One could also make a case for the restriction being temporal: 'You're not going to die in the immediate future'. Certainly, a temporal reading of the implicit content ('today') seems likely in the following example:

(21) I have eaten breakfast.

This takes us into the territory of Partee's famous (1973) example (22):

(22) I didn't turn off the stove.

If you say this halfway down the turnpike, it is likely that you do not mean merely that there was some time or other in the past at which you did not turn off the stove; it is more likely, says Partee, that you are referring to a particular time interval, perhaps one that elapsed shortly before you left the house. Now if Partee's initial theory here is correct, we could just say, with her, that tense morphemes are sometimes referential; and we would not be involved with implicit content. But since Partee's pioneering paper, it has become more common to treat tenses as involving existential quantification over time intervals even in cases like (22); the apparent reference to one time in particular is done by means of restricted quantification over time intervals, so that (22) would mean something like 'There was a time interval t such that t lasted from my turning on the stove to my leaving the house such that it is not the case that I turned off the stove in t ' (Ogihara 1995). But if that is the case, we are back in the realm of implicit content, since there is not obviously an overt morpheme that contributes the restriction on this existential quantification over time intervals.

Bibliography: Partee 1973, Bach 1994, Ogihara 1995.

3.10 Knowledge Ascriptions

(23) George knows that he has hands.

Under most circumstances (assuming that George is an adult human with normal mental abilities and, indeed, hands) it would be utterly uncontroversial to say (23). Everyone would agree that (23) was true. But then let some of those people take an epistemology course. It is put to them that there is no way that they can tell for sure that they are not disembodied brains in vats, being fed stimuli through electrodes by mad scientists. (In case you did not know, this is the kind of thing that goes on in epistemology courses.) Hmm, our subjects think, does George know that he is not a brain in a vat? Why no! So George, they continue, does not know that he has hands after all. For disembodied brains in vats do not have hands. So (23) suddenly starts to seem false. Various responses have been made to this problem. One is to suggest that the word *know* is context-sensitive, in

that different standards for what counts as knowledge are in operation in different circumstances. So most of the time, *knows* means ‘knows according to everyday standards’ but in epistemology class *knows* means ‘knows according to the standards of sceptical epistemologists’. But there is not obviously an overt morpheme in (23) whose contribution to the proposition expressed is an epistemic standard.

Bibliography: DeRose 1992, 2002, 2009, Cohen 1999, Lewis 1996, Williamson 2000, 2005, Rysview 2001, Hawthorne 2004, Lawlor 2005, Stanley 2005a, Blome-Tillmann 2009a,b, Ichikawa 2011a,b.

4 Theoretical Questions

4.1 How much implicit content is there?

Subject to the caution expressed above, this question could also be expressed as ‘How much context sensitivity is there?’ As might be expected, given such a question, the answers in the literature fall short of full precision; but they can basically be divided into ‘Not very much’, ‘An awful lot’, and ‘Somewhere in between’.

To start with ‘Not very much’, some theorists seek to confine context sensitivity to a small set of lexical items that are in some sense obviously context sensitive: Cappelen and Lepore (2005: 1), for example, would restrict context sensitivity to pronouns, demonstratives, temporal and locative adverbs (*today, here*, and so on), tense morphology, *actual, present*, and a few relational nouns and adjectives (*enemy, foreign*, and a few others). (Cappelen and Lepore (2005: 2) call this set the Basic Set.) They express doubt about the last category, relational nouns and adjectives, which is the only one in the list to qualify as implicit content according to the standards of the present chapter. The Basic Set obviously omits many of the examples of implicit content given in the last section, such as quantifier domain restriction, incomplete definite descriptions, weather predicates, and *know*; other examples that have cropped up in the literature would be excluded too.

Loosely following Cappelen and Lepore (2005), I will call theorists who hold positions like this *minimalists*, and the corresponding doctrine *minimalism*.⁸ A minimalist of the Cappelen and Lepore variety will maintain, for example, that (24) semantically expresses the proposition that John is ready, *Punkt*; that (25) semantically expresses the proposition that it is raining, *Punkt*; and that (26) semantically expresses the proposition that Mary is tall, *Punkt*.

(24) John is ready.

