Extending Focus Theories: Particles in Focus

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Chapter 1 - Introduction

1.1 – Particles across languages and semantic variation under stress

Particles are notorious for their complexity. Plenty of unclarities surround semantic and pragmatic functions these entities play on sentential and discourse levels. Some particles have been argued to have a certain semantic import on the meaning of the sentence in which they appear. Others can clearly be stated not to contribute to the propositional content of a sentence. Still, even in such cases, particles somehow seem to posses the power to make otherwise infelicitous utterances into felicitous ones and omitting them is not an always available option. Empirical evidence that language-learners are especially troubled grasping the 'right circumstances' in which the utterance of a certain particle can be assimilated to cases of correct usage is yet another witness to their distinctly problematic nature.

Things are further complicated with the fact that some particles can be stressed, showing 'semantic variation' from their own unstressed uses. By *semantic variation* we mean either a change in the presupposition triggered by the occurrence of a particle, or a change in the pragmatic purpose a particle serves on a sentential/discourse level. As an illustration, we give an example (adopted from Zeevat, (to appear)) with Dutch particle *toch*:

(1) Laten we hem vrijdag opzoeken. Hij is dan toch in Amsterdam.
(Let us visit him on Friday. He is then in Amsterdam anyway).

(2) Hij is TOCH in Amsterdam.
(He is in Amsterdam after all).

Efforts to summarize on a minimal level what role *toch* plays in a sentence, lead us to two different 'entries' for this particle in case of (1) and (2). In the second example, we can say that *toch* (that is, *TOCH*) presupposes the negation of what is said; it is thinkable that prior to the utterance of (2) somebody said that 'He' was not in Amsterdam. In (1), however, *toch* can be said to presuppose what is said; it just marks the fact of it coming as no surprise that 'He' is in Amsterdam – the speaker assumes interlocutors to already know about this as old material.

Toch (which is identical to German *doch*) is not alone in this 'double-behavior'. Below we give similar two-fold 'definitions' for some of the other Dutch particles:

- Wel
  with stress: marks the correction of a negated sentence (in a sentence which asserts the opposite)
  without stress: probably

- Ook (= German *auch*)
  with stress: corresponds to English too
  without stress: expanding on an earlier sentence

- Weer (= German *wieder*)
  with stress: no resumptive readings
  without stress: also resumptive readings

Some languages, like Dutch and German, show a curious similarity with respect to some of their particles, and even the relevant semantic variations associated with these when under stress. The German counterpart of Dutch *toch* is *doch* - it is indicated within brackets in the list above.

Quite expectedly, other languages too, host the same phenomenon. Below, we give descriptions of semantic variations for particles in three more languages, supported with examples where needed and/or available:

- Again (English)
  without stress: has its ordinary lexical meaning
  with stress: conveys speaker's 'negative attitude'
  example: John closed the window AGAIN (it was John who closed it before and the speaker is annoyed he did it again)

- Too (English)
  without stress: has its ordinary lexical meaning
  with stress: marks the correction of the negated sentence
  example: A: Bill is coming to the party
  B: But John is not
  A: No, he is coming TOO

- Khom (Georgian)
  with stress:
  a) marks speaker's presupposition when evidence to the contrary is available (has a slight 'father-to-son' flavor)
  b) even more, to a much greater extent
  c) together with negation particles *ar* or *ver* asks for confirmation of the negated sentence, when in reality, the opposite result is desired

  without stress: speaker conveys belief that his utterance is a mutual belief between him and hearer (parallels Dutch *immers*)

- Ami (Bulgarian)

first vocal stressed: speaker does not agree with hearer on the subject addressed in the previous utterance
last vocal stressed: speaker conveys his surprise
without stress: basically, expresses speaker's agreement to the previous utterance by hearer

1.2 – 'being stressed' as 'being focused'

Having seen that the phenomenon is cross-linguistically wide-spread enough to be worth investigating, we take a slightly different approach. We will limit ourselves to Dutch particles *wel*, *niet* and especially *toch* (since *toch* proves to be unique in many respects not only compared to other Dutch particles, but also to its 'foreign colleges'), and will explore the question of whether 'stressed occurrence of a particle' can be understood as 'focused occurrence of a particle', bringing us to a crucial issue - whether or not stressed particles can be considered to be foci of sentences in which they appear. To sufficiently deal with this question we see as one of the main tasks of the current project.

In Chapter 2, we introduce the notion of focus and give an overview of already well-established focus theories, and also of Hendriks's theory.

In Chapter 3, the results of applying the theories from the previous chapter to particles are presented.

Chapter 4 contains our proposal regarding the meaning of focused *toch*[1] and ways of accounting for adversative readings of this and other particles.

