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A Solution to Soames' Problem: Presuppositions, Conditionals and Exhaustification*

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Abstract
This paper focuses on sentences like *Nixon is guilty, if Haldeman is guilty too*, first discussed by Soames (1982) and Karttunen and Peters (1979), which raise three problems. First, they are felicitous and do not appear to have presuppositions. However all major theories of presuppositions predict that they should presuppose what the antecedent presupposes (e.g., the sentence above should presuppose that Nixon is guilty). Second, there is a contrast between these sentences and the corresponding sentence-initial conditionals like *if Haldeman is guilty too, Nixon is guilty*. Finally, a way to solve the problem would be to locally accommodate the presupposition in the antecedent. However, this wrongly predicts tautological truth-conditions. In the case above, the predicted meaning could be paraphrased as "Nixon is guilty, if both Haldeman and Nixon are guilty." As a solution to these three problems, I propose that the presupposition is nonetheless locally accommodated in the antecedent and furthermore that the sentence is also interpreted exhaustively, which gives rise to a non-presuppositional and non-tautological meaning analogous to *Nixon is guilty, only if both Haldeman and Nixon are guilty*. Furthermore, I argue that the degraded status of the sentence-initial case is an independent fact rooted in the topic-focus structure of sentence-final conditionals. Finally, the present proposal can also be extended to treat related non-presuppositional cases like *I will go, if we go together*.

Keywords
presuppositions, local accommodation, conditionals, exhaustification

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1. Introduction

1.1. *The Problem in Brief*

Cases like (1), (2), and (3) are problematic for all major theories of presupposition projection.[1]

(1) Nixon is guilty, if Haldeman is guilty too. (Soames, 1982)

(2) I'll go to the party, if you go too.

(3) Mary is in the office, if John is there too.

The recipe for these problematic examples is simple: create a sentence-final conditional with "too" in the antecedent and its presupposition as the consequent. There are three problems with these cases. The first one, which I call "the presupposition problem," concerns the fact that (1)–(3) are felicitous and appear presuppositionless. Nonetheless, the prediction for all theories above is that they should presuppose that Nixon is guilty, that I'll go to the party, and that Mary is in the office, respectively.[2] The second problem, "the contrast problem," has to do with the fact that there appears to be a contrast between (1)–(3) on one hand and (4)–(6) on the other.

(4) ?If Haldeman is guilty too, Nixon is guilty. (Soames, 1982)

(5) ?If you'll go to the party too, I will go.

(6) ?If John is in the office too, Mary is there.

The third problem, "the truth-conditions problem," concerns the fact that a typical way of solving the presupposition problem would be local accommodation of the presupposition in the antecedent of the conditional. However, this predicts tautological truth-conditions for cases like (1)–(3); the meanings obtained are (7)–(9).

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1) See Heim (1983); Beaver (2001); Beaver and Krahmer (2001); Schlenker (2008, 2009); George (2008); Rothschild (2011).

2) Notice that one might think that the interpretation of (1) could be one in which we are presupposing that somebody else in the context is guilty (not Nixon). As Kripke (2009) has observed, we are not generally able to do this (cf. fn. 27). Furthermore, we can exclude this reading explicitly as in (i).

(i) I don't know whether anybody is guilty, but Nixon is guilty, if Haldeman is guilty too.

(7) Nixon is guilty, if both Haldeman and Nixon are guilty.

(8) I will go to the party, if you and I go to the party.

(9) Mary is in the office, if Mary and John are in the office.

1.2. *The Proposal in Brief*

As a solution to the presupposition problem, I propose that the presupposition is nonetheless locally accommodated in the antecedent. As we just saw, the immediate challenge is that this move gives rise to the tautological meanings in (7)–(9). In response to this second issue, I argue that cases like (1)–(3) are exhaustified conditionals, in the sense of Chierchia et al. (to appear), with a meaning analogous to (10)–(12).[3]

(10) Nixon is guilty, only if Haldeman is guilty too.

(11) I'll go to the party, only if you go too.

(12) Mary is in the office, only if John is there too.

As I show below, this proposal provides, among other things, a unified account of (1)–(3) and (10)–(12), the presuppositionless status of which is also problematic for many of the theories mentioned above. Furthermore, given that *if*-conditionals in general are not interpreted as *only-if* conditionals, I have to address below what mechanisms are responsible for the reinterpretation in the cases I'm focusing on. Finally, as a solution to the contrast problem, I submit that the slightly degraded status of (4)–(6) is an independent fact rooted in the relation between topic-focus structure and the position of the if-clause. Before turning to the proposal, I show in more detail that the presupposition problem is a real problem for all accounts above.[4] But first, let us briefly look at the framework that I adopt.

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[3] Thanks to Irene Heim (pc) for suggesting this strategy.

[4] Karttunen and Peters (1979: fn. 17) suggest an account of cases like (1) in terms of *too* taking scope over the entire conditional. While this might be reasonable when *too* is located at the right edge of the sentence, it is unclear how one could generalize this idea to cases of *also* like (i), which appears in the same way felicitous (thanks to Yasutada Sudo (p.c.) for discussion on this data).

(i) I'll go to the party, if you also go.

See also Kripke (2009) and Soames (2009) for discussion of these cases.

2. Adopting a Trivalent Framework

2.1. *A Note on the Choice*

I adopt a trivalent theory of presupposition projection..[5] ■ two periods correct? While nothing hinges on this choice, I use it because the trivalent theory is generally known and has been revived as one of the serious contenders in the recent literature. Furthermore, like other recent theories of presupposition projection, it separates clearly a basic system, which predicts symmetric projection of presuppositions and an independent mechanism for predicting asymmetric patterns of projection.[6] This is convenient for our purposes because it provides a way to present the predictions of different mechanisms for creating the asymmetry. In particular, there are two types of approaches for making the system asymmetric: a linear order based approach and a hierarchical order based approach.[7]

Sentence-final conditionals are relevant for this debate, since they are some of the few cases in which the two approaches make divergent predictions (see Schlenker, 2008; Chierchia, 2010). One might think that Soames' cases can be solved by one or the other approach. In particular the contrast between the sentence-final (1) and a sentence-initial (4), repeated below in (13-a) and (13-b), might suggest that a linear order based approach can fare better here.

(13) a. Nixon is guilty, if Haldeman is guilty too.

b. ?If Haldeman is guilty too, Nixon is guilty.

The trivalent theory provides a convenient way to illustrate that this is not the case: whether we combine it with a linear or hierarchical order we make no headway on solving the problem. Furthermore, the solution I propose in the end is neutral with respect to this debate.

2.2. *Ingredients*

2.2.1. The Third Value and Its Projection

The basic logic is trivalent, hence the domain of truth-values is expanded to include a third value, indicated as #. This third value is interpreted as uncertainty

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5) See Peters (1979); Beaver and Krahmer (2001); George (2008); Fox (2008); Fox (2012).

6) The reason for this separation is the fact that the recent presupposition debate started from an attempt to explain the asymmetric part of the projection behavior of presuppositions in a more principled way than previous approaches (see Schlenker, 2008).

7) For the former see Schlenker (2008, 2009), Fox (2008), George (2008), Rothschild (2011); for the latter see Chierchia (2010). See also George (2008) for discussion.

about some actual underlying truth-value of the sentence. In other words, if a sentence φ_p is evaluated in a world in which its presupposition p is not met we cannot tell whether it is true or false in that world.