⁸Cappelen and Lepore (2005) call their doctrine *semantic minimalism*. But this is another area in which a considerable degree of terminological variability can be found. For example, if you are a theorist like Cappelen and Lepore, you are a *radical minimalist* according to the terminology of Recanati (2010: 5, footnote 3). Strictly speaking, Recanati uses ‘radical minimalist’ to describe people who are *minimalists* in his sense (i.e. people who think that pragmatic effects all take place via the assignment of values to variables in the syntax) who also want to cut down the number of instances of context sensitivity to something like the above set. But we need a more inclusive term, since in principle there could be someone who thinks that all implicit content is added only in the language of thought who also thinks that implicit content is added only in a very small number of cases. For this inclusive term, I am using Cappelen and Lepore’s (2005) *minimalist*.

- (25) It is raining.
- (26) Mary is tall.

But can there even be such propositions in the cases of (24) and (26)? Or alternatively (since Cappelen and Lepore do not wish to commit themselves to propositions as separate entities) can we really say that (26) is true if and only if Mary is tall and that (24) is true if and only if John is ready? In order to arrive at a genuine proposition, and in order to present coherent truth conditions, do we not need to specify what John is ready for and the standard by which Mary is being judged to be tall? (Tall for a five-year-old? Tall for a professional basketball player?) Such is a frequently voiced worry. Interestingly, Cappelen and Lepore (2005: 166-72) stand their ground in the face of such objections. If three people are all ready, they say, even if they are ready for different things, do they not have something in common, namely being ready? This one-place property is what they take (24) to ascribe to John. Things go similarly with tallness. If a person, a mountain, and a building are tall, Cappelen and Lepore urge, do they not have something in common, namely being tall, that can be attributed to them even though different comparison classes might come to mind in each case if we cared to think of them?

But how, according to Cappelen and Lepore (2005), do speakers come to assert what we commonly take them to assert in cases like (24) and (25), given that this differs from the proposition semantically expressed in these cases? The answer lies in the doctrine of *speech act pluralism* (Cappelen and Lepore 2005: 190-208). According to this doctrine, there is an indefinitely large number of pragmatically generated things said or asserted by any given utterance⁹; the semantically generated propositions just discussed serve as 'a starting point' (Cappelen and Lepore 2005: 185) for audiences in working out the other things asserted; the authors express scepticism that any algorithm will ever be found for working out all of these things.

Exploring the details of this idea would take too long for current purposes. But two points should be noted. The first is that, given the large, indeed indefinitely large, number of additional propositions asserted in each case (including the proposition that it is raining in Palo Alto, or wherever, in the case of (25), and the proposition that John is ready to play tennis, or whatever, in the case of (24)), Cappelen and Lepore's view suddenly starts to look less austere than it might have done at first. They admit that propositions exactly like those posited by other theorists are asserted in these cases; the only difference, if difference there be, seems to be the primacy of the initial 'starting points', the propositions semantically expressed, which are asserted along with the other propositions (Cappelen and Lepore 2005: 200). But (and this is the second point advertised above) this is not a particularly comfortable selling point for this theory, since many such semantically expressed propositions would be taken to be false by the speakers concerned. Take (27) and (28), for example:

- (27) Everyone is having a good time.
- (28) It is not raining.

⁹I will not devote much space to this interesting aspect of Cappelen and Lepore's (2005) theory; but see Buchanan and Ostertag 2005 for a similar position.

The proposition semantically expressed by (27), according to Cappelen and Lepore, would be what we earlier called the *Punkt*-reading: ‘Everyone, *Punkt*, is having a good time’. According to their theory, this is one of the many things asserted by the speaker of (27). But this proposition might be explicitly rejected as absurd by the speaker of (27), who, while justifiably maintaining that everyone in her semantics class was having a good time, was nevertheless acutely aware of the high levels of misery around the world (in epistemology classes, for example). A similar argument can be constructed about (28). Some reformulation might be necessary here, then. But if the privileged position of the semantically expressed proposition in Cappelen and Lepore’s theory is revoked (including the fact of its being asserted), there is a risk, it seems to me, that their theory might collapse into another theory.

Another important minimalist theory is that of Borg (2004), who argues that semantically expressed propositions contain existential quantification over apparent gaps; so the proposition expressed, in the first instance, by (24) is something like ‘There is some entity x such that John is ready for x ’. It is noteworthy that Bach (1994: 130) had already posed an objection to positions like Borg’s: since sentences can be used literally, why can (24) not intuitively mean ‘John is ready for something or other’? But Borg defends her theory in two substantial monographs (Borg 2004, 2012).

