Two Types of Semantic Presuppositions

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Abstract Expressions that normally carry presuppositions differ with respect to whether their presuppositions can be *suspended*, or behave as if they were mere entailments, in exceptional circumstances. In recent terminology there are said to be 'soft triggers', which allow for suspension, and 'hard triggers', which do not (Chierchia and McConnell-Ginet 2000; Simons 2001; Abusch 2002, following Karttunen 1971; Stalnaker 1974; Wilson 1975). Most of these authors have assumed that the possibility of suspending a presupposition argues against its being a *semantic presupposition* of the relevant expression, and in favor of treating it as a pragmatic inference. If this is correct, the explanatory burden for the theory of semantic presuppositions would seem to be reduced. On the other hand, if both soft and hard triggers are to be treated uniformly as carrying semantic presuppositions, two logically distinct problems arise. The first is to give an account of why suspension is possible in the first place. The second is to explain, given that account, why suspension is impossible or extremely difficult for hard triggers. This paper suggests that there is a simple answer to the second problem: soft triggers necessarily entail their semantic presuppositions, hard triggers do not, and speakers do not invoke semantic presuppositions idly. In addition, formulating this answer makes transparent the nature of the first problem.

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1 Accommodating semantic presuppositions

Two notable features of the following 'families of sentences' are that (normally) (i) they share a salient implication (their complement clause), and (ii) it is defective to use any of their members when this implication hasn't been agreed upon with one's interlocutor(s) in advance (in the terminology of Stalnaker (1973, 1974), the relevant implication must be *pragmatically presupposed*):

(1) a. John {realizes/regrets} that Bill left.
b. John doesn't {realize/regret} that Bill left.
c. If John {realizes/regrets} that Bill left, he'll apologize.
d. Does John {realize/regret} that Bill left?

An influential theoretical move to explain these properties was to take the implication to be a distinct category of meaning – a *semantic presupposition* – associated by convention with the relevant lexical items (here 'realize' and 'regret'; similarly for other words that exhibit (i) and (ii) in a relevant family of sentences, e.g. 'start [smoking]' and 'stop [smoking]'). I will call any theory that posits a conventional semantic property of words/structures in accounting for (i) and (ii) and related facts, a *semantic theory of presupposition*. One way of implementing such a theory is to introduce a semantic value ('#'), distinct from both truth and falsity, assigned by hypothesis to sentences like (1) in the event that the relevant implication does not hold. Then, by definition

(2) a sentence *s (semantically) presupposes p*, or has the *(semantic) presupposition p*, $\leftrightarrow$ *s* is # unless *p* is true

The *dynamic* view of presuppositions ((Heim, 1983)) is closely related to (2). It differs in that sentence meanings are equated with potentials for updating information states, rather than truth conditions. As such, semantic presuppositions are equated to constraints on when a sentence can successfully update an information state, rather than on when it has a (classical) truth value as (2) would have it. Importantly, (2) and the dynamic approach are stronger than the basic view that there is a conventional linguistic category, 'semantic presupposition', which explains (i) and (ii). They make a sentence's semantic presuppositions also part of its truth conditions or meaning (a point to which we return at length below, in §2).

Exceptions to (i) and (ii) exist, and part of the task of a semantic theory of presupposition has to be to allow for an explanation of this fact. Exceptions to (i) I will call cases of *suspension*; exceptions to (ii) are known as cases of *global accommodation*. More generally, suspension involves a presupposition acting as if it were a mere entailment of the local clause in which it is triggered (as such the phenomenon is often called 'local accommodation'; I stick with 'suspension' for reasons that will become apparent directly, but also because 'local accommodation' doubles as the name for the dynamic approach's) theoretical account of the phenomenon):

(3) a. As far as I know, everything I've said is correct. But if I realize later that I have not told the truth, I will confess it to everyone. (Karttunen, 1971, 1973)
b. Have you recently quit/stopped smoking? [on a survey designed to assess possible anxiety, and its causes][2]

The presuppositions of 'regret' and 'stop' are not inherited, contrary to the pattern that is normally observed (as exemplified by (1)). (Note that this failure of inheritance is at pain of the utterance being nonsensical, which lends credence to the idea that the examples are exceptional or special.) In contrast, in global accommodation a semantic presupposition does appear as an implication in accord with the normal pattern, but fails to be pragmatically presupposed in advance. In spite of this, the utterance is not deviant, or at least not entirely so.[3]

(4) a. announcement: We regret that children cannot accompany their parents to commencement exercises. (Karttunen, 1974)
b. immediately upon meeting a new doctor: My throat has been hurting and I don't know what to do. If I stop smoking, I'm going to get fat.

Suspension is often taken to pose a distinct and stronger problem for semantic theories of presupposition. Arguably, global accommodation is a natural consequence of something more general about communication (Stalnaker 1978, 2002; von Fintel 2008). Stalnaker and others have pointed out that even in cases not involving semantic presuppositions, the very fact of an utterance occurring can affect what is taken to be true by conversants – in particular the hearer – with consequences for the interpretation of that very utterance.[4] Global accommodation could be viewed as a special case of this, where a speaker succeeds in causing a semantic presupposition to be accepted by his conversant, simply by asserting a sentence that normally requires it to be (exploiting the fact that the hearer recognizes this requirement). If this is correct, no special theoretical mechanism needs to be posited to account for global accommodation.[5]

Suspension, on other hand, seems to require building flexibility into the theory, either regarding (a) precisely whether an implication is a semantic presupposition (as opposed to simple entailment), in a given case, or (b) the rules that determine how the semantic presuppositions of a complex sentence are determined by those of its parts. (a) can be cashed by positing a presupposition-carrying vs. presupposition-free ambiguity, or by positing an operator to 'remove' presuppositions as in Beaver

[2] Based on an example in Simons (2001).

[3] The reader will note that as I've put it, some apparent cases of global accommodation (e.g. (4-a)), could alternatively (or additionally) be cases of suspension. See §3.

[4] A simple example: B is searching for A who calls out, 'I'm behind the tree!'. B can understand what A says – that he, A is behind the rock – because he recognizes A's voice and thus comes to know that A is (the person) speaking.

[5] As it is often put, global accommodation on this view is expected to be constrained only by whether the hearer is willing to come to accept the semantic presupposition as true without further discussion.

and Krahmer 2001. (b) is accomplished in *non-deterministic* theories of presupposition projection (see for example van der Sandt (1992); Geurts (1999)).

Complicating the picture for semantic theories of presupposition – be they deterministic or not – is the fact that certain presupposition triggers are more amenable to suspension than others. Recent work identifies two categories, amenable or 'soft' triggers, and unamenable or 'hard' ones (Simons 2001; Abusch 2002). It takes 'too' and 'again' as paradigm cases that resist suspension, contrasting them with change of state verbs. Earlier work focused on verbs like 'regret', contrasting them 'realize' and 'discover' (Karttunen 1971, 1973; Stalnaker 1974).[6]

(5) a. HARD TRIGGERS: feelings factives (*regret*, *be surprised*); *too*, *again*, *it*-clefts, ...
b. SOFT TRIGGERS: informational factives (*discover*, *know*, *realize*); change of state verbs (*start*, *stop*, *continue*)...

