

DON'T INTERPRET FOCUS!*
**WHY A PRESUPPOSITIONAL ACCOUNT OF FOCUS FAILS AND HOW
A PRESUPPOSITIONAL ACCOUNT OF GIVENNESS WORKS**

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Abstract

This paper advances a purely presuppositional analysis of intonation. I first show that a inspiring recent article by Geurts and van der Sandt (*Theoretical Linguistics*, 2004) that pursues the same goal cannot account for multiple foci. Then, I show that if it is assumed that destressed rather than focussed material is semantically marked, multiple foci are accounted for correctly.

1 Introduction

My paper builds on and extends the purely presuppositional analysis of intonational marking in English. In a recent paper, Geurts and van der Sandt (2004) (and Fox, Nissenbaum and Sauerland (2001) in unpublished work) propose a radical simplification of the semantics of focus. Their proposal is that focus introduces an existential presupposition. Most previous work on focus (Jackendoff (1972), Rooth (1985), (1992), Krifka (1991), Schwarzschild (1999) and others) explicates focus by means of the notion *Presupposition Skeleton*, which is also called *P-Set* or *Focus Alternative Set*. Specifically, focus serves to define the presupposition skeleton of a higher node that contains the focus. The presupposition skeleton represents, loosely speaking, the meaning of a sentence without its focussed constituents. The effect of focus on interpretation within such an approach is therefore indirect and mediated by a concept specifically introduced for the account of focus, the presupposition skeleton. Eliminating this concept would constitute major progress in the semantics of intonation.

The direction I pursue, therefore, is to interpret intonational marking directly as a presupposition following Geurts and van der Sandt (2004). This proposal captures a traditional intuition: for example, Chomsky (1970) discusses focus purely in terms of presuppositions. However, the purely presuppositional analysis was argued against by Jackendoff (1972) and fell into disregard. Geurts and van der Sandt (2004) have not only revived the purely presuppositional analysis, but spelled it out in a lot more detail. This level of detail

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allows us to capture new insights as I will show in this paper. The first new insight, which I present in the Section 2, was first made in unpublished work of Danny Fox, Jon Nissenbaum, and myself (Fox et al. 2001). Namely, the following negative result: A purely presuppositional entry for the focus feature predicts a semantics for multiple foci that is in many cases too strong. While the presuppositional analysis of focus, therefore, fails, I go on to argue that a presuppositional account of focus-intonation is feasible after all: As I show in Section 3, it requires the assumption that distressed material is marked by a givenness feature *G*, whereas focus may be not marked by an interpreted feature.

1.1 Presuppositions

Since the analysis makes heavy use of the theory of presuppositions, this subsection briefly clarifies my underlying assumptions concerning presuppositions. This is also opportune since my assumptions differ from those of Geurts and van der Sandt (2004). They rely on an account of presuppositions where all presuppositional elements are anaphoric that earlier work of the same authors introduces (cf. van der Sandt (1992)). However, as far as I could see no aspect of the analysis relies on this specific account and therefore this paper uses the simpler truth-value gap analysis of presuppositions (Blau (1978), Heim (1983) and others), which I find more attractive. On this approach, an expression is without value if its presuppositions are violated. This is formally captured by representing the meaning of a phrase that has a presupposition as a partial function—functions that have a domain smaller than the set of all individuals of their argument type. Heim and Kratzer (1998) use the notation in (1) for partial functions.

$$(1) \quad \lambda x.\text{presuppositions}(x) : \text{value}(x)$$

Instead of the notation in (1), I use the following fraction notation for presuppositions:

$$\lambda x \frac{\text{presuppositions}(x)}{\text{value}(x)}$$

Here the domain of a function is specified by the expression above the fraction line, while the value is given by the expression below the line. For example, the verb *stop* presupposes that the subject had the property the complement specifies in the past, and asserts that the subject does not have the complement-property at the present time. The lexical entry for *stop* in fraction notation is the following:

$$\llbracket \text{stop} \rrbracket = \lambda P \lambda x \lambda t \frac{\exists t' < t: P(x)(t')}{\neg P(x)(t)}$$

Sometimes I will use the fraction notation without a leading λ operator with the presupposition part containing a contextually specified variable.