(14) If for some $w, p(w) = 0$ then $\varphi_p(w) = \#$

Given the way we interpret the third value, we need a principle that guides us in deciding what to do when a complex sentence has arguments that are non-classically valued. In other words, a principle that tells us how # projects. The principle that is generally adopted is the so called "Strong Kleene principle", the definition of which is in (15).

(15) **Strong Kleene**: If the classically-valued arguments of a connective would suffice to determine a truth value in standard logic, then the sentence as a whole has that value; otherwise it doesn't have a classical value. (Beaver and Geurts, to appear)

The principle requires us to do whatever we can with the classically valued arguments. To give a concrete example, consider the case of disjunction with a presupposition trigger embedded in one of the disjuncts, as schematically represented in (16). The question to ask is how the non-classical value of φ_p projects to the whole disjunction.

(16) q or φ_p

The Strong Kleene principle tells us that undefinedness projects to the whole disjunction, only when we cannot determine a classical value just by looking at the value of q. In other words, the predicted projection for (16) is the standard one in (17): if q is false, then the presupposition of φ_p must be true or the whole sentence is undefined.

(17) $\neg q \rightarrow p$

That this result is a good prediction is shown by the intuitively presuppositionless status of (18-a), which is indeed predicted to presuppose just the tautological (18-b).

(18) a. Haldeman isn't guilty or Nixon is guilty too. *no presupposition*

b. If Haldeman is guilty, Haldeman is guilty.

2.2.2. Connecting Undefinedness to Presuppositions

We saw a principle that tells us about how semantic undefinedness projects. The question is how to connect this notion to a more pragmatic notion of presupposition, in the sense of Stalnaker (1978). Stalnaker (1978) himself suggests a way to do this, by proposing that utterances should express propositions that have a (classical) truth-value in each world of the context set. Von Fintel (2008) formulates this as a felicity condition on the utterance of sentences as in (19).

(19) **Stalnaker's bridge**: A sentence φ uttered in a context c is felicitous if for every world $w \in c$, $\varphi(w) \neq \#$.

(19) connects semantic undefinedness and pragmatic presupposition in the sense above, as it effectively requires that the presupposition of a sentence should be entailed by the context set in which the presupposing sentence is uttered.

One question for any account of presuppositions based on contextual satisfaction is what happens when a condition like (19) is not met. A response to this question from the trivalent theory is allowing a reinterpretation of the sentence in a way that renders the presupposition part of the assertion. In order to do this, we can define an assertion operator (*A* operator), that works as a presupposition wipe-out tool in the system (Beaver and Krahmer, 2001). I turn to this task now.

2.2.3. The Assertion Operator

The semantics of the *A* operator is in (20).

(20) $[\![A]\!](\varphi)(w)$

$= 1$ if $\varphi(w) = 1$

$= 0$ if $\varphi(w) \neq 1$

(20), together with **Stalnaker's bridge**, makes adding the *A* operator equivalent to asserting the presupposition; for any sentence φ_p, $A(\varphi_p) = p \wedge \varphi_p$. In a context in which Stalnaker's bridge is not met, we have the option of reinterpreting the sentence with an *A* operator. Furthermore, the *A* operator is an operator that can be merged at any scope site in the sentence, which also raises the question about the scope position where *A* is merged relative to other operators in the sentence. Suppose a sentence like (21) is uttered in a context in which Stalnaker's bridge is not met.

(21) John doesn't drive his Ferrari to school. He doesn't want to show off.

One way to reinterpret (21) is by merging the *A* operator globally and obtaining the intuitively correct meaning in (22).

(22) $A[\neg$[John drives his Ferrari to school]] = John has a Ferrari and doesn't drive it to school.

Suppose instead that the same sentence is uttered in the same context but with a different continuation as in (23).

(23) John doesn't drive his Ferrari to school. He doesn't have one.

Here globally merging the operator would create a meaning that is in contradiction with the continuation. However, we also have the option of locally merging *A* and obtaining the meaning in (24), which is instead compatible with John not having a Ferrari: what (24) says is that either he doesn't have a Ferrari or he doesn't drive it to school.

(24) ¬[A[John drives his Ferrari to school]] = It's not true that [John has a Ferrari and drives it to school]

One immediate question for accounts based on repairs like the *A* operator in (20) is what the conditions that govern its use are and what the conditions that govern the choice between global and local merging are. This is a general problem and it is completely parallel to the question about global and local accommodation in the sense of Heim (1983). I come back to this issue in section 5.2. Now that we have an account to work with, I will demonstrate that the presupposition problem is really a problem.

3. The Presupposition Problem Really Is a Problem

The theory sketched above predicts symmetric filtering of presuppositions. It makes the same predictions for (25-a) and (25-b). It is not clear that this is a wrong prediction in the case of disjunction, but there are arguments for asymmetry in the literature coming from other connectives (see Rothschild, 2011, for a critical discussion).

(25) a. Haldeman isn't guilty or Nixon is guilty too.

b. Nixon is guilty too or Haldeman isn't guilty.

Assuming that we want asymmetry, there are two main types of approaches for making a system like the trivalent theory above asymmetric: a linear order based approach and a hierarchical order based approach. As I show below, regardless of which approach one chooses, the prediction is that cases like (26-a) (= 1) should presuppose (26-b). In other words, the presupposition problem really is a problem.

(26) a. Nixon is guilty, if Haldeman is guilty too.

b. Nixon is guilty.

3.1. *Creating the Asymmetry*

In the following I sketch two ways of making the trivalent theory above asymmetric. Both of them essentially restrict the material that one may consider in applying the Strong Kleene Principle. The difference is whether we should base our restriction on material that comes first in terms of linear order or on material that is "lower" in a structural sense.

3.1.1. A Linear Order Based Asymmetry

I adopt (and slightly adapt) an informal principle by Beaver and Geurts (to appear) that describes what the linear-order based approach does. Before turning to the principle, notice that another way of formulating the Strong Kleene principle is as shown in (27).

(27) **Strong Kleene (reformulation)**

a. For each argument X that takes a non-classical value, check whether **on the basis of everything else in the sentence**, you can determine that assigning an arbitrary classical value to X would not have an effect on the overall value.

b. If so, just assign X an arbitrary value, and carry on. Otherwise, the sentence as a whole lacks a classical truth value.

c. If this procedure allows all non-classical values to be filled in classically, then the sentence can be assigned a classical value.

Consider now what it means to restrict the principle above to just the material on the left in the linear order.[8]

(28) **Linear Order**:

a. Go from left to right through the sentence. For each argument X that takes a non-classical value, check whether **on the basis of material on its left**, you can determine that an arbitrary classical value to X would not have an effect on the overall value.

b. If so, just assign X an arbitrary value, and carry on. Otherwise, the sentence as a whole lacks a classical truth value.

c. If this procedure allows all non-classical values to be filled in classically, then the sentence can be assigned a classical value.

To give a concrete example, consider (29), analyzed as material implication for the sake of simplicity. Imagine also that in the evaluation world w, $\varphi_p(w) = \#$.

(29) if p, φ_p

It is clear that when we hit φ_p we know, looking only at material on its left, that it's not going to matter whether we assign 1 or 0 to $\varphi_p(w)$. In fact, if $\varphi_p(w) = \#$,

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[8] Sometimes this principle is called Middle Kleene, see Beaver and Geurts (to appear).

then $p(w) = 0$, hence the conditional is going to be true in w no matter what the value of the consequent is.