In Chapter 5, some conclusions are listed.

[1] Here and everywhere in the paper, 'focused *toch*', 'stressed *toch*' and *TOCH* are all used as synonyms to denote particle *toch* acting as the focus of a sentence.

Chapter 2 – The Overview

2.1 – The Phenomenon of Focus

The term *focus* throughout this paper will refer to such prosodic prominences in sentences, that are traditionally regarded in linguistic literature as being equipped with certain semantic and pragmatic functions. In most examples discussed in the paper, focus is associated with a pitch accent, however other phonetic means of expressing focus are not ruled out; the paper will not so much concentrate on the nature of accenting itself on intonationally prominent terms (which kind of (pitch) accents are employed and what meanings are associated with them), but rather, will assume that these prominences are somehow realized by exploiting one of the many available tools in the language – low pitch accent, high pitch accent, combinations thereof, loudness, whisper and so forth, and will attempt to determine the 'causal environment' in which these prosodic prominences and other linguistic phenomena, e.g. given/new information distinction relate to each other. Maintaining a considerable flexibility of usage, a different term – 'stress' will also be used in roughly the same sense. So, for instance, if we have a sentence like

(1) I like RED wine

we will say that 'red' is the focus of the sentence, or alternatively, that 'red' is stressed. [2] Either uppercase letters (like in (1)) or the following notation: $[\ ....]_F$ will be employed to denote focus of a sentence.

In order to illustrate the importance of the notion of focus and its location in a sentence, let us consider another sentence:

(2) I like red WINE

(1) and (2) only differ in that different parts of the sentence are intonationally prominent, that is, different expressions of the sentence serve as its focus. This being the case, (1) can be perceived as an answer to a question:

(1a) What kind of wine do you like?

While (2) can be taken to answer the following (admittedly rather odd, but still perfectly possible) question:

[2] As Jackendoff notes, 'containing the main stress is a necessary but not sufficient condition for a phrase to be focus'. Differences between the terms, *focus* and *stress* be what they may, we will ignore them since the current paper has little to do with purely phonetic aspects of intonational prominence. However, when talking about informational status of phrases, only the term *focus* will be applicable to mark the status 'new'. In all other cases the two terms will have synonymous usage.

(2a) What red drinks do you like?

Switching the answers would yield inappropriate question-answer pairs:

What kind of wine do you like?
I like red WINE

And

What red drinks do you like?
I like RED wine

Furthermore, apart from inappropriate question-answer pairs, it is possible to show that two sentences differing only in the location of focus (together with so-called focus-sensitive operators, e.g. *only*) can have distinct truth-conditions. This next example is taken from (Rooth, 1985).

In a situation, where John introduced Tom and Bill to Sue and no other introductions were made (3a) is true, but (3b) is false:

(3a) John only introduced Bill to SUE
(3b) John only introduced BILL to Sue

So, focus has a truth-conditional effect in the context of *only*.

A number of other interesting phenomena (conversational implicatures, reasons and counterfactuals, etc.) are also affected depending on what parts of a sentence are focused. However, most of these lie beyond the scope of the present work.

A wealth of relevant literature is available on the notion of focus. Two influential proposals put forward in the area have come to be called the structured meaning semantics and the alternative semantics for focus. While it can be said that these two approaches show some similarities in that sets of notions and concepts employed by each of them in explaining the phenomenon under consideration overlap, it still might be a sensible enterprise to take a closer look at them separately. This will provide us with some helpful insights with respect to the particles we are examining in this paper.

2.2 - The Structured Meaning Semantics (SMS)

In the structured meaning semantics approach, propositions denoted by sentences containing focused expressions are viewed as being made up from two components: a) a property obtained by abstracting away the focused expression of a sentence and b) the semantics of the focused expression. Thus, whenever we talk about the semantic value of a clause containing a focused phrase, we mean a pair consisting of a and b - $< a , b >$.

Rooth, applying this approach to his own examples in (4a) and (4b), comes up with the following formalisms in (5a) and (5b) respectively:

(4a) John introduced BILL to Sue
(4b) John introduced Bill to SUE

(5a) $< \lambda x$ [introduce (j,x,s)],b>
(5b) $< \lambda y$ [introduce (j,b,y)],s>

The property in (5a) is the property of being introduced by *John* to *Sue*, and *b* is the individual denoted by *Bill*. The property in (5b) is the property of being a y such that John introduced Bill to y, and s is the individual denoted by Sue.