2 Focus

One attraction of a presuppositional analysis of focus is that it consists simply of a lexical entry for the focus feature. All other aspects of focus interpretation should then arise from the general mechanism of sentence interpretation; in particular, how presuppositions are

interpreted. The lexical entry of the focus feature must depend on the type of the phrase it is attached to. For the following, I focus on the case of focus on an expression of type e . Following (Fox et al. 2001), I assume the following lexical entry:

$$\llbracket F \rrbracket = \lambda x^e \lambda P^{et} \frac{\exists x' : P(x') = 1}{P(x)}$$

Geurts and van der Sandt (2004) formulate the same proposal, but as a syncategorematic rule rather than as a lexical entry. I quote their rule in (2):

- (2) Whenever focusing gives rise to a background $\lambda x.\phi(x)$ there is a presupposition to the effect that $\lambda x.\phi(x)$ holds of some individual.

The formulation in (2) leaves some room for ambiguity as to whether it is applicable to focus in some of the critical examples I discuss below. Therefore, I shall prefer the formulation in terms of a lexical entry for F .

Question-answer pairs are the prototypical case of focus in the account of Rooth (1992). Geurts and van der Sandt (2004), however, focus on more complex cases involving focus sensitive operators, where parallels between focus and presuppositions can be observed. But, for my concerns it turns out to be useful to follow Rooth's method, and focus on question-answer pairs. For a first illustration of the account consider the answer of the question-answer pair in (3). The natural pronunciation of (2b) in this context has focus on the subject *Lina*.

- (3) a. Q: Which girl ate a cookie?
b. A: LINA-F ate a cookie.

The presupposition the focus feature that gives rise to in (3b) can be paraphrased as *Someone ate the cookie*. Note that focus feature changes the semantic type of the subject to that of a generalized quantifier, but this can be interpreted in the subject position without type-mismatch. Now consider why this focus placement is obligatory in example (3). First consider why the presupposition focus introduced must be satisfied. This follows, from the fact that the presupposition of the answer is entailed by a presupposition of the question since it is well known that non-rhetorical questions presuppose that a true answer exists.

Now consider (4) with focus on the object, which would not be well-formed in answer to (3a).

- (4) Lina ate [the COOKIE]-F.

In the object position, the focus feature causes a type-mismatch as with other generalized quantifiers in object position. I assume that for type mismatch resolution the object moves to a position above the base position of the subject as shown in the LF-representation (5). The presupposition of (5) can be paraphrased as *Lina ate something*.

- (5) [the COOKIE]-F λx Lina ate x

In general, the question in (3) does not entail that Lina ate something. Therefore, focus on the object is not predicted to be well-formed unless it is independently known that Lina ate something. The examples in (6) and (7) show that indeed focus placement is more flexible, when it is independently known that Lina ate something. Observe the ordering

effect: In (6), only subject focus is natural. In (7) subject focus is still the most natural, but object focus is marginally possible.

- (6) a. Q: I know that Lina ate something, but tell me: Which girl ate a cookie?
 b. A: LINA ate the cookie.
- (7) a. Q: Which girl ate the cookie?
 b. A: Well, I know Lina ate something. So maybe, SHE ate the cookie/? So maybe, she ate the COOKIE.

The facts in (6) and (7) indicate that presuppositions differ in how salient they are for the purpose of focus licensing and that the presuppositions of questions are very salient for the following discourse. I propose that the presupposition that is established most saliently must be expressed by means of focus. This is a generalization of the *maximize presupposition* principle of Heim (1991). I leave aside the possibility of multiple foci on the subject and the object at this point because I return to this matter in the following subsection.

The main argument of Jackendoff (1972) against a purely presuppositional account of focus concerned focus on negative quantifiers like *no one*. This issue can also arise in answer to a question: In answer to the question in (3), (8) would be pronounced with focus on the subject.

- (8) NO one-F ate the cookie.

Geurts and van der Sandt (2004) discuss one possible solution to this question in detail. Namely, they suggest that focus in (8) brings about an existential presupposition, which is then cancelled by the assertion. This approach works well if the question, as in (3), establishes an existential presupposition. However, subject focus as in (8) is even required with a question like (9), which does not establish the existence of someone who ate the cookie for sure. Following (9), (8) should simultaneously trigger accomodation and cancellation of the existential presupposition, which seems difficult to square with the presupposition maximization maxim.

