

# *Free enrichment or hidden indexicals?\**

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## **Abstract**

In this paper, I defend the thesis that free pragmatic enrichment contributes to the proposition expressed by an utterance. The main objection to free enrichment is that it appears to be an unconstrained process, and therefore to overgenerate (Stanley 2002a, 2005a). I first examine the semantic alternative proposed by Stanley and other authors, on which all truth-conditional effects of context can be traced to an element of logical form. I show that there are several cases of optional pragmatic contributions to the proposition expressed that cannot be accounted for by any linguistic trigger, and that the semanticist account therefore fails to exclude free enrichment. The final section starts to address the question of how free enrichment is constrained.

## **1 Introduction**

A current debate in semantics and pragmatics concerns the extent to which the proposition expressed by an utterance is constrained by the context-invariant, encoded meanings of the expressions used, and what kinds of pragmatic contribution are possible<sup>1</sup>.

It's widely agreed that the proposition expressed can go well beyond what the overt (pronounced) material seems to provide. In the following examples, the material outside the brackets is the sentence uttered, while inside the brackets are other elements that most authors would treat as contributing to the proposition expressed, in certain contexts<sup>2</sup>:

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<sup>1</sup> The term "proposition expressed" is used throughout this paper to refer to the proposition that the speaker communicates – the asserted content (or "intuitive truth-conditional content", or "explicature", or "implicature") – as opposed to a minimal proposition, determined by linguistic meaning, that may or may not be one of the communicated propositions.

<sup>2</sup> The current popularity of semantic minimalism (Cappelen and Lepore 2005; Borg 2004) might seem to contradict this, as minimalists deny that the "semantic content" or "proposition semantically expressed" goes much, if at all, beyond the pronounced material. So, for them, (1) would express the proposition that *it is raining (punkt)*. In fact, though, in all respects relevant to

- (1) It's raining [*in London*].
- (2) Every student [*in my class*] passed the exam.
- (3) Mary is tall [*for a six-year-old*].
- (4) He insulted her and [*then, as a result*] she hit him.
- (5) He's got a [*very high*] temperature.
- (6) You're not going to die [*from that little cut*].
- (7) It'll take time [*more time than expected*] to heal.
- (8) The ham sandwich [*person who ordered the ham sandwich*] wants his bill.
- (9) (Context: pointing at someone)  
[*That man is*] John's father.
- (10) [*That is a*] nice shirt.

This kind of data has been used by many pragmatists (including Bach 1994; Carston 1988, 2002; Recanati 2004; Sperber and Wilson 1986/1995; Stainton 1994) to argue that there are “unarticulated constituents” of the proposition expressed. Such constituents are not traceable to any overt or covert element in the logical form that is the result of decoding, so they are in no sense “articulated” in the linguistic meaning of the sentence. Instead, they are provided entirely on pragmatic grounds by a process of free (i.e. not linguistically mandated) enrichment: in some cases – (3), (9), (10), arguably (1) and (2) – they are necessary to arrive at a truth-evaluable proposition; in others – (5), (6), (7), and maybe (2) – they are not required for truth-evaluability, but are recovered because of considerations of relevance, informativeness, and so on. (5) is trivially true without the enrichment; (6) is patently false; (2) is absurd if the minimal proposition is taken to be ‘*Every student in the world passed the exam*’; therefore, the “literal” propositions, without enrichment, are not propositions that the speaker intended to express. Instead, what is expressed in each case is the enriched proposition.

The last few years, though, have seen the development of a view that denies the existence of unarticulated constituents, and rejects altogether optional pragmatic effects on the proposition expressed. Stanley (2000, 2002a, 2005a), Stanley and Szabo (2000a), King and Stanley (2005), Marti (2006), and Taylor (2001), among others, have been defending the thesis that, as Stanley (2000: 391) puts it, “all truth-conditional effects of extra-linguistic context can be traced to logical form”. The motivation for this view is the desire to preserve a systematic, compositional explanation of our understanding of sentences: comprehension succeeds because we know what the words used refer to, and understand how their contents are

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this paper, and particularly as far as the scope of semantic content is concerned, the minimalists are in almost complete agreement with advocates of free enrichment. On both approaches, the asserted content of declarative sentences can include elements supplied on purely pragmatic grounds.

combined. These authors therefore take it that the job of semantic theory is to account for our intuitions about the truth conditions of sentences, and they aim to preserve the equation of linguistic form and truth conditions (Stanley and Szabo 2000: 240; King and Stanley 2005: 141).

To appeal to purely pragmatic processes (i.e. free enrichment with unarticulated constituents), according to Stanley, is to abandon hope of giving any systematic explanation of how we communicate linguistically, since such processes are apparently unconstrained. Yet these authors (henceforth “semanticists”) broadly agree with the defenders of free enrichment (“pragmatists”) on the scope of truth-conditional content, and accept that it exceeds the overt material in examples such as (1)-(10). In some types of case, the semanticists dispute that the element of meaning at issue is part of the truth conditions, and so relegate it to either implicature or taken-for-granted, background assumption; I discuss some instances of this later (sections 4 and 5). First, in the next section, I’ll describe how they handle the cases where they do agree that the truth conditions include more than the overt material, and examine the arguments for this approach.

## 2 Hidden indexicals

In examples (1)-(3) above, no one disputes the truth-conditional status of the italicized elements, ‘*in London*’ and so on. To explain these contextual contributions to truth conditions, the semanticists have to establish the presence of some device in the linguistic meaning that can interact with context to produce the desired reading. One way of doing this is to posit some covert parameter in the semantics of an expression that can somehow pick up the relevant contextual factor. This has, so far, been applied to only a few cases (see King and Stanley 2005: section 5), including conditionals, which I’ll consider in section 4. The main way of dealing with alleged unarticulated constituents, though, has been to posit covert indexicals in the logical forms of sentences, requiring the provision of a specific value, so that most pragmatic effects on truth conditions result from the saturation of these variables. For example, on this account, (1) contains a location variable attached to the verb ‘rain’, and this could be assigned the value ‘*in London*’ on a particular occasion of use. In (3), the comparative adjective ‘tall’ comes with a variable for the comparison class. And in (2), the domain restriction is supplied because all nominals are associated with domain restriction indices, to which a context-specific value such as ‘*in my class*’ is assigned<sup>3</sup>.

On the semanticist view, then, there are no genuinely unarticulated constituents, because, although some constituents of truth-conditional content may not be

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<sup>3</sup> For details of domain restriction indices, see Stanley and Szabo (2000); Stanley (2002b).

pronounced, they are still “articulated” in the sense that the need for their provision is linguistically indicated. Although the semanticists acknowledge that Gricean reasoning is involved in saturation (Stanley and Szabo 2000a; Marti 2006), pragmatic “intrusion” into truth-conditional content is therefore highly constrained: apart from disambiguation, it is limited to “weak pragmatic effects” (King and Stanley 2005: 118) – that is, effects that wouldn’t occur without some linguistic indication that they are required.

The main motivation for limiting truth-conditional effects of context in this way is the belief that it represents our only hope of giving any systematic, explanatory account of how hearers recover truth-conditional content. Correspondingly, the main objection against free enrichment is that it overgenerates: that it is an unconstrained process, and, importantly, doesn’t predict where there *can’t* be any truth-conditional effects of context (Stanley 2002a; 2005a). The overgeneration issue will be the focus of this paper (sections 3-5), since it highlights a major challenge for free enrichment theories in the face of the apparently clearer, more elegant alternative being offered by the semanticists – to predict what kinds of enrichment can, and which can’t, contribute to truth conditions. First, though, I’ll briefly consider the semanticists’ positive argument for their approach.

Since the claim that a systematic pragmatic account is impossible is, even if true, a quite indirect argument for the hidden structure that the semanticists are positing, it would help if they could find some syntactic/semantic evidence for such structure, and this, according to Stanley, is provided by the binding argument:

### **The binding argument**

The pragmatic recovery of some alleged unarticulated constituents, namely the denotations of bound variables, is impossible. So where binding is possible, a bindable variable must be present in the logical form of the sentence.

The binding argument is an important part of the semanticists’ case, since it is the only linguistic motivation for most of their hidden variables<sup>4</sup>. However, as I’ll discuss now, it actually provides no evidence to choose between the two approaches.