The distinction can be seen by contrasting (3-a) and (3-b) with the following examples involving 'regret':

(6) a. As far I know, I have done nothing wrong. #?But if I later regret that I have hurt her, I'll apologize.
b. #?Do you regret that you smoke? [on a survey designed to establish whether teens are engaging in risky behaviors, and their attitudes towards doing so]

It seems that (6-a) and (6-b) are much less felicitous than (3-a) and (3-b). This is naturally explained if suspending the presupposition of 'regret' (i.e. it's complement) is difficult or impossible, in contrast with the presuppositions of 'realize' and 'stop'. The presupposition would have to be suspended in (6-a) in order for the discourse to be consistent and coherent. In (6-b) the assumption is that the survey is designed precisely to establish a person's behaviors and attitudes towards them, and therefore can be taking neither for granted. (Note that it would be perfectly sensible for such a survey to pose a question asking explicitly what (6-b) would if it's presupposition could be suspended: 'Do you smoke and regret that you do?'.)

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[6] Presuppositions of hard triggers can sometimes be "suspended' under negation ('I don't regret that I hurt her – because I didn't'; 'I didn't hit Johnny *too* – because I didn't hit Billy either'). Intuitively, these case involve denial of a previous or inferred assertion, and I assume that they require a different kind of analysis; see Horn (1985).

Simons (2001) and Abusch (2002) give examples illustrating the difficulty of suspending the presuppositions of 'too' and 'again', respectively.[7] The following example is to the same effect:

(8) teacher: Johnny claims that you gave him a black eye. Is this true?
problem child: #?I don't know, but if I give Susie a black eye too, they'll be twins. (How cool would that be!)

The response should be perfectly sensible and felicitous assuming (a) that the presupposition of 'too' can (in principle) be that the problem child did give Johnny a black eye, and (b) that suspension of this presupposition – turning it into a local entailment – is possible. That (a) is correct, and thus that (b) cannot be, is shown by the following example: (the example shows in addition that 'too' allows for global accommodation)

(9) teacher: Johnny claims that you hit him. Is he telling the truth?
problem child: I hit Susie too. What are you going to do about it?[8]

In many cases 'too' and 'again' seem to resist global accommodation, but this is likely an artifact of their anaphoric nature (Beaver and Zeevat 2007; Kripke 2009). The apparent fact that all triggers allow for global accommodation (cf. also (4-a) above), but not all allow for suspension, lends plausibility to treating the two phenomena distinctly.[9]

Most authors who have discussed soft triggers have explicitly or implicitly taken their flexible behavior to argue against positing that they carry genuine semantic presuppositions (e.g. Stalnaker (1974); Wilson (1975); Chierchia and McConnell-Ginet (2000); Simons (2001); Abusch (2002)). Each has pursued a strategy of trying to derive the (pragmatic) presuppositional requirements typically imposed by soft triggers, and the variability thereof, from (putatively) Gricean pragmatic considerations. However, most assume or allow that hard triggers do carry semantic

[7] Abusch (2002)'s example (13):

(7) John will either attend the first meeting, or miss it.
a. #?And he will either attend the second meeting too, or miss the second meeting too.
b. And he will either continue attending meetings, or continue missing them.

As Abusch points out, if the presuppositions of both occurrences of 'too' and 'continue' are suspended – turned into local entailments – the two examples become roughly semantically equivalent (assuming there are two meetings; ≈John will either attend the first meeting and the rest as well, or John will miss the first meeting and the rest as well). But the example with 'too' seems to be marginal – and this is naturally explained by the assumption that 'too' resists suspension. The projection behavior of disjunction is notoriously complex (see Beaver and Krahmer 2001), but it is generally agreed that unmarked cases of $\phi \vee \psi$ require that the presupposition of at least one of ϕ or ψ be satisfied. Given that suspension is impossible for 'too', the first example should therefore either presuppose that John will attend the first meeting, or that he will miss it, in conflict with the fact that the preceding discourse is only felicitous if neither of these outcomes is certain.

[8] Similarly with 'again': 'I'm going to do it again, harder, now that I know that he ratted me out.'

[9] In turn it could be taken to lend plausibility to the Stalnakerian account of global accommdation. I return to global accommodation in §3.

presuppositons. Somewhat ironically, if their strategy could be successfully carried out, it would lighten the explanatory burden for the theory of semantic presuppositions, since the theory would no longer need to provide any account of suspension.

This paper suggests that the distinct flexibility of soft as opposed to hard triggers does have a principled explanation under the assumption that both carry genuine semantic presuppostions.[10] I propose that the differences between triggers can be reduced to the simple question of whether or not a trigger entails – in addition to merely presupposing – its semantic presupposition. In particular I propose that

(10) soft triggers necessarily entail their semantic presuppositions; hard triggers do not

I will take suspension to amount to the literal waiving or cancelation of a presupposition. It follows from (10) that if the presupposition of a hard trigger is suspended it is entirely inert, contributing nothing to the truth conditional meaning *or* presuppositions of the sentence in which it appears.[11] In §2 I argue that it is this fact that explains that hard triggers resist suspension.[12] Several points require immediate clarification.

First, by a trigger 'entailing' its presupposition I mean that atomic sentences containing it do; the sloppy usage is kept as a convenience. Second – as the reader may have noticed already – (10) simply could not be true under some prominent understandings of semantic presupposition. For example, under (2) or in dynamic semantics every sentence entails its semantic presuppositions by definition. I return to this point directly in §2. In §2.1 I show how trivalent and dynamic theories can be modified to make them compatible with (10), in a way that is argued to be theoretically innocuous. For the moment, however, it may simply be noted that many semantic theories of presupposition exist which are compatible with (10), notably bivalent theories which treat presuppositions as primitive, independent components of meaning (e.g. Gazdar (1979); Karttunen and Peters (1979); Schlenker (2006, 2008)).

An implicit motivation behind pragmatic approaches to soft triggers seems to be an assumption that there is something conceptually problematic about the idea that semantic presuppositions can be canceled or suspended. For the most part I will simply take it for granted that the project of giving a uniform semantic account of presuppositions is not fatally compromised by soft triggers. In this respect I do not

[10] While I am neutral as to whether *some* presuppositions have a pragmatic source, I find existing pragmatic accounts either insufficiently predictive or explanatory, or not really pragmatic in the first place. See Soames (1976) for criticism of Wilson (1975)'s account, Simons (2001) on Stalnaker (1974), and Abusch (2002) in turn on Simons. I take Abusch's own account to be semantic in the sense I have laid out: it crucially relies on lexically specified, non-truth conditional information to derive the presuppositions of soft triggers, and the further principles appealed to are not pragmatic in a broad Gricean sense.

[11] This particular view of suspension makes the explanation perspicuous, but is not absolutely essential; see §3.

[12] Karttunen (1971) proposed something similar, in positing that there are two types of semantic presuppositions, strong and weak, carried by factives ('regret') and "semi-factives" ('discover', 'realize') respectively. This was meant to account for the difference in their suspendability. I do not discuss his idea here. Mine differs in that a uniformity of semantic presuppositions is maintained.

depart from many proponents of semantic theories of presupposition, who typically treat soft triggers as core cases of semantic presupposition, and assume a formal mechanism for suspension (e.g. Heim 1983; Beaver and Krahmer 2001). The primary goal here is to provide an answer, given a uniform semantic account, for why some triggers resist suspension.[13] I take it that this is an important question in principle, and that a uniform approach remains mysterious without an answer.[14]

However, I do think that addressing the primary goal of this paper helps to clarify what is and is not conceptually or theoretically problematic about suspension of semantic presuppositions. This comes out in §2, in showing how (10) explains the behavior of hard and soft triggers, and in particular in showing how this explanation can be cashed out within standard trivalent and dynamic frameworks for presupposition. The paper concludes (§3) with a discussion of the status of suspension, and of global and 'intermediate' accommodation, in light of the the discussion in §2.