- (9) Who, if anyone, ate the cookie?

Therefore, I would like to suggest that the existence presupposition of focus is actually epistemically weaker than I stated above. Namely, I suggest the following lexical entry, where the \diamond -operator indicates existential possibility within the context set of Stalnaker (1979):

$$\llbracket F \rrbracket = \lambda x^e \lambda P^{et} \frac{\diamond \exists x' : P(x') = 1}{P(x)}$$

Furthermore, I assume that there is a default epistemic strengthening operation that predicts that stronger presupposition without \diamond unless the assertion explicitly contradicts it.

In addition to question-answer pairs, a second important type of examples involve association of focus with *always*. Consider the interpretation of (10) that can be paraphrased as *Whenever Lina eats something, it's a cookie*. This 'association with focus' interpretation is salient when the word *cookie* is focussed (cf. Beaver and Clark (2003)).

- (10) Lina always eats a COOKIE-F.

Rooth (1999) first noted that association with focus in (10) can be reduced to the more general phenomenon of association with presupposition on a presuppositional analysis of focus (see also Geurts and van der Sandt (2004):(23)). (11) illustrates association with presupposition with the salient interpretation that, in situations where a unique first cookie exists (for example, after opening a package), Lina eats it.

(11) Lina always eats the first cookie.

Within theories of presupposition, association with presupposition is explained as accommodation of a presupposition of the scope of a generalized quantifier into the restrictor. In (11), accommodation adds the existence and uniqueness presupposition of the definite to the restrictor of *always*, which amounts to the condition that there be a unique first cookie. The focus example (10) is treated analogously: accommodation adds the restriction to situations where Lina eats something to the restrictor of *always*.

2.1 Multiple Focus

While the presuppositional account of focus works well for the examples with a single focus considered above, it runs into a problem with multiple foci. Consider the discourse fragment in (12):

(12) This woman saw this man.
 Q: Which woman saw which man?
 A: Mary-F saw John-F.

The question in (12) establishes the presupposition that some woman saw some man. However, the presupposition the two occurrences of focus in the answer give rise to turns out to be much stronger. Namely, the two foci each result in the presupposition that they would give rise to if the other focus was not there. This will result in the presupposition that someone saw John and Mary saw someone.¹

To verify this prediction, consider the LF-representation of the answer in (12) in (13):

(13) Mary-F λ_x John-F λ_y [x saw y]

The computation of the presupposition of (13) involves evaluating the following functional application:

$$\left[\lambda P. \frac{\exists x. P(x)}{P(\text{Mary})} \right] \left(\lambda x. \frac{\exists y. x \text{ saw } y}{x \text{ saw John}} \right)$$

Since both the functor and the argument carry a presupposition, the presupposition of the functor must be satisfied by the actual value of the argument and in addition the presupposition of the argument must be satisfied. This yields the following result:

$$\frac{\exists x. x \text{ saw John} \wedge \exists y. \text{Mary saw } y}{\text{Mary saw John}}$$

¹Chris Tancredi (p.c.) points out that this presupposition may be appropriate in the case of pair-list answers. I have pursued this direction in several presentations, and believe that it offers a very interesting perspective on so called *topic-focus* accent. For space reasons, I cannot include this result in the present version of the paper other than a brief discussion in the conclusions.

The predicted presupposition is too strong and cannot be satisfied in (12). Multiple foci therefore are a problem for the analysis of Geurts and van der Sandt (2004). Initially it may seem that the reason behind this difficulty lies in the account of presuppositions, and that we would want to change the account so as to get the weaker double-existential presupposition *Someone is talking with someone* in (13). This would require modifying the following functional application principle:

$$\left[\lambda x : \frac{P(x)}{Q(x)} \right] \left(\frac{R}{S} \right) = \frac{P(\frac{R}{S})}{Q(\frac{R}{S})} = \frac{P(S) \wedge R}{Q(S)}$$

Within the truth-value gap account of presuppositions, functional application is a well-defined mathematical operation of applying a function to some entity in its domain. This operation requires that the actual value of the argument must be in the domain of the function which is represented by the middle term in the functional application principle. Recall that the term R is present only when we make use of the notational convention to write presuppositions that involve only contextual parameters above the fraction.² Therefore, the result is identical regardless of which of the fraction lines we write these above. The right hand side in (13) represents a simplification of this term that is applicable if the value of the function does not depend on the presuppositions of its argument. This assumption does not affect the presuppositions of the result. In sum then, the general principle above is a mathematical necessity for the truth-value gap based account of presuppositions.