Here’s how the binding argument goes. Many of the disputed elements of meaning, including the pragmatically fixed location with weather verbs, can be

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<sup>4</sup> The only class of expressions for which there is some independent syntactic evidence of hidden variables is relational terms, such as ‘local’, ‘enemy’. These seem to behave syntactically very like overt pronouns, giving rise to weak crossover effects, and several pragmatists, including Carston (2002) and Recanati (2004), accept that these are plausible cases of covert variables. But there appears to be no similar evidence for the domain or location variables.

bound by operators. For example, (11) has both the reading in (12), where the location of the rain co-varies with the location of the cigarette-lighting, and that in (13), where the locations are independent of each other:

- (11) Every time John lights a cigarette, it rains.  
 (12) *For every time  $t$  at which John lights a cigarette, it rains at  $t$  at the location  $l$  at which John lights a cigarette.*  
 (13) *For every time  $t$  at which John lights a cigarette, it rains at  $t$  at some contextually salient location.*

For the semanticists, the possibility of a bound reading is a clear indication that a variable is involved, and their claim seems to be that variables are linguistic entities only, and can't be provided by pragmatics:

It is easy to see how an object or property could be provided by pragmatic mechanisms: it need only be made salient in the context either by the speaker's intentions, or contextual clues [...] However, denotations of bound variables are odd, theoretically complex entities. It is difficult, if not impossible, to see how, on any account of salience, such an entity could be salient in a context. [...] It is not something about which we have beliefs or intentions. They are therefore not supplied by pragmatic mechanisms. (Stanley 2000: 410-11)

If they are right about this, then the possibility of binding means that the constituent of content that's bindable – in (11), the location of rain – must be manifested somehow in the sentence's logical form. Stanley (2000) runs this argument on a range of expression types, to establish the presence of location variables attached to weather verbs, domain variables attached to nominals, and comparison class variables that come with comparative adjectives such as 'old', 'tall', 'local'<sup>5</sup>. Between them, these variables could potentially account for a quite large number of alleged unarticulated constituents (domain variables, in particular, prove surprisingly versatile: see Stanley (2002b)), so might, if the binding argument works, go some way towards eliminating the need for free enrichment.

A serious problem with the binding argument, though, is that it relies on the stipulation that bound variables cannot be supplied pragmatically – a claim for which no justification has been produced. If we assume that the process of understanding an utterance of a sentence containing a bound variable results in a conceptual representation, in the language of thought, then it seems reasonable to

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<sup>5</sup> This has the result that free enrichment is *never* involved in supplying these kinds of values, since, when they are not bound, they are the result of saturation, as the variable is always present.

further assume that this LoT representation includes a bound variable (or something equivalent). The reason that we can make a distinction between free and bound variable readings of sentences is presumably that we can have thoughts corresponding to the distinct readings, so a bound variable must be a constituent of such a thought. And since thoughts are what pragmatic inference operates on, it's not obvious why pragmatics should have any difficulty with bound variables<sup>6</sup>. Moreover, on Stanley's own account, all that the linguistic meaning supplies is a variable indicating the sort of value to be assigned (location, domain, comparison class, or whatever). Recovery of the bound reading, therefore, is a matter of pragmatic inference, taking into account the speaker's intentions: Stanley and Szabo (2000) acknowledge the involvement of Gricean reasoning in saturation. So there is a contradiction in Stanley's argument, and this needs to be resolved, and some evidence provided for the claim that pragmatics can't handle bound variables, before the binding argument can be considered to constitute a serious objection to free enrichment accounts of even this quite limited set of cases (nominal restriction, and so on)<sup>7</sup>.

One consequence of the failure of the binding argument is that the semanticists are left in the not entirely comfortable position of positing quite extensive, and previously undiscovered, syntactic structure for which they have no syntactic evidence. And, while this is not a decisive objection – it merely neutralizes an argument for hidden variables, rather than providing any evidence against them – the semantic approach is left heavily dependent on its pessimism about the possibility of a theory of pragmatic constraints on the development of truth-conditional content. After all, the appeal of a pragmatic account, if one could be developed, would be considerable. From the point of view of linguistic theory, leaving more responsibility to pragmatics makes for a simpler, more elegant, and thus preferable, syntax and semantics, while the pragmatic mechanisms and principles involved in free enrichment are just those that are independently needed for other pragmatic tasks – least controversially for implicature calculation, plus, most would argue, for reference assignment and disambiguation. Moreover, the semanticists are not claiming that there are any effects on truth conditions that

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<sup>6</sup> Similar points have been made by Carston (2004a) and Recanati (2002).

<sup>7</sup> Another line of response pursued by some authors has been to argue that the binding argument overgenerates – i.e. necessitates the positing of hidden variables in implausible places. This is, so far, inconclusive. For potential examples of overgeneration, see Recanati (2002: 325-6; 2004: 105-6), Breheny (2003), Cappelen and Lepore (2005: 74-5). For discussion, see Stanley (2005a: 242-9), Pagin (2005: 319-28).

*couldn't* be accounted for by free enrichment<sup>8</sup>: it's not the case that the interpreter has to rely on the semanticists' hidden variables to trigger pragmatic processes.

The above reasons alone might be seen as motivation enough to abandon the enterprise of tracing all truth-conditional effects to semantics. Among those who have taken this approach are Pietroski, who describes the asserted truth-conditional content as a "massive interaction effect due to the meaning of S [= the sentence] and many factors not indicated by elements of S" (2005: 254), and Cappelen and Lepore, who have a very minimalist, systematic propositional semantics, but agree that speech act content "depends on a potentially indefinite number of features of the context of utterance and of the context of those who report on (or think about) what was said by the utterance" (2005: 4).

As it is, for various kinds of enrichment that are possible, we already have reasonably detailed accounts of what pragmatic factors motivate the enrichment, and how the resulting content is recovered<sup>9</sup>. Only if this cannot be completed with an explanation of where enrichment can't occur might the semanticist account be a real alternative. So, in the rest of the paper, I assess the "overgeneration" argument against free enrichment and whether the semanticist approach can really avoid it (sections 3 and 4), and start to explore some lines of response (section 5).

### 3 The overgeneration argument against free enrichment

The most serious objection to free enrichment is that it appears to be too powerful and unconstrained: pragmatic accounts don't seem to make any clear predictions about where free enrichment *can't* take place (Stanley 2002a, 2005a). It's clear that extra conjuncts, for example, can't be added on to the proposition expressed, even when the result would be highly relevant. But what excludes this, on an account that relies on a powerful pragmatic inferential capacity able to freely "intrude" on truth-conditional content, supplying unarticulated constituents without any linguistic mandate?

What the pragmatist approach is lacking, according to Stanley, is "an *explanatory* account of information freely provided by context" (2005a: 225). Given that this is the main criticism of free enrichment from the semanticists, one might reasonably expect that their approach would avoid it, and provide the requisite explanatory,

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<sup>8</sup> Except for bound variable readings, but, as I've indicated above, this claim is unsupported by any evidence and is incompatible with Stanley and Szabo's own theory. Stanley (2000) acknowledges that free enrichment can account for unbound readings.

<sup>9</sup> For example, Atlas (1989, 2005); Carston (1988, 1993, 1996, 2002); Horn (1992); Levinson (2000); Recanati (1995, 2002, 2004); Sperber and Wilson (1986/1995); Wilson and Sperber (1998).

predictive power. And at first glance, it might seem that it does: the indexicalist solution appears to avoid the overgeneration argument, as its claim is that context can only affect truth conditions where the need for contextual contribution is marked in the logical form. This should straightforwardly predict where context can't make any truth-conditional contribution. However, their strategy so far has been to establish where a truth-conditional contribution occurs, and find something to explain it. So they are arguing *from* truth-conditional effects *to* hidden structure. This doesn't predict where truth-conditional effects of context can or can't occur.

So while the semanticist approach might initially seem to avoid the overgeneration charge entirely, it's not so clear that it does. The positing of hidden structure is post hoc, so it's difficult to see anything really predictive about it. All the same, the issue is one that needs to be resolved for the pragmatist approach, and that is what I'll start to address now.