2 Distinguishing presuppositional and assertive content, and hard and soft triggers

According to (2) every sentence (as well as its negation) entails its own semantic presuppositions: if s presupposes p then by definition s cannot be true (or false) without p also being true. Thus, a trivalent framework based on (2) needs to be modified or enriched for it to give sense to the claim that hard triggers – or any triggers at all – fail to entail their presuppositions.

The same situation obtains on the dynamic approach. On it, sentence meanings or contents are treated as (possibly partial) functions from contexts to contexts, with presupposition defined as follows:[15]

(11) a. sentence s presupposes p iff s expresses a partial function, $[\![s]\!]$, defined only for contexts c which entail p
b. **context** c **entails** p iff $[\![p]\!](c)$ is defined and vacuous, i.e. iff $[\![p]\!](c) = c$
c. **sentence** s **entails** p iff for all contexts c such that $[\![s]\!](c)$ is defined, $[\![s]\!](c)$ entails p

[13] Thus, I do not provide arguments against the possibility that the presuppositional requirements of soft triggers really do have a genuinely pragmatic basis. However, I think that evidence in favor of the latter would have to come from controlled psychological data about utterance interpretation; similar issues arise as in the case of the current debates about scalar implicatures.

[14] A further question not addressed in this paper is why a given trigger does or does not entail its semantic presupposition. For example, is there an interesting reason that we do not find a word meaning essentially what 'regret' does, but with the behavior of a soft trigger? The 'why' question is interesting, but is logically independent of the one focused on here: how can differences in suspendability be explained in terms of basic properties of semantic presuppositions? Even if there are interesting generalizations about the kinds of words that allow for suspension, it does not follow that the generalizations play a direct role in explaining the fact that they do.

[15] A context is treated a set of possible worlds; *assertion* of s is the instruction to apply $[\![s]\!]$ to the set of worlds compatible with what is pragmatically presupposed.

Since sentences are assumed to (only) add information to contexts ($\forall s, c, c'$, ($[\![s]\!](c) = c') \rightarrow c' \subseteq c$), it follows that if s presupposes p it entails it: every context in the range of $[\![s]\!]$ must entail p.

In both frameworks presuppositions are effectively equated with constraints on a sentence having a "classical" value in the first place: being either true or false, in the case of (2), and being able to update a context, in the case of dynamic semantics. Something missing in these frameworks, then, is a representation of what classical value (update effect) a sentence would have if its presuppositions could be ignored. It is precisely this information that I will appeal to to differentiate hard and soft triggers.

It must be stressed that there is nothing inherent to the idea of semantic presuppositions that requires abandoning classical interpretations for sentences. Classical interpretations can be 'added' to the trivalent and dynamic frameworks in an inconsequential way, as demonstrated below. A more direct example is the influential theories of Gazdar (1979) and Karttunen and Peters (1979), which took indeed took semantic presuppositions to be primitive and (thus) independent in principle of the assertive or truth conditional content of sentences.

To take an example, for Gazdar (1979) and Karttunen and Peters (1979), the proposition that it is raining is simply "labeled" as the semantic presupposition of 'John realizes that it is raining'. As such the truth conditional content of the latter can be independently specified, the plausible candidates being (i) that John believes that it is raining, and (ii) that it is raining and John believes that it is.[16] It is trivial on this approach to distinguish between sentences that entail their presuppositions and those that do not. If (ii) is the content of 'John realizes that it is raining' the sentence entails its presupposition, but not if (i) is.

For concreteness let us assume a view of semantic presupposition along the lines of Gazdar/Karttunen & Peters, with option (ii) for 'realize'. (Their particular proposals are not really crucial; what is crucial is simply that semantic presuppositions be such that they can fail to be entailments of their triggers.) More generally let us assume along the following lines:

(12) **soft triggers**: PS=p, meaning=$p \wedge q$

  a. example: *John stopped smoking*; PS=John smoked prior to u, truth condition=John smoked prior to u and John does not smoke at u
  b. example: *John realizes that it is raining*; PS=it is raining, truth condition=it is raining and John believes it is raining

(13) **hard triggers**: PS=p, meaning=q

[16] There is probably a further condition than belief, to the effect that the belief must be active or salient. I ignore this.

a. example: *John regrets that he is rich*; PS=John is rich, truth condition=John dislikes the possibility that he is rich, and believes that he is rich[17]
b. example: *Alex hit Johnny too*; PS=Alex hit x, truth condition=Alex hit Johnny (where x is anaphorically determined)

For the purposes of this paper it does not matter exactly how presuppositions and truth conditional content are represented – as syntactic objects, as in DRT (van der Sandt (1992); Geurts (1999)), or simply as propositions or sets of possible worlds. In either case, whether or not a a sentence entails its presupposition is trivially determined.

Given such a view of semantic presupposition, what is suspension? We will take it to be the literal waiving or cancelation of a semantic presupposition. One could think of this as a pretense that a trigger simply lacks a semantic presupposition that it does in fact carry (this view is compared to the account of suspension offered in classical trivalent and dynamic semantics, which is of necessity different, in §3). Given this view of suspension, and given that a hard trigger does not entail its presupposition, if the latter were suspended it would be idle or inert. It would contribute nothing to determining the overall presuppositions of the entire sentence containing the trigger, nor to determining its truth conditions. The situation is different for soft triggers. Since a soft trigger does entail its presupposition, the latter will make a truth conditional contribution, at least, even when suspended.

I claim that it is these facts that explain why hard but not soft triggers resist suspension, as a consequence of the following assumption: speakers do not use (semantically) presuppositional expressions gratuitously. The latter is to be understood as, a semantic presupposition should make a semantic contribution, either to determining a sentence's presuppositions, or its truth conditions. This means that if a presupposition is suspended – not projected/satisfied according to the normal rules – it must make truth conditional contribution. Normally, only the presuppositions of soft triggers will have this property, since they are also entailments. To see the intuitive plausibility of the assumption it is useful to return to a previous example:

(14) a. If I realize later that I have not told the truth, I will confess it to everyone. (= (3-a))
b. If I later regret that I have hurt her, I'll apologize. (= (6-a))

Given that 'realize' entails its presupposition, there is a reason for a speaker to have used it even though he's violating the normal conditions for its appropriate use (i.e. even though its presupposition is suspended). This is to assert exactly what he would have by asserting 'If I have not told the truth and I realize later that I haven't…'. But in the case of 'regret' (and soft triggers more generally), if the presupposition is canceled, it has been invoked to no apparent end. The situation is even more extreme in the case of 'too' and 'again', which seem to be solely

[17] There is a problem here of stating the truth conditional content perspicuously without using a presuppositional expression: there's no non-factive embedding verb that means roughly what 'regret' does. It should be clear what is intended, however.

presupposition inducing and contribute nothing truth conditionally (given (10) and that they are hard triggers).[18]

Partially underlying the explanation I've given is the idea that invoking a semantic presupposition is 'costly', and that the cost must be justified. A further step is needed to get to the crucial idea that, if a semantic presupposition is suspended, its having been invoked can only be justified by it continuing to play a semantic role (qua entailment). I find both of these ideas plausible, but do not claim that they follow from a priori considerations about (rational) communication. I assume that they are, as a simple matter of fact, norms governing the way we use semantic presuppositions.