3.1.2. Structure-Based Approach

To facilitate a comparison between the two approaches, we can formulate a similar informal description of the structure-based approach.

(30) **Hierarchical Order**:

a. Proceed bottom up, following the semantic composition. For each function f and argument X, if X takes a non-classical value, check:

(i) whether there is a co-argument Y of f c-commanded by X

(ii) if there is such Y, whether on the basis of it you can determine that an arbitrary classical value to X would not have an effect on the value of $f(Y)(X)$.

b. If so, just assign X an arbitrary value, and carry on to the next f, otherwise $f(Y)(X)$ (or $f(X)(Y)$) lacks a classical truth value.

c. If this procedure allows all non-classical values to be filled in classically, then the sentence can be assigned a classical value.

As an example consider again (31-a), and assume the structure in (31-b), where f is a function associated with the conditional.[9]

(31) a. if p, φ_p

b. $[[f\ \mathrm{p}]\ \phi_p]$

If we consider the function f and the argument φ_p, there is a co-argument of f c-commanded by φ_p, on the basis of which we can determine that assigning an arbitrary value to φ_p is irrelevant. In fact if $\varphi_p(w) = \#$, then $p(w) = 0$ and the conditional is going to be true in w no matter what the value of the consequent is.

Let's go back now to the case is (32) (= 1), schematized as (33), and let us turn to see that both approaches actually make the same problematic prediction.[10]

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[9] I am using material implication here, but the same result would be obtained with the semantics of conditionals that I discuss in section 4.2.

[10] As mentioned above, these two approaches make different predictions in certain instances of sentence final conditionals (see Schlenker, 2008; Chierchia, 2010). Consider (i-a) and (i-b), schematized as (ii-a) and (ii-b). Notice that these cases are very similar to Soames', but crucially the position of the sentence with "too" and its presupposition are swapped: the latter is now in the antecedent and the former is in the consequent.

(i) a. If Haldeman is guilty, Nixon is guilty too.

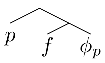
b. Nixon is guilty too, if Haldeman is guilty.

(32) Nixon is guilty, if Haldeman is guilty too.

(33) p, if φ_p

3.2. *Back to Soames' Cases*

Soames' cases are problematic for the hierarchical order based approach because there is no co-argument of φ_p c-commanded by φ_p on the basis of which we could determine whether any arbitrary assignment to φ_p would be irrelevant. The presupposition of φ_p is hence wrongly predicted to project to the whole conditional.[11]

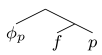
(34) 

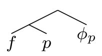
The linear order based approach does not fare better here. In fact, the projection predicted for a sentence-final conditional like (35-a) is (35-b).

(ii) a. if p, φ_p

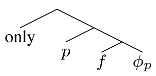
b. φ_p, if p

The linear-order based approach correctly predicts that (ii-a) should be presuppositionless. In fact, on the basis of the material on the left we can determine that giving an arbitrary value to the consequent has no overall effect on the truth-value of the whole conditional. On the other hand, in the sentence final case in (ii-b) there is no material on the left; the linear order approach, thus, predicts that the presupposition of φ_p projects to the whole disjunction. The hierarchical order predicts no difference between the two cases. In fact the antecedent is a co-argument of f and it is c-commanded by the consequent, regardless of the linear order, so we can always take it into consideration.

(iii) a. 

b. 

[11] Notice that the case of *only if* is also problematic for this approach because, wherever *only* is merged, there is no apparent reason why it should change the relevant structural relation between antecedent and consequent.

(i) 

Furthermore *only* seems to let presupposition go through in general as (ii) shows.

(ii) a. Only John likes his car.

b. → John has a car.

(35) a. q, if φ_p

b. $\neg q \rightarrow p$

This is because if q is true in some w, we can determine that the whole conditional is true in that world, regardless of the value of the antecedent. This means that the undefinedness of the antecedent projects to the whole conditional only if the consequent is false. Applying this to Soames' case, which has the form in (36-a), the predicted presupposition is (36-b), which is equivalent to (36-c).

(36) a. p, if φ_p

b. $\neg p \rightarrow p$

c. p

Crucially the linear order based theory does not predict the tautological $p \rightarrow p$, which is what we would need here to account for the presuppositionless status of (36-a).

4. The Proposal in More Detail

4.1. *Solving the Presupposition Problem: Local Accommodation*

I submit that the presupposition is locally accommodated in the antecedent. In the trivalent framework adopted here, this means merging the A operator locally, so that we interpret (37-a) and (37-b).

(37) a. p, if φ_p

b. p, if $A(\varphi_p) = p$, if $(p \wedge \varphi_p)$

An immediate concern for this approach is what to do about the tautological meaning that we obtain. This is what I called "the truth-conditions problem" above, which is the topic of the next section.

4.2. *Solving the Truth Conditions Problem: Exhaustification*

I propose that cases like (38-a) are cases of exhaustified conditionals, with a meaning analogous to (38-b). The meaning we obtain is thus equivalent to (39), which is obviously not tautological.

(38) a. Nixon is guilty, if Haldeman is guilty too.

b. Nixon is guilty, only if Haldeman is guilty too.

(39) If Nixon is guilty, both Haldeman and Nixon are guilty

The question now is how to obtain this meaning compositionally. In the following, I show that we can do so by adopting Fintel's (1997) semantics for "only if".

4.2.1. A Semantics for "only if"

I adopt Fintel's (1997) theory of *only if* conditionals.[12] Again this not essential, but it gives me a concrete way to present and compute the predictions of the proposal here. The ingredients of von Fintel's (1997) account are the following: first, the LF for a case like (40-a) is (40-b), where GEN is an implicit universal quantifier, with the semantics in (41).

(40) a. The flag flies only if the Queen is home.

b. Only$_c$ [GEN [if the Queen is home] [the flag flies]]

(41) $[\![\text{GEN}]\!](f)(p)(q)(w) = \forall w' \in f(w)[p(w') \rightarrow q(w')]$

where f is a context dependent function that selects a modal base

Importantly, this semantics validates contraposition, which says that a conditional *if p, q* is equivalent to *if* $\neg q$, $\neg p$.[13]

(42) **Contraposition**: $[\![\text{GEN}]\!](f)(p)(q)(w) \leftrightarrow [\![\text{GEN}]\!](f)(\neg q)(\neg p)(w)$

Furthermore, the semantics comes with two presuppositions: a compatibility presupposition, which requires there to be antecedent worlds in the modal base and an homogeneity presupposition, which requires that either all antecedent worlds are consequent worlds or all antecedent worlds are not consequent worlds.

(43) **Compatibility presupposition**: capitalize p? $[\![\text{GEN}]\!](f)(p)(q)(w)$ is defined if:

$\exists w' \in f(w)[p(w')]$

(44) **Homogeneity Presupposition**: $[\![\text{GEN}]\!](f)(p)(q)(w)$ is defined if:

$\forall w' \in f(w)[p(w') \rightarrow q(w')] \vee \forall w' \in f(w)[p(w') \rightarrow \neg q(w')]$

The homogeneity presupposition is one way of validating conditional excluded middle, which requires that *if p, q* is false then *if p,* $\neg q$ is true (see Lewis, 1973, and Stalnaker, 1973, for discussion).