The structuring approach to focus originates from much earlier, though[3]. In (Jackendoff, 1972) the notions of *focus* and *presupposition* are introduced in the following way: 'focus of a sentence' denotes the information in the sentence that is assumed by the speaker not to be shared by him and the hearer, and 'presupposition of a sentence' denotes the information in the sentence that is assumed by the speaker to be shared by him and the hearer. Thus, the focus of a sentence is associated with the 'new' information it expresses, while presupposition corresponds to the information with the 'old' status. Let us consider (6) (due to Jackendoff) in order to illustrate newly introduced notions:

(6) a. Is it JOHN who writes poetry?
b. No, it is BILL who writes poetry

The presupposition in (6a) is that someone writes poetry, while the focus is *John*. In communicating (6a), the speaker presupposes that someone writes poetry and assumes the hearer to know his identity. (6b) shares its presupposition with (6a), but the focus is on *Bill*, which conveys the new information.[4]

It is worth noting that (7)

[3] The structured meaning semantics has many advocates and pretty recent variants of it are around. But, in this paper, we will talk about it in terms of the Jackendoff's version.

[4] What is known as the focus/presupposition approach, is also referred to as the focus/background, or the focus/open proposition approach. But differences between these approaches are largely of a terminological nature. All of these correspond to given/new , i.e. old/new distinction in the informational packaging of a sentence. However, topic/comment (theme/rheme) approach seems to be significantly different: topic – usually a sentence initial part – introduces a 'topic' of a sentence, while the rest of the sentence called 'comment' says something about the topic, or, in other words, expresses what is newly asserted of it. In Reinhart (1982) it is argued that 'old/new' information distinction is orthogonal to and hence irrelevant for the analysis of sentence topics. Although, in literature, attempts were made to incorporate the two approaches into a single trinomial and hierarchical one (Vallduvi 1992, 1993,1994). In this paper, however, we will pursue the chosen focus/presupposition approach to the end as it is both, the most handy and relevant in chasing particular goals our present project aims at.

(7) No, it is JOHN who writes short stories

is not a 'natural' answer to (6a). This can be blamed on the difference in presuppositions of the two sentences.

The presupposition of a sentence is derived by substituting appropriate semantic variables for the focused material. The notion of 'appropriate semantic variable' to be substituted for the focused material in forming the presupposition needs some further elaboration. An obvious constraint on the semantic variable is that the variable has 'the same functional semantic form' as the focus, and that it 'defines a coherent class of possible contrasts' with it (Jackendoff, 243). What the first constraint actually says is that it should be possible for each of the possible contrasts with the focus to take its place without making the sentence ungrammatical. As a crude example, substitution of the variable with the functional form of predicate for the focus denoting an individual would constitute the violation of this constraint. However, it is important to observe, that the condition just described (within certain limits) does not imply anything about the syntax of the possible contrasts. The syntactic similarity is neither a necessary nor a sufficient condition here. The following examples (taken from Jackendoff) are called for to illustrate precisely this point:

(8) a. Did Tom HIT Bill?
b. No, He just LAUGHED at him

Here, the foci of the two sentences are both two-place predicates, but while *hit* is a transitive verb, *laugh* takes a PP object. Although, the presupposition is not clearly statable in English (something like 'Tom did something nasty to Bill' would be the best approximation), nevertheless (8a) and (8b) can be said to form a natural pair. Thus, just a syntactic difference is not an obstacle for an item to qualify as a possible contrast to the focus.

However, that a syntactic similarity is not in itself a sufficient condition for a semantic variable to be substituted for the focus is demonstrated by (9) (also taken from Jackendoff):

(9) a. Did Fred turn the lights ON?
No, he turned them OFF

b. Did Fred turn the proposal IN?
No, he turned it OUT

The ill-formedness of the answer in (9b) stems from the fact that while *turn on* and *turn off* happen to form a semantic contrast, no such contrast is constituted by the opposition of *turn in* and *turn out*. However, syntactically, there is no difference between (9a) and (9b). This is why Jackendoff calls this a 'nonsyntactic basis of contrast'.

Having settled the issue of possible constraint on the semantic variable and to further clear up the nature of relations that hold between the focus and the presupposition of a sentence, Jackendoff makes a stipulation that two formal objects are identified in the process of the derivation of the semantic representation for a sentence. The first is the Focus containing the semantic material associated with the surface structure nodes dominated by the marker F[5], and the second is a one-place predicate Presupp (x) obtained by replacing the Focus by an appropriate semantic variable *x*. So, for example, if the focus of the sentence is *admires* in (10)

(9) Mary ADMIRES actresses,

the functional structure of the sentence will be like in (11)

(10) Admires (Mary, actresses)

and the appropriate function Presupp (x) will be like in (12)

(12) the attitude of Mary toward actresses is x

So, what the presupposition says is that the speaker and the hearer agree to the fact that some relation does exist between Mary and actresses but/and argue over which kind.