However, I would point out that the crucial claim seems to be a necessary assumption for any theory that allows that some (atomic) sentences do not entail their semantic presuppositions. It is banal fact that no presupposition can be outright 'canceled' in an atomic sentence, be it due to a hard or a soft trigger:

(15) a. John realizes/regrets that Mary was fired. I mean – assuming that Bill *was* fired
b. #John realizes/regrets that Mary was fired, but she wasn't/might not have been.
c. #It is unclear whether or not Mary was fired. (But) John realizes/regrets that she was.

We can retract presuppositions or correct ourselves later when we realize that they may not hold, but we cannot deny them or profess ignorance outright. This is trivial if all triggers (also) entail their presupposition, but would seem to be unexplained if some don't, unless it is a fact that we don't use triggers gratuitously.

At this point a question a naturally arises: should the account of the hard/soft distinction proposed above be understood as grounding or explaining a convention, or as providing a (roughly) pragmatic explanation that applies on a case by case basis? On the first view, the failure of hard triggers to suspend is a hard 'grammatical' fact. Crucially though it is not an arbitrary one: its existence follows from the fact that the presuppositions of hard triggers would (in general) be idle if suspended, and the norm that presuppositions are not invoked to no communicative end. On the second view, these same facts are accessed by a hearer (speaker) in 'real time' when assessing (deciding whether to produce) sentences like (6-a).

The two views make different predictions in principle. We've assumed that soft triggers necessarily entail their presuppositions, whereas hard triggers do not. Or course, depending on the particular content of its complement clause (etc.), even a hard trigger may happen to entail its presupposition. The second view predicts that suspension should possible in those cases, and thus that there should be a contrast between the following:

[18] Abbott (2006) considers and dismisses an explanation of the hard-soft distinction that is related to mine. Roughly, what she suggests is that a trigger allows for suspension just in case there's no equally complex, or simpler expression that has the same content but is non-presuppositional. As she notes, this would explain why 'too' resists suspension, but fails to explain why 'regret' does, since there is no ready, non-presuppositional paraphrase of it (see fn. 17).

(16) a. therapist: I don't know whether you are an alcoholic. But if you regret that you are one, I can help you.
"…but if you are an alcoholic *and* regret that you are, I can help you."
b. analyst: I don't know whether you have regrets. But if you regret that you do, I can help you.
"…but if you have regrets and regret that you do (have regrets), I can help you."

In both cases the presupposition of 'regret' is the sentence about which ignorance is professed in the preceding discourse. Since in (16-b) but not (16-a) the presupposition is entailed by the (local clause containing) 'regret' (nb.: *x regrets that p* entails *x has regrets*), the second view predicts suspension to be possible in former but not the latter. (To help the in assessing the relevant intuition, paraphrases of the reading that would be given by suspension are give below the examples). On the first interpretation of the account, on the other hand, a contrast is not necessarily expected. This view posits a hard formal constraint against suspending the presuppositions of hard triggers, which is owes its existence to the fact that in many (most) cases the latter do not entail the former.[19]

I leave open the question of which interpretation of the theory is preferred, as the data seem to be fairly subtle, even more so in the case of 'too' (etc.). It seems that independently of suspension, 'too' is marginal when its presupposition is entailed by the clause containing it:

(17) a. Mari invited Bill. ??She invited John and Bill, too.
b. Mari is from France. ??She's from Paris, too.

To the extent that the examples are acceptable they take on an extra, 'scalar' meaning, that the assertion is particularly interesting or unexpected. Modulo this, is suspension possible for such examples? Suppose I've only ever encountered Parisians, and otherwise can't tell a French accent from a Belgian (or Canadian one). Someone even less knowledgeable than me has heard Mary speaking French, and wonders whether she is indeed from France:

(18) I don't know whether Mari is from France. But if she's from Paris, too, I'll be able to be certain that she's French.

2.1 Presuppositional and assertive content in trivalent and dynamic approaches

In this section I show how (10), and thus my proposal about what explains the difference in suspendability of hard and soft triggers, can be implemented within the trivalent and dynamic frameworks for presupposition. The purpose of the exposi-

[19] A related case that could provide even stronger support for the second view would be the possibility suspending a presupposition of hard trigger that is (only) *contextually* entailed by it.

tion is two-fold. First, I want to show that it is possible, in a rather trivial way (in spite of the apparent conflict with (10)), and one which does not rob the theories of any explanatory power. This is turn helps point up the more general fact that there is nothing inherently explanatory in any particular notion of semantic presupposition. The latter is relevant for evaluating whether and to what extent suspension is conceptually problematic for semantic theories of presupposition, a question that is taken up in §3.

The flip side of adopting the Gazdar/Karttunen & Peters view of presuppositions as primitives is is that, since they are defined independently of truth conditional content, an account of presupposition projection has to be given "in addition to" the meaning composition rules. Dynamic semantics was born in part because there were thought to be deficiencies in the empirical coverage or explanatory power of existing accounts of projection that treated presuppositions as primitives (see Heim (1983)'s criticism of Gazdar 1979 and Karttunen and Peters 1979, respectively). In addition, a motivating idea of dynamic semantics was that the projection behavior of connectives/operators should be made to follow directly from their ("truth-conditional") meanings.

The theoretical situation at present is somewhat different. First, there are a number of recent semantic and pragmatic theories of presupposition projection that are consistent with the view that presuppositions are conventionally associated with lexical items/structures, but are independent of their truth-conditional or assertive content (Schlenker 2008, 2009; Chemla 2009b). These approaches achieve the same empirical coverage as Heim's dynamic theory or a trivalent approach à la f Peters (1979). Second, while the dynamic approach does tie the projective behavior of connectives directly to their meanings, it has been recognized that doing so is not enough to derive that behavior. The explanatory power of dynamic semantics depends on (the existence of) a general procedure for pairing expressions with their attested dynamic meanings, as opposed to others that are equivalent in the bivalent case, but which would yield different, unattested patterns of projection (Soames 1989; Heim 1990; see also Schlenker 2006, 2008, 2009; Rothschild 2011). The latter point becomes relevant directly.

Let us consider how to make room for bivalent meanings for presuppositional sentences in dynamic semantics and under the trivalent approach, starting with the latter. In the trivalent approach, with '#' interpreted as neither true nor false, simply assigning a trivalent interpretation to the connectives determines how compound sentences inherit the presuppositions of their parts. To illustrate this, consider Peters (1979)'s trivalent interpretation of 'and', given here as a truth table:

(19)

$p \wedge q$	T	F	#
T	**T**	**F**	#
F	**F**	**F**	**F**
#	#	#	#

As Peters ingeniously showed, there is a trivalent interpretation for each of the connectives (along the lines of (19)) which yields exactly Karttunen (1973)'s general-

izations about how presuppositions project. These in turn are the predictions made by most modern theories, including Heim (1983)'s.

Let us now suppose that # is not mutually exclusive with True and False. Rather, it simply indicates that a sentence is (presuppositionally) *unassertable*. For atomic sentences this means simply that the sentence's presupposition does not obtain. The bottom left and top right cells in the table above will thus correspond to cases where p or q is presuppositionally unassertable. Although p and q are either true or false in those cases, which value they take is not relevant for present purposes, since it does not affect the presuppositional assertability of $p \wedge q$. Cells where no # appears correspond to situations in which p, q, or $p \wedge q$ is presuppositionally assertable, i.e. does not (also) receive a #.