We have looked at two prominent ‘Not very much’ theories, using the rough and ready division established above. Now for ‘An awful lot’ and ‘Somewhere in between’. Someone who accepts a good deal of context sensitivity (more than Cappelen and Lepore’s Basic Set of items above) is a *contextualist* according to Cappelen and Lepore; they further divide contextualists into *radical contextualists*, who believe that every item is context sensitive, and *moderate contextualists*, who do not (Cappelen and Lepore 2005: 5); moderate contextualists believe that more items than those in the Basic Set are context sensitive, but do not go as far as the radical contextualists.¹⁰

Prominent radical contextualists include Sperber and Wilson (1986), Carston (1988, 2002), Recanati (2004, 2010), Searle (1978, 1980), and Travis (1996). Recanati (2010: 17) distinguishes between two positions: *truth-conditional pragmatics* ‘holds that the linguistic meaning of an (ordinary, non-indexical) expression *need not be* what the expression contributes to propositional content’. The linguistic meaning of any expression, in principle, can be *modulated* (adjusted) under pragmatic pressure, in order to make sense of an utterance (Recanati 2010: 5, 39–46). But modulation does not have to take place in any given case. The second position described by Recanati (2010: 17) maintains that the standing linguistic meaning of an ordinary, non-indexical expression ‘*cannot be* what the expression contributes to propositional content’. In other words, modulation happens to all words in every utterance. Recanati (2010: 17) calls this position *radical contextualism*, the term used by Cappelen and Lepore (2005) to refer both truth-conditional pragmatics and this position; for those who wish to stick to Cappelen and Lepore’s terminology, I hereby suggest *very radical contextualism* for this latter doctrine, but without any notable optimism.¹¹

¹⁰But Recanati (2010: 5, footnote 3) reserves the label *contextualist* for what Cappelen and Lepore call *radical contextualists*.

¹¹In Recanati 1993, the term *truth-conditional pragmatics* covers both Recanati’s (2010) truth-conditional pragmatics and very radical contextualism, as just defined; i.e. it is used just as Cappelen and Lepore (2005) use ‘radical contextualism’. Meanwhile, one should not forget that Recanati in his 2010 monograph uses

I do not know if there actually are any very radical contextualists, although Recanati (2010: 17) says that he is sympathetic to the position. But at least two kinds of objection have been raised to truth-conditional pragmatics; and they would, naturally, pose a challenge for very radical contextualism as well. The first is that communication, if this theory were true, would be a miracle, since any word can take on any one of any indefinitely large number of deformations or alterations of its standing meaning; it is unclear how speakers and hearers would be able to zero in on the same proposition (Cappelen and Lepore 2005: 123–7). Replies to this kind of objection have been given by Bezuidenhout (2002) and Recanati (2010). It is perhaps worth noticing, as Recanati (2010: 6–7) does, that to a certain extent every theorist is faced with the same problem, or an analogous one, since everyone must acknowledge the apparent frequency of implicit content and everyone is faced with a daunting task in trying to explain how speakers and hearers arrive at the same propositions.

The second kind of objection raised against this view is that truth-conditional pragmatics overgenerates: that is, the all-pervasive and powerful mechanism of modulation in this kind of theory will predict certain readings to be possible for sentences that simply are not possible (Stanley 2002a, 2005b). Stanley (2002a), for example, asks why (29) cannot mean the same as (30) (i.e. (31)) in this kind of theory.

- (29) Everyone likes Sally.
- (30) Everyone likes Sally and himself.
- (31) Every person x likes Sally and x .

This problem is especially pressing for radical contextualists since, as Stanley (2000, 2002a,b) observes, implicit content does sometimes have to include bound individual variables. For example, (32a) has a reading (32b) and (33a) has a reading (33b).

- (32) a. Most species have members that are small.
b. Most species x have members that are small for x .
- (33) a. In most of John's classes, he fails exactly three students.
b. Most classes x of John's are such that he fails exactly three students in x .

Why, then, can (29) not mean (31) according to radical contextualist theories? Recanati (2010: 11) and I (Elbourne 2008) have sketched possible replies, but my impression is that radical contextualism still faces a challenge here. In particular, I have not seen or heard of any radical contextualist response to the following data, inspired by Stanley's, which I discussed in Elbourne 2008:

- (34) John fed no cat of Mary's before the cat of Mary's was bathed.
- (35) John fed no cat of Mary's before Mary's cat was bathed.
- (36) No x such that x is a cat of Mary's is such that John fed x before the cat of Mary's identical to x was bathed.

'contextualism' for what Cappelen and Lepore (2005) call 'radical contextualism'. I trust that this is all crystal clear.

