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Projection Problem**

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# Presupposition and Anaphora: Remarks on the Formulation of the Projection Problem

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Writers on presupposition, and on the “projection problem” of determining the presuppositions of compound sentences from their component clauses, traditionally assign presuppositions to each clause in isolation. I argue that many presuppositional elements are anaphoric to previous discourse or contextual elements. In compound sentences, these can be other clauses of the sentence. We thus need a theory of presuppositional anaphora, analogous to the corresponding pronominal theory.

*Keywords:* presupposition, anaphora, projection problem, filtering, active context

From the stock example “Have you stopped beating your wife?” we are all familiar with the intuitive concept of presupposition. Though there have been many conflicting attempts in the literature to capture what this concept means, to some degree Justice Stewart’s comment about pornography holds here: we all recognize it when we see it, even if we can’t say exactly what it is. In this paper, I will be concerned with what is called in the linguistics literature “the projection problem for presuppositions.” That problem is simply this: if we have a logically complex sentence whose clauses bear certain presuppositions, how do we compute the presuppositions of the whole?

This paper is an edited transcript of a talk delivered at the conference “Linguistic and Philosophical Approaches to the Study of Anaphora,” held at Princeton University in October 1990. Thanks to Scott Soames and Stephen Neale for urging me to present this material. Also, in another way, to Scott and to the tenure system since it was reading his papers on these matters as part of his tenure review that got me interested in these issues in 1984. Had I not read Soames’s papers, I might never have gotten interested in the problem.

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The fact that this is a transcript of a paper delivered orally (with a handout), rather than written, accounts for a certain amount of conversational tone.

In a later seminar given at Princeton in the fall of 1994, I gave a more elaborate presentation of the material in which some particular cases discussed were modified. However, I do not incorporate these modifications in the present text, which is basically correct. The basic main points about anaphora, active and passive context, and the like, were unaffected by any modifications.

The contents of this paper and/or its basic ideas have been in professional circulation for some time. Nevertheless, I felt (and have been urged) that it ought finally to see formal print.

Some cases where the reference carried by a presuppositional word is to an unspoken element of the active context (or called into the active context from the passive context) might best be thought of as deixis rather than anaphora. Because of the title of the symposium, and the relation between deixis and anaphora, I have used the term *anaphora* throughout, and do not worry about the question.

The main thesis of this paper is that the usual literature on the projection problem for presupposition ignores an anaphoric element that ought to have been taken into account. When this element is put in, there is a considerable change in the formulation of the problem.

Since I do not consider myself an expert in this area, I will begin by giving a brief review of the portion of the literature that I know. Soames (1982:488) gives a fairly standard list of different kinds of presupposition.

- |   |                       |
|---|-----------------------|
| (1) Bill regrets lying to his parents.<br>P: Bill has lied to his parents.              | (Factive)             |
| (2) Ivan has stopped beating his wife.<br>P: Ivan has beaten his wife.                  | (Aspectual)           |
| (3) Andy met with the PLO again today.<br>P: Andy met with the PLO before.              | (Iterative)           |
| (4) It was in August that we left Connecticut.<br>P: We left Connecticut.               | (Cleft)               |
| (5) What John destroyed was his typewriter.<br>P: John destroyed something.             | (Pseudocleft)         |
| (6) <i>Billy</i> is guilty, too. <sup>1</sup><br>P: Someone other than Billy is guilty. | ( <i>Too</i> )        |
| (7) All of John's children are asleep.<br>P: John has children.                         | (Certain quantifiers) |
| (8) The king of France is in hiding.<br>P: There is a king of France.                   | (Referential)         |

Frege, who was perhaps the first philosopher to introduce the notion of presupposition, described it in such a way that the last of these examples is the paradigmatic case. It is not clear whether he thought that presuppositions went beyond this sort of example. His theory was that the presupposition fails precisely when there is a truth-value gap. For him, all such failure came from failure of reference. This might be made to extend to some of the other cases as well. Strawson, rather famously, reintroduced this notion into the philosophical literature (see Strawson 1950, 1952). In Strawson's case, there are two strains. One is a Fregean strain, but the more important strain is that nothing has been said—that is, no statement has been made—when the presupposition fails.<sup>2</sup>

<sup>1</sup> Throughout this paper, I have italicized the focus element in the *too* cases.

<sup>2</sup> Evans (1982:12) has argued with some limited success that there is a Strawsonian strain in Frege's later manuscripts, though it is not in "Über Sinn und Bedeutung" (Frege 1892) to my knowledge.

In addition to the Fregean and Strawsonian conceptions of presupposition, there is the broader characterization of the presuppositions of a speaker, or of the participants in a conversation, introduced by Stalnaker (1973, 1974) and discussed by Lewis (1979). The idea, roughly speaking, is that you shouldn't make an utterance involving a presupposition unless it is in the background assumptions of the participants in the conversation that the presupposition holds. Stalnaker and Lewis recognize that there are cases in which this rule seems to be violated. They recognize that you can introduce a presupposition into the conversation even though it was not a prior background assumption, without having to state the introduced presupposition explicitly. For example, you can say that you are going to meet your sister, and the presupposition that you have a sister is thereby introduced (Stalnaker calls this "accommodation"). It is argued that in such cases, conversational participants recognize that the existing conversational context does not satisfy the presuppositional requirements of the utterance, but accommodate the speaker by adding the required information to bring the context into harmony with the presuppositional rule. It is suggested that speakers exploit this process when they think the required information will be agreed upon as uncontroversial by all hands, or something like that.<sup>3</sup>

Another feature of presupposition that people have often noticed is that, unlike the asserted contents of sentences, presuppositions survive when sentences are embedded under negation, or as the antecedents of conditionals. The simplest hypothesis about the projection problem is the cumulative one: if you have a presupposition to a clause, it is also a presupposition to the whole complex sentence.<sup>4</sup> Although this is similar to certain aspects of Frege's theory, even he did not hold the cumulative hypothesis in its most general form. What would follow from his theory is that truth functions<sup>5</sup> have the cumulative property, but indirect discourse, propositional attitudes, and so on, do not. The latter are what are called *plugs* by Karttunen and Peters (1979): sentences that do not inherit the presuppositions of their clauses.<sup>6</sup> However, even for the truth functions,

<sup>3</sup> I haven't thought that this formulation as it is stated in print always works. A problem for me is that a French monarchist might belligerently say to a republican, "No matter what you republicans say, I met the king of France last week." Here it isn't taken to be uncontroversial or expected to be uncontroversial that there is a king of France. There are various things that can be said about such a case; I don't know if any are quite satisfactory. But I'm going to assume the general satisfactoriness of this roughly sketched picture. It is pretty good; possibly it can be stretched to cover a case like this. That's enough for the present discussion.