Furthermore, the above principle makes the right prediction in clear cases of multiple presuppositions: the examples in (14) each contain two lexical presupposition triggers.

- (14) a. Taylor too is returning to England.
 b. Mary stopped smoking again.

For example, ‘*Taylor too P*’ in (14a) presupposes that someone else has property P , while ‘*x is returning to y*’ presupposes that x has been in y at some time in the past. Both presuppositions involve existential quantification like the putative presuppositions of focus. The weak double-existential presupposition would, in this case, amount to: Someone else has been in England at some time in the past. But, (14a) clearly has the stronger presuppositions that Taylor has been in England in the past, and that someone else moved out of and back to England. This follows straightforwardly from the general functional application principle above, and therefore lends empirical support to the general approach to presuppositions. We must look elsewhere to for a solution to the multiple foci problem.

2.2 Movement?

Another direction that one should investigate is the following idea: multiple foci are analyzed rather like a single complex focus. In this subsection, I outline such an analysis, but then argue that for several reasons it cannot be upheld.


²Formally, the following reasoning underlies this convention: If we add a contextual parameters as additional arguments to the argument term as in $\lambda c. \frac{P}{Q}$, and $\lambda c. [\frac{P}{Q}](\lambda c. \frac{R}{S})(c)$ is defined only if $R(c)$ is defined.

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Concretely, the proposal would be that there is a dyadic focus feature, which I call FF, with the following semantics:

$$\llbracket \text{FF} \rrbracket = \lambda x \lambda y \lambda R \frac{\exists x', y' R(x', y')}{R(x, y)}$$

The analysis of (15a) (= (12)) could then be given as (15b). In (15b), both focussed constituents move to form a complex double-focus constituents, which provides the two arguments of type *e* to the FF-feature. The movement to FF would have to be generalized to all examples with more than one focus.

- (15) a. Mary-F saw John-F.
 b. [Mary John]-FF $\lambda y \lambda x$ x saw y
- 

The morpheme FF as defined above introduces a weak, double-existential presupposition and therefore (15b) is predicted to have the desired presupposition *Someone saw someone*.

The approach to multiple foci based on dyadic (and polyadic) focus features could be generalized to all instances of multiple foci by postulating morphemes such as FF for other types. However, at this point, there is already sufficient evidence to reject the approach. In particular, there are three arguments against the approach: The first argument is that the postulation of FF does not rule out multiple F-marking from occurring, which seems to cause a wrong prediction. Secondly, the movement that the approach requires can be empirically shown to not be subject to island constraints. Thirdly, the approach predicts unattested scope relations. Consider all three arguments in turn.

First consider the relation of FF and multiple F-marking. In examples like (12), it is impossible to tell whether the structure with two individual foci and the concomitant strong presupposition existed in addition to structure (15b) with FF: The strong presupposition would not be satisfied, and therefore only the structure with FF would be possible. However, example (16) indicates that multiple focus structures are not ambiguous between a structure with a weak and one with a strong presupposition, but only allow the former. The scenario in (16) entails that, whenever Cheney talks to someone and someone talks to Bush, then Cheney talks to Bush. This entailment paraphrases the interpretation predicted for the example sentence in (16) if a structure with the strong presupposition of two individual F-marks existed. But, since the example seems false in the scenario, it can be concluded that only the structure with FF and its weak presupposition is possible.

- (16) *Scenario:* Cheney always talks to many people, and many people talk to Bush. Sometimes, Cheney also talks to Bush. But, when someone other than Cheney is talking to Bush, Cheney has to sit quietly next to Bush.
 #It's always the case that CHENey talks to BUsh.

For the analysis of multiple foci based on FF, this result entails that an additional constraint is required. For example, the constraint might say that no F-marked constituent may occur in the scope of F or FF. Since we will see below that a different approach to multiple foci does not require such an additional constraint, this constitutes an argument against the approach based on FF.