Most English speakers find that the definite description in (34) can receive a bound reading (cf. Wilson 1984, 1991, Heim 1991, Neale 2004, Elbourne 2005, 2013); (34) can mean something like (36), in other words. But speakers are unanimous in finding that (35) cannot have this reading. But why should this be, according to radical contextualism, given that bound variables can be added in implicit content and given that *Mary's cat* is a definite description that has a meaning very similar to that of *the cat of Mary's*? It is hard to see how such a close minimal pair is compatible with radical contextualism. A moderate contextualist, on the other hand, could say that constructions like *the cat of Mary's* but not constructions like *Mary's cat* can host bound variables; this difference might even be traceable to built-in aspects of the lexical entries of *the* and whatever the definite article-like thing is in (35).

Meanwhile, we should note that even middle-of-the-road moderate contextualism is not without its problems. Cappelen and Lepore (2005: 39–68), in fact, by presenting a series of ingenious arguments that seem to show that all kinds of words and phrases are context sensitive, even ones one might not have suspected (*red, weigh 80kg...*), urge adoption of the view that moderate contextualists are just not trying hard enough.¹² If they were sufficiently diligent and imaginative, they would soon realize that their methods lead them down a slippery slope to radical contextualism. (Cappelen and Lepore (2005) themselves, of course, accept none of these arguments and none of these methods; their point is that *if* one accepts the kind of examples that make people moderate contextualists, *then* there is no principled way to halt one's downward trajectory, as it were, into radical contextualism.) Since examining all of these examples would be a lengthy enterprise, I will refer readers to Cappelen and Lepore's stimulating discussion.

4.2 Levels of representation

At which level of representation does implicit content originate? A wide variety of positions have been advocated. I will survey them, starting with the most syntactic, and progressing through semantics, the language of thought, and up into sublime realms beyond.

Some theorists maintain that implicit content is the value of items in the syntax. There are two main varieties of this position, which differ on what kinds of items they employ. Collins and Postal (2012) claim that some implicit content is expressed with regular lexical items that happen not to be pronounced. For example, they claim that all non-expletive pronouns that are not accompanied by pointing gestures have antecedents in the syntax (Collins and Postal 2012: 27, 32). So for Lasnik's (1989: 90–1) (37), which is meant to be spoken without any deixis just after an unpopular man has left a party, Collins and Postal (2012: 32) propose the LF in (38).

(37) Well, he's left.

(38) [AS FOR THAT MAN,] well, he's left.

The words in capital letters are supposed to be the regular lexical items thus indicated; they are present in the syntax but not pronounced, and their presence does not depend

¹²See Rothschild and Segal 2009 for further analysis of the alleged context-sensitivity of the word *red*.

on the presence of some kind of antecedent for them. This deletion with no antecedent Collins and Postal (2012: 32) call *ghosting*. They claim that there is evidence for structures like (38) in certain pronominal agreement phenomena pointed out by Tasmowski-De Ryck and Verluyten (1982: 328). The English word *pants*, for example, is idiosyncratically plural, and pronouns referring to something of that description are plural too:

(39) (*John wants Mary to hand him his pants.*) Could you hand them/*it to me please?

(40) (*Same situation, but with a shirt.*) Could you hand *them/it to me please?

The idea is that ghosting, as in (38), allows a linguistic antecedent for these pronouns and that the idiosyncratic number agreement in (39) is brought about by a ghosted antecedent including the word *pants* (Collins and Postal 2012: 35).

Now Collins and Postal (2012) do not use ghosting in their book for anything except a fairly narrow range of cases having to do with pronominal agreement. But Collins (personal communication) has suggested that all implicit content originates from ghosting and maintains that this position, since it uses only normal words and normal syntax, should be the null hypothesis. Sometimes, of course, it has been claimed that deletion procedures require overt antecedents, which would rule ghosting out of court. But we have known for a while now that this is false (Fiengo and May 1994: 192–3):

(41) (*Someone has entered someone's office and is visibly hesitating about whether to sit down.*) Please do.

Debates surrounding this position are likely to centre at least in part on whether examples like (41) provide a sufficiently close parallel for this new and very widespread syntactic deletion procedure. It is also worth noting, before we leave this topic, that one possible interpretation of the passage from Sellars 1954 discussed above is along these lines.