All the possible values of *x*, that is, values which, when substituted for *x* in Presupp (x) yield a true proposition, form another formal object – the *presuppositional set* symbolized as λx Presupp (x). Naturally, the cardinality of the presuppositional set is more than one.

The prediction, then, is that the presupposition of a sentence takes the form roughly expressed in (13)[6]

(13) λx Presupp (x) { is a coherent set / is well-defined / is under discussion }

The nature of these constraints needs explanation. Jackendoff is fairly vague about it. Since members of the set that is characterized by these three properties are expressions potentially replacing the focus of a sentence, then, letting *a* be an element of the set, it should be understood as requiring that φ(x)(a) is coherent, well-defined and under discussion. (We will elaborate on this in the next subsection). For now, we note that, if this reasoning is correct, then it is unclear how, for instance, φ(x)(a) can be

[5] here and everywhere in this section it is assumed that the focus of a sentence is marked as a feature F in the syntactic description of the sentence

[6] Actually, Jackendoff lists four constraints – the three in (13) plus the constraint 'is amenable to discussion'. Let alone a pretty vague nature of even those presented in (13), we do not see how anything can be 'amenable to discussion' without being 'under discussion'. That is the reason why we did not include the fourth constraint above.

coherent but not well-defined, or, well-defined but not coherent. Hence, we take the constraint of well-definedness to be responsible for *grammatical correctness* of φ(x)(a). Since *coherence* is a *separate* constraint, it is impossible to view its function as ensuring *grammatical* coherence – the job already done by the previous constraint. So we have to assume that Jackendoff implies some kind of semantic coherence. An example that substantiates this opinion is an expression *WALL*, which by satisfying the well-definedness constraint, would be considered as an alternative to the focus *BOY* in *BOY admires actresses*, but in virtue of the (semantic) coherence constraint is ruled out. The nature of 'φ(x)(a) is under discussion' is even more unclear. As noted above, we will attempt to make sense of these properties a little later.[7]

The presupposition of this form must be preferred over an existential presupposition of the form: 'there exists something satisfying Presupp (x)', because λx Presupp (x) can be the empty set as in *NOBODY admires actors*.

Along these lines, Jackendoff holds that, what the assertion of a declarative sentence claims is that the focus is a member of the presuppositional set (i.e. the material corresponding to the focus of the sentence, is such that it satisfies the presupposition function Presupp (x)[8]).

He represents this fact formally as in (14)

(14) Focus ∈ λx Presupp (x)

(In the following subsection, Jackendoff's ideas will be more critically analyzed. One of the things we will suggest, is that it is possible to view the requirement for the focus to be the member of the presuppositional set as too weak, in the sense that, this is also true of other members of the set. In light of this, we might want to say that the focus, while evoking alternatives, is the unique member of the singleton set, only of which the speaker wants to say what the rest of the sentence conveys, that is:
{Focus} = {y | λx Presupp (x) (y)}. In such a case, for instance, (17) will look like this: {*admires}* = {x | 'x is an attitude of Mary toward actresses'}, i.e., *admires* is the actual attitude of Mary toward actresses. However, until then, a more traditional Jackendoff's approach is employed for examples (15) through (23)).

The assertion will take a different form for other sentence types, such as questions and imperatives.

Applying (13) and (14) to our example reproduced here as (15)

(15) Mary ADMIRES actresses

[7] What we said earlier regarding the semantic variable constraint – that it should be possible for possible contrasts to replace the Focus without resulting ungrammaticality in the sentence, is subsumed under (13) through the constraint of well-definedness.
[8] we again note, that the comment within brackets does not pertain to expressions like *NOBODY*, which, nonetheless, belong to the presuppositional set.

would yield the presupposition of the sentence as in (16)

(16) λx [(the attitude of Mary toward actresses) is x] is $\left\{ \begin{array}{l} \text{coherent} \\ \text{well-defined} \\ \text{under discussion} \end{array} \right\}$

and the assertion it expresses as in (17)

(17) *admires* $\in \{x \mid$ 'x is an attitude of Mary toward actresses'$\}$

The intuitive counterparts of (16) and (17) can be given as (18) and (19) respectively:

(18) We are talking about possible [attitudes of Mary toward actresses]

(19) *admires* is one of [Mary's attitudes toward actresses]

As it was noted in the beginning of this section, the focus-influenced semantic value of a clause is a pair consisting of a) a property obtained by abstracting the focused phrase, and b) the semantics of the focused phrase. We have seen that the former corresponds to the presuppositional set of a sentence, while the latter – to the Focus of a sentence. So, the pair < a , b > is in fact the pair $< \lambda x$ Presupp (x), Focus >.