The second concern with the approach based on FF is syntactic. The approach requires the formation of a constituent that does not contain any focus. The processes forming

constituents are well-studied in syntax, and, in particular, the formation of derived constituents is well-known to be constrained by island constraints (Ross 1968). Consider, however, multiple focus in (17b).

- (17) a. Q: Which linguist is happy if which philosopher is coming?
 b. A: John-F is happy if Mary-F is coming.

To form a focus-free constituent in (17b) would require movement of Mary (or an equivalent process) from the subject position of the conditional into the matrix clause. This process would violate the well-established constraint that movement out of conditional clauses is not possible. Such island sensitivity would be surprising, in particular, since it contrasts with other cases where derived dyadic predicates are formed (Beck and Sauerland (2000)).

Finally, consider the third argument against the FF-based approach. This argument is more complex than the other two, and requires that I introduce data concerning the scope of focus existential closure first discussed by Fox et al. (2001). Consider example (18).

- (18) *Scenario*: I regularly call a baby-sitting service and ask for someone to come. When my son is fussy, I ask for Lucy. But, at other times, there is no one specific that I ask for.
 #I always demand that LUCY-F come

The example (18) is judged false in the scenario. (18) is indeed predicted to be false on the presuppositional account to focus. The existential presupposition is projected to yield the presupposition *I demand that someone come*. When this is accommodated into the restrictor of *always*, an interpretation paraphrasable as (19) is the result:

- (19) Whenever I demand that someone come, I demand that Lucy come.

Because in the scenario I often demand that someone come without requesting a specific person, (19) is predicted to be false. This corresponds to the intuition observed in (18).

Now consider representation (20), where the focussed constituent has been moved to a position above *demand*.

- (20) always (Lucy-F λx I demand that x come)

In this case, the existential introduced by F takes scope above *demand* in the presupposition. Therefore, structure (20) is predicted to receive the interpretation paraphrased by (21).

- (21) Whenever there's is someone such that I demand that he come, it's Lucy.

Therefore, (20) is predicted to be true in the scenario given in (18). Consequently, it can be concluded that structure (20) is not available for (18) as would follow for instance from Fox's (2000) scope-economy principle. The contrast between (18) and (22) corroborates this point. The surface position of the focus in (22) is outside the scope of the intensional verb *want*, and consequently (22) is judged to be true in the same scenario where (18) is false.

- (22) I'm surprised that it's always LUCY-F that you want to come.

Example (18) supports the presuppositional approach as Fox et al. (2001) discuss: Alternative approaches to focus do not predict the structural position of focus to have any

scopal effect. However, the scopal effect can also be tested in examples with multiple focus, and it provides evidence against the FF-approach in that case. Consider (23).

- (23) *Scenario*: You're working for a babysitting service. All customers never ask for a specific babysitter, except for sometimes the Millers. The Millers also often don't ask for a specific person, but sometimes they do.

#Why is it always the case that the MILLERS demand that LUCY come?

The FF-approach to multiple focus would predict that the final sentence of (23) should obligatorily have a structure where the two foci move to form a binary predicate $\lambda x \lambda y. x \text{ demand that } y \text{ come}$ as remnant. In this structure, the double existential quantification introduced by FF takes scope above demand, and therefore the interpretation that results should be acceptable in the scenario in (23). However, (23) is perceived to be odd in contrast to the prediction of the FF-approach.

In summary, this section presented three results. First, it was shown that the presuppositional account of focus does not work for multiple foci in general. The other two results considered and rejected two possible modifications of the presuppositional account of focus that would solve the problem with multiple foci. Namely, general modifications within the theory of presuppositions were argued to lead to bad predictions for other cases of presuppositions. And, the introduction of a special lexical entry for multiple focus was seen to be syntactically and semantically problematic. Therefore, I draw the overall conclusion that the account of Geurts and van der Sandt (2004) cannot be maintained.

3 Givenness

3.1 Single Givenness

The previous section showed that the presuppositional account of focus cannot be maintained. Nevertheless, a presuppositional account of intonation might be possible. I propose that it is not focus, but its complement, *Givenness*, that is marked by a semantic feature G. In several examples, this change does not affect the predicted presuppositions at all. Consider again (24) (= (3)). I propose that the intonationally prominent subject *Lina* does not bear any semantic mark, but that instead its complement, the verb phrase, is marked by a G-feature.