The second main variety of the position that implicit content originates in the syntax maintains that implicit content is the semantic value of phonologically null variables in the syntax (von Stechow 1994, Stanley 2000, 2002a,b, Stanley and Szabó 2000b,c, Pelletier 2003, Kratzer 2004, Martí 2006, Elbourne 2013). As described above in Section 2, von Stechow (1994) suggested this for the case of quantifier domain restriction and Stanley (2000) proposed that all implicit content was mediated in this way. So *everyone* in (42) might look like (43) (von Stechow 1994) or (44) (a simplified version of the theory in Stanley and Szabó 2000b), for example.

(42) Everyone is having a good time.

(43) [[every P] one]

(44) [every [one P]]

In these Logical Forms, *P* is a property variable that will take on a contextually salient property, such as 'at my dinner party'. This will then combine with the other morphemes present by normal compositional procedures; note that an emended version of the lexical entry of *every* (taking three arguments) will be necessary in the case of (43). These covert variables have been alleged to come in various different semantic types; more on this below.

In connection with theories that claim that implicit content originates in the syntax, one should note the following terminology. A *weak pragmatic effect*, according to King and Stanley (2005: 118–19), is context determining the interpretation of a lexical item ‘in accord with the standing meaning of that lexical item’; for example, selecting between the senses of polysemous words and assigning values to variables. A *strong pragmatic effect* is a pragmatic effect that is not weak. If you allow only weak pragmatic effects, you are a *minimalist*, in Recanati’s terminology (1993, 1996, 2004, 2010).¹³

Other theorists allege that implicit content first makes its presence felt, as it were, in the course of the compositional semantics. Partee (1984), for example, studied the interpretation of noun–noun compounds like *milk truck*, *fire engine*, and *pony cart*, where there is arguably some implicit content giving us the relation that holds between things describable by the first noun and things describable by the second: a milk truck is a truck for carrying milk but a pony cart is a cart drawn by a pony, and so on. She suggests that structures like (45) (where ‘BCN’ stands for ‘basic common noun’) are interpreted by means of a lexical rule as having meanings like (46):

(45) [BCN₁ BCN₂]

(46) $\lambda x[\text{BCN}'_2(x) \wedge \forall \mathcal{R}(\wedge \text{BCN}'_1)(x)]$

In some semblance of English: if you are a BCN₁ BCN₂, then you are a BCN₂ that bears some contextually salient relation \mathcal{R} to BCN₁s. So if you are a pony cart, for example, you are a cart that bears some contextually salient relation (like ‘is pulled by’) to ponies. Note that the relation variable \mathcal{R} does not appear in the syntax and makes its first appearance in the semantics, by means of an interpretation rule.¹⁴ Partee (1984) also offers a treatment along these lines for the relation inherent in genitive constructions like *Peter’s horse*: is this the horse that Peter owns, the one that he is drawing, the one that he has bet on, or what? And Stump (1981, 1985) suggested the same procedure for the interpretation of free adjuncts and absolutes.

Recanati (2010: 9–10, 44–5) outlines another position that takes implicit content to arise in the semantics. As a radical contextualist, he takes it that any word can, in principle, have its standing meaning altered or *modulated* in response to pragmatic pressure from the context. He describes the situation by positing a function, *mod*, which takes as arguments a word and a context and delivers a further function that applies to the meaning of the word in question to yield up the modulated meaning of that word in context. The meaning of a complex expression in context is a function of its structure and the modulated meanings of its parts (Recanati 2010: 10); implicit content, then, for Recanati (2010), originates and plays a prominent role in the compositional semantics.

¹³Note that this use of ‘minimalist’ is distinct from the use made of the term by Cappelen and Lepore (2005), which I followed above. For example, Stanley (2000) is a minimalist in Recanati’s sense, since he rejects strong pragmatic effects on what is said; but he is not a minimalist in Cappelen and Lepore’s sense, since he thinks that context sensitivity extends beyond their Basic Set of items.

¹⁴Some readers might be puzzled by the appearance of the variable \mathcal{R} , with no apparent value having been assigned to it, in what looks like a semantic value (since it contains lambdas and so on). I assume that Partee (1984) is here making use of Montague’s (1973) two-stage semantics, in which natural language is first translated into an intensional logic and then a semantics is given for the intensional logic expressions; the expression in (46), then, is an expression in a Montagovian intensional logic and has yet, strictly speaking, to be interpreted. A value for \mathcal{R} can be filled in during this latter stage.