Nevertheless, I think Richmond Thomason had a point when he said in the discussion of this paper at the 1990 symposium that Stalnaker states conditions for the conversational notion of presupposition that, even according to him, hold except insofar as they don't. The dangers are already present in the *sister* case mentioned by Stalnaker himself; they are more obvious in the monarchist-republican exchange just given. Nothing in the present discussion really depends on Stalnaker's characterization of presupposition, which was mentioned because of its prominence in Soames 1982. In fact, it is not so crucial even to Soames's paper.

<sup>4</sup> The cumulative hypothesis was introduced to the linguistic literature by Langendoen and Savin (1971).

<sup>5</sup> Karttunen and Peters (1979) seem willing to accept the truth functions as formalizations of *and*, *or*, *not* (at least in its primary use), and *if...then* in English. Not too much hangs on the issue as far as the present discussion is concerned. Probably it could be modified to fit another account of some or all of these particles in English.

<sup>6</sup> This is not to say that Frege's theory necessarily makes the correct predictions about what the plugs should be. Frege also does not discuss the related Russellian question of scope ambiguities. [One could now consult my own discussion of this topic in Kripke 2005.]

Russell (1905) gave an example for the conditional that he thought refuted Frege's presupposition theory. He pointed out that in the case of a conditional sentence where the presupposition of the consequent is asserted in the antecedent, the participants need not assume that the presupposition is true.<sup>7</sup> Russell's point is reflected in the algorithm proposed by Karttunen and Peters for computing the presupposition of both a conditional sentence *If A then B* and a conjunction *A and B*.

$$(9) (A_p \& (A_\alpha \supset B_p))$$

In this notation,  $S_\alpha$  stands for the assertive content of a sentence  $S$  and  $S_p$  stands for the presupposed content of  $S$ . So, according to Karttunen and Peters, conditionals and conjunctions presuppose both the presupposition of  $A$  and the claim that if the assertive content of  $A$  is true, then the presupposed content of  $B$  is true. It follows that if the assertive content of the antecedent, plus perhaps certain background assumptions, entails  $B_p$ , then any necessity to assume or presuppose  $B_p$  disappears, or is filtered out. This is the feature they wanted to capture.

I don't want to suggest that this account of the presuppositions of conditionals and conjunctions is a perfect theory. In fact, I don't know of any account that is free from descriptive problems or apparent counterexamples.<sup>8</sup> For present purposes, however, the Karttunen and Peters algorithm will do. Similar remarks apply to the algorithm for disjunction proposed by Karttunen and Peters, and modified by Soames (1979) in the last clause.

$$(10) (\neg A_\alpha \supset B_p) \& (\neg B_\alpha \supset A_p) \& (A_p \vee B_p)$$

Although Soames has shown that there are cases in which even this definitely doesn't work, it will be good enough for the moment. Only two examples, (49) and (50), not crucial to the main discussion, involve disjunction. I do not discuss cases involving *believes that*, *wants that*, and the like, nor how my approach might affect them.

An assumption underlying this whole project, as standardly conceived, is that we assign presuppositions to separate clauses, independently of the environments in which they occur, and then compute the presupposition of the whole. This is very natural, for example, from Frege's formulation of the problem, but it survives outside the Fregean background as well. Certainly it is recognized that if there is *explicit* pronominal anaphora or cross-reference in any of the clauses, then the clauses will have to be interpreted in the light of this. More importantly, if quantifiers are interacting with presuppositions, this simple picture clearly doesn't hold (Heim 1983). But in the absence of such elements, this seems to be the picture that is presented in the literature.

The argument of this paper is that an important anaphoric element that is carried by the presuppositional terms themselves is left out of the standard picture. As a result, the appropriate

<sup>7</sup> Russell's example is this:

The King in "The Tempest" might say, "If Ferdinand is not drowned, Ferdinand is my only son." . . . But the above statement would nevertheless have remained true if Ferdinand had been in fact drowned. (Russell 1905:484)

Russell also gives a set-theoretic example involving a universally quantified conditional. (His example strikes me as a bit artificial, but reasonable mathematical examples can be given.) [Once again, one could now consult my own discussion of this topic in Kripke 2005:1018–1019.]

<sup>8</sup> I am familiar with only a small subset of the proposals in the literature covering such cases.

presuppositions are misdescribed, for example, in the list quoted from Soames 1982 above.<sup>9</sup> I feel in retrospect that this list doesn't get our intuitions about the relevant presuppositions as we would naturally think of them, and is even highly counterintuitive in many cases. Although I will try to establish this point, I will not present an explicit countertheory, partly because of the small amount of time I have had to devote to this problem, and partly because of a feeling that some people will be more expert in relevant considerations than I am at the moment (without having read up in particular on a lot of the literature on standard anaphora in syntax).<sup>10</sup> But I will sketch considerations relevant to the development of a theory of presuppositional anaphora, and I will say some things about the form such a theory should take.

Consider the following relatively complex case (more blatant and simpler counterexamples to the usual picture will follow soon):

(11) If Herb comes to the party, *the boss* will come, too.

According to the usual view, the presupposition of the consequent is that someone other than the boss will come to the party.<sup>11</sup> In my own view, the presupposition of the consequent is that Herb is not the boss. The important thing to note here is that my own view gives a presupposition to the consequent that cannot be understood in isolation from the antecedent.

It seems to me incontestable that we would normally think that this is what is presupposed. However, there is an appropriate pragmatic explanation of why we would think this, which is related to an explanation that Karttunen and Peters have already given. Recall the Karttunen and Peters algorithm for the presupposition of conditionals.