- (24) a. Q: Which girl ate a cookie?
b. A: LINA [ate a cookie]-G

I assume that G-features of various semantic types exist, and that their interpretation is always purely presuppositional. If the complement of G has a semantic type ending in *t*, I assume that G presupposes the existential closure of its complement. Specifically, I assume that in (24b) G has the following interpretation:

$$\llbracket G \rrbracket = \lambda_{fet} \frac{\exists x \in D^e. f(x) = 1}{f}$$

Therefore (24b) receives exactly the same interpretation as in the analysis based on F. Specifically, the G-mark predicts the presupposition that someone ate a cookie. It follows that the account given above following (3) carries over to the approach based on

G-marking: The presupposition G-marking gives rise to is established by the question, and furthermore it follows from the maxim of presupposition maximization that the G-mark is obligatory. The phonology of assigning intonational prominence will need to be modified if givenness rather than focus is featurally marked. I believe that this will not cause any difficulties. For a start, assume the principle that intonational prominence is assigned to phrases that are not dominated by any G-mark.

Now consider again (25) (repeated from (12)) which turned out to be problematic for the analysis based on a lexical entry for F. In the new analysis, only the verb *saw* in (25b) would be G-marked.

- (25) Q: Which woman saw which man?
A: Mary saw-G John.

The presupposition of (25b) is therefore the existential closure of the transitive verb *saw*. The result is therefore exactly as desired: The predicted presupposition of (25b) can be paraphrased as *Someone saw someone*.

3.2 Multiple Givenness

In the previous subsection, I showed that the example (12) with multiple foci can be easily analyzed under the new purely presuppositional approach based on G-marking, since the new analysis of the example only contained a single G-mark. Do examples with multiple G-marks lead to similar problems on the present approach as examples with multiple F-marks did before? In this section, I show that multiple G-marks do not lead to presuppositions that are too strong. Rather, as I will discuss, the presupposition predicted by multiple G-marking are sometimes weaker than one might expect, but I will argue this to be a good result of the account. Consider the question-answer pair in (26).

- (26) a. Q: What did Mary do to John?
b. A: Mary-G praised John-G.

The question presupposes that Mary did something to John. First verify that the presupposition of the answer is entailed by the presupposition of the question. In this case, we cannot straightforwardly assume that a G-feature presupposes the existential closure of its complement since the complement of both occurrences of G is a proper name, which I assume is an expression of type e . Two lexical entries for the G of type ee seem to be plausible. Ultimately the choice between the two will not affect the point of this section, but consider both proposals in (27):

- (27) a. $\llbracket G \rrbracket = \lambda x^e \exists f \in D^{et}. f(x)=1$
b. $\llbracket G \rrbracket^g = \lambda x^e \exists i. g(i)=x$

The semantics of the lexical entry in (27a) would result if we type-shift the proper name to the generalized quantifier type, and then applied existential closure. The presupposition (27a) predicts is very weak: that an individual have some property. (27b) is a stronger presupposition and is closer to the proposal of Schwarzschild (1999). (27b) states that an individual is given if it is the value of some index of the assignment. If we assume that only individuals that are salient are stored in the assignment, this presupposition amounts to a requirement that an individual be salient. For concreteness, I make use of (27b) in the

following. The sentential presupposition of (26b) results from the following functional application:

$$\left[\lambda x \frac{\exists i. g(i) = \text{John}}{x \text{ praised John}} \right] \left(\frac{\exists j. g(j) = \text{Mary}}{\text{Mary}} \right)$$

Since neither the presupposition of the argument nor that of the functor depend on the value of the argument, the givenness presuppositions just conjoin. The result is the presupposition that both John and Mary be values of indices of the assignment function, which amounts to a requirement that both John and Mary are salient.

The predicted presupposition certainly is not too strong since the question presupposes that Mary did something to John, and therefore makes Mary and John salient. However, one may wonder whether the presupposition is not too weak. The F-marking account discussed in Section 2 would predict a presupposition that *Mary did something to John*. In example (28), however, the question (28a) does not presuppose that Mary did something to John, but nevertheless the answer receives the same intonation as in (26b).

- (28) a. Q: What did Mary and John do?
b. A: Mary-G praised John-G.