And indeed, the assertion expressed by Rooth's example in (4a) reproduced here as (20)

(20) John introduced BILL to Sue ($< \lambda x$ [introduce (j,x,s)],b>)

is (21)

(21) b $\in$ {x | 'John introduced x to Sue'}

that is, *Bill* (the focus) belongs to the set of individuals satisfying the Presupposition of the sentence (to be 'politically correct', i.e., to include cases like *nobody*, it is more accurate to say that *Bill* is a member of the presuppositional set of the sentence specified as λx [introduce (j,x,s)]).

Analogously, the assertion of (4b) reproduced here as (22)

(22) John introduced Bill to SUE ($< \lambda y$ [introduce (j,b,y)],s>)

is (23)

(23) s $\in \{y \mid$ 'John introduced Bill to y'$\}$

indicating that *Sue* is one of the individuals belonging to the presuppositional set of the sentence defined as λy [introduce (j,b,y)].

2.2.1 – The criticism of Jackendoff

In this subsection, we try to get clearer as to what Jackendoff's ideas regarding the presupposition and the assertion for a sentence are. We will also attempt to be more consistent with formal side to adequately treat examples in subsequent chapters.

Abstract

The part of a sentence that is left after abstracting the focus, we will symbolize as:

(1) $\lambda x\ \varphi(x)$ or $\{x \mid \varphi(x)\}$.

The latter is handier when the formula is a part of a bigger one. We will be referring to formulas in (1) either as 'abstract' or 'presuppositional' set (despite the fact that, as we shall see, with particles we do not really get to speak of 'presupposition').

Presupposition

We believe, that when giving the constraints that define the presupposition of a sentence, Jackendoff should be understood as holding, that the presupposition is a set A of at least 2 members such that for all $a \in A$

(1) $\lambda x\ \varphi(x)(a)$ is well-defined
(2) $\lambda x\ \varphi(x)(a)$ is coherent
(3) $\lambda x\ \varphi(x)(a)$ is under discussion

meaning, that to characterize a presuppositional set as well-defined, coherent and being under-discussion, is in fact to characterize a sentence containing a member of this set as well-defined, coherent and being under discussion. But, this, as we already mentioned earlier, is vulnerable to a good number of difficult questions arising from the vagueness of the latter – let us take for granted that we are agreed on the first two constraints and they pose no problems, for we know from the previous section what it means for a sentence to be well-defined, and we also know what it means for it to be coherent. However, the third constraint is still problematic; it is hard to comprehend what exactly the meaning of a statement '$\lambda x\ \varphi(x)(a)$ is under discussion' is.

At any rate, without having a determinate answer to the last question, the above seems to be Jackendoff's idea of a sentence presupposition.

Existential Presupposition

The existential presupposition, that Jackendoff is reluctant to give focus, will be transformed to the following in our formal framework:

There is an element b∈ A such that λx φ(x)(b) is true.

The existential presupposition indeed seems to be too strong for focus (the view also shared by the 'weak' alternative semantics, to be introduced later in the paper).

Assertion

Given that c∈ A is the focus of some sentence S, we have a pair built from the abstract and the focused expression:

(1) $< \lambda x\ \varphi(x)\ , c >$

According to Jackendoff, the assertion expressed by S is

(2) $c \in \{x \mid \varphi(x)\}$

(where , $\{x \mid \varphi(x)\}$ is equivalent to $\lambda x\ \varphi(x)$)

We suggest that this can be too weak for c, as (2) is true of the other members of the presuppositional set as well, but unlike c, none of them are selected for the focused position. In this sense, c is unique among its alternatives. To this end, we propose a new definition of the assertion expressed by S:

(3) $\{c\} = \{x \mid \varphi(x)\}$

(3) means that, although there can be more than one member of the set specified as $\{x \mid \varphi(x)\}$, it is actually c that is the focus. On our account of the assertion, Focus is not just the member of the presuppositional set, but it *is* an unique member of a singleton set corresponding to the focus of the sentence S.

Despite the similarity, this is crucially different from the existential presupposition that we are so keen to avoid. (3) is capable of handling terms like *nobody* as the focus.

An example

(4) TOM is drunk

Abstract: λx (x is drunk) or $\{x \mid x \text{ is drunk}\}$.

Presupposition: there is a set A (>1) of elements under discussion such that for all a∈ A, 'a is drunk' is coherent and well-defined.

Existential Presupposition: there is an element b∈ A such that

'b is drunk' is true (this subsuming the first two constraints)
∃x (x is drunk and x is under discussion)

The 'pair' and the Jackendoff's assertion: $< \lambda x$ ('x is drunk') ,{Tom} >

Tom ∈ {x | x is drunk}.