Although presuppositional assertability is independent of truth value, we can retain (2). The above table (understood in the way presented in the previous paragraph) will predict the same presuppositions for $p \wedge q$ as it does under the trivalent approach, and in an essentially identical way. (2) entails that $p \wedge q$ presupposes whatever must be the case for it to not be #, namely that p is not #, and furthermore that if p is true, q is not #. p and q are not # iff their respective presuppositions are true. So, using the notation '$\textsc{ps}(s)$' for the (conjunction of the) semantic presuppositions of s, we have that $p \wedge q$ presupposes $\textsc{ps}(s)$ and $p \rightarrow \textsc{ps}(q)$.[20]

Since '#' is now being treated as an (ultimately) primitive or underived notion, so are semantic presuppositions themselves. Importantly, though, the situation is not so different if '#' is treated as neither true nor false. As argued by Soames (1989), it simply does not follow from a priori considerations about communication that a sentence which is not (pragmatically presupposed to be) either true or false should be deviant (see also von Fintel 2008). Since a sentence is true only if its presuppositions are, to assert s – to claim it to be true – can perfectly well *inform* the hearer that its presuppositions are. As such it is not the case that treating presuppositions as preconditions for truth/falsity is inherently more explanatory than treating them as primitives. Essentially the same point applies to the dynamic treatment of presuppositions, to which we return below.

Peters's interpretation of the connectives is a generalization from the bivalent case based on two principles: (i) the guiding idea behind the strong Kleene interpretation of the connectives, that a subsentence's being deviant (i.e. being #) can be ignored if the final outcome would be identical had it taken any another (non-deviant) value, and (ii) a linear order constraint requiring that the former condition be checked incrementally left to right.[21] Importantly, then, the trivalent case is defined in a predictable and general way from the bivalent one. In effect, whether # is treated as primitive or as neither true nor false, we get the exact same explanation for presupposition projection, namely (i) and (ii).

It is true that on the former view the projective behavior of a connective does not follow (merely) from its semantics, but it is only in a trivial sense that it does on the latter: the table just is its semantics. It is also true that on the '#' as primitive view, it

[20] We assume that the semantic presuppositions of s are finitely stateable.

[21] This aspect of Peters's proposal is revisited and clarified in recent work by Beaver and Krahmer (2001) and Fox (2008).

is logically possible for the connectives to be associated with different trivalent truth tables governing assertability, which would give different patterns of presupposition projection than what are actually attested. However, it is equally true of the '#' as neither true nor false view that the very same alternative tables could have been the semantics for the connectives, with the same consequence. In either case it's assuming (i) and (ii) as underlying principles that constrains the theory, be they (language specific) primitives or deriveable from more general principles.

A parallel move can be made to retain bivalent contents in dynamic semantics, by dissociating definedness conditions from update effects.[22] So, for example, let's say that 'John realizes that it is raining' is *presuppositionally acceptable* in c iff c entails that it is raining, and let $[\![$John realizes that it is raining$]\!]$ be the *total* function mapping any information state c to a state c' that entails what c does, but also entails that it is raining and that John believes it is. More generally, each (atomic sentence containing a) trigger will be paired with a total function and a presuppositional acceptability condition. The presupposition relation is then defined in terms of presuppositional acceptability:

(20) s presupposes p iff for any c,
s is presuppositionally acceptable (in c) $\leftrightarrow$ c entails p

Now, for each connective, presuppositional acceptability is defined in a way that directly mirrors Heim's semantic rule for that connective. For example, Heim's dynamic semantic rule or 'update procedure' for 'and' is as follows:

(21) $[\![p \wedge q]\!](c) = [\![q]\!]([\![p]\!](c))$

The corresponding rule of presuppositional acceptability for 'and' will be:

(22) $p \wedge q$ is presuppositionally acceptable in c iff p is presuppositionally acceptable in c and q is presuppositionally acceptable in $[\![p]\!](c)$

This gives Heim's result that $p \wedge q$ presupposes $\textsc{ps}(p)$ and $p \rightarrow \textsc{ps}(q)$.

More generally, identical results to Heim's theory can be obtained (in the propositional case) without a need to define the presuppositional acceptability conditions for connectives on a case by case basis. Rather, we obtain equivalent predictions about the presuppositions of complex sentences by taking the presupppositional acceptability conditions for any sentence s formed by an n-place connective $*$ to be given as follows. Let $s_1 \ldots s_n$ be the maximal sub-sentences of s, and let $c_1 - c_n$ be the contexts/information states to which $[\![s_1]\!] \ldots [\![s_n]\!]$ are respectively applied in the

[22] There is another possible way of (indirectly) keeping track of the bivalent content of presuppositional sentences in either the trivalent or the dynamic framework. It could be posited that presuppositional sentences are simply ambiguous between a bivalent/total reading and a presuppositional one. This view would require an additional assumption that, all things equal, the presuppositional expression should be used – at pain of making presuppositions too easy to accommodate/suspend. I take it that while the ambiguity approach could be correct, it is fairly counterintuitive, and a theoretical last resort in the absence of positive evidence.

application of Heim's dynamic rule for $*$ to s.[23] Then s is presuppositionally acceptable (in c) iff s_1 is presuppositionally acceptable in c_1 ... and s_n is presuppositionally acceptable in c_n.

Thus, although the projective behavior of a connective is no longer determined directly by its meaning (update procedure), there's a completely general way in which the former follows from the latter. As noted above, even on Heim's formulation the projective behavior of connective cannot be said to follow, in any non-trivial sense, from its dynamic meaning. Rather, it follows from whatever justifies that particular dynamic meaning as opposed to other logically possible, bivalently equivalent ones. So there seems to be no explanatory power lost by keeping the conditions on using a presuppositional expression separate from its semantics.[24]

As with our reintrerpretation of the trivalent framework, there must be a primitive assumption that a sentence shouldn't be used unless its semantic presuppositions are mutually accepted. (The assumption is implicit in the choice of the term presupposition(al acceptability). Again this is not something new required by treating presuppositions as primitives. A parallel assumption is needed in Heim's dynamic framework. The reason is that there is a perfectly 'rational' way of using and responding to sentences in contexts in which they are undefined. Given that the aim of assertion is to get a sentence to affect an update of the context according to the recipe provided by that sentence ($\approx$ to be pragmatically presupposed), it would be perfectly 'rational' for the hearer to simply ammend the context as (minimally) required for it to be able to do so. And since speakers would be aware of this fact, there would be nothing to stop them from asserting undefined sentences as a way of getting the definedness condition – the presupposition – to be added to the context. If today there were a convention of language barring using sentences in contexts in which they are undefined, but we simply stopped adhering to it tomorrow, semantic presuppositions would effectively go extinct.

2.2 (10) and 'normal' presupposition projection

Evidence for or against (10) could come, in principle, from normal or non-exceptional cases of presupposition projection. There are logically possible patterns of presupposition projection that would sharply distinguish triggers that putatively entail their presuppositions from those that do not. To my knowledge there are not any operators or constructions in English that clearly and definitively exhibit such patterns. (One example would be an operator O such that $O\phi$ is true iff ϕ's truth conditional

[23] Note that for all of Heim's dynamic rules for complex sentences, it is the case that for each (maximal) sub-sentence, there is one and only one context that is updated by that sentence.