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12) I also adopt the notation by Heim and Kratzer (1998): with $\lambda\varphi : \psi . \chi$ I mean the function that maps φ to χ only defined if ψ.

13) See von Fintel (1997) for a discussion of the cases in which contraposition intuitively should not be validated.

(45) **Conditional Excluded Middle**: for any *f, p, q* and *w*,

$$\neg[\![\text{GEN}]\!](f)(p)(q)(w) \leftrightarrow [\![\text{GEN}]\!](f)(p)(\neg q)(w)$$

From here on, I simplify the notation and just write as in (46).

(46) $[\![\text{GEN}]\!](f)(p)(q)(w) = \Box[p \rightarrow q]$

The last ingredient that we need is a meaning for *only*. For our purposes the one in (47) will suffice: *only* takes a set of alternatives *C* and a proposition *p* as arguments and it presupposes the truth of *p*, while negating all alternatives in *C* that are not entailed by it.

(47) $[\![\text{Only}]\!](C)(p) = \lambda w : p(w) . \forall q \in C[p \not\subseteq q \rightarrow \neg q(w)]$

For simplicity's sake, let us work on the case in which the alternatives in *C* are just the following in (48).

(48) $C = \left\{ \begin{array}{c} \Box(p \rightarrow q) \\ \Box(\neg p \rightarrow q) \end{array} \right\}$

Von Fintel (1997) provides some cases where focus on the auxiliary or on *if* might plausibly be interpreted as focus on the truth polarity of the sentence.[14]

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14) Von Fintel (1997) proposes a more general way to handle these cases which works both with wide and narrow focus in the antecedent. We can straightforwardly adopt it. The extra assumption needed is that in the relevant cases one of the alternatives to the antecedent is true.

(i) $\text{Only}_c[(p\,[...]_f)(q)]$

To give an example, consider the alternatives in (ii).

(ii) $C = \left\{ \begin{array}{c} \Box(p \rightarrow q) \\ \Box(p' \rightarrow q) \\ \Box(p'' \rightarrow q) \end{array} \right\}$

Assuming that in all relevant alternatives one if *q* one of *p, p′* and *p″* is true, ignoring the presupposition of the prejacent we have the following derivation.

(iii) a. $\text{Only}_c\,[\text{GEN}(p)(q)] =$

b. $\neg\Box(p' \rightarrow q) \wedge \neg\Box(p'' \rightarrow q)$ — mean of *only*

c. $\Box[p' \rightarrow \neg q] \wedge \Box(p'' \rightarrow \neg q)$ — cond excl middle

d. $\Box[q \rightarrow \neg p'] \wedge \Box[q \rightarrow \neg p'']$ — contrap

e. $\Box[q \rightarrow p]$ — if *q* one of p … p_n is true

(49) It probably won't rain and

a. the game will only be cancelled if it DOES rain.

b. the game will only be cancelled IF it rains.

Given the ingredients above, we can now go through the following derivation: first we compute the meaning of "only," which presupposes the prejacent and negates the alternative $\Box\,[\neg p \rightarrow q]$. Next, we apply conditional excluded middle and finally we apply contraposition. The prediction is that (51-a) now entails (51-b).

(50) a. Only$_c$[GEN$_f$$(p)(q)$] =

b. $\Box(p \rightarrow q) . \neg\Box(\neg p \rightarrow q)$ — meaning of *only*

c. $\Box(p \rightarrow q) . \Box[\neg p \rightarrow \neg q]$ — cond excl middle

d. $\Box(p \rightarrow q) . \Box[q \rightarrow p]$ — contraposition

(51) a. The flag flies only if the Queen is home.

b. If the flag flies the Queen is home.

The ingredients for solving the presupposition and truth conditions problems are now in place; let us go back to Soames' cases and see how we can apply them there.

4.3. *Soames' Cases Again*

4.3.1. First the *Only-If* Case

Consider again the sentence in (52) (= 1) and recall that the assumptions are Fintel's (1997) semantics and the *A* operator.

(52) Nixon is guilty, only if Haldeman is guilty too.

We can now see that the derivation of the meaning of (53-a), with LF in (53-b), is (54). The derivation is analogous as above, with the only addition of the *A* operator.

(53) a. Nixon is guilty, only if Haldeman is guilty too.

b. Only$_c$[GEN[Nixon is guilty] [if A[Haldeman is guilty too]]

(54) Only$_c$[GEN(q, if $A(p_q)$)] =
non-matching parenthesis

a. $\Box(Ap_q \rightarrow q) . \neg\Box(\neg(Ap_q) \rightarrow q)$ — meaning of *only*

b. $\Box(Ap_q \rightarrow q) . \Box[\neg(Ap_q) \rightarrow \neg q]$ — cond excl middle

c. $\Box((p \wedge q) \rightarrow q) . \Box[\neg(p \wedge q) \rightarrow \neg q]$ meaning of A[15]

d. $\top . \Box[\neg(p \wedge q) \rightarrow \neg q]$ log equiv

e. $\Box[q \rightarrow (p \wedge q)]$ contraposition

The meaning predicted for (55-a) is paraphrasable as (55-b) with no presupposition. I argue that this is the right meaning for the Soames' case with overt "only."

(55) a. Nixon is guilty, only if Haldeman is guilty too.

b. If Nixon is guilty, both Haldeman and Nixon are guilty.

4.3.2. Now Back to Simple Conditionals

Now, let us go back to simple conditionals like (56) (= 1). It is probably clear by now that the proposal is that the sentence in (56) is actually interpreted as in (57).

(56) Nixon is guilty, if Haldeman is guilty too.

(57) Nixon is guilty, only if Haldeman is guilty too.

For concreteness, I use an EXH operator with a meaning analogous to overt *only* (see Fox, 2007; Chierchia et al., to appear). I assume that the tautological meaning licenses a reinterpretation of the sentence with EXH. More precisely, when a sentence like (57) is uttered in a context we first reinterpret it with the *A* operator in the antecedent. The tautological meaning, thereby created, forces us to a second reinterpretation with the exhaustivity operator.[16] The meaning of EXH that I assume is in (58).

(58) $[\![\text{EXH}]\!](Alt(p))(p) = \lambda w \,.\, p(w) \wedge \forall q \in Alt(p)[p \nsubseteq q \rightarrow \neg q(w)]$

The LF for (56) becomes (59) and the derivation in (60) is completely analogous as the derivation of the case with overt *only* above. The only difference concerns the fact that the prejacent is now asserted instead of presupposed. Given that it

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15) Remember that $A(\varphi_p) = \varphi \wedge p$.

16) Mandy Simons (p.c.) pointed out to me that exhaustification is not a strategy that we seem to employ in response to other tautological meaning like (i).

(i) War is war.

It's not clear to me that this is problematic. In fact, we can assume that exhaustification can be used only if there are triggered alternatives in the first place and it is not clear that with normal intonation there are alternatives to (i).

is tautological anyway, there is no overall difference in meaning with respect to the sentence with overt "only".