Our account of assertion: The x such that 'x is drunk' is *Tom*
{Tom} = {x | x is drunk}.

2.3 – The Alternative Semantics (AS)

The basic idea of alternative semantics for focus (originating from (Rooth, 1985)), is that it takes the focused expression to determine the additional focus semantic value of the sentence in which it appears, apart from the ordinary semantic value that sentence has. The focus semantic value of a sentence is the set of propositions obtainable from the ordinary semantic value by making a substitution in the position of the focused phrase. Naturally, the ordinary semantic value of a sentence is assumed to be the member of the focus semantic value of that sentence. Adopting Rooth's own notation, the focus semantic value of a clause *s* will be symbolized as $[[s]]^f$, while $[[s]]^0$ will stand for the ordinary semantic value of the same clause.

Thus, if we have a sentence like:

(1) I like red WINE

The focus semantic value of this sentence, will be the set of propositions obtained by making a substitution in the position of *WINE*, that is

(1a) $[[\text{I like red WINE}]]^f$ = the set of propositions of the form "I like red x "

If the focus of the sentence, instead of being on *wine* is on *red*, :

(2) I like RED wine,

then naturally, substitution will proceed in the position of *RED*, and we get:

(2a) $[[\text{I like RED wine}]]^f$ = the set of propositions of the form "I like x wine"

The set of propositions of the form "I like red x" being as different from the set of propositions of the form "I like x wine" as it may, (1) and (2) contribute the same

proposition in (3), i.e., the ordinary semantic values of clauses are not directly affected by focus:

(3) The proposition "I like red wine"

This fact can be represented as:

(4) [[I like red WINE]]^0 = [[I like RED wine]]^0 = the proposition "I like red wine"

According to (Rooth 1985), evoking alternatives is the general function of focus. By 'alternatives' here, are meant alternatives to the proposition that is actually expressed by a sentence. As we saw, any proposition of the form, "I like red x" can be considered an alternative to the proposition "I like red WINE". But, it is trivial to see that these alternations between propositions (*at the propositional level*, might be a better term), are, so to speak, direct consequences of alterations on a smaller level, namely, on the level of items that are focused in two sentences said to form such an alternative pair of propositions. For instance, (5) and (6)

(5) Jane likes WHITE roses
(6) Jane likes YELLOW roses

(both of which are propositions of the form "Jane likes x roses", which in turn can be taken to be the focus semantic value of either of these sentences) together constitute such an alternative proposition pair only in virtue of the fact that the respective focuses of the two sentences *white* and *yellow* themselves are 'alternatives' to each other. More generally, apart from respective foci being alternatives, there is nothing else in two (or more) propositions belonging to the same set of propositions evoked by a focus semantic value of some sentence S, that would make these propositions members of such a set. So, 'alternatives at the propositional level' principally comes down to 'alternatives at the focus level'. Being the backbone for the theories of the structured meaning semantics and the alternative semantics, this is an important point at which the two theories intersect. Of course the SMS and the AS show differences in the ways they deal with various linguistic phenomena (which will be followed to some extent for the AS in what comes below), but, the principal 'idea of alternatives' (i.e. opposition between alternatives) shared by both of them cannot be underestimated for either of the theories.

Let us examine an example.

(7) John introduced BILL to Sue

The SMS will view the proposition expressed in (7) as a pair consisting of two components: λx [introduce (j, x, s)] and *Bill*, that is:

(8) < λx [introduce (j, x, s)], b >

The AS, on the other hand, will give (7) the interpretation to the effect that the focus determines the additional focus semantic value, i.e. the set of propositions of the form 'John introduced x to Sue'.

(9) [[John introduced BILL to Sue]]^{f} = the set of propositions of the form 'John introduced x to Sue'

But, I think we would be justified in saying that, *x* in (9) is exactly the same as the *x* that figures in (8). What we mean by 'exactly the same *x*' is the following. The *x* in (8) is a semantic variable substituted for the focus, the nature of which was discussed at length in the previous section. What Rooth refers to as a 'semantic variable' in the framework of the AS, is a quite different concept that is beyond the scope of this work. Right now, we note that, all the requirements for the semantic variable in the SMS, are also applicable to x in (9), to the very same extent. This amounts to saying, that the *x* in (9) is just as much a semantic variable in the sense of the SMS, as the *x* in (8) is. Constraints of 'possible contrast' with the focus, and belonging to the same functional semantic category as the focus are equally acute here. If we ignore some conditions of a syntactic character that the SMS is free of but are present in the AS [9] and make some generalizations, *we can say that a semantic variable x can be substituted for the focus when interpreting it along the lines of the SMS if and only if it can be substituted for the focus when giving it an interpretation that determines the additional semantic value along the lines of the AS.*

Disregarding the many different aspects of the theories under consideration that bear out the fact of their supposed incompatibility, still, in light of the above discussion, there is a sense in which the AS can be said to subsume the SMS - a statement that only pertains to the choice of the semantic variable. What the AS does then, is to give the phenomenon of focus a propositional dimension.