Other theorists maintain that implicit content does not arise until after the compositional semantics has done its work. The output of semantic interpretation of syntactic structures is an object in the conceptual system or language of thought; implicit content is added at this level (Sperber and Wilson 1986, Carston 1988, 2002, Bach 1994, 2000, 2005, Bezuidenhout 1997).¹⁵ For example, suppose that John and Mary have guests, John enters the house noisily and Mary says (47) to him.

(47) Everyone is asleep!

The compositional semantics acts upon this sentence and produces an output something like the conceptual representation in (48). From this, John (or some aspect of John's inferential faculties) proceeds to (49).¹⁶

(48) EVERYONE IS ASLEEP

(49) EVERYONE WHO IS A GUEST OF MINE IS ASLEEP

In this kind of theory, then, implicit content is not the value of anything in the syntax and does not arise in the compositional semantics. An important variant, however, is the *explicit approach* of Stephen Neale (Neale 1990, 2004), which says that supplementation in the language of thought must add material that could have been expressed in normal words.

Finally, at least one theorist has maintained that implicit content, in some cases, is not present even in the language of thought. Perry (1986), discussing his famous example (50), proposed that this statement could be about a location without either containing a syntactic item designating that location or giving rise to a language of thought string that contains an item designating that location.

(50) It's raining.

Perry (1986: 146–50) expresses this by saying that people at least sometimes believe not propositions but propositional functions; such beliefs would be true if the propositional functions in question yield up truth when applied to the places or objects that they are about. This is reminiscent of the notion of an *Austinian proposition*, explored in Barwise and Perry 1983: an Austinian proposition is a pair of a function from situations to truth values, on the one hand, and a topic situation (a situation that a speech act is about), on the other.

This ends my survey of levels of representation at which implicit content has been claimed to arise. As we can see, it has been claimed to arise at all conceivable levels of representation.

There has been rather little work directly arguing in favour of one of these theories as against the others. Perhaps the best-known argument is Stanley's (2000, 2002a) claim that

¹⁵Bach (1994: 157) suggests that a finer distinction needs to be made: the semantically interpreted output of the compositional semantics is only an input to the language of thought; and supplementation to produce implicit content takes place at the level of the semantically interpreted output of the grammar, rather than in the language of thought proper. Without trying to judge the matter, I will henceforth ignore this variant.

¹⁶I follow the usual convention of representing language of thought strings as English sentences in capitals.

cases of apparent binding into implicit content constitute evidence that the implicit content in question is represented in the syntax. The idea is that, if something is semantically bound by an operator that is in the syntax, then the bound element has to be in the syntax too (Stanley 2000: 412). If we assume this, then examples such as the following will be seen to be significant (Stanley 2000: 418, 420):

(51) Most species have members that are small.

(52) In every room in John's house, he keeps every bottle in the corner.

These sentences have the following readings, among others, where the alleged implicit content is underlined:

(53) Most species x have members that are small for x .

(54) Every room x in John's house is such that he keeps every bottle in x in the corner.

Stanley argues that these examples involve implicit content that is bound into, with the binding in each case being done by the subject quantifier phrase. According to his principle, then, the bound element in each case has to be in the syntax, which is evidence for at least some implicit content having its origin there.

One might have qualms about individual examples. In the case of (52), for example, it looks very much as if the initial phrase *in every room in John's house* is basically a modifier of *bottle* and has been topicalized; this would mean that there is no implicit content in this example, unless traces count. But one can also question the general principle that is being invoked. Why should it not be the case that the relevant bound variable is contributed only in the language of thought? Stanley (2000: 414) considers this position and argues that denotations or representations of bound variables cannot be added in pragmatic processes, since they are recondite entities that lay speakers have no thoughts or intentions about. But Carston (2002: 200) maintains that speakers are able to make use of mental representations that contain bound variables as models for the kind of representations that can be constructed in interpretation (without the precise nature of these representations being consciously appreciated, presumably). The possibility of speakers adding bound variables to language of thought interpretations of sentences is hard to rule out, then.

The present discussion is related to the allegation by Stanley (2002a, 2005b) and me (Elbourne 2008) to the effect that theories like that of Sperber and Wilson (1986) overgenerate; but this latter kind of argument, as I hope to have signalled by discussing it in Section 4.1, really relies not on the fact that Sperber and Wilson (1986) and their followers take implicit content to be added only in the language of thought, but rather on the fact that they assume it can be added at any location; in other words, it relies on the radical contextualism of Sperber and Wilson 1986 and related work. In principle, one could be a radical contextualist who believed that implicit content was always the semantic value of items in the syntax; the kind of cases that Stanley (2002a, 2005b) and I (Elbourne 2008) adduce are just as problematic (or unproblematic) for such a position as they are for Relevance Theory or Truth-Conditional Pragmatics. And conversely, one could believe that implicit content makes its first appearance in the language of thought, but one could limit the places in which it could occur and the things that it could express, presumably by appealing to the alleged syntactic properties of the language of thought (Fodor 1975); such a position might

escape the force of these alleged examples of overgeneration. In fact Neale's (1990, 2004) 'explicit approach' is rather like this; see Elbourne 2008 for further discussion.