First, it's important to be clear what the free enrichment advocates have to account for, since Stanley's presentation of the argument, I think, can obscure this. The confusion is illustrated by one of the two examples he provides of potential overgeneration by free enrichment, given in (14):

- (14) a. Every Frenchman is seated.  
 b. *Every Frenchman in the class is seated.*  
 c. *Every Frenchman or Dutchman in the class is seated.*

In a certain context, an utterance of (a) could express the proposition in (b). But, Stanley asks, if pragmatic processes can provide the domain '*in the class*', then why can't they also add the disjunct, '*or Dutchmen*', as in (c) (Stanley 2005a: 225-6)?

In fact, though, Stanley's use of this example is not relevant to the issue of overgeneration at the level of truth conditions/proposition expressed, which is the level at which unarticulated constituents are allegedly provided. This is because (c) is not something that would arise as any part of the speaker's meaning (neither as the proposition expressed nor as an implicature) from an utterance of (a) (at least in the absence of a prior stipulation that it is being so used). For such an inference to go through, there would have to be an accessible contextual premise such as (15):

- (15) If P then [P or Q].

But it is not possible that such a premise would be accessible, for the reason that for the input conditions for this MPP deduction to be met, P has to be accepted as something that the speaker wants to assert, i.e. something that she is putting forward as true. So she cannot also communicate (or expect a hearer to recover) a proposition that so obviously cancels her commitment to the truth of P. This is



predicted automatically by any pragmatic theory that takes into account the interplay of effort and effects in utterance processing: pragmatic inference involves the expenditure of processing effort, so it requires some motivation – for example, the lack of expected informativeness or relevance of the “semantic content”, for which the extra, inferred material will compensate. This excludes ‘or’-introduction, which always has a trivial result, with the output of such an operation being considerably less informative than the input<sup>10</sup>.

It seems unlikely that the semanticists can reject this explanation for why extra disjuncts don’t get supplied by pragmatic processes. For one thing, they accept that Gricean reasoning is responsible for implicature calculation (see, e.g. Stanley and Szabo 2000; Marti 2006), and the prediction of any account in that spirit is that, in the absence of any motivation for expending extra effort, pragmatic inference won’t get off the ground. For another, why optional pragmatic effects – implicatures, for them – in general do or don’t arise is not something about which the semanticists are offering any alternative story.

Instead, what is really at issue here is the distinction between pragmatic contributions to the proposition expressed, and conversational implicatures. This question only arises, of course, for something that is an element of speaker’s meaning; that is, for inferences that are motivated by pragmatic considerations, and not for impossible constituents of speaker meaning such as extra, randomly inferred disjuncts.

In many cases, we have reasonably clear intuitions about whether a given element of pragmatically derived meaning is part of the proposition expressed/intuitive truth-conditional content, or is implicated – consider the wide consensus about the italicized elements in the list of examples at the start of this paper. But the semanticists’ complaint is that work on the explicit-implicit distinction has provided few clear predictions about how much material can feature in the

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<sup>10</sup> It’s worth noting that it is possible, in some contexts, to get something like a disjunctive reading from an utterance of (14a): ‘every Frenchman’ could be loosely interpreted as ‘*every Frenchman or Belgian*’, for example, where what is relevant is the property of being French-speaking. Most pragmatists, though, would treat this process not as the addition of a disjunct, but as a case of concept loosening (also known as broadening) (see Carston 1997, 2002: chapter 5; Recanati 2004; Sperber and Wilson 1998; Wilson and Sperber 2002): the encoded concept FRENCHMAN would be loosened to FRENCHMAN\*, whose denotation would be French speakers. For this kind of interpretation to be possible, there has to be a relevant similarity between the two disjunct clauses that would support the contextual broadening of the denotation of the encoded concept FRENCHMAN. The reason such a reading is unavailable for (14) is that any such similarity is inaccessible.

A further point here is that, if the loosening analysis is correct, the semanticists will have difficulty accounting for it, since they presumably would not want to posit any more hidden variables in the word ‘Frenchman’ (in addition to its alleged domain variable, which it has by virtue of being a noun). I’ll come back to this kind of issue later.

proposition expressed, and thus offered little explanation of these intuitions. Consider the following definitions of proposition expressed and implicature<sup>11</sup>, which are what many pragmatists seem, in practice, to work with:

**Explicature (proposition expressed):** a communicated assumption that is a development of the logical form of an utterance.

**Implicature:** a communicated assumption that is not an explicature.

The definitions both depend on the notion of “development”, but it isn’t, on the face of it, clear exactly what is involved in the development of the logical form. One might ask, for example, why whole extra propositions cannot be freely incorporated into the proposition expressed, as long as the original logical form (now fleshed out) is preserved somewhere in the enriched proposition.

To begin to address this, I’ll illustrate, for a relatively straightforward example, how the pragmatic processing system sorts out the proposition expressed from implicatures; I discuss further cases in section 5. The key point about the distinction between proposition expressed and implicatures, as defined above, is that it is a derivational distinction: the proposition expressed is derived by a combination of decoding and inference, while implicatures are derived purely inferentially by the combination of fully propositional premises. “Development” refers to the pragmatic processes involved in taking the subpropositional logical form and completing and enriching it into a proposition that can serve as a premise in further inferences. When we look at the processing of particular examples, this distinction turns out to place quite substantial constraints on the amount of material that can go into the proposition expressed. Consider the quite common type of case where the truth-conditional content of an utterance is visible in one of the implicatures, as in (16):

(16) A: Do you want coffee?

B: Coffee would keep me awake.

(17) *B doesn’t want coffee because coffee would keep her awake.*

In certain contexts, (17) could clearly be an implicature of (16)B, but the semanticist could ask why it isn’t the proposition expressed, on the above definition, since it might appear to be just a development of the logical form. But when we consider how this utterance would be processed in the context (as an

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<sup>11</sup> The definitions are taken from Sperber and Wilson (1995: 182). Explicature and proposition expressed can be equated for my purposes here. I won’t discuss what they call “higher-level explicatures”, which are also developments of logical forms, resulting from embedding the basic explicature under propositional attitude/speech act descriptions.

answer to a yes-no question), (17) is predicted to be an implicature. The hearer (A) is expecting B's answer to communicate either that *B does* or *doesn't want coffee*. B's indirect reply suggests the negative answer, since the utterance provides justification for rejecting A's offer. And for the negative answer to be derived, the proposition '*Coffee would keep B awake*', given in (18)d, is needed on its own, without any further extension, to combine with other premises, e.g. (18)a-c, so that the hearer can derive the conclusion in (19), which is the sort of implication he is looking for:

- (18) a. *B doesn't want to stay awake.*
- b. *If B doesn't want to stay awake, then she doesn't want to eat/drink anything that would keep her awake.*
- c. *If coffee would keep her awake then she doesn't want coffee.*
- d. *Coffee would keep B awake.*
- (19) *B doesn't want coffee.*

(19) cannot be incorporated in the proposition expressed by (16)B, since (19) cannot be derived in the first place unless the development of that proposition expressed results in (18)d. So this demonstrates how the pragmatic enrichment of the proposition expressed can be quite tightly constrained by the kind of implications the hearer expects from the utterance: for the conclusion to be inferentially warranted, the proposition expressed can only be developed so far.

The explanation for that kind of example can be generalized to a range of cases: if an assumption (developed from the logical form) is needed as a premise in the derivation of further intended aspects of meaning, as is frequently the case, then it cannot be developed any further at the level of proposition expressed. Further development would block the inference, and thus prevent any inferential warrant for obviously intended conclusions. Any incorporation of additional material as a result of global inference, as opposed to development, must therefore take place at a later stage, i.e. implicature derivation. Similarly, this account predicts that contextual premises that have to be available independently (for example, in order to warrant the move from logical form to proposition expressed) cannot be incorporated into the proposition expressed. Taking account of processing effort excludes the incorporation of more material into the proposition expressed if it serves no additional purpose, or will have to be detached anyway to run the inferences needed to recover the various communicated propositions.

To sum up so far, I think there are grounds for optimism about the possibility, eventually, of a suitably constrained theory of free enrichment. More immediately, there are several reasons why it is worth pursuing. I've mentioned, in the last section, some advantages that a pragmatic account would have, and, in this section, the suggestion has been that genuinely problematic examples of potential

overgeneration of free enrichment may be harder to come by than it at first appears. There are also, as I'll address in the next section, serious problems with the semantic alternative.