[24] It seems to me to be pointless to worry that there are other, logically possible procedures for deriving presuppositional acceptability conditions from dynamic meanings. The procedure used is extremely natural, and a similar assumption is essentially built into the original dynamic theory: there are logically possible, bivalently equivalent, dynamic entries that don't respect it. For example, $[\![p \wedge q]\!](c) = [\![q]\!]([\![p]\!](c)) \cap [\![p]\!]([\![q]\!](c))$.

component is; for atomic ϕ containing soft triggers, $O\phi$ would entail ϕ's presupposition, but not so for those containing hard triggers.) Before considering this issue more closely, and to get a feel for what is at stake, let us first consider the case of the truth-functional connectives *and*, *or*, etc. – which can easily be seen to be neutral regarding (10).

Modern formal theories of projection converge on Karttunen (1974)'s empirical generalizations about what the presuppositions of truth-functional complex sentences are as a function of those of their parts (Peters 1979; Heim 1983; Schlenker 2008, 2009). Where $ps(\phi)$ and $ps(\psi)$ state the presuppositions of ϕ and ψ: ϕ *and* ψ and *if* ϕ, ψ are said to presuppose $ps(\phi)$ and $\phi \rightarrow ps(\psi)$, $\neg\phi$ to presuppose $ps(\phi)$, and ϕ *or* ψ to presuppose $ps(\phi)$ and $\neg\phi \rightarrow ps(\psi)$.[25] Given this it follows that in any context in which the presuppositions of the whole are true/satisfied, the presuppositions of the embedded clause(s), ps(ϕ) and ps(ψ), cannot be distinguished from local entailments of their clauses (whether or not they are in fact). Taking negation as an example, this can be seen by observing the following. Whenever the presupposition of $\neg\phi$ is satisfied, it is contextually equivalent to the sentence $\neg(ps(\phi)$ and $\phi)$, in which $ps(\phi)$ is made an explicit entailment of the embedded clause. For example, *It is not the case that (it's raining and John knows that it's raining)* is semantically indistinguishable from *It is not the case that John knows that it's raining*, whenever the presupposition of the latter obtains.[26] An analogous point can easily be made for each of the other connectives.[27]

What about other complex constructions? A thorough overview of presupposition prejction is beyond the scope of this paper. Instead I'll discuss two types of cases from the literature that might appear to tell against (10), and argue that they in fact do not. This should help to clarify what an argument for/against (10) from normal projection would have to look like.

First, consider speech act verbs, which have sometimes been claimed to act as 'plugs' for presupposition (Karttunen, 1973). Theory neutrally, a plug is an operator that (completely) blocks inheritance of the presupposition of the sentence it embeds. An example is 'say' in the following;

(23) John said that he stopped smoking.

According to Karttunen (23) can be read as not presupposing that John smoked.

Interestingly, the presuppositions of hard triggers do not simply disappear under plugs, but rather seem to behave as local entailments. The following, for example, seems to attribute to John the claim that Bill is successful and regrets that he is,

(24) John said that Bill regrets that he is successful.

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[25] In fact, Karttunen observed that in some cases a disjunction behaves 'backwards', presupposing $ps(\psi)$ and $\neg\psi \rightarrow ps(\phi)$. This doesn't affect the point being made in this section.

[26] Of course the former is not entirely felicitous in such a context (see Schlenker 2008), but that's immaterial to the point at hand.

[27] Likewise for quantified sentences, at least given Heim 1983's generalizations about how they inherit presuppositions. However, see Chemla (2009a), who argues for different generalizations, which if correct may in fact bear on (10).

and not the (mere) claim that Bill laments some imagined success. Does that fact constitute a counterexample to the claim that *regret* does not entail its presupposition? It depends on how one analyzes plugs. It is trivial to account for both (24) (and (23)) within the kind of framework for presupposition that I have assumed, by simply taking 'x said that ϕ' to be equivalent to 'x said that $ps(\phi)$ and ϕ'. And note that this comes very close to the way that plugs would have to be treated in a trivalent or dynamic semantics.

The second case is that of attitude verbs. The fact of interest is that the presuppositions of soft triggers appear not to behave as local entailments when they are embedded under certain attitude verbs. Here is such a case:

(25) a. Mary's doctor wants it to be that case that Mary stops smoking.
b. Mary's doctor wants it to be the case that Mary smokes but will not smoke in the future.

Unlike (25-b), (25-a) does not suggest that the doctor wants Mary to smoke. But that looks puzzling, since (I assume) the complement clause of (25-a) entails its presupposition, that Mary smoked, and thus has more or less the same truth conditional content as the embedded clause in (25-b).

But this is a puzzle that arises just as well for standard trivalent and dynamic theories, since they too take the complement clause to entail that Mary smokes. So those theories would also seem to predict (25-a) to attribute a desire for Mary to have been a smoker. The semantics of predicates like 'want' and their projection behavior is a complex matter, and I will not discuss it in detail here. Heim (1992) proposes a semantics for 'want' that solves the puzzle above, distinguishing the desires attributed in the two cases. It does so by making the semantics of 'want' sensitive to presuppositions of its complement clause in a particular way. This explanation is, as far as I can tell, completely compatible with my own assumptions.

The discussion in this section should make it apparent that the primary argument for (10) is likely to come from the difference in suspendability of triggers itself, rather than from normal projection. However, in the following section I offer some considerations involving *global* accommodation that could be taken to offer independent support for (10).

3 Is there (non-global) accommodation?

If sentences are to be associated with two distinct contents, presuppositional and assertive or truth-conditional, a theory of presupposition must include a basic or underivable assumption to the effect that it is (normally) inappropriate to use sentences whose semantic presuppositions are not mutually accepted. It was also noted that even the trivalent and dynamic frameworks in their original formulations require a similar assumption. The fact that they do is obscured somewhat by their failure to assign classical values (update effects) to sentences whose presuppositions don't hold. It is tempting to make the mistake of equating a sentence's having the value

#/being undefined with it being conversationally deviant, but this does not follow without further stipulation.

Thus, assigning a special truth conditional status – the value '#', or undefinedness – to presuppositional sentences is superfluous. Moreover, doing so necessitates positing a formal repair mechanism to deal with suspension, to avoid wrongly assigning this status in cases like (3-a) and (3-b), and, more importantly to ensure that they have the right truth conditions/update effect. There must be some way of effectively removing presuppositions and turning them into (mere) entailments. In the dynamic framework this is achieved by adding the presuppositions of a clause to the local context at which it is to be evaluated (Heim (1983)'s 'local accommodation'; see fn. 33). In the trivalent framework it can be achieved by applying a sentential operator, effectively expressing assertability (see Beaver and Krahmer 2001):[28]

(26) $A\phi$ is True if ϕ is True, and False if ϕ is False or #[29]

No formal (repair) mechanism for suspending presuppositions is needed on approaches in which presuppositional and assertive contents are kept distinct, as in the reformulations of the trivalent and dynamic frameworks given in the previous section. On any such approach, suspension can be reduced to (tolerable) violation of the condition against asserting sentences whose presuppositions fail to be mutually accepted.[30] (More specifically, a violation which is not 'obviated' by globally accommodating the relevant presuppositions; we return to global accommodation below.) In the previous section (§2) an independent constraint on the violability of this condition was posited, to the effect that presuppositions should never be entirely idle.

Given this constraint and (10), the impossibility of suspending the presuppositions of hard triggers is explained. It is not possible to formulate the same explanation in the original frameworks, for the obvious reason that (10) is nonsensical in them. On the perspective adopted here, to give a (full) theory of suspension is just to discover the conditions under which it is possible to violate the constraint requiring a sentence's semantic presuppositions to be mutually accepted. (See Beaver and Zeevat (2007) for a summary of literature discussing the conditions under which local accommodation is available.) Alternatively, one could take suspension to show that there is no such constraint, but rather only a weaker set of conditions governing the use of semantically presuppositional expressions, which in many (normal) cases are indistinguishable from the strong constraint itself.