(9)  $(A_p \ \& \ (A_\alpha \supset B_p))$

How can the standard algorithm explain the presuppositions here? Given the Karttunen and Peters theory, the presupposition of the consequent in (11) is "someone other than the boss will come" and the presupposition of the entire conditional is "if Herb comes, someone other than the boss

<sup>9</sup> The only place I know of where this approach is questioned is the final section of Soames 1989. That section contains a footnote reporting a conversation with me about some of the material in this paper. Also, some of the text of the relevant section appears to be influenced by my approach, as I reported it to him.

[Since I gave this paper, I saw a circulated draft of Heim 1992 (not the final version). Though recognizing that the existential (nonanaphoric) accounts of presuppositions cited at the beginning of this paper from Soames 1982 have been dominant, Heim cites Karttunen 1974:184 as mentioning an analysis of *too*, said to be based on Green 1968, similar to that proposed here. Indeed, Karttunen (incidentally) does appear to give such an analysis, but seems to follow it immediately with the purely existential analysis that it is my main point to criticize, and moreover maintains the existential analysis of *too* in Karttunen and Peters 1979 (see, e.g., page 35). I couldn't find the point in Green 1968, though I may have missed something. The points made about inclusions and converse inclusions are indeed illustrated there. See, for example, Green's sentences (12) and (19), pages 24–25.]

<sup>10</sup> There is probably material for the syntactician here as well as for the semanticist.

<sup>11</sup> The inheritance condition for the conditional as a whole was given by Karttunen and Peters (1979) as a primitive semantic notion (involving conventional implicature). Stalnaker (1974), and following him Soames (1982), tried to give a pragmatic explanation of the inheritance conditions that is sensitive to context. Heim (1983) offers a more semantical account that also involves changes in the context associated with the clauses and predicts the inherited presuppositions in an algorithmic way.

will come.” Then one can try a “conversational implicature” explanation in the style of Grice (see Grice 1961, 1975, 1989) for any feeling that at least the entire conditional presupposes that Herb is not the boss. For how would someone know the conditional “if Herb comes to the party, someone other than the boss will come”? A natural explanation would be that the speaker takes for granted that Herb is not the boss. This might be a reasonable explanation for the “illusion” of the stronger presupposition that Herb is not the boss.

However, this explanation would not work for cases like (12).

(12) If Herb and his wife both come to the party, *the boss* will come, too.

The presupposition of the consequent according to the standard account is that someone other than the boss will come to the party. But on my view the presupposition of the consequent is that neither Herb nor his wife is the boss. Notice that on the standard view the presupposition of the whole conditional is

(13) If Herb and his wife both come to the party, then there exists an  $x$  not equal to the boss such that  $x$  comes to the party.

This conditional is trivial, and we need no extra information to assume it other than that Herb and his wife are two people. Therefore, no feeling of its being either implied or presupposed that neither Herb nor his wife is the boss can be accounted for by a theory that assigns (13) as the presupposition of (12).<sup>12</sup> The simple suggestion is that in general, if I say so-and-so and so-and-so are coming, and he’s coming too, the presupposition is that ‘he’ is an extra person. This presupposition is not in addition to, but actually replaces, the existential presupposition given by the usual account.<sup>13</sup> How to extend this to other cases is complicated but will emerge from later examples.

The general idea is that the presupposition arises from the anaphoric requirement that when one says *too*, one refers to some parallel information that is either in another clause (that’s the

<sup>12</sup> This could even be true of (11) if we assume a background in which no one comes to the party unless accompanied by his or her spouse.

Even more so, it would probably be part of the background assumptions that many people are expected to be coming to the party. It would hardly be a party otherwise. So *of course* someone other than the boss is coming. Then the case would be closer to (14) below.

<sup>13</sup> Since I think that even the consequent of (11) presupposes that Herb is not the boss, and of (12) that neither Herb nor his wife is the boss, if one otherwise accepts the Karttunen and Peters algorithm, the presupposition of (11) becomes “if Herb comes to the party, then Herb is not the boss,” read as a material conditional, and analogously for (12). Soames (1979) and Gazdar (1979) see a problem with cases where the consequent of a conditional seems to be presupposed. However, one could give a Gricean reply as proposed by Karttunen and Peters and argue that since there is already a unique boss (of the company or group), the only grounds for asserting the material conditional can be truth-functional knowledge of the consequent. There is no connection between Herb’s coming to the party and whether or not he is the boss. See Soames 1982 for a discussion of the contrast between the earlier Soames and Gazdar approaches and the Karttunen and Peters approach. For my own reason for thinking that the consequent of the conditional, rather than the conditional as a whole, presupposes that Herb is not the boss, and that pragmatic Gricean reasons must be used to explain the intuition attaching the same presupposition to the entire conditional (assuming the Karttunen and Peters algorithm), see my discussion of (20) further on.

interesting case for the projection problem) or in the context. (Actually, in what I will later call the “active context” rather than the “passive context.” One might wish to subsume the clause case under the context case in some form of theory, but I won’t commit myself either way here.) When the focused element is a singular term, it is presupposed to be noncoreferential with the other corresponding elements in the parallel clauses or other bits of information in the (active) context. Since what we have is a species of anaphora, what we need is a theory, parallel to that for pronominal anaphora, of what types of anaphora are permitted, and of how these new types of presuppositional anaphora are related to other, more familiar types of anaphora, including ordinary anaphoric pronouns.

The following example is simpler and very striking:

(14) *Sam* is having dinner in New York tonight, too.

Imagine (14) as uttered out of the blue; no context is being presupposed in which we are concerned with anyone else having dinner in New York.<sup>14</sup> On the usual view, the presupposition of (14) is that someone other than Sam is having dinner in New York tonight. But this is wrong. Since a sentence is appropriate as long as its presuppositions are fulfilled, the usual view predicts that (14) is virtually invariably appropriate without any special context. Surely many people are having dinner in New York on a given night. But, contrary to the usual prediction, it is obvious that the *too* here is particularly bizarre. The hearer will say, “‘Too’? What do you mean, ‘too’? What person or persons do you have in mind?”

Example (15) is similar.

(15) Priscilla is eating supper, again.

On the usual view, the presupposition is that Priscilla has eaten supper before. Since if she is a grown woman this can easily be assumed, an utterance of (15) should invariably be perfectly appropriate. But in the absence of any special background, the natural reaction to such an utterance is “What do you mean, ‘again’? Maybe she had supper an hour ago, also? Are you suggesting that she is bulimic? Or is she on a diet where she is supposed to skip supper and she has broken it recently and now has broken it again? What is going on here?” It is obvious that the usual prediction is not correct.