My argument will be that the semanticist approach, taking as its object of explanation our truth-conditional intuitions, is empirically inadequate. Since the semanticist's claim is simply that there are no strong pragmatic effects on truth conditions, he has to account for all genuine truth-conditional effects of context by positing hidden structure. If, for some constituent of truth-conditional content, it can be shown that there is nothing in the linguistic meaning that could plausibly account for it, then the conclusion has to be that free pragmatic enrichment can affect truth conditions. And if the semanticist allows *any* strong pragmatic effects on truth conditions, then he is, after all, exposed to the very same overgeneration charge that he wields against the pragmatist: he needs to explain what pragmatic constraints allow some enrichments but exclude others; moreover, once an account of this is available, it is likely to cover the semanticists' favourite examples as well – domain restriction, location of weather events, comparison classes – and thus undermine the entire case for hidden indexicals.

In section 4, I examine a range of data that presents difficulties for the semanticist. First, I look at the causal connotations communicated by some 'and'-conjunctions, and argue that the semantic solution proposed so far is inadequate in several respects. After that, I consider some cases for which no syntactic/semantic solution is being offered by the semanticists, or looks attractive: metonymy, referential uses of definite descriptions, and various types of narrowing and loosening. To sustain the overgeneration argument against free enrichment, the semanticists have to show that these obviously optional pragmatic processes have no effect on the intuitive truth conditions. If, as I will argue, this strategy doesn't succeed, then the semanticist cannot maintain the equation of the truth-conditional and the semantic.

## 4 Semantics and truth conditional content

### 4.1

The first counterexample to the semanticist approach that I want to discuss involves the causal relation between the events referred to by the conjuncts in an utterance of (20):

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

Since the causal connection falls within the scope of the operator 'if...then', practically everyone agrees that it contributes to truth conditions. King and Stanley

are no exception here: they write that (20) “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” (2005: 158). This requires, for them, that the linguistic meaning of the sentence contains some element that can pick up the ‘*as a result*’, and King and Stanley claim that this is found in the semantics for indicative conditionals proposed by Stalnaker (1999):

As Robert Stalnaker has argued, indicative conditionals normally exploit a similarity relation that counts only those non-actual worlds compatible with the mutually accepted background assumptions as similar worlds for purposes of semantic evaluation. ... An indicative conditional is true if and only if the consequent is true in every one of the most relevantly similar worlds in which the antecedent is true. (King and Stanley 2005: 154).

On this account, the similarity relation in the indicative conditional requires the selection of the most relevantly similar worlds in the context set, and, in a context in which the speaker has in mind a causal relationship between the events described in the conjuncts, the relevantly similar worlds will be just those worlds in which that causal relationship holds. So this predicts the reading of (20) on which a causal relation is part of the truth-conditional content (*ibid*: 160).

There are, though, at least two problems with this semantic solution as developed so far. First, since it is the semantics of the conditional that accounts for the incorporation of the causal relation into truth conditions, it follows that, for King and Stanley, the semantic content of the unembedded conjunction (21) does not include the causal relation. Instead, this would be implicated, and is, according to them, calculable from the semantic content using Gricean maxims:

(21) Hannah insulted Joe and Joe resigned.

Is this supported by our truth-conditional intuitions? With isolated utterances such as (21), our intuitions may not be entirely clear, but they are sharper with (22), which looks like an obvious case of *modus ponens*, and which most people would judge to be a valid argument<sup>12</sup>:

- (22) a. If Hannah insulted Joe and Joe resigned, then Hannah is in trouble.  
b. Hannah insulted Joe and Joe resigned.  
c. Hannah is in trouble.

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<sup>12</sup> Carston (2004b) uses the same argument against Levinson (2000), who also accepts that the causal relation is part of the truth conditions of (22a), but appears to see it as an implicature of (22b).

For King and Stanley, (22)b must have a different propositional form than the antecedent of (a). Modus ponens requires an argument of the form ‘If P then Q. P. Therefore Q’. (22) would have the form ‘If P then Q. R. Therefore Q’, so, despite appearances, this can’t be a case of modus ponens on their theory.

Treating the causal connection as contributing to truth conditions in (20) but not in (21) contradicts ordinary intuitions. I doubt that King and Stanley can be entirely happy with this, as they are keen to respect intuitions about truth conditions and take them to be the primary object of semantic theorizing. They don’t offer any justification for why our intuitions about the validity of the argument in (22), which depend on the intuitions about the truth conditions of (20) and (21), shouldn’t be respected, but are forced to this position by the fact that none of the overt expressions in the unembedded conjunction are plausible candidates for having an appropriate kind of hidden indexical attached, or having a semantics that could pick up a similarity relation.

Moving on to the second problem, a particularly pressing question about King and Stanley’s account of pragmatic intrusion into conditionals, given the broader debate about overgeneration, is what determines which salient contextual factors can be picked up by the Stalnakerian similarity relation, and which can’t. The problem can be illustrated by considering a slight variation on the example just discussed. Suppose a speaker “has in mind” the same causal relation as before, that if Hannah’s insult caused Joe’s resignation, then Hannah is in trouble. Why can’t she use (23) to express this?

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

It cannot simply be the ordering of the conjuncts that excludes this “reverse” temporal/causal relation being communicated, as (24) shows:

(24) Joe resigned. Hannah insulted him.

An easily accessible interpretation of (24) is that the second sentence provides an explanation for the first. But nothing on King and Stanley’s account of the semantics of the indicative conditional precludes reverse causal relations also being picked up by the similarity relation and entering into truth conditions. Their attempt to avoid having to accept a free enrichment account of the causal relations in ‘and’-conjunctions, then, runs into overgeneration problems of its own.

The point could be extended beyond examples like (23). Going back to (20)-(21), if the causal connection, a potential mere implicature of unembedded utterances of ‘P and Q’, can get into the truth conditions when the conjunction is embedded in a conditional, then what prevents any other implicatures of unembedded sentences from becoming part of the truth conditions when the sentence is embedded? King

and Stanley will have to rely on pragmatic constraints to delimit what features of “relevantly similar worlds” can be picked up by ‘if’s’ alleged similarity relation. Yet pessimism about the possibility of such pragmatic constraints is precisely what they take to justify their criticism of free enrichment, and is what provides their strongest argument in favour of their overall approach. It appears that what they are proposing is a semantic feature that allows a pragmatic effect to be traced to linguistic meaning, but imposes no constraints on the kind of pragmatic contribution required. But the pragmatic constraints needed to supplement this account, to determine just what, if any, pragmatic contribution is required, will make the similarity parameter redundant<sup>13</sup>. So this proposal cannot rescue the semanticists’ account of this particular case of pragmatic intrusion.

So to conclude this subsection, King and Stanley’s proposal about causal connections in ‘and’-conjunctions is clearly unsatisfactory, both violating intuitions and overgenerating, and poses a real problem for the semanticists, since they agree that the element of meaning at issue is part of the truth conditions. At present, then, this reading of ‘and’-conjunctions provides strong evidence for the existence of free enrichment. In section 4.2, I look at several more types of data, which haven’t yet been addressed in as much detail by the semanticists, and consider the prospects for a semantic solution.

## 4.2

This subsection deals with a variety of related cases – including deferred reference (metonymy), and some types of non-figurative “loose” use – for which it is generally agreed, by (most) semanticists as well, that a syntactic/semantic account seems unlikely. The only option for the semanticist, then, is to deny that these pragmatic effects contribute to truth conditions, and I argue that this strategy fails.

The first problematic case for the semanticist is deferred reference, illustrated in (25) and (26):

- (25) The ham sandwich wants his bill.
- (26) I’m parked out back.