(59) EXH$_{Alt}$[GEN[Nixon is guilty, if A[Haldeman is guilty too]]]

(60) EXH$[\Box(Ap_q \rightarrow q)] =$

a. $\Box(Ap_q \rightarrow q) \wedge \neg\Box(\neg Ap_q \rightarrow q) =$ mean of EXH

b. $\Box((q \wedge p) \rightarrow q) \wedge \neg\Box(\neg(q \wedge p) \rightarrow q) =$ meaning of A

c. $\Box((q \wedge p) \rightarrow q) \wedge \Box(\neg(q \wedge p) \rightarrow \neg q) =$ cond excl middle

d. $\top \wedge \Box(\neg(q \wedge p) \rightarrow \neg q) =$ logical equiv

e. $\Box(q \rightarrow (q \wedge p))$ contraposition

The meaning of (61-a) is predicted to be (61-b), again with no presupposition. In other words, you would judge (60-a) false if Nixon is guilty but Haldeman isn't.

(61) a. Nixon is guilty if Haldeman is guilty too.

b. If Nixon is guilty, both Nixon and Haldeman are guilty.

Notice that this exhaustification reinterpretation seems independently motivated by non-presuppositional cases like (62) and (63).[17]

(62) I will go to the cinema, if you go with me/if we go together.

(63) A: What about John and Mary, do you think that they will confess the murder?

B: John will confess, if both of them will.

These cases are also predicted to be tautological, unless interpreted as exhaustified conditionals, so that the meanings are analogous to (64) and (65).

(64) I will go to the cinema, only if you go with me/only if we go together.

(65) John will confess, only if both of them will.

Summing up, it seems that exhaustification (or analogous operations) is needed independently for treating non presuppositional cases like (62) and (63). This same strategy can be used to solve the truth-conditions problem in Soames' cases.

[17] Thanks to Philippe Schlenker (pc), Fabio del Prete (pc) and Brian Leahy for discussion on these cases.

4.4. *A Solution to the Contrast Problem*

Recall that Soames (1982) argues that there is a contrast between (66-a) and (66-b).

(66) a. Nixon is guilty, if Haldeman is guilty too.

b. ?If Haldeman is guilty too, Nixon is guilty.

It has been claimed in the literature that whether a conditional clause is in initial or in final position depends on its discourse status as being in the background or in the foreground (Givon, 1982; von Fintel, 1994). What is relevant for us is the observation that the sentence-initial position is dispreferred when the if-clause contains new information. An example that shows this preference is the contrast in (67-a) and (67-b).

(67) Under what conditions will you buy this house? (von Fintel, 1994)

a. I'll buy this house if you give me the money.

b. #If you give me the money I'll buy this house.

EXH needs focus on the antecedent to have the alternatives that gives rise to the exhaustification with the meaning of an "only if" conditional. Assume, further, a question-answer congruence principle for focus along the lines of (68) (Rooth, 1996) and the notion of Question Under Discussion (QUD) which stands for the explicit or implicit main question in the discourse (see Roberts, 2004; Beaver and Clark, 2009).

(68) The focus of the answer corresponds to the questioned position in the wh-question.

It follows that the focus in a sentence like (69), in turn, requires a question under discussion along the lines of (70).[18]

(69) ?If [Haldeman is guilty too]$_F$, Nixon is guilty

(70) Under what conditions is Nixon guilty?

[18] Notice that as a reviewer points out focus is also needed on Haldeman, as that associates with *too*. The structure is as in (i): the first focus on Haldeman associates with *too*, while the second focus on the entire antecedent including the A-operator, associates with EXH.

(i) EXH[if [A[[Haldeman]$_F$ is guilty too]]$_F$ Nixon is guilty]

This, however, is precisely the situation that the generalization above says it is degraded, thus we account for the dispreference for sentence initial conditionals like (69).[19]

4.5. *Summing Up*

I argued that a conditional like (71-a) has the LF in (71-b) and the meaning in (72).

(71) a. Nixon is guilty, if Haldeman is guilty too.

b. EXH$_{Alt}$[GEN[Nixon is guilty, if A[Haldeman is guilty too]]]

(72) If Nixon is guilty, both Haldeman and Nixon are guilty.

I have also argued that the contrast between (73-a) and (73-b) is attributable to the focus structure of sentence-final/initial conditionals.

(73) a. Nixon is guilty, if Haldeman is guilty too.

b. ?If Haldeman is guilty too, Nixon is guilty.

The approach here predicts no presupposition problem given the assumption of local accommodation in the antecedent and no truth-conditions problem, as the meaning predicted is not tautological. Furthermore, it provides a unified account of sentence-final conditionals and only *if* conditionals with a trigger in the antecedent like (74).

(74) Nixon is guilty, only if Haldeman is guilty.

Finally, it can also account for related non-presuppositional cases like (75).

(75) I'll go to the cinema, if we go together.

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[19] It is easy to show that without the alternatives of the antecedent we do not get the meaning of "only if". Consider a focus structure in which the focus is on "Nixon" in the consequent. Assuming that we first locally merge the A, we can only obtain the negation of alternatives of the form "x is guilty, if Haldeman and Nixon are guilty". The meaning obtained is thus that if both Haldeman and Nixon are guilty, nobody else relevant is guilty. Though this might be a possible reading of the sentence, this is certainly not the primary reading.

(i) [Nixon]$_F$ is guilty, if Haldeman is guilty too

5. Open Issues & Extensions

In the following, I discuss four open issues and how to respond to them. First, I've claimed that certain cases of *if*-conditionals are really interpreted as *only if*-conditionals, and one may take issue with that. Second, it has been claimed in the literature that triggers like *too* cannot be locally accommodated (Chemla and Schlenker, to appear), so why would it be possible here? Third, I have only talked about *too*, what about other triggers? Finally, what about other quantificational structures, in particular ones for which conditional excluded middle cannot be assumed? I turn to each of these issues in the next sections.

5.1. *Differences with "Only-If" and the Pragmatics of* EXH

5.1.1. Differences

I have argued that (76-a) means (76-b); in other words, it is false if Nixon is guilty but Haldeman isn't.

(76) a. Nixon is guilty, if Haldeman is guilty too.

b. If Nixon is guilty, both Haldeman and Nixon are guilty.

To give another example, imagine a context in which we were about to enter the door of our house and I say (77). Then I open the door and Mark is there but Bill isn't. The question is whether, in that context, I said something false, as the present proposal predicts.

(77) Mark is here, if Bill is here too.

Instead of relying just on our intuitions about (77), we can ask whether there are differences between (78-a) and (78-b), as a contrast would be an argument against the meaning proposed here.[20]

(78) a. John will go to the movies, only if Mary goes too.

b. John will go to the movies, if Mary goes too.

There appear, in fact, to be cases in which (78-a) and (78-b) differ, in particular when we add a continuation that is incompatible with the *only-if* meaning.[21]

[20] Thanks to Brian Leahy, Bernhard Nickel and David Beaver for extremely helpful discussions of the data discussed here.

[21] Notice that cases like the above are also possible with non presuppositional cases like (i) and (ii), so a response is needed independently from Soames' cases.

(79) a. John will go to the movies, only if Mary goes too. #But if there is a movie with George Clooney, he will go whether Mary goes or not.

b. John will go to the movies, if Mary goes too. But if there is a movie with George Clooney, he will go whether Mary goes or not.

In sum, there seems to be a difference between Soames' cases with and without "only", which the present proposal does not predict. Notice, however, that the present proposal is not committed to the claim that a case like (76-a) is always interpreted as (76-b). The proposal is that one way to avoid attributing a tautological meaning to what the speaker said is re-interpreting it exhaustively. It is compatible with the proposal that the tautological meaning can be also avoided in other ways in certain cases (cf. fn 24). In the next section, I explore one such strategy and show that we can, in fact, account for such differences on pragmatic grounds.