To take care of examples like (14) and (15), I propose a distinction between two types of context.<sup>15</sup> Let us call material that has been explicitly mentioned in the conversation, or is on people’s minds and is known to be on people’s minds, or is highly salient in some way, the *salient* or *active* context. The active context could include a set of questions or topics as well as assertions. The active context might be a complex sort of entity, but it will be the kind of thing that makes uses of *again* and *too* appropriate. There is also a *passive* context, which consists of general

<sup>14</sup> There is a related discussion of this example in the last section of Soames 1989. Very likely, as I said in footnote 9, he was influenced by the discussion and examples he ascribes to me in a footnote.

<sup>15</sup> This can be seen as relevant to a couple of considerations mentioned in the last section of Soames 1989.

background information available to the speakers that is not taken as relevant or on their minds. *Too* or *again* should refer to parallel elements, that is, to something parallel to Priscilla's eating supper, or Sam's having dinner in New York, or the boss's coming to the party. These parallel elements must come from the active context or from other clauses in the assertion in question. They cannot come merely from the passive context: that they are merely very well known is not sufficient.<sup>16</sup>

Something is introduced into the active context merely by mentioning it. Consider this example:

- (16) Tonight many other people are having dinner in New York, and *Sam* is having dinner there, too.

This is a pretty strange performance still. Why is the speaker putting things that way? But once the speaker has done so—for example, in reply to a worried mother who is saying, “Should Sam really be going out to New York in the evening? Isn't that a dangerous place?”—the *too* is entirely appropriate.<sup>17</sup> The content of the sentence obtained by dropping *too* from (16) is the same as the content of (17).

- (17) Like many others, Sam is having dinner in New York tonight.

Except for those people whose information state is very poor, for whom a very broad range of possible worlds are not excluded, (17) simply conveys the same information as (18), since it is well known that many people are having dinner in New York tonight.

- (18) Sam is having dinner in New York tonight.

But as far as the appropriateness of adding *too* is concerned, (17) is not equivalent to (18). If someone just says (14),

- (14) *Sam* is having dinner in New York tonight, too,

without any suitable background, then the *too* is inappropriate and should not be said, even to the worried mother. However, (19) is acceptable.

- (19) Like many others, *Sam* is having dinner in New York tonight, too.

The presupposition (tautologous here) is that Sam is not one of the many others.

On the other hand, if the appropriate material is, for whatever reason, in the active context, then (14) becomes all right. The active context need not consist in a clause or even an immediately preceding discourse element. Examples have already been suggested. The participants in the

<sup>16</sup> Notice, as opposed to the impression given by Soames (1989), that this is not merely a matter of whether we know various particular people who are having dinner in New York or that Priscilla has had supper at various particular times. We may very well know many particular people who are having dinner in New York, or particular times when Priscilla has had supper before, that are not relevant here.

<sup>17</sup> Although (16) is a conjunction, I could equally well have given two separate sentences and still gotten the information that many people are having dinner in New York into the active context. Nevertheless, *too* could be regarded as anaphoric in these cases. An explicit mention is a special way of bringing something into the active context.

conversation may actively have in mind particular people who are having dinner in New York. Similarly, as in some of the suggestions about Priscilla mentioned in the discussion, (15) can be appropriate if people have such suggestions in mind.

So the idea is that there is a back-reference to parallel information either in the active context or in other clauses or discourse elements. Something gets into the active context if it has been explicitly mentioned or if it is very much in mind. The passive context, however, is sufficient for the nonidentities; people do not have to be desperately thinking or saying that Herb is not the boss as long as they are aware of this. The required presupposition of nonidentity can be satisfied by either the active or the passive context. Heim (1983), I believe, rolls the whole context into one grand proposition that is a set of possible worlds. On my account, it seems likely that not only will there have to be two contexts, the active and the passive, but also the nature of the active context, at least, will have to be more complicated than simply a set of worlds. First, the active context will be a set containing propositions, which might better be thought of as structured. Moreover, the set might be divided into questions and topics as well as assertions and so on. Alternatively, we might even just have interpreted sentences instead of propositions in the context. (Since they are already there, we may as well use them.) None of these speculations are crucial. I certainly do not want the paper to depend on any particular formal semantics.

At this point, an important question arises. In discussing (11), I identified the presupposition that Herb is not the boss. Should this presupposition be attached to the consequent clause—that is, to the clause that contains the presuppositional element *too*—or should it be attached to the whole conditional, as we would intuitively think in many of these cases? If we attach it merely to the consequent clause, then we have to invoke the type of explanation given by Karttunen and Peters for why it is that we intuitively think something stronger. I do, indeed, favor attaching it to the consequent clause. The need for this is seen from example (20).

- (20) If Nancy does not win the contest and the winner comes to our party, *Nancy* will come, too.

The presupposition according to my proposal is that Nancy will not be the winner. According to Karttunen and Peters, if the presupposition is attached to the consequent, it is “filtered out” and need not be presupposed by the speaker who utters the entire conditional. This result seems to me to be intuitively correct. The entire conditional in no way presupposes that Nancy will not win. Since this presupposition is explicitly stated in the antecedent, it need not be presupposed by the speaker who utters the entire conditional. Thus, (20) is acceptable without any presupposition in advance that Nancy will not be the winner, and indeed is explicitly compatible with the idea that Nancy may well win.

The corresponding case for *again* is introduced by example (21).

- (21) If Kasparov defeats Karpov in the game in Tokyo, probably he will defeat him again in the game in Berlin.

On the conventional account, the presupposition attached to the consequent is that Kasparov has previously defeated Karpov. This may in fact be well known. By contrast, I take the presupposition

normally to be that the game in Berlin will be played after the game in Tokyo. Once more, that the presupposition should be attached to the consequent rather than to the entire conditional should be argued for on the basis of the parallel example.

- (22) If the game in Tokyo precedes the game in Berlin and Kasparov defeats Karpov in Tokyo, probably he will defeat him again in the game in Berlin.

As before, (22) need not presuppose (in the entire conditional) that the game in Tokyo will precede the game in Berlin, since this is explicitly stated in the antecedent and is “filtered out” in the entire conditional.