Influential accounts of deferred reference such as Nunberg (1979, 1995) treat the deferred meaning (e.g. in (25), ‘*person who ordered the ham sandwich*’), rather than the encoded meaning, as contributing to the truth conditions of the utterance,

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<sup>13</sup> For a detailed proposal about how pragmatic processes explain the relations that can and can’t arise with conjoined and juxtaposed sentences such as (20)–(24), that doesn’t make use of any such semantic feature, see Carston (2002, chapter 3), and Blakemore and Carston (2005).

and most theorists follow him on this – both pragmatists such as Recanati (1993, 2004), Carston (2002), Bach (1994), and semanticists, including Sag (1981), Stern (2000, 2006), and, significantly here, Stanley (2005a).

Deferred reference doesn't seem like the most natural candidate for being given a semantic account, but let's briefly consider what such a move would involve. Stern (2000, 2006) develops an account of metaphor on which metaphorical readings are traced to an operator at logical form, and he suggests that a similar operator would work for metonymy. For metaphor, Stern posits, in the syntactic representations of sentences, a covert 'Mthat' operator which, when applied to an expression, results in that expression being interpreted metaphorically. How this works is as follows: the output of linguistic decoding is a "metaphor set" consisting of all the "grammatically admissible" combinations of Mthat with various parts of the sentence (including with no part of the sentence, and with all of it)<sup>14</sup>. A process of disambiguation then selects the correct logical form. The subsequent stage is analogous to the saturation of indexicals, as pragmatic processes come into play to assign contents to those words/phrases with associated Mthats.

An immediately obvious problem here is the massive increase in computational load required for disambiguation, as compared to a pragmatic account. Since almost every term in the language can be used metaphorically, most sentences uttered will have dozens of different possible logical forms – a simple four-word utterance has at least five different logical forms to choose between, for a start (see footnote 14) – and this alone makes the proposal unappealing as a plausible account of how metaphors are interpreted online<sup>15</sup>. A similar problem will arise for an attempt to treat deferred reference along the same lines: while not multiplying logical forms to quite the same extent, each noun phrase will need a metonymy operator, so a sentence containing just four nouns will have at least 16 different logical forms to choose between.

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<sup>14</sup> So, for an utterance of 'Juliet is the sun', the metaphor set, according to Stern (2000: 134) is:

1. Juliet Mthat['is the sun'].
2. Mthat['Juliet'] is the sun.
3. Mthat['Juliet'] Mthat['is the sun'].
4. Mthat['Juliet is the sun'].
5. Juliet is the sun.

As Wearing (2006: 314, footnote 6) points out, at least two more possibilities should probably also be included: where Mthat attaches to 'the sun', or just 'sun'. It's not clear on what basis Stern can exclude these, but their inclusion has the unwelcome effect of increasing the disambiguation work required.

<sup>15</sup> Wearing (2006) and Camp (2005) offer several more objections to Stern's account.



So the implementation of a semantic account of metaphor or metonymy looks very difficult in practice, requiring a much greater implausible proliferation of hidden syntax than Stanley's relatively conservative proposal about domain, location, and comparison class variables (and maybe one or two others). These practical difficulties aside, the motivation for a semantic account in the first place is, I think, very weak. Stanley (2005: 229-30) discusses Sag's (1981) proposal for handling deferred reference semantically, and makes the point that, on this kind of account, the "semantic" content is hardly constrained at all by the encoded, literal meaning. The same criticism carries over to a Stern-type proposal. Beyond the fact that the encoded property should provide a guide of some sort, the content is determined entirely by pragmatics, and the syntax/semantics places no constraints on what the pragmatics can do. And a metonymy operator is not required to tell the pragmatics system that the encoded property is to serve as a guide to interpretation, since, given common-sense assumptions about how pragmatics works, the fact that the words have been uttered is enough to establish that they are to be used as a guide to interpretation.

Stanley is at one with the pragmatists here, swiftly dismissing the idea of trying to account for deferred reference and other figurative uses semantically: deferred reference and metaphor, "have to do with the *use* of a term, rather than the semantics of a particular expression," and involve "how we can use constructions that have a certain semantics to communicate something different than such constructions semantically express" (Stanley 2005a : 229).

But now Stanley has conceded that dissociation between the semantic and the truth-conditional is possible, so doesn't this threaten the entire semanticist case against free enrichment? He seems here to be moving towards a weaker position, namely that truth-conditional effects of context should be given a semantic account if possible, and this, while still aiming to account for much more in the semantics than the pragmatist does, would be to accept that strong pragmatic effects on intuitive truth-conditional content can and do occur.

Stanley recognizes the danger, and attempts to address it by pointing out that the "literal" meaning, as well as the deferred one, is quite easily accessible to interpreters, whereas with properly semantic phenomena (such as the provision of comparison classes), it isn't (2005a: 231-2). I'm not sure of the relevance of this point, since, on the one hand, some of the cases, such as quantifier domain restriction, which Stanley wants to account for in the semantics, are also transparent<sup>16</sup>, and, on the other hand, there is a continuum among the deferred

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<sup>16</sup> As Stanley himself reminds us: "like the case of deferred reference (and unlike the case of comparative adjectives), the unrestricted interpretation is also available to competent language users, as the coherence of the following sort of discourse illustrates:

A: Every bottle is in the fridge.

reference (and metaphor) cases, with, for example, ‘I’m parked out back’ being harder to recognize as transparent than the ‘ham sandwich’ metonymy. Stanley’s response here amounts, I think, to a hope that deferred reference and metaphor, being species of figurative use, are special cases, and therefore don’t threaten the semanticist thesis since, in “normal”, literal communication, the equation of semantics and truth conditions still holds.

That needs more justification than the fact that it is required for the semanticists’ theory, and so I don’t think Stanley’s discussion does anything to reduce the difficulty that deferred reference, as he admits, presents for the semanticist. Indeed, deferred reference only reinforces the threat to the semanticist thesis, since, as I’ll discuss now, there are non-figurative utterances where pragmatic effects are agreed to occur, and to contribute to truth conditions, but they cannot be accounted for by anything in the logical forms of the sentences uttered.

One very promising case is that of the referential use of definite descriptions. The majority view these days is that the referent enters into the proposition expressed/truth conditions<sup>17</sup>. As is well known, the truth conditions of an utterance of ‘The *F* is *G*’ can either be attributive (*There is exactly one F and it is G*), or referential (*a is G*), and, since intuitions clearly support this, it seems unlikely that the semanticists can plausibly deny it. However, along with the majority of philosophers, they treat definite descriptions as quantifiers, which means that the encoded meaning is *There is exactly one F and it is G*. Stanley, for one, is obviously convinced of the correctness of the quantificational analysis of definite descriptions, citing as one of the many virtues of his nominal restriction theory (involving the domain variables attached to nouns) the fact that it provides support for this quantificational treatment (Stanley 2002b, section 5).

The problem here is, of course, that, given that the encoded meaning determines truth conditions which, in the attributive use, do serve as the asserted content (abstracting away from any context-sensitivity in the rest of the sentence), the move to the referential reading cannot be linguistically triggered, but is motivated on purely pragmatic grounds – roughly, when it’s more important that the predicate be true of the object referred to, than that the object fit the description. And it would be very difficult to make a case for an indexical in the meaning of definite descriptions: one suggestion that may occur, given that many, perhaps most, uses of definite descriptions are referential, might be that they encode something like Recanati’s (1993) REF feature, which he suggests is encoded by referring terms

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B: Well, your fridge couldn’t possibly be that large! There are bottles somewhere in the world that aren’t in your fridge.” (2005: 232)

<sup>17</sup> Larson and Segal (1995); Neale (1999); Recanati (1989, 1993); Powell (2001); and Bezuidenhout (1997) are a selection of authors working in various semantic/pragmatic frameworks who have argued that the referential-attributive distinction affects truth conditions.

(pronouns and demonstratives), and ensures that the truth conditions are referential. But this is a non-starter for definite descriptions, since REF renders the descriptive material truth-conditionally irrelevant, and so would make the attributive use problematic. Also, if definite descriptions are quantifiers, then, given that attributive uses undoubtedly occur, any proposed indexical or parameter to account for the referential use could not be something that *requires* a contextual contribution, which means that any such contribution would still occur solely on pragmatic grounds. The semanticist approach at present, then, in as much as it is committed both to the quantificational analysis of definite descriptions, and to respecting intuitions about truth conditions, seems to have no option but to treat these referential readings as the result of strong pragmatic effects on truth conditions.