Another possibility, though, is that the presupposition that Mary did something to John can easily be accommodated in (28). Some people have pointed out to me that the judgment in (28) could change if the order of conjuncts in the question is changed to *John and Mary*. It seems to me that other factors also play a role here: for example, whether the conjuncts are given in the phonologically most natural order (Müller 1997). Therefore, a full investigation of this case is beyond the scope of the present paper.

3.3 Comparison with Schwarzschild (1999)

The approach I propose has several similarities with the proposal of Schwarzschild (1999). However, a closer look shows that there are important differences as well. The central condition of Schwarzschild's proposal is that every phrase that is not focussed must be given. His definition of givenness is the following (though (29) applies only to utterances, it is clear from the discussion that Schwarzschild intends (29) to apply to all phrases):

- (29) Definition of GIVEN (final informal version): (Schwarzschild (1999):151)
An utterance U counts as GIVEN iff it has a salient antecedent A and
- a. if U is type e, then A and U corefer;
 - b. otherwise: module \exists -type shifting, A entails the Existential F-Closure of U

One minor difference between (29) and the purely presuppositional account of givenness is that (29) requires the existence of an antecedent A, while the purely presuppositional account just requires that a presupposition be entailed by the context set. However, since Schwarzschild follows the consensus that antecedents for focus/givenness licensing can be accommodated (cf. Tancredi (1992)), it is difficult to see whether this theoretical difference predicts any actual empirical differences. Therefore, I will put this difference between anaphoric and non-anaphoric presuppositions aside in the following.

The three major differences between (29) and my account are the following: 1) focus has a semantic effect according to (29), but not in my proposal; 2) (29) relies on the

presupposition skeleton (by its use of F-Closure), which my proposal does not, and 3) (29) applies to many more phrases than are G-marked on my proposal. To discuss these differences, consider again the concrete example (30) (repeated from (3)) with focus on the subject.

(30) LINA-F ate a cookie.

Schwarzschild's givenness condition (29) is applied to any subconstituent of (30) except for the focussed subject. The application of (29) to the verb phrase, *ate a cookie*, makes the same prediction as G-marking of the verb phrase makes on my proposal (modulo the antecedent vs. presupposition difference): It presupposes that someone ate a cookie. The application of (29) to subconstituents of the verb phrase predicts a set of weaker presuppositions such as the ones that someone ate something and that a cookie exists. Since these presuppositions are all entailed by the presupposition of the verb phrase, it is impossible to discern the two proposal in this domain.

The major difference of Schwarzschild's treatment of (30), however, is that (29) is also applied to the entire IP. In this case, condition (29) relies on the F-Closure which is defined as the existential closure of the presupposition skeleton. The application of givenness to the IP, therefore, necessitates Schwarzschild's use of the presuppositional skeleton and the semantic role of F-features. In (30), application of (29) to the IP predicts the presupposition that someone ate a cookie. Since this is the same presupposition that also is derived from the givenness of the VP, the application of givenness to the IP seems initially redundant. But, actually this is not the case. Schwarzschild's paper does not make this point directly for examples such as (30), but it can be done.

Consider the question-answer pair in (31), which Arndt Riester (p.c.) provided to me. In this case, Lina is explicitly mentioned in the question, and therefore should be given in the answer. Nevertheless the natural intonation of (30b) places focus on the subject.

- (31) a. Q: Which of Lina and Kai ate a cookie?
b. A: Lina-F ate a cookie.

On Schwarzschild's proposal, the account of focus placement in (31b) relies on givenness of the IP: In (31), givenness of the IP is satisfied because the Existential F-closure of IP is that someone ate a cookie. On the other hand, if focus on the subject is omitted the IP can not be given since that would presuppose that Lina ate a cookie. Therefore, an alternative focus structure satisfying givenness for the answer (31b) is (32), where Schwarzschild (1999) would predict pitch accent to fall anywhere in the IP. That (31b) is the only natural intonation, however, must follow from a further condition: Schwarzschild's Avoid F condition. Avoid F requires that a speaker F-mark as little as possible without violating givenness. Since in (32) the entire IP is F-marked while only the subject is F-marked in (31b), Avoid F prefers (31b) over (32).³

(32) [Lina ate a cookie]-F

³Schwarzschild (1999:158–60) discusses an example similar to (31), but not in the context of his full proposal. Namely, he abandons the focus projection principles used in this discussion later in the paper. The condition that F-marking of a small phrase is preferable to F-marking of a bigger phrase was explicit in a prepublication version of Schwarzschild's paper, but the published version does not contain these parts anymore. I assume that nevertheless the condition is necessary to maintain Schwarzschild's proposal.