Stanley (2000: 423) has a second argument for implicit content deriving from constituents in the syntax, which is that some examples are subject to weak crossover constraints. Just as (55a) is ungrammatical with the reading shown, so, alleges Stanley, (55b) is ungrammatical on the reading whereby every reporter x is sponsored by a bar local to x . This, says Stanley, shows that 'the variable element in relational expressions has the syntactic properties of explicit pronouns' (Stanley 2000: 423).¹⁷

- (55) a. *Her_{*i*} local bar sponsored [every reporter]_{*i*}.
b. A local bar sponsored every reporter.

Stanley's data have been subject to doubt, however. Rothschild and Segal (2009: 490) conducted a small survey and report that, while their informants generally found (55a) to be ungrammatical, (55b), on the relevant reading, was only reckoned to be inelegant or slightly awkward. They give the examples in (56) as further reason for scepticism in this area (Rothschild and Segal 2009: 491):

- (56) a. A political enemy sabotaged each congressman's campaign.
b. His political enemy sabotaged each congressman's campaign.

They find (56b) 'clearly awful' on the reading whereby each congressman had his campaign sabotaged by his political enemy; but the analogous reading of (56a) they find 'quite good' (Rothschild and Segal 2009: 491). It is notable, in any case, that these weak crossover arguments have only been alleged to work with *local*, *enemy*, and other overt relational terms of the kind that even Cappelen and Lepore (2005) grudgingly admit might be indexicals; it is unclear at best how wide a conclusion we might draw from them even if the data were undisputed.¹⁸

To complicate things still further, we should not assume that all implicit content has to be introduced at the same level of representation. Different kinds might be introduced at different levels for all we know.

Before we leave this topic, we should also note the following question, which has occasionally divided theorists. Is there any distinctive role to play for a semantic object computed solely from the denotations of the overt words and morphemes? (Such semantic objects are sometimes called *minimal propositions* (e.g. Bach 1994, Recanati 2010); but in some cases, of course, those that Bach (1994) calls cases of completion, they will not be fully propositional.) Now those who maintain that implicit content is supplied in the syntax

¹⁷Partee (1989) had previously cited very similar data but without drawing the conclusion that phonologically null pronouns in the syntax were responsible. Her reasoning, which I will not attempt to summarize here, repays close study.

¹⁸I know of one other attempt to distinguish between different levels of representation. This is the argument by Recanati (2002) to the effect that the optional nature of the addition of implicit content in certain constructions makes it likely that this is a pragmatic process. It was pointed out by Martí (2006), however, that certain elements in the syntax (i.e. adjuncts) are optional too, and that the relevant phenomena might be dealt with by a syntactic theory that saw them as deriving from syntactic constituents with this status. But see Recanati 2007 for a reply.

and those who are advocate some form of minimalism will presumably answer this question with a definitive yes: such propositions are the propositions expressed in each case, or at least are among the propositions expressed (on a view like Cappelen and Lepore's (2005)). But if one is an advocate of contextualism without maintaining that all implicit content comes in via the syntax, the answer is not so obvious. We have seen that Recanati (2010) allows that implicit content is introduced during the compositional semantics, so that the semantic value of a complex phrase is a function of its structure and the modulated semantic values of its parts; so this position allows that, on many occasions at least, no minimal proposition will ever be built (Recanati 2010: 16). On the other hand, Bach (1994: 158) has maintained that on at least some occasions a minimal proposition must be arrived at, so that it can be inspected and found wanting, thus triggering a backtracking insertion of implicit content. In fact both Recanati and Bach, in the publications just cited, seem content to allow that sometimes a minimal proposition is built and used as described while in other cases no minimal proposition is entertained; but Recanati (1993: 318) once held a stonger position whereby no minimal propositions were ever entertained.