Some more good candidates for free enrichment are loose uses such as (27)-(29):

- (27) This steak is raw.
- (28) Jane has a round face.
- (29) Holland is flat.

Assuming a strict semantics for the word ‘raw’, meaning completely uncooked, then (27) is literally false; the other examples are also false if the concepts encoded by ‘round’ and ‘flat’ are what enter into truth conditions. However, these utterances are not blatant floutings of truthfulness maxims or expectations (in order to communicate implicatures, such as ‘*This steak is undercooked*’ for (27)), and, since speakers and hearers are not aware (at least without reflection) of the non-literalness, it appears that these contextual loosening of encoded concepts are best treated as contributing to truth-conditional content/the proposition expressed. Based on these observations, several pragmatists have started to develop accounts of such loosening as pragmatic “modulation”<sup>18</sup>: the encoded concept, e.g. RAW, is loosened so that it is replaced by another atomic concept (RAW\*) whose denotation includes everything covered by the denotation of the encoded concept (everything completely uncooked), plus things that count as raw judging by the contextually relevant standard. Carston (2002), Wilson and Sperber (2002), and Recanati (1995, 2004) suggest some initial ideas about how such processes might work, and their approach is supported by Barsalou (1987, 1992) who shows how people construct

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<sup>18</sup> The term “modulation” refers to processes of loosening or narrowing of an encoded concept, i.e. which replace one atomic concept with another. From now on, “free enrichment” will be used to cover all optional pragmatic processes, whether resulting in atomic or complex concepts: this includes the provision of unarticulated constituents, and modulation. The important feature that both types of free enrichment have in common is that they are pragmatically motivated, and free from linguistic control.

‘ad hoc’ concepts from information stored in long-term memory to suit their different purposes in different contexts.

It is likely that the semanticist would agree that these examples involve effects on truth conditions, and so a possible route for him would be to treat the adjectives as indexicals of some sort. This is the approach developed by Szabo (2001), focusing on the words ‘green’ and ‘good’, for which we don’t seem to be able to give precise definitions, and whose conditions of application seem to vary from context to context, depending on considerations like, for ‘green’, degree of greenness, standards for judging greenness, or what parts of the relevant object have to be green. Szabo suggests that these words are incomplete one-place predicates, and hopes that the same treatment can be extended to most adjectives.

No doubt it *is* possible to analyse most adjectives as indexical, but I would question whether there is any good motivation for doing so, beyond the fact that the semanticist has to treat them in this way in order to avoid admitting free enrichment and preserve the thesis that the intuitive truth conditions are the result of composing the referential contents, or senses, of the expressions used (which was Szabo (2001)’s purpose). Given that what is at issue now is whether or not this thesis is correct, the fact that a particular analysis supports the thesis, and vice versa, in itself provides no argument for either the analysis or the thesis.

The main objection to the semantic treatment rests on the doubtful utility of the proposed hidden indexicals. Consider, in this regard, (30), discussed by Travis (1985: 197):

(30) The kettle is black.

Travis describes numerous different sets of truth conditions for different occasions of use of this sentence: a kettle might or might not count as black in different contexts if it is aluminium but covered in soot, stainless steel but painted black, cast iron but glowing with heat, cast iron on the outside but white inside, and so on (and see also Gross (1998, chapter 3) on the “part” context-sensitivity of adjectival predicates). Travis (1981, 1985, 1991) and Gross discuss a great number of further examples, and argue that any predicate in the language can make many different contributions to truth conditions, depending on the context in which it is used.

Given the many different ways of counting as black that there are, as illustrated by Travis, it seems unlikely that an indexical could constrain the interpretation, beyond merely indicating that some contextual contribution can occur. And if all that the indexical does is provide somewhere to locate the pragmatic contribution, then this doesn’t meet the semanticists’ own requirement for a systematic, explanatory theory. To repeat a point made in the discussion of the possibility of a metonymy operator: it’s not clear that the indexical in colour expressions could indicate anything more than that the property ‘black’, for example, is to be used as

a guide to the interpretation. It would therefore place no constraints on interpretation that don't follow automatically from the workings of the pragmatics system, which will use whatever it's given as a guide to the speaker's meaning. To take just the example of the part context-sensitivity of colour terms, illustrated by (30) above, it doesn't seem that we need anything more than the general knowledge that we can attend to different parts of objects, and that the different parts can be different colours, to explain why these pragmatic adjustments occur.

Also, some adjectives, unlike the colour terms or evaluative and comparative adjectives, have very clear conceptual boundaries and can therefore be assumed to have an absolute semantics: obvious examples are 'round', as in (28) above, and other geometric terms. These are highly unlikely to encode indexicals, yet they can be used loosely. A pragmatic account of how these adjectives are loosened in context is needed, therefore, and should easily generalize to explain modulation of the less clear cases, and so the argument for indexicals in 'flat', 'bald', colour terms, and so on, would be undermined<sup>19</sup>.

Finally in this section, I'll discuss another set of examples where it is difficult to deny that the enrichment affects truth conditions, and yet hidden indexicals look unlikely. In (31)-(33), the overt meaning alone can determine a proposition, but this is clearly not a proposition that the speaker wants to communicate (or that the hearer recovers):

- (31) It will take [*a long*] time for that cut to heal.
- (32) Mary has a [*very good*] brain.
- (33) You're not going to die [*from that scratch*].

The propositions determined by the linguistic meaning of (31) and (32) are trivially true; (33), taken literally, is patently false. Like the loose uses discussed above, these are not perceived as obviously non-literal, and are accepted as non-trivially true in appropriate contexts. However, hidden indexicals or covert semantic parameters are unlikely in these cases. A conceivable solution for (31) might be to treat the word 'time' as encoding a hidden quantifier (though this would be redundant in a majority of uses of the word, and we would like some independent justification for more hidden structure here). As for the others: 'brain' is not obviously a scalar noun; and if the meaning of 'die' included some variable-like element such as 'from x', then this would have to be existentially closed in discussions of immortality, and existential closure seems to be something that the

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<sup>19</sup> Wilson and Sperber (2002) give an account of how some other kinds of term with an absolute semantics can be loosened in accordance with expectations of relevance – e.g. 'four o'clock' used to mean 'between four o'clock and five past'; 'run' used to mean 'walk quickly'.

semanticists hope to avoid<sup>20</sup>. Anyway, they seem reluctant to be too liberal with otherwise unmotivated extra structure, so their best hope might be to deny that the alleged unarticulated constituents in these examples should be considered part of truth conditional content, by appealing to the fact that the literal meaning in each case is easily accessible, on brief reflection. But this argument would be incompatible with the semanticists' stated aim: to account for our intuitions about truth conditions. It is irrelevant whether or not the "literal" truth conditions are accessible upon reflection, and the "intuitive truth conditions after you've thought about it a bit" seems to be a contradiction in terms<sup>21</sup>. Consider (34):

- (34) A: It'll take time for that cut to heal.  
 B: No, it won't: I'm having the stitches out tomorrow.

Similar examples could be constructed for the other enrichments discussed in this section, and the naturalness of such exchanges suggests that what we evaluate and respond to are the "enriched" truth conditions of the utterance, which include the results of various modulations. The semanticist may therefore have to accept these as genuine cases of strong pragmatic effects on truth-conditional content, which can't be traced to some element of the syntax/semantics.

In conclusion, there are several types of case where context clearly does affect truth conditions, but which can't be accounted for by any linguistic trigger requiring contextual contribution. King and Stanley's attempt to explain what they agree to be a truth-conditional effect in conjunctions embedded under conditionals is, at best, incomplete, and looks like collapsing into a free enrichment account, since pragmatic constraints will be needed to supplement their proposal. Referential uses of definite descriptions are generally agreed to result in different truth conditions than attributive uses, but there is no case for a hidden indexical or covert semantic parameter, and the move from the encoded (attributive) meaning to the referential truth conditions is a strong pragmatic effect. Various types of loose use, and non-figurative cases where the semantic content is not meant, reinforce the argument that, if the intuitive truth conditions are what we are meant to be explaining, then strong pragmatic effects have to be accepted: our semantic

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<sup>20</sup> Overt indexicals can't be existentially closed, and the semanticists would like covert indexicals to be as much like overt ones as possible, given that the latter's existence is beyond doubt and that evidence for the former's existence is weak. See Stanley (2005b); Marti (2006); Recanati (2002: 326-8).