5.1.2. The Pragmatics of EXH

Theories of scalar implicatures based on exhaustivity operators of the kind defended in Chierchia et al. (to appear) and Fox (2007) among others, are proposals that draw the line between semantics and pragmatics differently than in Gricean and Neo-Gricean accounts. In particular, Fox (2007) divides the labor between semantics and pragmatics as follows: scalar implicatures are derived as entailments of exhaustified sentences, they are completely on the semantic side, while ignorance inferences about the speaker are derived pragmatically. More specifically, the latter are derived by reasoning about the speaker's mental state, as in the (neo)-Gricean accounts, in accordance with a maxim of quantity along the lines of (80) (adapted from Fox, 2007).

(80) **Maxim of Quantity**: If S_1 and S_2 are both relevant to the topic of conversation and S_2 is not more informative than S_1, if the speaker believes that both are true, the speaker should utter S_1 rather than S_2.

Notice that (80) is not restricted to alternatives allowing us to (only) conclude that the speaker is ignorant about every relevant proposition that isn't entailed by

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(i) I will go to the cinema, only if we go together. #But if there is a movie with George Clooney, I'll go whether you go or not.

(ii) I will go to the cinema, if we go together. But if there is a movie with George Clooney, I'll go whether you go or not.

the assertion.[22] By way of illustration consider the sentence in (81-a): (81-a) can be read with the scalar implicature in (81-b) or with the ignorance inference in (81-c). The idea is that the former is derived by exhaustification, while the latter is derived by reasoning in accordance with the maxim of quantity in (80).[23]

(81) a. Some student came.

b. Not every student came.

c. The speaker is ignorant as to whether all student came.

In case of a continuation that is incompatible with (81-b) like the one in (82), an obvious strategy for this approach would be to say that (81-a) is simply interpreted without exhaustification. In other words, it is read with the weak inference in (81-c), which is compatible with the continuation.

(82) Some student came. In fact, maybe even all of them did.

Can we apply the same strategy to the case of (83), repeated from above?

(83) John will go to the movies, if Mary goes too. But if there is a movie with George Clooney, he will go whether Mary goes or not.

I propose that we can and that this is precisely what happens in the case of (83): when we reach the continuation that is incompatible with the exhaustification of the first part, we simply re-interpret the first sentence without EXH. Notice, though, that in the case of (83), this cannot be the whole story, because if we just interpret the first part without exhaustification, we wind up with the tautological meaning in (84).

(84) John will go to the movies, if Mary and John go.

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22) A maxim of quantity non-restricted to alternatives allows us to derive only ignorance inferences because of the so-called "symmetry problem". In brief, the problem is that every time you consider a more informative and relevant proposition p for any asserted proposition q, also the more informative $q \wedge \neg p$, must also be relevant, given reasonable assumptions about relevance. However, if we assume that the speaker both doesn't believe p and he doesn't believe $q \wedge \neg p$ we obtain that she is ignorant about p (see Fox, 2007, and Chierchia et al., to appear, for discussion).

23) (81-b) is obtained via assuming the LF in (i-a) and the alternatives in (i).

(i) a. EXH[some student came]

b. {some student came, every student came}

Indeed, I argued above that the tautological meaning is what triggers exhaustification in a case like (85). Now, however, I am proposing that in the case of a continuation that is incompatible with this exhaustification we do not exhaustify. The question, hence, is how in these cases we deal with the tautological meaning. I argue that we should look at the pragmatic inferences of (84) obtained by reasoning in accordance to the maxim of quantity in (80), and that these are enough to account for the meaning of (83). In particular, the meaning that we obtain could be paraphrased as (85), which is a coherent and plausible meaning for (83).

(85) It's possible that if John goes to the movies, both Mary and John go. But if there is a movie with George Clooney, he is going whether Mary is going or not.

Let us now go through how we obtain (86): (80) tells us that the speaker is ignorant about all relevant propositions that are not entailed by the assertion. We obtain, in particular, that the speaker is ignorant about (86).

(86) John will go to the movies, if not both Mary and John go.

What does it mean that the speaker is ignorant about (86)? It means that we can conclude (87-a) and (87-b).

(87) a. It's possible for the speaker that it's true that if not both Mary and John go, then John goes.

b. It's possible for the speaker that it's false that if not both Mary and John go, then John goes.

This, in turn, means that, from (87-b), we can go through the derivation in (88), using conditional excluded middle and contraposition as before, and conclude (88-d), thus we obtain the meaning in (85), which is not contradictory.[24]

[24] To illustrate that (85) is coherent, we have to first look at the interpretation of (88-d). If the conditional is an epistemic conditional, that is it quantifies over the belief state of the speaker, I argue that the way we should formalize it is (i): the speaker considers possible that if John goes, Mary and John go.

(i) $\Diamond[p \rightarrow q]$

This is parallel to the cases in which an overt epistemic possibility modal is present in the assertion, like in (ii), which is also to be formalized as (i).

(ii) Maybe if John goes, Mary will go.

In the case of a generic conditional like (iii), we would, instead, formalize it as (iv), where $\Diamond$ and $\Box$ range over different modal bases.

(88) a. It's possible for the speaker that it's false that if not both Mary and John go, then John goes.

b. It's possible for the speaker if not both John and Mary go, John doesn't go — conditional excluded middle

c. It's possible for the speaker that if John goes, Mary and John go. — contraposition

d. It's possible for the speaker that if John goes, Mary goes. — log equiv

In sum, I argue that a sentence like (89) can have the strong reading in (90-a), obtained via the insertion of EXH, or the weak reading in (90-b), in turn obtained via pragmatic reasoning in accordance with (80). The latter reading is used, in particular, when the first one is incompatible with either a continuation of the sentence or information in the context.

(89) John goes, if Mary goes too.

(90) a. If John goes, Mary goes.

b. It's possible that if John goes, Mary goes.

(iii) Maybe the kids play soccer, if the sun is shining.

(iv) $\Diamond\Box[p \rightarrow q]$

We also have to look at the contribution of the unconditional *whether or not* in the continuation. For our purposes, I simply assume that *whether or not-p, q* should be formalized as (v-a). (v-a) is equivalent to (v-b), but given the **compatibility presupposition** it also requires that in the domain of quantification there is a world in which p and a world in which $\neg p$ (see Rawlins, 2008, for a more sophisticated analysis of unconditional, which is, however, compatible with the present proposal).

(v) a. $\Box[p \rightarrow q] \wedge \Box[\neg p \rightarrow q]$

b. $\Box\, q$

Putting these two things together, I propose that the way to formalize (vi) is (vii-a), which is coherent and equivalent to (vi-b), with the presupposition that there is a world in the modal base in which there is a movie with George Clooney and Mary goes and one in which there is a movie with George Clooney and Mary doesn't go.

(vi) It's possible that if John goes, Mary goes. But if there is a movie with George Clooney, John goes whether or not Mary goes.