A nice illustration of the 'level-difference' between the two theories is given in (Rooth,1992). It is in the context of the focusing adverb *only*. Horn's (1969) semantics for *only* combining with a structured meaning contributed by the rest of the sentence, according to Rooth, dictates the following rule:

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[9] Cases inducing a syntactic constraint on *x* in the AS, that are unable to do so in the SMS, are similar to the one emphasized in the section 2.2. In the SMS framework, the foci of the two sentences *Tom HIT Bill* and *Tom LAUGHED at Bill* can be replaced by the semantic variable *x*, and the presupposition of both of the sentences will be identical (though not easily stateable in English). Both *hit* and *laugh*, then, will be the members of the same presuppositional set, and the syntactic difference between two verbs (namely, that *hit* is a transitive verb, while *laugh* takes a PP object) will pose no problems.
For the AS, however, the difficulty is not so painlessly avoidable. In cases like this, we have to introduce another requirement – of some sort of 'syntactical identicality' for items that *x* will stand for in the process of providing a formal representation for the relevant sentence. Unless this is done, either of these sentences can be considered to be the member of the set of propositions determined by the focus semantic value of the other, *Tom x Bill*, which cannot be true, because it results in the syntactic ill-formedness of
**Tom HIT at Bill* and **Tom LAUGHED Bill*. The reason behind this difference the two theories show is a more general one – that the AS is a theory operating on the propositional level unlike the SMS. But, as already suggested above, for the claim presently made, cases like this one can be ignored on the basis of their relatively small number and a specific nature.

(10) *only* combining with the structured meaning $< R, a_1 ..... a_k >$ yields the assertion
$\forall x_1 .....x_k [R (x_1 .....x_k) \tau < x_1 .....x_k > = < a_1 ..... a_k >]$,
together with the presupposition $< R, a_1 ..... a_k >$

Applying this rule to the sentence

(11) John only introduced BILL to Sue,

which, in the SMS receives the formal representation in (12)

(12) $< \lambda x$ [introduce (j, x, s)], b >,

we get, that the assertion expressed by the sentence is

(13) $\forall x$ [introduce (j, x, s) τ x = b]

together with the presupposition:

(14) introduce (j, b, s)

Informally, (13) means that what (11) asserts is that there was nobody other than Bill that John introduced to Sue; (14) makes it clear that (11) presupposes that John introduced Bill to Sue, that is, this fact is taken for granted before (13) becomes meaningful.

Rooth gives his own version of a rule for *only* in terms of alternative semantics:

(15) *only* combining with a clause φ yields the assertion
$\forall p$ [p χ $[[\varphi]]^f$. (p is true) τ p = $[[\varphi]]^0$], and the presupposition p

that is, put informally, no alternative to $[[\varphi]]^0$ is both, distinct from $[[\varphi]]^0$ and true. Every proposition of the form "John introduced x to Sue" is "John introduced BILL to Sue", and furthermore, it is presupposed that John introduced Bill to Sue.

It is easy to see that the difference between the rules in (10) and (15) is that in the latter, quantification is at the level of propositions.

Since the theory grants focus the function of evoking alternatives to the proposition expressed by original sentence, the presupposition would naturally be expected to be defined as one of the alternatives being true. In fact, this was the position adhered to in the 'stronger' versions of the AS. However, settling on the weaker variant, Rooth concedes that what Jackendoff thought about the presupposition, namely that the existential presupposition was probably too strong of a condition for focus, is the view that is to be upheld for the AS as well. Problematic are examples like (16) (taken from Rooth, 1995):

(16) JOHN is going to dinner with the speaker

Focus in (16) does not introduce a presupposition that someone is going to dinner with the speaker. In other words, just because somebody uttered the sentence in (16) with *John* as its focus, it does not follow that if it had not been *John*, it necessarily would have been somebody else going to dinner with the speaker. On the other hand, the questioner in (17a) might well be understood as taking for granted that someone is going to dinner with the speaker:

(17) a A: Who is going to dinner with the speaker ?
b B: JOHN is going

In view of the lack of such intuitions for (16), and also, due to some other complications (a detailed discussion of which here would lead us too far), Rooth concludes that, instead of existential presupposition, focus should rather be given a weaker semantics of evoking (relevant) alternatives, without any of them being true. Thus, for (16) a set of propositions of the form "x is going to dinner with the speaker" will be evoked, without a commitment to the claim that there is somebody who is going to dinner with the speaker.