While there is a substantive empirical question about when suspension is possible, it seems to me that the considerations above take some of the mystery out of the fact that it is. First, there is no need of a special formal mechanism to account

[28] The logically possible alternatives include positing variable rules of presupposition projection, and positing ambiguities between presuppositional and non-presuppositional versions of expressions.

[29] So, $A\phi$ is true iff both ϕ and its presupposition are. Which is to say that $A\phi$ is effectively equivalent to $\textsc{ps}(\phi) \wedge \phi$, or that A turns presuppositions into (local) entailments.

[30] Trivially, since a (classical) truth condition is available even in cases of presupposition failure, there's never a need to perform a 'repair' to obtain one.

for it. Second, because the constraint that semantic presuppositions should be mutually accepted must be primitive (at least according to all popular conceptions of semantic presuppositions), it is not as if we should have expected the constraint to be absolute in the first place.

On the other hand, if one is bothered by treating suspension as involving violation of the constraint that semantic presuppositions must be pragmatically presupposed, or by the idea that something weaker is in fact in place, a repair mechanism can be used to bring suspension in line with the constraint. In our reworked dynamic framework, Heim's operation of local accommodation can be used directly. In our reworked trvialent framework, Beaver's *A*-operator can be redefined to strip a sentence of its presuppositions ($A\phi$ is true iff ϕ is, but has no presupposition). Of course, the distribution of this operator would have to be restricted to sentences containing only *soft* triggers, at pain of wrongly predicting that the presuppositions of hard triggers can be suspended. Similarly, in the reworked dynamic framework, it would have to be required that the local accommodation simply cannot apply for the presuppositions of hard triggers. In either case, the necessary limitation on the repair mechanism need not be viewed as a stipulation. Like the repair mechanism itself, the restriction on it could be viewed as a grammaticalization, of the condition that a semantic presupposition should not be idle.[31]

Thus far I've assumed that global accommodation is to be explained in the way proposed by Stalnaker, as an utterance self-fulfilling its presuppositional requirements. However, given the view of suspension as violation, it is possible that at least some cases of global accommodation rather involve the violation of presuppositional requirements. As noted in §2, the presuppositions of atomic sentences never simply vanish, a fact that I attributed in part to the assumption that the presuppositional component of a sentence should never be entirely idle. Given (10) the latter condition *is* met for atomic sentences involving (only) soft triggers ('I have stopped smoking'), even when their presuppositions are not mutually accepted in advance. Thus, global accommodation for soft triggers could in principle sometimes involve suspension rather than self-fulfillment in Stalnaker's sense.

It is difficult to tease the two possibilities apart for obvious reasons. Global accommodation involves something (the presupposition) becoming mutually accepted, but so does assertion (the truth conditional content). Since soft triggers entail their presuppositions, they are asserted in atomic sentences, and thus become mutually accepted in any event. However, I am committed to Stalnakerian global accommodation being a possibility, given that hard triggers do seem able to be globally accommodated (cf. (4-a) and (9)).

I leave open the question of whether the two types of "global accommodation" can be empirically distinguished. For me there is an intuitive difference between hard and soft triggers which is suggestive. For example, as an explanation for nervous behavior (where it is not mutually known that the speaker smokes), 'I recently stopped smoking' seems understandable as more or less as a bald assertion. (4-a),

[31] As such, positing a (constrainted) repair mechanism is particularly compatible with the "second" interpretation of the theory in §2, which treats the constraint against suspending the presuppositions of hard triggers as conventionalized.

however, feels different: one gets the sense that the presupposition really does have to be accommodated. If these intuitions can be made precise, they could be used as a further argument for (10) and the view of suspension adopted in this paper.

Finally, what about "intermediate" accommodation? Intermediate accommodation is the putative case in which a semantic presupposition acts as a (mere) entailment of a clause distinct from the one in which it is triggered (Beaver and Zeevat 2007).[32] A hypothetical case of intermediate accommodation can be illustrated by considering (27) below. (27-a) and (27-b) indicate roughly the results of suspending and "intermediately accommodating", respectively, the presupposition of its consequent.

(27) If Mary visits the doctor soon, he will discover that she recently got pregnant (before it is too late)
   a. If Mary visits the doctor soon, then she recently got pregnant and the doctor will discover that she did (before it is too late)
   b. If Mary recently got pregnant and visits the doctor soon, he will discover that she recently got pregnant (before it is too late)

The possibility of intermediate accommodation of the kind that would give the reading (27-b) for (27) does not follow from the basic view of suspension proposed in this paper. According to it, semantic presuppositions can only be suspended, or projected as normal. The same holds if we add a repair mechanism as sketched above.[33] The reader is referred to Beaver and Zeevat (2007) and von Fintel (2008) for discussion of the empirical and theoretical status of intermediate accommoda-

[32] But subordinate to the entire sentence, hence distinguishing it from global accommodation.

[33] It is worth noting that Heim's dynamic framework is compatible with at least some kinds of intermediate accommodation, including that considered for (27). Once her operation of local accommodation is admitted, the possibility of (some) intermediate accommodation all but follows. Local accommodation is essentially a repair on Heim's theory, and amounts to the following. Where s is not defined in the global context c (and global accommodation is not an option), as a last resort a modification can be made to the context to which some subpart of c is applied in the application of the semantic rule for s, in order to make s become defined. Consider Heim's dynamic rule for conditionals (and negation):

(28) a. $c + (p \rightarrow q) = c - [[c + p] + \neg q]$
   b. $c + \neg p = c - [c + p]$

(In the notation from §2, $c + s = [\![s]\!](c)$.) To derive a suspension case like (3-a) by local accommodation, the presupposition of the antecedent is simply added to the context that is input to the antecedent in the application of (28-a), as follows: (For ease of reference I reuse the metavariables p and q to stand for the antecedent and consequent of (3-a), and similarly below)

(29) $c + (3\text{-a}) = c - [[[c + ps(p)] + p] + \neg q]$

In (29) the *most* local context possible was chosen to make the sentence globally defined. Although it is implicit in the term "local accommodation" that the most local context possible should always be chosen, it does not follow a priori that it must be. Suppose that the presupposition of (27) is not met (but not in virtue of 'the doctor' failing to refer; we ignore its presupposition). This situation can be repaired – the sentence can be rendered to have no presupposition at all – in

tion. Like von Fintel (2008), I'm skeptical that intermediate accommodation really exists.[34]

Although it does not yield intermediate accommodation, the basic view of suspension presented here is consistent with what might be called *intermediate suspension*. Intermediate suspension would be the suspension of a presupposition that is derived by application of the rules/mechanism for presupposition projection for complex sentences, as opposed to being triggered by a (non-logical) lexical item. To take a concrete example, consider the presupposition of a conjunction $p \wedge q$ (as claimed by Karttunen, and as predicted by most accounts, including the modified dynamic and trivalent theories presented in §2):

(32) $ps(p) \wedge (p \rightarrow ps(q))$

Can this presupposition be suspended, modulo the general constraint that only entailed presuppositions can be? Consider the following:

(33) a. (If) Bill came and John came too (, then Bill wasn't lonely)
b. #(If) John came too and Bill came (, then Bill wasn't lonely)