(vii) a. $\Diamond[p \rightarrow q] \wedge \Box[(r \wedge \neg q) \rightarrow p] \wedge \Box[(r \wedge q) \rightarrow p]$

b. $\Diamond[p \rightarrow q] \wedge \Box[r \rightarrow p]$

In the case of overt "only" repeated in (91), on the other hand, of course there is no option of interpreting the sentence without "only", thus contradiction is bound to arise.[25,26]

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25) To illustrate, we formalize the meaning of (91) as (i-a). This is equivalent to (i-b) but it introduces the compatibility presuppositions that there is a world in which r and $\neg q$ (cf. fn. 23). Given the second conjunct, however, that world must also be a p-world, which means that this world falsify the first conjunct, as it is a world in which p and $\neg q$.

(i) a. $\Box[p \to q] \wedge \Box[(r \wedge \neg q) \to p] \wedge \Box[(r \wedge q) \to p]$

b. $\Box[p \to q] \wedge \Box[r \to p]$

26) An anonymous reviewer points out that a sentence like (i) is felicitous and asks whether this is not a problem for the present approach.

(i) I'll go, whether you go too or not.

Let me show that (i) is not a problem: I analyze (i) to as (ii-a), which is equivalent to (ii-b), but that also introduces the compatibility presuppositions that in the modal base there is at least a world $p \wedge q$ and a world $p \wedge \neg q$ (cf. fn. 23)

(ii) a. $\Box[(p \wedge q) \to p] \wedge \Box[\neg(p \wedge q) \to p]$

b. $\Box p$

(i) is, hence, not tautological and just means that I will go, while presupposing that it's possible that you come and that you don't come. In other words, in this case we do not need to exhaustify to obtain a tautological meaning after local accommodation.

This strategy helps also with another question of the same reviewer about cases like (iii).

(iii) Nixon is guilty, even if Haldeman is guilty too.

An indicative *even*-if conditional like (iii) appears to have a *whether or not* interpretation. In other words, it appears to entail the consequent (Barker, 1994). I submit that the meaning we want to obtain for (iii) is that Nixon is guilty and that it's possible that both Haldeman is guilty and that it's possible that Haldeman isn't guilty. Assuming a simplified version of *even-if* conditionals, which says roughly that *p, even if q* means that *p, if q* and *p, if not-q*, we would predict that (iii) is not tautological and means (iv-a), which is equivalent to (iv-b), and that presupposes (iv-c) and (iv-d) (see Barker, 1994, for discussion and a more sophisticated version of this analysis).

(iv) a. Nixon is guilty, if Haldeman and Nixon are guilty and Nixon is guilty if not both Haldeman and Nixon are guilty

b. Nixon is guilty

c. it's possible that Nixon and Haldeman are guilty

d. it's possible that not both Nixon and Haldeman are guilty

(91) John will go, only if Mary goes too. #But if there is a movie with George Clooney, he will go, whether or not Mary goes.

In sum, we can account for certain differences between Soames' cases with and without overt "only", if we look at their pragmatic inferences.

5.2. Too *and Accommodation*

5.2.1. Is Local Accommodation Possible or Not?

It is claimed in the literature that triggers like *too* are very hard, if not impossible, to locally accommodate.[27] Chemla and Schlenker (to appear) discuss the case in (92).

(92) #I talked to Ann. It's impossible that John too will come. Ann is abroad.

The question is why (92-b) cannot mean that it is impossible that both John and Ann will come because Ann is abroad. This would be exactly the meaning that we would obtain if we could locally merge the *A* operator.

correct?

(93) It's impossible [A[that John too will come]]. = It's impossible that [Ann will come and John will come]. Ann is abroad.

More to the point, why can't we insert an *A* locally in (92-b) and we can in Soames' cases? Chemla and Schlenker (to appear) propose a semantics for *too* based on contrastive focus. As I discuss in the next section, their analysis can

Putting it all together, the meaning we obtain is that Nixon is guilty and that it's possible that Haldeman is guilty and that it's possible that he isn't, which is precisely the meaning that we wanted to obtain above. Notice that, as in the case of *whether or not*, we do not need to exhaustify. This fact also accounts for the observation that overt "only" cannot occur with "even" in cases like (v) and with *whether or not* as in (vi).

(v) Nixon is guilty, (*only) even (*only) if Haldeman is guilty too.

(vi) Nixon is guilty, (*only) whether (*only) Haldeman is guilty too or not.

27) Triggers like *too* are also assumed to be impossible to accommodate globally. Kripke (2009) shows that an example like (i) is infelicitous in a context in which there is no salient individual that satisfies the predicate.

(i) ??Sam is having dinner in New York tonight, too.

In response to this data, it has been claimed that *too* has an anaphoric component that needs a salient entity in the context (Heim, 1992; Kripke, 2009). The lack of global accommodation can be traced back to the absence of a salient anaphoric reference. Notice that in Chemla and Schlenker's (to appear) case the first sentence provides a salient entity in the context.

account for why it is not possible to locally accommodate in their case above and it is possible instead in cases like Soames'.[28]

5.2.2. A Semantics for *Too*

Chemla and Schlenker's (to appear) analysis of *too* has the following characteristics: (i) *too* is a focus sensitive particle that requires a clausal antecedent (ii) the clausal antecedent has to be presupposed to be true (iii) the clausal antecedent has to entail a member of the focus value of the clause containing *too*. For illustration consider a case like (94), adapted from Rooth (1992): the requirement is that a member of the focus value of [HE insulted HER] is entailed by the antecedent clause [Mary insulted John] (the antecedent of *too* will be indicated with co-indexation).[29]

(94) [Mary insulted John]$_i$, and then HE insulted HER too$_i$.

The case in (94) is straightforward; consider now a slightly more sophisticated case like (95). (95) is felicitous as long as we globally accommodate that *if Mary called John a republican, she insulted her*.

(95) [Mary called John a republican]$_i$, and then HE insulted HER too$_i$.

This is derived by Chemla and Schlenker's (to appear) analysis. In fact, the requirement is that the antecedent entails a member of the focus alternatives of the clause [HE insulted HER]. The alternatives are of the form *x insulted y*, where for (95) *x* and *y* are resolved to Mary and John, respectively. Then, [Mary called John a republican] entails that [Mary insulted John] if we accommodate that *if Mary called John a republican, then she insulted him*.

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[28] Notice that, as they discuss, this runs against their own assumption that *too* is impossible to locally accommodate. Thanks to Philippe Schlenker (p.c.) for pointing this to me and for extensive and extremely helpful discussion on this part of the paper.

[29] More formally, the analysis of *too* is the following in (i) (where $[\![]\!]_f$ and $[\![]\!]_o$ are the focus and ordinary value, respectively, see Rooth (1992))

(i) $[\![\text{too}_i \text{ IP}]\!]^{g,w}{}_o = \#$ unless

a. $g(i)$ denotes a proposition that is true at w

b. for some proposition p in $[\![\text{IP}]\!]^{g,w}{}_f$

1) p is an alternative distinct from $[\![\text{IP}]\!]^{g,w}{}_o$

2) relative to the context set, $g(i)$ entails p

if $[\![\text{too}_i \text{ IP}]\!]^{g,w}$ is defined than it is equal to $[\![\text{IP}]\!]^{g,w}$

Notice that allowing global accommodation of conditionals like the above, would massively overgenerate. In fact, it is in principle possible with any antecedent, unless some economy condition is postulated. Chemla and Schlenker (to appear) propose the constraint in (96).