4.3 The logical form of implicit content

I will now move on to ask what the logical form of implicit content might be. By this I mean the manner in which it combines with the content provided by the overt constituents in the syntax. Approaches to this problem can be classified under two heads: the global approach and the local approach. The global approach says that the content derived from the overt constituents in the syntax is asserted to be true only of a restricted spatiotemporal part of the world. The local approach says that implicit content can be interwoven with the content provided by overt constituents in the syntax.

One way of spelling out the global approach is that provided by Barwise and Perry (1983: 161): they propose, as mentioned above, that the semantic value of an utterance is an Austinian proposition. An Austinian proposition is a pair of a topic situation (that the speaker is trying to refer to or say something about) and a function from situations to truth values. The topic situation need not be syntactically represented and need not feature in the compositional semantics; the semantic value of the sentence, in such theories, is often reckoned to be just the function from situations to truth values (cf. Elbourne 2013: 30). An utterance whose semantic value is such a function will be true if and only if it maps the topic situation it is paired with to truth. One can imagine quantifier domain restriction, for example, being accomplished by such a restriction to entities within a particular topic situation.

However, Westerståhl (1985) and Soames (1986) pointed out that this theory does not seem able to deal with sentences like the following:

(57) Everyone is asleep and is being monitored by a research assistant.

We might imagine this being said as a response to an inquiry about what stage an experiment on sleep has reached. Presumably the research assistant, in the midst of the monitoring task, is not asleep. So there is no situation or spatiotemporal area such that everyone is asleep there and the research assistant is monitoring everyone there. So there can be no

topic situation of the required kind.¹⁹ The demise of the global approach is possibly the only point within this whole field of study on which there is widespread consensus.

The local approach to the problem of implicit content says that the missing material is present in the form of unpronounced additions or modifications to material already contained by the sentence or the sentence's semantic representation (or, if we distinguish this from the last, the language of thought string that the semantic representation gives rise to). Such additions or modifications are made locally, to particular words or word meanings. Assuming some version of this approach to be correct, we can go on to ask what is the semantic type and (if applicable) syntactic organization of the syntactic, semantic, or language-of-thought items yielding up implicit content.

As far as semantic type goes, are we dealing with property variables? Pairs of relation and individual variables (von Stechow 1994, Stanley and Szabó 2000a, Stanley 2002b)? Situation variables (Kuroda 1982, Recanati 1996, 2004, Kratzer 2004, Elbourne 2008, 2013, Keshet 2010, Schwarz 2012)? Location variables? Or, if we are not dealing with variables but with ordinary words (Collins) or ordinary language-of-thought units (Sperber and Wilson 1986), we can ask if there is any restriction placed on the semantic type of these things. We should note that the same questions arise, in principle, for each level of representation: for example, one might posit individual variables as null items in the syntax, as being introduced by rule in the compositional semantics, or as being added to appropriate representations in the language of thought. Again, there is relatively little work trying to argue directly that some subset of these items is the one employed, while the others are not. I make some first steps in this direction in Elbourne 2008, 2013; in the latter work, I argue that incomplete definite descriptions must use situation variables to supply their implicit content, and that other approaches, in particular theories that posit bindable individual variables in these phrases, overgenerate by predicting unattested sloppy readings (Elbourne 2013: 172–90). One should note, of course, that it is perfectly possible that different constructions come with implicit content of different semantic types.

A certain amount of detailed work has been done on the syntactic organization or positioning of implicit content; perhaps understandably, this has mainly, perhaps exclusively, been carried out by those who think that implicit content originates in variables in the syntax. Thus Stanley and Szabó (2000a) have given arguments against von Stechow's (1994) placement of property variables, relation variables and individual variables in DPs (seen in (43) above) and in favour of their own (seen in (44)). And Percus (2000), Keshet (2008, 2010), and Schwarz (2012) have engaged in a debate about the proper placement of situation variables.

5 Conclusion

As the above survey has hopefully made clear, there is not much consensus on most issues in the study of implicit content. And I have not even dared to broach some of the most

¹⁹The global approach is sometimes framed in terms of domains of quantification or universes of discourse (Westerståhl 1985). The current kind of argument is fatal to this version too, as far as I can see.

difficult issues.²⁰ In short, there is much to do.

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²⁰I am thinking of the problem of how listeners manage to work out what the implicit content in an utterance is, if indeed they ever do. Relevance Theory (Sperber and Wilson 1986) offers perhaps the most explicit account here; but see Bach 1994: 155–6 for some judicious pessimism. One should also note, in this connection, the position of Buchanan and Ostertag (2005), who maintain that speakers’ linguistic intentions might be satisfied if hearers grasp any one of a number of distinct related propositions.

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