Now let us consider the case of *stop* (perhaps the most famous one).

- (23) If Sam watches the opera, he will stop watching it when the Redskins game comes on.

According to my view, a presupposition attached to *stop* is that the Redskins game comes on during the opera, but not at the very beginning of it. The traditional presupposition in the consequent, that Sam has watched the opera before, is also, of course, valid, but in (23) it is filtered out in the entire sentence by being explicitly included in the antecedent. However, it can only be filtered out because of the presupposition that the Redskins game begins after the opera does (and in fact, during the opera, though this is not needed for the filtering).

However, there does appear to be a significant difference between the *stop* case, on the one hand, and the *again* and *too* cases, on the other. Whereas *again* and *too* have obligatory anaphora to parallel statements in the active context or in other clauses, that is not always true for *stop*. Consider:

- (24) Jill has stopped smoking.

(24) is something that can be said even if there is no particular concern about Jill smoking, so long as her smoking is well known to the conversational participants. The assumption is not required to be in the active context or in other clauses. Thus, in this respect *stop* contrasts with what I have said regarding *too* and *again*.

In the case where (24) is uttered out of the blue, as just envisaged, normally the presupposition would not merely be that Jill has smoked before; it would also be that she smoked until relatively recently. There may be other cases where the presupposition is weaker, but I do not intend to go into detail here.<sup>18</sup> But in some cases in which there is another clause or an element of the active context that gives a time or date, as in (23), there is an intended anaphoric reference to that clause or element. In such a case, the presupposition is that the stopping takes place after that time, or after a continuous period starting with that time, or after a period ending when the stopping occurs and the thing mentioned in the clause containing the anaphoric element takes place.

Thus, in many cases the presupposition carried by *stop* refers to a time or time period. In the case of (24) uttered out of the blue, the reference is simply to the time of utterance, whereas

<sup>18</sup> Since I gave the original paper, some such cases have been suggested to me by Romina Padró.

in other cases such as (23), the reference is carried by other clauses or elements of the passive context. The usual account of the presupposition, perhaps influenced by the stock interrogative example with which this paper begins (and where the weak presupposition may indeed be all that is carried by *stop*), has been too influential and it is not the general case.<sup>19</sup>

Consider a case that is unlike *stop*.

(25) It was John who solved the projection problem.

Here there is a compulsory reference, I think, to another clause or to the active context. Or at least, usually there is; sometimes there is some accommodation (in Stalnaker's sense) that occurs when the sentence is introduced.

Soames (1989:605) mentions something relevant to this. Suppose someone says, out of the blue, "It was Mary who broke the typewriter," where there is no background knowledge that the typewriter was broken. The presupposition is that someone broke the typewriter (very soon I will argue that this account of the presupposition is too weak; let us accept it for the moment). Accommodation might take place; but there is, Soames suggests, something odd about this—there is a kind of pretense that a topic of conversation prior to the remark was that of determining who broke the typewriter. I agree with that.

In some contexts, however, it is not so bad. It is a fairly familiar rhetorical trope in academic writing, and so should be very familiar to us (that is, to academics). I have frequently seen sentences like "It was Mary Smith who should be given the credit for first observing that \_\_\_\_\_," where the information that \_\_\_\_\_ is really supposed to be unknown to the reader. The writer is trying to give the information that \_\_\_\_\_ and at the same time give Mary Smith the credit. But the main thing is to convey the information that \_\_\_\_\_. The writer might just as well have said, "That \_\_\_\_\_ is true is an important observation. Mary Smith gets the credit for noting it first," using straight assertions. (Possibly the trope is most common when the supposed fact Smith discovered is reasonably well known, but not necessarily to the reader.)

However, something is really very bad, in fact quite terrible, about the usual picture of what is presupposed. It is illustrated by this example:

(26) If John Smith walked on the beach last night, then it was Betty Smith who walked on the beach last night.

The usual presupposition for the consequent is this:

(27) Someone walked on the beach last night.

According to the Karttunen and Peters filtering rule, the presupposition for the whole conditional is (28).

<sup>19</sup> Richard Holton and Michaelis Michaels found my original discussion of *stop* unclear in certain respects. I hope my revisions answer their queries about my intent.

- (28) If John Smith walked on the beach last night, then someone walked on the beach last night.

Since (28) is incontestably true, (26) should always be okay. But (26) is obviously very bizarre. Similarly with the following cases:

- (29) a. If Sally opposed his tenure, it was Susan who opposed it.  
 b. Sally opposed his tenure, and it was Susan who opposed it.

These are also pretty bizarre. Like (26), (29a) and (29b) should be perfectly acceptable on the usual account, but out of the blue they are very bizarre indeed. The Karttunen and Peters filtering rule, taken with the usual account of the presupposition carried by clefts, gives as the presupposition carried by both (29a) and (29b) the conditional “if Sally opposed his tenure, someone opposed it,” which is trivially true. So nothing should be wrong with (29a) and (29b).

In fact, (29b) especially provokes the reaction, “Wait a minute! You said it was Sally who opposed his tenure! Why do you continue by saying it was Susan?” You could try to modify the standard proposal in light of these examples by saying that the real presupposition involves a uniqueness condition. According to this proposal, the real presupposition of (26) is that someone uniquely walked on the beach last night, and of (29a–b) that someone uniquely opposed tenure. That would account for the bizarreness of the two statements. The presupposition of (26) would then be that if John Smith walked on the beach last night, then someone uniquely walked on the beach last night, directly contradicting the claim of the consequent. Similarly for (29a–b). But this proposal does not work because such a uniqueness presupposition does not always hold, as the usual proposal correctly asserts. For example, in the tenure case the statement “If anyone opposed his tenure, I bet it was Sally and Susan who did so” is fine, contrary to any uniqueness presupposition in the cleft.

What seems to me to be going on is this: a cleft requires an explicit reference to the active context or to another clause (sometimes the presupposition can be introduced into the active context by a rhetorical trope with accommodation, as mentioned above). The active context or another clause does indeed entail that someone has some property P or did something. It must also suggest a question, “Who has the property?” or “Who did it?” The answer given in the cleft, as is suggested by its surface form *It was so and so who did it*, is supposed to be a *complete* answer to the relevant question, “Who did it?”