(96) **Role of the antecedent**. The antecedent clause of *too* plays a role in satisfying the presupposition it triggers. More precisely, the presupposition which is accommodated when *i* denotes this antecedent should not be equivalent to the presupposition that would have to be accommodated in its absence, i.e. if *i* denoted the context set.
Chemla and Schlenker (to appear: 14)

To illustrate the role of (96), they discuss the contrast between (97) and (98).

(97) [Mary is eating popovers]$_i$, and John too$_i$ is overeating.

(98) [Mary is drinking Bordeaux]$_i$, and John too$_i$ is overeating.

In both (98) and (97) the clausal antecedent entails the clause containing *too* if we accommodate the conditionals *if Mary is eating popovers, she is overeating* and *if Mary is drinking Bordeaux, she is overeating*. The former case, however, appears unproblematic, while the latter is quite hard in absence of further information in the context. Their intuition is that if one is willing to accommodate (98), then this is probably because one already believes the consequent, i.e. *that Mary is overeating*. But if this is the case, then the antecedent plays no role in the satisfaction of the presupposition and this is precisely what (96) disallows.

5.2.3. Back to Local Accommodation

Contrary to Chemla and Schlenker (to appear) I am assuming that local accommodation is possible with *too*.[30] The idea is that once we adopt their analysis of *too* and the economy condition in (96), we can account for the infelicity of (92) as a violation of (96), without assuming that it is due to an impossibility of local

[30] As Chemla and Schlenker (to appear) discuss a resulting prediction is that sentences like (i) and (ii) should be felicitous. In my intuitions, (i) is felicitous, while (ii) is more degraded. I leave this as an open problem here.

(i) John wonders whether Mary will come to the party. But it's clear that if Peter comes too, the evening will be highly entertaining.

(ii) ?John doubts that Mary will come to the party. But it's clear that if Peter comes too, the evening will be highly entertaining.

accommodation. In fact, *too* needs a clausal antecedent and this forces global accommodation of the conditional *if I talked to Ann, she is coming to the party* and one would do this presumably only if one already believes that *Ann is coming to the party*. However, this leads to a violation of (96).

Soames' cases, on the other hand, are such that the consequent can be the anaphoric antecedent for *too*, so no such problem arise and we can locally accommodate.[31]

(99) [Haldeman is guilty]$_i$, if Nixon is guilty too$_i$

5.3. *Other Triggers*

We saw that triggers like *too* can give rise to Soames' cases. *also* can be used to create analogous cases.

(100) Nixon is guilty, if Haldeman is also guilty.

We might be able to create these cases with *again*, as in (101-a).

(101) Suppose we are at the beginning of the season, Shaq has just came to Boston and we are at the second game

[31] One might ask why we cannot globally accommodate in Soames' cases. I believe this relates to the generalization in (i) proposed by Katzir and Singh (to appear) (see also Gazdar, 1979).

(i) **Ignorance Inferences Block Accommodation**: Accommodation of a proposition p is disallowed if doing so would contradict an earlier ignorance inference that the speaker is ignorant about p. (Katzir and Singh, to appear)

Katzir and Singh (to appear) provide examples like (ii) in support of (i).

(ii) If Lyle flies to Toronto, he has a sister. #His sister is from Montréal.

The proposition that Lyle has a sister is the consequent of the conditional thus the speaker implies that she is ignorant about it (Gazdar, 1979). The idea is that the speaker cannot go on and require the hearer to accommodate the same information that she implied to be ignorant about. Soames' cases provide a similar situation: we have a proposition that is both the presupposition to be accommodated and the consequent of the conditional.

(iii) p, if φ_p

What we would get if we were to globally accommodate would simply equivalent to p.

(iv) $A(p, \text{if } \varphi_p) = p \wedge (p, \text{if } \varphi_p)$

However, the speaker has just implied that she is ignorant about p, so there is a clash and p cannot be globally accommodated.

a. I don't know if Shaq played yesterday, but

(?)He played yesterday, if he plays again today.

However other triggers appear to be non felicitous in this configuration.

(102) ?Mary used to smoke, if she stopped.

(103) ?Mary is in New York, if John discovered that she is there.

(104) ?Somebody killed Mary, if it was the butler.

This might suggest that we are dealing with a specific phenomenon linked to additives. Notice, though, that in those cases the correspondent overt *only if* conditionals are also infelicitous.

(105) ?Mary used to smoke, only if she stopped.

(106) ?Mary is in New York, only if John discovered that she is there.

(107) ?Somebody killed Mary, only if it was the butler.

There seems to be some yet to be explained factor that makes also overt *only if* weird in these configurations. In these cases we have a tautological meaning that triggers exhaustification, however, the sentences remain weird as the overt *only* examples show. The present proposal predicts that to the extent that one can create a context in which the sentence with *only if* is felicitous, so will be the sentence final conditional without *only*. If the weirdness is both with conditionals and only-if conditionals, those cases might not tell us much about the Soames' problem.

5.4. *Quantificational Cases*

Given the treatment above, we expect to find analogous cases with generic and quantified sentences.

5.4.1. Generics

In the case of generics, we can straightforwardly adopt Fintel's (1997) proposal, which extend to *only* in generics. The only modification is generalizing the meaning of GEN so that it can quantify over predicates.

(108) a. Only professors are confident.

b. Only_c[GEN[professors] [are confident]]

c. All confident people are professors.

The question is whether we can create cases analogous to Soames' ones with generics or habituals. I argue that we can: although in English these cases sound a bit funny, in Italian, where subjects can appear easily post-verbally, these examples sound natural.

(109) a. (?) Only professors that are also confident are tall.

b. (?) Professors that are also tall are confident.

(110) Sono bravi i professori che sono anche ben vestiti.
are good the professors that are also well dressed

The problem is the same, the meaning predicted for (110) is tautological, something we can paraphrase as (111). If we apply Fintel's (1997) semantics we obtain the non-tautological meaning in (112).

(111) Professors that are well-dressed and good are good.

(112) Professors that are good are good and well-dressed.

Summing up, the proposal here can be extended straightforwardly to cases of generics that are analogous to Soames' cases.

5.4.2. Overt Quantifiers

The case of overt quantifiers is more complicated. Consider (113), with focus on the entire restriction.

(113) Yesterday, I met every [student that you also met]$_f$

The problem is that here we do not have conditional excluded middle. In fact, if (114-a) is true it certainly does not follow that (114-b) also is.

(114) a. Not every student came

b. Every student didn't come

If we apply the strategy above without the homogeneity presupposition, we get a very weak meaning: "there is somebody in the domain of quantification that I didn't meet yesterday."

(115) a. Yesterday, I met every [student that you also met]$_f$

b. $\textsc{exh}[\textbf{every}_x(Qx_{Px})(Px)]$

c. $\neg(\forall x[\neg(s(x) \wedge m(I,x) \wedge m(y,x)) \rightarrow m(I,x)])$

d. $\exists x[\neg(s(x) \wedge m(I,x) \wedge m(y,x)) \wedge \neg m(I,x)]$

e. $\exists x[\neg m(I,x)]$

Notice, however, that this is a problem also for cases with overt "only", so we need an independent solution for that as well. For cases in which the focus is on the entire restrictor, von Fintel (1997: 43) proposes a solution expanding the domain of alternatives; a solution that we can adopt here.

(116) Yesterday, I only met every [student that you also met]$_f$

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