Assuming that the presupposition of the first conjunct in (33-b) can be that Bill came, just as is the case for the second conjunct in (33-a), it will also be the presupposition of the conjunction as whole according to the generalization (32). But then the conjunction in (33-b) entails its presupposition, and is predicted to be felicitous so long as intermediate suspension can take place. Since (33-b) seems bad in all contexts, intermediate suspension must be assumed to be impossible, at least in cases like (33-b). I add the disclaimer because (33-b) has the property that "locally" suspending the lexical presupposition of 'too' is ruled out (since it is not entailed by its trigger), but would give an equivalent result to intermediate suspension if it were possible. Conceivably, then, intermediate suspension is possible in principle,

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a highly local way, by adding the presuppositions of the consequent to the context that is input to it (much as in (29)):

(30) $c + (27) = c - [[c + p] - [[c + p] - [[c + ps(q)] + q]]]$

But it can also be repaired by adding the presupposition of the consequent to the input context for the *antecedent*, and this gives roughly (27-b), i.e. intermediate accommodation:

(31) $c + (27) = c - [[[c + ps(q)] + p] + \neg q]$

Just as in (30), in (31) the presupposition of the consequent q is satisfied in the local context in which it is evaluated. It's just that in the latter this is achieved by modifying a different one. This possibility could be ruled out by brute force if intermediate accommodation is to be banned. The point is just that it is conceptually compatible with the theory.

[34] If it did, we might well expect to find it in (27). Consider a context in which Mary is the sort of person who makes routine trips to the doctor, and is not presupposed to be pregnant. Then the normal presupposition of (27) – that if Mary visits the doctor, she recently got pregnant – is unlikely to be mutually accepted, and the reading derived by intermediate accommodation, (27-b), is the more plausible one. As such we might expect (27-b) to be possible in such a context, but it seems very difficult.

but only when it gives a different result than suspending a (contained) lexical presupposition would.[35]

References

Abbott, Barbara, 2006. Where have some of the presuppositions gone? In *Drawing the boundaries of meaning: neo-Gricean studies in pragmatics and semantics in honor of Laurence R. Horn*, eds. Betty J. Birner and Gregory Ward, vol. 80 of *Studies in Language Companion Series*, 1–20. John Benjamins.

Abusch, Dorit, 2002. Lexical alternatives as a source of pragmatic presuppositions. In *Proceedings of SALT XII*, ed. Brendan Jackson. Ithaca, NY: CLC Publications.

Beaver, David and Krahmer, Emiel, 2001. A partial account of presupposition projection. *Journal of Logic, Language, and Information* 10(2):147–182.

Beaver, David and Zeevat, Henk, 2007. Accommodation. In *The Oxford Handbook of Linguistic Interfaces*, eds. Gillian Ramchand and Charles Reiss. Oxford University Press.

Chemla, Emmanuel, 2009a. Presuppositions of quantified sentences: experimental data. *Natural Language Semantics* 17(4):299–340. doi:10.1007/s11050-009-9043-9.

Chemla, Emmanuel, 2009b. Similarity: towards a unified account of scalar implicatures, free choice permission and presupposition projection. Under revision for *Semantics & Pragmatics*.

Chierchia, Gennaro and McConnell-Ginet, Sally, 2000. *Meaning and Grammar*. MIT Press, 2nd edn.

Fox, Danny, 2008. Two short notes on Schlenker's theory of presupposition projection. *Theoretical Linguistics* 34(3):237–252.

Gazdar, Gerald, 1979. *Pragmatics: Implicature, Presupposition and Logical Form*. New York: Academic Press.

Geurts, Bart, 1999. *Presuppositions and Pronouns*. Elsevier Science.

Heim, Irene, 1983. On the projection problem for presuppositions. In *Second Annual West Coast Conference on Formal Linguistics*, eds. Michael Barlow, Daniel Flickinger and Michael Westcoat, 114–126. Stanford University.

Heim, Irene, 1990. Presupposition Projection. In *Reader for the Nijmegen Workshop on Presupposition, Lexical Meaning, and Discourse Processes*, ed. Rob van der Sandt. University of Nijmegen.

Heim, Irene, 1992. Presupposition projection and the semantics of attitude verbs. *Journal of Semantics* 9(3):183–221.

Horn, Laurence R., 1985. Metalinguistic negation and pragmatic ambiguity. *Language* 61(1):121–174.

[35] There are other, more general constraints that would rule out (33-b); for example, that (intermediate) suspension of the presupposition of *s* is possible only if it is possible to suspend the presuppositions of all constituents of *s*. This would block suspending the presuppositions of any complex sentence containing a hard trigger.

Karttunen, Lauri, 1971. Some observations on factivity. *Papers in Linguistics* 5:55–69.
Karttunen, Lauri, 1973. Presuppositions of compounds sentences. *Linguistic Inquiry* 4:169–193.
Karttunen, Lauri, 1974. Presuppositions and linguistic context. *Theoretical Linguistics* 1:181–194.
Karttunen, Lauri and Peters, Stanley, 1979. Conventional implicature. In *Syntax and Semantics*, eds. Choon-Kyu Oh and David A. Dinneen, vol. 11: Presupposition, 1–56. New York: Academic Press.
Kripke, Saul A., 2009. Presupposition and anaphora: Remarks on the formulation of the projection problem. *Linguistic Inquiry* 40(3):367–386.
Peters, Stanley, 1979. A truth-conditional formulation of Karttunen's account of presupposition. *Synthese* 40(2):301–316.
Romoli, Jacopo, 2011. The presuppositions of soft triggers are not presuppositions. In *Proceedings of SALT 21*, eds. Neil Ashton, Anca Chereches and David Lutz, 236–256. Rutgers University.
Rothschild, Daniel, 2011. Explaining presupposition projection with dynamic semantics. *Semantics & Pragmatics* 4:1–43.
Schlenker, Philippe, 2006. Anti-dynamics: Presupposition projection without dynamic semantics. *Journal of Logic, Language, and Information* 16(3):325–356.
Schlenker, Philippe, 2008. *Be articulate*: A pragmatic theory of presupposition projections. *Theoretical Linguistics* 34(3):157–212.
Schlenker, Philippe, 2009. Local contexts. *Semantics & Pragmatics* 2:1–78.
Simons, Mandy, 2001. On the conversational basis of some presuppositions. In *Proceedings of Semantics and Linguistics Theory 11*.
Soames, Scott, 1976. *A Critical Examination of Frege's Theory of Presupposition and Contemporary Alternatives*. Ph.D. thesis, MIT.
Soames, Scott, 1989. Presupposition. In *Handbook of Philosophical Logic*, eds. Dov Gabbay and Franz Guenther, vol. IV, 553–616. Dordrecht: Reidel.
Stalnaker, Robert, 1973. Presuppositions. *The Journal of Philosophical Logic* 2:447–457.
Stalnaker, Robert, 1974. Pragmatic presuppositions. In *Semantics and Philosophy: Essays*, eds. Milton K. Munitz and Peter K. Unger. New York University Press.
Stalnaker, Robert, 2002. Common ground. *Linguistics and Philosophy* 25(5-6):701–721.
Stalnaker, Robert C., 1978. Assertion. In *Syntax and Semantics Vol. 9: Pragmatics*, ed. Peter Cole, 315–332. New York: Academic Press.
van der Sandt, Rob, 1992. Presupposition projection as anaphora resolution. *Journal of Semantics* 9(4):333–377.
von Fintel, Kai, 2008. What is presupposition accommodation, again? *Philosophical Perspectives* 22(1):137–170.
Wilson, Deirdre, 1975. *Presuppositions and Non-Truth-Conditional Semantics*. New York: Academic Press.