On this account, (26) is normally bizarre because, if the antecedent is assumed, then the consequent does not give a complete answer to the relevant question, “Who walked on the beach last night?” Similarly, (29a) and (29b) are bizarre. For example, (29b) suggests that a complete answer to the question “Who opposed his tenure?” is given by *it was Susan who opposed it*, even though the previous clause says that Sally opposed the tenure.

However, sometimes the complete answer will not be a complete list of all the satisfiers of the condition. The list can be restricted by a relevant condition in the active context. For example, someone may have asked, “Which *woman* walked on the beach last night?” Someone might suggest that John Smith is always accompanied by his wife, and that there is reason to suppose

that he walked on the beach last night. In such a situation, (26) is unobjectionable, though in a normal context it would be bizarre.

In all these cases, I am assuming the nonidentity of the people referred to—as, for example, John Smith and Betty Smith, Sally and Susan, and so on. This is a cause of the bizarreness of the examples. When we have two ways of referring to the same person, then a similar cleft construction can be perfectly appropriate. I could use the stock case of Cicero and Tully, but let me try some other examples.

- (30) If Viscount Amberley is giving the lecture, it is Bertrand Russell who is giving the lecture.

In (30), the question in the active context might be “Who is giving the lecture?,” as before, but it could also be “Who is Viscount Amberley?” or “Should I go to this lecture which is being given by one Viscount Amberley? Who is that?” Someone might answer, “Yes, you should go,” and continue with (30).<sup>20</sup>

Similarly, in appropriate contexts we could have these sentences:

- (31) If the author of “On Denoting” is giving the lecture, it is Bertrand Russell who is giving the lecture.

- (32) If Bertrand Russell is giving the lecture, it is the author of “On Denoting” who is giving the lecture.<sup>21</sup>

It should be clear without running through the examples again that the case of pseudoclefts is like that of clefts.

Next consider (33).

- (33) If Kasparov doesn’t defeat Karpov in the next game, probably he won’t defeat him *in the Berlin game*, either.

*Either* behaves like *too* except that it goes with a negative element. In (33), the presupposition is that the Berlin game is not the next game. Similarly:

- (34) *Sam* is not having dinner in New York tonight, either.

The presupposition is not merely that someone other than Sam is not having dinner in New York tonight, which as in (14) is trivial. Rather, something in the active context must mention some particular person, persons, class of people, or the like, who are not having dinner in New York tonight.

<sup>20</sup> Russell’s father was Viscount Amberley (as was his grandfather). Russell eventually inherited the title himself (and later inherited the title “Earl Russell”). One might imagine (30) uttered at a time when Russell had inherited the Amberley title but not yet the other one. (Actually, Bertrand Russell’s father used “Amberley” as a surname and made use of the title “Viscount Amberley,” but I don’t know of any instance where Russell himself did—say, when giving a lecture. In that sense, the example is probably somewhat fictive.)

<sup>21</sup> Examples (30)–(32) were added in response to a question by Scott Soames.

An example similar to (33) is (35).

(35) If Karpov checkmates Kasparov in the next game, probably the challenger will defeat the champion *in the Berlin game*, too.

In such cases, the focused element is supposed to be different from the corresponding element in the anaphoric parallel. Thus, the first presupposition of the conditional is that the next game is not the game in Berlin. But here some identities and one inclusion are presupposed that have been left tacit in previous examples because they have been exhibited by mere repetition of the terms, or by pronouns. Here they became explicit. The presuppositions are that Kasparov is the champion, that Karpov is the challenger, and that anyone who checkmates an opponent defeats him or her (the last case is an inclusion).<sup>22</sup> So, in addition to presupposed nonidentities, there are also presupposed identities and inclusions. These are needed to support the back-reference to parallel information and can come from either the passive or the active context. They can also be filtered out by appropriate information in other clauses. Similar remarks apply to *again*, as illustrated by (36).

(36) If Kasparov checkmates Karpov in the next game, probably the champion will defeat the challenger in the Berlin game, *again*.

The presuppositions are as follows:

The next game will be before the one to be held in Berlin.

Kasparov is the champion.

Karpov is the challenger.

Anyone who checkmates a player defeats him or her.

Example (37) illustrates another point about this.

(37) The Republicans supported the bill, and *Senator Blank* supported it, too.

The relevant presupposition here is not a nonidentity between singular terms, but a nonmembership statement: Senator Blank is not a Republican. In (37), *all* the Republicans are supposed to have supported the bill, but this does not seem to be necessary. This is illustrated by (38).

(38) A few Republicans supported the bill, and *Senator Blank* supported it, too.

Here again, the relevant presupposition is that Senator Blank is not a Republican.

<sup>22</sup> The examples about chess have been modified in the light of comments by Richard Holton and Michaelis Michaels. One of their remarks about *checkmates* was politely understated; they said, "Resignations are common." In fact, resignations are the norm in tournaments; playing to explicit checkmate is very rare. Strictly, nothing is wrong with (35) as now stated, but there is some sort of implicature that games are played to checkmate, which is fictive (perhaps there is also some suggestion that this is a championship series, which in my impression is rarely played in a number of different places). Rather than changing the example, I suggest that the reader just assume the appropriate things, even if they are contrary to normal fact.

Consider now the following pair of examples:

(39) The chemists are coming to the party, and *Harry* will come, too.

(40) If some other chemists come to the party, *Harry* will come, too.

The presupposition in (39) is that Harry is not one of the chemists. The presupposition in (40) is directly opposite. Here, it is obviously presupposed that Harry is a chemist, and the presupposition is carried by *other* rather than by *too*. There is no more obvious case of presuppositional anaphora than the presupposition carried by *other*. The presupposition attached to *too*, that Harry is not one of the chemists other than Harry, is tautologous.

Clearly, a converse to (40) is also acceptable, as in (41).

(41) If Harry comes to the party, *some other chemists* will come, too.

The presupposition carried by *other* is the same, though the anaphoric order has been reversed. Also, though it is natural to include *too*, the sentences (40) and (41) would be acceptable without it.

So clear it is that *other* is a presuppositional element, that I cannot imagine that it has not been mentioned in the linguistic literature on presupposition. However, it doesn't appear to have been, although I haven't made a systematic search.<sup>23</sup>

Another case arises where *other* refers to the active context, or previous discourse elements—for example, in (42).