<sup>21</sup> And, as mentioned in a previous footnote, some of the semanticists' own favoured cases of hidden indexicals accounting for truth-conditional effects (such as quantifier domain restriction) are similarly transparent.

competence only partly determines truth conditions, and we need a theory of what constrains free enrichment<sup>22</sup>.

## **5 Towards constraints on free enrichment**

I'll assume from now on that many of the pragmatic effects that contribute to the proposition expressed are to be accounted for by free enrichment. The examples discussed in previous sections suggest that free enrichment is essentially a local process: it applies to subpropositional constituents, either replacing encoded concepts with inferred concepts, or adding material (unarticulated constituents) to change the interpretation of some encoded element (making it more specific, or loosening its denotation, to meet the hearer's expectations of relevance, informativeness, and so on). Enrichment contrasts with global processes, responsible for conversational implicatures, which take full-fledged propositions as input.

The enrichments proposed by pragmatists can all be understood as local adjustments. The narrowings and loosening discussed in the last section are the most obvious examples: no extra constituents are added, but the encoded concept is replaced by another, relevantly related, concept. Recanati (1993, 2004), Sag (1981) and Nunberg (1995) discuss metonymies such as (26):

(26) I'm parked out back.

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<sup>22</sup> Subsentential utterances, such as (i)-(iii), might initially appear to be very obvious cases where unarticulated constituents need to be supplied to develop the encoded linguistic meaning into a proposition:

- (i) John's father.
- (ii) Nice shirt.
- (iii) Typical.

We can use such utterances to express propositions that have all the characteristics of truth-conditional content: (i) and (ii) could clearly be used to lie; (ii) can be used ironically; they can all serve as premises for implicatures – (iii) could implicate disapproval – and so on (as Stainton, e.g. 2005, has pointed out). But some semanticists have argued for treating these as a (previously unrecognized) type of ellipsis (see, for example, Stanley 2000; Ludlow 2005; Merchant 2004, to appear). Stainton (2005; forthcoming) has defended the pragmatic approach and raised problems for the ellipsis theory that remain to be addressed. The ever-growing literature on subsententials (e.g. the collections of papers in Elugardo and Stainton (2005) and Progovac et al (forthcoming)) can't be dealt with here, but the eventual outcome of that ongoing debate might well provide more evidence for unarticulated constituents.

They point out that we don't seem to first compute the absurd "literal" meaning on which a person is parked out back, then, recognizing the absurdity, infer that the speaker was referring to the car owned by that person; instead, the deferred meaning is computed at the local level, and is what goes into the composition process.

Domain restriction, as when utterances of (35)a and (36)a are used to express the propositions in (b), can also be seen as local:

- (35) a. Every boy was there.  
       b. *Every boy in the class was there.*
- (36) a. I've got nothing to wear.  
       b. *I've got nothing suitable for a party to wear.*

Recanati (1993: 262-3) treats (35) as enrichment of the predicate 'boy' to '*boy in the class*', rather than the whole proposition being enriched; and, similarly, the enrichment in (36) is just specifying the domain over which 'nothing' quantifies.

Enrichment of (37) and (38), too, is local, involving modification of just the noun, rather than recovery first of, e.g., the trivially true proposition that the activity in question will take place over a period of time, and then the calculation that what the speaker is trying to communicate is something else:

- (37) It will take [*a long*] time.  
 (38) She's got a [*good*] brain.

Moving on to the causal connections in 'and'-conjunctions, it is less clear which subpropositional constituent is getting adjusted: neither of the conjuncts individually is enriched; rather, it is the relation between them that is modified, and the use of 'and' provides some more syntactic/conceptual structure to which the unarticulated constituent can be attached. Also, that this should be treated as a local enrichment is suggested by the fact that the causal connection falls in the scope of logical operators and propositional attitudes (as demonstrated by (20), repeated here), positions that are not susceptible to a global inference process:

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

And the other enrichments occur in embedded positions too – in (39), the consequent, that the speaker will stay at home tomorrow, depends on the location of rain, and so on:

- (39) If it rains tomorrow, I'll stay at home.  
 (40) If you're parked in front of the entrance, you'll get a parking ticket.



That brief survey covers a representative range of proposed pragmatic enrichments, and suggests that they all can be seen as local processes. But, assuming that enrichment does only operate locally, is this just a stipulation, or is there some independent way of excluding global processes from the proposition expressed?

I'll turn now to the second, and final, case that Stanley (2002a; 2005a) suggests of alleged overgeneration by free enrichment (the first having been the 'or'-introduction case, which I dealt with in section 3). Imagine that the contextual assumption (41) is already highly salient. In that case, Stanley asks, why can't an utterance of sentence (42) be enriched to the proposition (43)?

(41) *Everyone who likes Sally likes his mother.*

(42) *Everyone likes Sally.*

(43) *Everyone likes Sally and his mother.* (Stanley 2002a: 165)

The answer to this is, in fact, quite straightforward. I discussed in some detail in section 3 a case with a similar structure to this (example (16)), to show that some global processes are excluded automatically on an account on which pragmatic inference develops the subpropositional logical form only as far as needed to produce a proposition that provides an inferential warrant for the intended implications of the utterance. This constraint also applies to the current case: the proposition expressed by (42) cannot be enriched beyond '*Everyone likes Sally*' because this proposition is needed as input to a global inference process together with the premise in (41) to derive the proposition '*Everyone likes his mother*', before the two can be conjoined.

Neither of the examples of alleged overgeneration by free enrichment discussed in the literature, then, really poses any problem. A slightly more difficult case, though, would be a variation on Stanley's &-introduction case that I'll discuss now.

Here's the example: it's already salient somehow in the context that John likes his mother. So, why can't an utterance of (44) express proposition (45)?

(44) *John likes Sally.*

(45) *John likes Sally and his mother.*

(46) *If John likes Sally and his mother, then he likes dominant women.*

(47) *John likes dominant women.*

In the context of a discussion of what sort of women John likes, then another premise like (46) would be easily accessible in the context. In this case, deriving the conjunction (45) would be highly relevant as it would allow the hearer to draw the conclusion in (47). The proposition '*John likes Sally*' doesn't appear to be required independently here, as it was in the above example, so don't enrichment theories (incorrectly) predict that (45) could be the proposition expressed by (44)?

Free enrichment theories would be forced to make this prediction if conjoining the proposition expressed by (44), ‘*John likes Sally*’, with the contextual assumption ‘*John likes his mother*’, followed by MPP, were the only way to derive the conclusion (47). But an alternative to &-introduction is provided by the rule of conjunctive modus ponens, given here<sup>23</sup>:

- (a) Input: (i) (If (P and Q) then R)  
 (ii) P  
 Output: (If Q then R)  
 (b) Input: (i) (If (P and Q) then R)  
 (ii) Q  
 Output: (If P then R)

We have, then, two alternative ways of processing the same set of premises to derive the same conclusion: &-introduction followed by MPP, or conjunctive modus ponens then MPP. When we consider how the pragmatic processing of (44) would go, taking into account the accessibility of the various premises at different stages in the derivation, we find that conjunctive modus ponens is more likely to be applied than the combination of &-introduction and then MPP. In the context described above, the complex conditional plus one of the conjuncts in the antecedent are salient already in the context, allowing conjunctive modus ponens to apply:

- Premise 1: *If John likes Sally and his mother, then he likes dominant women.*<sup>24</sup>  
 Premise 2: *John likes his mother.*  
 Conclusion: *If John likes Sally, then he likes dominant women.*

So, when the other conjunct in the antecedent of the conditional premise is recovered from the utterance of (44), MPP applies to generate the intended conclusion:

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<sup>23</sup> Sperber and Wilson (1986/1995: 99-100) argue that the rule of conjunctive modus ponens is psychologically plausible. Assuming that our cognitive systems have evolved to maximize efficiency, any adaptation that would maximize the usefulness of new information would be highly valued, and the rule of conjunctive modus ponens would be one such adaptation. If a premise with a conjunctive antecedent is available, as in (46), the chances of finding either conjunct separately, either stored in memory or communicated, are much greater than the chances of finding the whole antecedent. So having at one’s disposal the rule of conjunctive modus ponens would greatly increase one’s chances of being able to make use of newly presented information.