On my account, (31) is initially problematic. Since both the subject and the verb phrase satisfy givenness the structure in (33) should be possible. But, this would not predict the intonational prominence of the subject observed in (31).

(33) Lina-G [ate a cookie]-G

I propose that (33) is ruled out by the new condition in (34). This condition requires, in effect, that every non-given constituent must contain at least one lexical terminal that can be assigned intonational prominence. Since the IP in (33) is not given, (34) is violated.

(34) *Stress Condition*: At least one lexical terminal in every non-G marked phrase must not be dominated by G.

Having ruled out (33), the possibilities for G-marking in (35) should be considered.⁴

- (35) a. Lina [ate a cookie]-G
- b. Lina-G ate a cookie

Example (35a) presupposes that someone ate a cookie, and (35b) presupposes that Lina has been already introduced into the conversation. While both presuppositions are satisfied, only structure (35a) predicts the correct accent placement. Recall though that we already observed in section 2 that the existence presuppositions underlying questions are particularly salient. Since only (35a) shares the existence presupposition introduced by the preceding question, it follows that maximize presupposition prefers (35a) over (35b). This predicts the observed intonation in (31).

The special status of questions with respect to the salience of presuppositions is reminiscent of special conditions for question-answer congruence in other accounts of focus. Schwarzschild (1999) views it as an accomplishment of his account that it does not require special rules of question-answer congruence. However, the examples in (36) and (37) show that Schwarzschild's account predicts the wrong focus placement because he does not accord any special status to questions. In both (36b) and (37b) the verb and the object are given, but the verb phrase is not. Nevertheless focus placement correlates with the question.

- (36) a. Which of praising and applauding to Mary do to John?
- b. She PRAISEd John.
- (37) a. Which of John and Bill did Mary praise?
- b. She praised JOHN.

Schwarzschild accounts for such all-given examples by means of a special constraint HEADARG, according to which focus of an argument is preferred over focus on a head. Therefore, Schwarzschild predicts that in both (36b) and (37b) the object should be focussed. Because this prediction is not correct, it seems inevitable that questions must be given a special status in some way.

4 Conclusion

In this paper, I presented two results concerning the account of focus. I first showed that the purely presuppositional account of focus as pursued by Geurts and van der Sandt

⁴Parts of the verb phrase in (35b) may also be G-marked. This is not important for the following.

(2004) and Fox et al. (2001) despite being very attractive in cases with single focus, fails for examples with multiple foci. Specifically, I showed that for (38a) the account predicts the strong presupposition (38b). But, there are cases where (38a) can be used even though (38b) is clearly not presupposed.

- (38) a. Mary-F saw John-F
b. Someone saw John and Mary saw someone.

I argued instead that only given material is marked by a semantic feature; the feature G. Specifically, this predicts that structure (39a) instead of (38a). G is defined to presuppose the existential closure of its argument. Therefore, (39a) is predicted to presuppose (39b).

- (39) a. Mary saw-G John.
b. Someone saw someone.

The account I develop shows that a purely presuppositional account that does not make use of the notion of focus alternatives or the presupposition skeleton is viable.

One interesting further result that the full version of this paper is going to cover in detail is an argument that the strong presupposition (38b) provides a nice account of the semantics of the so-called *topic-focus* accent pattern (Büring 1997). This accent pattern is used, for example, in answers to pair-list questions as in (40). In these cases, it is plausible that the presupposition (38b) is satisfied as Chris Tancredi (p.c.) pointed out to me.

- (40) a. Q: Please list: Which girl saw which boy?
b. A: MARY-F saw JOHN-F and LISA-F saw BILL-F.

Answers to pair-list questions furthermore are odd unless the list contain more than one pair. This effect follows nicely from the strong presupposition in (38b). Namely, in conjunction with the proposition that x saw y for exactly one pair (x, y) , (38b) would entail that Mary saw John which is the assertion. Therefore (38a) is pragmatically odd since what is asserted would also be presupposed, unless it is presupposed that possibly more than one pair stands in the *saw*-relation.

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