(42) Smith will come. Some other chemists are coming, too.

Then the presupposition carried by *other* is clearly that Smith is a chemist. A more complicated case is (43).

(43) Smith will come. Harry doesn't like Smith. Nevertheless, if some other chemists come, Harry will come, too.

Depending on what is known, the presupposition in (43) carried by *other* can be either that Smith is a chemist or that Harry is (or possibly that both are). Suppose it is just the first of these cases. Then in that case the presuppositions in the last sentence of (43) are that Smith is a chemist, carried by *other*, while the presuppositions carried by *too* are that Harry is not Smith (perhaps vacuous because it is implied by the preceding sentence) and that Harry is not one of the *some other chemists* (i.e., other than Smith) hypothesized in the antecedent. In this instance, Harry himself may or may not be a chemist. In (40), I had of course supposed it uttered with no previous context, or at least that it is clear that *other* is meant to refer to Harry, and to no one else.<sup>24</sup>

<sup>23</sup> At least, I had not seen *other* as an example in the linguistics literature on presupposition I had read in 1990. In 1957, I had heard the example given by Max Black (in another context), in comments, unpublished as far as I know, on a paper by Arthur Pap. However, I now find that a later version of Pap's paper was posthumously published and mentions Black's example. See Pap 1960:50.

<sup>24</sup> Richard Holton and Michaelis Michaels have influenced this discussion. The examples in (42) and (43) respond to a query of theirs. Also, some material in the original talk was deleted, since their queries made me unsure of the correct position.

The *other* case can be used to illustrate what may be a source of the usual view that *too* has the weak presupposition given in the list initially quoted from Soames 1982. This can be seen by considering the following example:

(44) If someone other than Harry volunteers, *Harry* will volunteer, too.

What is the presupposition carried by *too* on the present model? It is that Harry is not someone other than Harry. No doubt that is (very trivially) true. However, one might be tempted to look at the situation in (44) in the following way: In (44), the presupposition carried by *too* is filtered out in the conditional; (44) itself carries no presupposition. But this can only mean that the presupposition carried by *too* in the consequent is entailed by the antecedent. This antecedent is that someone other than Harry volunteers. Applying this argument uniformly, the standard account of the presuppositions of *too* cited at the beginning of this paper from Soames 1982 would appear to follow. However, although this argument might seem very convincing, it does not in fact follow. The present model handles it in a very different way. And I hope I have convinced the reader that the standard account cannot be correct.<sup>25</sup>

There are certainly idiolects, dialects, and contexts in which *other* is not explicitly said but nevertheless is meant. We were told in school not to leave *other* implicit in this way—for example, not to say ‘I can lick any man in the house’ if we do not mean to include ourselves. Similarly, ‘In his country, Harry is better than any chemist around’ might mean any other chemist around. Perhaps there are even dialects in which *some chemist* can be used in this way. The school insistence on *any other* can be ascribed to the devotion of schoolteachers to standard quantification theory. In fact, if we follow the school prohibition, our language is certainly more precise and unambiguous.

Another issue is illustrated by (45) and (46).<sup>26</sup>

(45) If the Nebraskans come to dinner, the Cornhuskers will *stay for drinks*, too.

(46) If the Poles defeat the Russians, (then) the *Hungarians* will defeat the Russians, too.

Obviously, general terms and verbs can be involved as the focused elements and also as the identity elements. This is illustrated in (45), where coming to dinner is contrasted with staying

<sup>25</sup> Actually, the *other* case was unknown to the literature on presupposition of which I was aware (see footnote 23), but similar filtering arguments can be given for many of the other presuppositions in Soames 1982, and they are fallacious in every case.

(i) If Priscilla has had supper before, then she is having supper again (now).

(ii) Priscilla has had supper before, and she is having supper again (now).

(iii) If someone voted against his tenure, it is Susan who voted against his tenure.

In every case, the antecedent states the presupposition in Soames 1982. Since it is filtered out in the conditionals (or conjunctions), it might seem to follow that the antecedent must state the entire presupposition required. Such filtering arguments, however, are never correct. In the tenure case, the antecedent raises the question ‘If so, who voted against his tenure?’ which requires a complete answer. In the supper case, vague and obvious (in the case of a normal grown woman) as the antecedent or the first conjunct may be, it gives enough context for *again* to have a proper anaphora.

<sup>26</sup> This issue partly was introduced above in the examples from chess.

for drinks. I have chosen a case where *Nebraskans* and *Cornhuskers* are synonyms. Sentence (46) is an example from Soames 1982:497. Here, *Russians* is repeated but according to me, the presupposition is that the Poles and the Hungarians are different groups.

More important are the following examples:

- (47) The people from the Midwest are coming to dinner, and the Nebraskans will *stay for drinks*, too.
- (48) All of John's friends are from Nebraska, and Bill's friends are all from the Midwest, too.

Apart from the distinction between coming to dinner and staying for drinks, the important presupposition in (47) is that Nebraskans are people from the Midwest. *Nebraskans* is the element figuring in an identity or inclusion statement as a result of anaphoric reference by *too* to parallel information. Of course, the Nebraskans are not identical with the people in the Midwest; rather, they are included in that set. So the sentence means that a bunch of people from the Midwest are coming to dinner, and a certain subset of them—namely, the Nebraskans—are going to stay for drinks. (There is also a supposition that the group of people from the Midwest includes some Nebraskans—in other words, that the subset is nonempty.) We know, of course, that if the people from the Midwest are coming, they include the Nebraskans, because the Nebraskans are from the Midwest. However, the inclusion can go the other way, as in (48). Here, the element *from the Midwest* in the second conjunct, which carries the presupposition, has an extension that contains (rather than is contained in) the extension of the parallel element *from Nebraska*. In (48), then, we have the same inclusion as in (47), but the order of the terms, and their association with the presuppositional word, are reversed. An inclusion was already mentioned above in connection with the chess matches, where there was a presupposition that checkmating implies defeating.

Barbara Partee mentioned a similar example,<sup>27</sup> which people who worked on the syntax of *too* were concerned with years ago. It was something like *If John will leave at ten o'clock, Jill will leave the party early, too*. The presupposition in this case is that those who leave at ten o'clock will leave the party early. The relation here and in (48) is what I call a *converse inclusion* or *superset*.