<sup>24</sup> This derivation has been simplified somewhat for ease of presentation. A more realistic starting point would be a set of premises including ‘*If John likes his mother and other similar women, then he likes dominant women*’, plus ‘*Sally is like John’s mother*’, but the derivation would still go via conjunctive modus ponens rather than &-introduction.

Premise 1: *If John likes Sally, then he likes dominant women.*

Premise 2: *John likes Sally.*

Conclusion: *John likes dominant women.*

The premise ‘*John likes Sally*’ must be available on its own to license this MPP deduction, so this proposition, without further enrichment, is correctly predicted to be the proposition expressed by (44).

Conjunctive modus ponens provides an alternative to &-introduction and allows us to avoid incorrectly predicting free enrichment in this example. And, although I can’t go into this in any detail here, it may be that &-introduction and some other global inferences are excluded independently: Sperber and Wilson (1986/1995: 96-9) have argued that the only inference rules used in the spontaneous processing of information, such as utterance interpretation, are elimination rules, and that our mental deduction systems don’t have access to introduction rules. The main argument they offer for this is as follows. From any given set of premises, an infinite number of conclusions could be validly inferred using the standard introduction and elimination rules for the logical operators. This is not a serious problem for informal deductive systems, because the intelligent user can decide which rules to apply, but if a characterization of the human deductive systems incorporates introduction rules, such rules will reapply indefinitely to their own output, and the derivation, once set in motion, would never stop. Introduction rules are, therefore, not adaptive, and it is plausible that our spontaneous processing systems do not incorporate them (especially since there are alternatives, such as the conjunctive and disjunctive versions of modus ponens). Sperber and Wilson’s claim will probably need much more investigation, but if it is correct that we don’t use introduction rules in spontaneous human inference, then this constraint would automatically apply to free enrichment, excluding potential examples of overgeneration such as that above<sup>25</sup>.

Fully addressing this aspect of the overgeneration argument against free enrichment will, of course, eventually require looking at many more examples of non-occurring global enrichments, and explaining how pragmatic processing predicts that they don’t arise. But in the rest of this section, I’ll briefly consider a different type of possible overgeneration by free enrichment, and how it could be accommodated.

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<sup>25</sup> So far, there is psycholinguistic evidence that the ‘or’-introduction rule is very inaccessible (Rips 1983). ‘Or’-introduction was discussed in section 3, with reference to Stanley’s example of alleged overgeneration by free enrichment: since it always has a trivial result, ‘or’-introduction is predicted not to occur in pragmatic processing.

The following examples have been analysed by Carston (2002), Recanati (2004), and other pragmatists, as involving free enrichment (the uttered sentences are outside the square brackets; enrichments are inside):

- (48) He handed her the scalpel and she made the incision [*with the scalpel*].  
 (49) She took the gun, went out into the garden, and killed her father [*with the gun*] [*in the garden*].  
 (50) She took out the key and opened the door [*with the key*].

If the alleged enrichments here are part of truth-conditional content, then they are a problem for the semanticist, since he would have to discover something in the linguistic meaning that could account for them. But if they aren't, then they are more examples of overgeneration by free enrichment, as there is no obvious reason why they shouldn't occur on the pragmatists' account. They are just local adjustments – modifications of predicates – so couldn't be excluded by the arguments discussed above and in section 3 about global enrichments. Stanley (2005c) suggests that many such elements should not be considered part of truth conditions: (48), for example, wouldn't be judged false if the incision was made with a razor blade instead of the scalpel, therefore the alleged unarticulated constituent '*with the scalpel*' isn't part of the truth conditions. Moreover, it is unlikely that in many cases, the intended implications of the utterance would depend on these enrichments, so it would be difficult to argue that they are necessary in order to warrant further inferences. Nevertheless, I'll maintain (using (48) as an example) that they should be treated as contributing to the proposition expressed.

It's clear that the hearer of (48) would assume that the incision was made with the scalpel, since, if it wasn't, it was misleading (and pointless) for the speaker to mention it in the first clause. It would be difficult to use the same sentence to communicate anything different (such as that the incision was made with a penknife), since alternatives would be much less accessible than the material already made highly salient by the first conjunct. So the information that the incision was made with the scalpel becomes more salient as a result of the utterance, and that this information is made salient is clearly intended by the speaker, since it's the reason why she mentioned the scalpel in the first conjunct. This information, then, is part of what is communicated by the utterance, which raises the question of whether it is part of the proposition expressed, or implicated.

If the information were implicated, then the proposition expressed and implicature would be, respectively, something like (51) and (52):

- (51) He<sub>x</sub> handed her<sub>y</sub> the scalpel and she<sub>y</sub> made the incision.  
 (52) She<sub>y</sub> made the incision with the scalpel he<sub>x</sub> had just handed her<sub>y</sub>.

Given that deriving propositions requires effort, and that effort will only be invested if it is likely to produce some reward in the form of useful, relevant information, it follows that the various propositions that the hearer recovers from an utterance should to some extent play independent roles, with each of them leading to effects not achieved from other propositions (Carston 1988, 2002). So the problem with treating the ‘*with the scalpel*’ as implicated is that the implicature of which it forms a part subsumes all of the information in the proposition expressed, as can be seen from (51)-(52). This makes the proposition expressed redundant as it has no independent role to play. So it would be more economical, in terms of processing effort and numbers of representations, to incorporate the enrichment in the proposition expressed.

Also, it doesn’t seem very straightforward to treat this as a global inference, so that premises and conclusion form a valid argument (as they did in the examples of global inference discussed above, (16) and (44)): would (51) be the input to this inference, along with some premise about the fact that a scalpel was mentioned, to derive the implicature (52)? Rather, it looks more promising to treat it as a local enrichment. An explanation of how this works would make use of the widely accepted idea that related information is stored together in memory, as cognitive “scripts” or “schemas”. These include scripts of stereotypical or frequently encountered situations, and when some of the information in the script is activated and represented in the central conceptual system(s), the related information is activated along with it, becoming more accessible. Some account is needed of how information in such scripts is integrated with information derived from utterances and other perceptual sources, but an outline of a story on how (48) is processed would be as follows. (48) refers to a familiar scenario, so we are likely to have a script of a stereotypical sequence of events of a nurse handing a scalpel to a surgeon and the surgeon making an incision with that scalpel. Upon hearing the first part of the utterance of (48), the information in this script is automatically activated. The conceptual structure decoded from the sentence maps on to part of this script, and incorporates the additional material, since this can be assumed to be true in the absence of any indication to the contrary.

The semanticists’ reason for discounting (48)-(50) as cases of free enrichment is that we disregard the alleged unarticulated constituents in evaluating the truth of the utterances – (50) is still true if the door was opened with a credit card, and so on. But, since incorporating these enrichments in the proposition expressed has several advantages (being a more efficient way of deriving the various components of the speaker’s meaning, and of exploiting material (in these cases, the first conjunct) that would otherwise be redundant and not link up with the rest of the propositions that are communicated), it’s not clear that what we are interested in recovering, as the primary speaker meaning, is only that portion of the

communicated content upon which the strict truth or falsity of the utterance depends.

I've made some initial suggestions about how free enrichment is constrained – it is a local process, and I've accounted for why at least some global enrichments are excluded. In principle, any local enrichments may be possible, but since enrichment, like any pragmatic process, will take place only as far as it has some worthwhile effects, it should be possible to predict, for any given utterance, how much enrichment will take place, by considering how it would warrant the implications that are to be drawn from it, and how the relevance of all the constituents of the uttered sentence is established.

## 6 Conclusion

I hope to have shown that free enrichment is still very much a live option, and that there is no reason to accept the semanticist thesis that all effects of context on the proposition expressed are linguistically mandated. Several phenomena – referential uses of definite descriptions, causal relations in 'and'-conjunctions, and utterances where the "literal" proposition expressed is not communicated – strongly suggest that, even if you share the view that as much of truth-conditional content as possible should be handled in the syntax and semantics, attempts to account for our truth-conditional intuitions will sooner or later need to appeal to pragmatic constraints.

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