There doesn't always have to be a strict inclusion or converse inclusion. Sometimes the sets that are presupposed to stand in the inclusion relation do not come directly from the antecedent and the consequent, but from the antecedent and the consequent together with other relevant background information.<sup>28</sup> Semantically, though, the general picture ought to be clear. The inclu-

<sup>27</sup> In a previous paper in the symposium where the present paper was given.

<sup>28</sup> In fact, the background information (probably in the active context) may be such that no inclusions are required. Suppose we know that the people from New York have been coming to events only when accompanied by their friends from California. Then one might say this:

(i) If the people from New York come, *their friends from California* will stay for drinks, too.

The presupposition is that if the people from New York come, their friends from California will come. But this is plainly no inclusion—say, that the friends from California are from New York.

sions and converse inclusions are calculated from the requirement that anaphoric elements like *too*, *again*, and so on, refer to parallel information. It remains a project to characterize syntactically when we have inclusions and when converse inclusions. In the examples above, antecedents with a predicate or group characterization in subject position require inclusions in the consequents, while predicates correspondingly require converse inclusions.<sup>29</sup>

With *or* there is yet another consideration. Take the following example:

(49) Either the Waring number is odd, or *the Waring number plus six* is even, too.<sup>30</sup>

The predicate *is odd* can be regarded as parallel to *is even*. In this case, it is presupposed that the Waring number, like all whole numbers, is even if it is not odd. The focused element is *the Waring number plus six*, which is supposed to be distinct from the Waring number, to justify the *too*.

A parallel example is (50).

(50) Either the boss will not come to the party, or *John* will come, too.

I assume that this is acceptable, with the presupposition that John is not the boss.

Another issue concerns the rules for when this type of anaphora is allowed. This parallels the corresponding questions for explicit pronominal and quantificational anaphora. Let me give a couple of examples.

(51) Perhaps Sam will come to the party. If there isn't a board meeting, *the boss* will come, too.

Obviously, the anaphora doesn't have to be within the same sentence, but can refer back to a previous sentence, at least if the sentence is at a reasonable distance back in the discourse in question. In (51), the presupposition carried by *too* is that Sam is not the boss. Examples for *other* were already given above, and the general point has really already been made in this paper. In fact, the presupposition may be unspoken in the immediately preceding discourse, as long as it is in the active context.

Look now at (52), based on examples from Soames 1982:525–526.

<sup>29</sup> If the relevant antecedent is put in the form *all As are Bs*, and the latter is expressed as a universally quantified conditional, then the subject will be logically in negative position, while the consequent is in positive position. I tentatively conjecture that this has something to do with the phenomenon and might lead to a generalization. (In quantification theory, every atomic formula is in positive position as a part of itself. In the antecedent of a conditional, positive and negative positions are reversed as part of the whole conditional, while they are retained in the consequent. Negation reverses positive and negative positions. Conjunction, disjunction, and universal and existential quantification leave positive and negative occurrences unreversed.)

<sup>30</sup> The Waring number of a given number  $q$  is the least number such that every positive integer can be represented as the sum of that many  $q$ th powers. (For example, every positive integer is the sum of four squares.) Here I am supposing that the parameter  $q$  was mentioned in the previous explicit context.

- (52) a. If Haldeman is guilty, (then) *Nixon* is (guilty), too.  
 b. *Nixon* is guilty, too, if Haldeman is (guilty).  
 c. If *Haldeman* is guilty, too, (then) *Nixon* is (guilty).  
 d. *Nixon* is guilty, if *Haldeman* is (guilty), too.

In (52b), the parallel element occurs in the antecedent of the conditional, but after the consequent clause has been uttered. For me, this is a problem of anaphora that is analogous to one for pronominalization. Notice the obvious analogy of this problem to the stock elementary pronominal examples.

- (53) a. If John is free, he will come to the party.  
 b. He will come to the party, if John is free.  
 c. If he is free, John will come to the party.  
 d. John will come to the party, if he is free.

In (53a–d), *he* is analogous to *too* in (52a–d). Moreover, in each of (52a–d), *too* is in a position in the conditional analogous to the position of *he* in each of (53a–d), respectively. However, the restrictions on anaphora are different. In (53), as is well known, *he* and *John* can be anaphorically related in all cases except (53b). In that case, *he* must be anaphoric to some (fairly immediately) previously mentioned person in the discourse, or must be deictic to some person in the context of utterance, not anaphoric to *John*.

In (52a–d), the anaphoric rules are different. Here, it is (52c) rather than (52b) where *too* cannot carry anaphora, in this case from *Nixon* to *Haldeman*. In (52c), as in (53b), there must be an anaphora or deixis to some previously mentioned or contextual figure (say, John Mitchell).<sup>31</sup>

An important question on the present account is this: what are the rules of anaphora for presuppositions, analogously to those for pronominalization? I discussed the case of *too* in part just now. The rules need not be the same for all the presuppositional elements discussed in this paper.

Normally the presuppositions are the ones predicted by my theory. There may well be cases that appear to be counterexamples and that may even require weakening of the presuppositions predicted, but every such case I have considered seems to require a corresponding weakening of the standard view, too. Such cases often seem to involve some special kind of trope and should not be seen as typical.<sup>32</sup>

<sup>31</sup> In the original version of this paper, I expressed some hesitation about the acceptability of (52d), which was endorsed by Soames, and said that sometimes I hear it his way, but not always. At the present time, I don't see why I was hesitant. Also in the original version, there was some contrast with Soames's own discussion of the Haldeman-Nixon examples. Soames pointed out that without *too*, the statements are all equivalent, since conditionals are equivalent whether the antecedent is stated before or after the consequent. He then concluded that neither semantics nor Gricean conversational implicature can be used to explain the exceptional status of (52c). My own explanation is in terms of anaphoric rules for *too* analogous to the well-known rules for *he* in (53). The interested reader can compare it with Soames's discussion in 1982:525–526. At the end of my original remarks on Soames's discussion, I raised and did not answer the question of whether the morals he draws disappear in the present analysis or can be supported by some examples other than the one he gave.

<sup>32</sup> See the opening footnote, where I mention a later seminar in which I indeed discussed such cases.

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