2.4 – Hendriks's Theory

We start with noting that what is referred to as 'Hendriks's Theory' throughout this section is not a 'third alternative' to the focus theories already discussed. In fact, there is no such thing as 'Hendriks's theory', but rather, a work by the author that, among many other issues, deals with the phenomena of information packaging and focus, reaching its culmination in a specific hypothesis that we will take up later. Nevertheless, concentrating mainly on the non-monotonicity hypothesis, for the ease of reference, we will be referring to this work as 'Hendriks's theory' or just 'the theory'.

Thus, Hendriks's theory assumes Vallduvi's account of information packaging (1992,1993,1994), which is a combination of two pragmatic approaches, the topic/comment approach and the focus/ground approach. The question as to where Hendriks's theory sits with respect to other two theories of focus, is not one we are primarily interested in. However, it can be noted: judging by the fact that it assumes a sentence to be split into *focus* and *ground* (which is further split into *link* and *tail*) it is Vallduvi-based, which in turn, is closer to the SMS, rather than the AS.

Before going to the hypothesis itself, we will give explanations of the newly introduced terms and will locate them in the realm of already adopted 'conceptual scheme'.

As Hendriks notes (page 12):

'The topic/comment (or theme/rheme) approach splits the set of subexpressions of a sentence into a topic, the – typically sentence-initial part – that expresses what the sentence is about, and a comment, the part that expresses what is said about the topic. Topics are points of departure for what the sentence conveys, they link it to previous discourse. Sentences may be topic-less: so-called 'presentational' or 'news' sentences consist entirely of a comment.'

And further below on the same page:

' … the two traditional binomial focus/ground and topic/comment articulations are conflated into a single trinomial and hierarchical one in Vallduvi's (1992, 1993, 1994) account of information packaging. … In addition, the ground is further divided into the *link*, which corresponds approximately to the topic in the traditional topic/comment approach, and *tail* [which points at an information record – normally a (possibly underspecified) condition – on the file card *fc* that constitutes the locus of update, RECORD (fc), and indicates that it has to be *modified* (or further specified) by the focus information]. Thus, on Vallduvi's proposal, the information in the hearer's model is *literally* taken to be organized in file-cards, a metaphor introduced in (Heim, 1982).[10]

To further illustrate the relations in which terms belonging to the two distinct pragmatic approaches roughly stand, a table below is given:

(1)

topic	comment	
link	tail	focus
ground		focus

On a specific example, this would look like:

(2)

topic		comment
The **teacher**	*loves*	ICE CREAM
link	tail	focus
ground		focus

The final thing to note before turning to the actual hypothesis is the following: according to Hendriks, in English (and Dutch), the focus is associated with a H* pitch

[10] Later on in the paper, it is argued, that for certain reasons, Kamp's discourse representation structures are to be preferred over Heimian files when modeling of the information the hearer has. But, the details of this discussion are quite irrelevant for our present concerns. Quotes are primarily meant to explicate the notions of link and tail, which will be alluded to in the discussion to follow.

accent (marked with caps in (2)), links – with an L+H* accent (marked with boldface), and tails are characterized by being deaccented (marked with italics).[11]

The hypothesis reads as follows:

(3) *Non – Monotonic Anaphora Hypothesis (NAH):*
Linkhood (marked by L+H* accent in English) serves to signal non-monotonic anaphora. If an expression is a link, then its discourse referent Y is anaphoric to an antecedent discourse referent X such that $X \not\subseteq Y$.

The hypothesis affects a range of phenomena. (3), among others, subsumes non-identity anaphora, contrastive stress, correction, pronoun referent resolution.

We will go through some examples (taken from Hendriks) to witness the effectiveness of the NAH, especially with respect to the phenomena listed in the previous paragraph.

(non-identity anaphora)

(4) Ten guys were playing basketball in the rain.
The fathers were having fun.

(5) Ten guys were playing basketball in the rain.
The **fathers** were having fun.

L+H* accent on *fathers* in (5) results in the reading, in which fathers, who were having fun constitute a proper subset of the ten basketball-playing guys (non-monotonicity), while (4) has an 'identity' reading to the effect that *fathers*, being anaphoric to *ten guys*, denotes the exactly same set as the latter. Since *father* is a relational noun, there is an additional non-monotonic reading that fathers *of* the ten guys playing basketball were having fun.

(contrastive stress)

(6) Where can I find cutlery?
The **forks** are in the cupboard, but
The **knives** I left in the drawer.

However, as Hendriks notes, contrast is not necessary for L+H* accent:

(7) Where can I find cutlery?
The **forks** are in the cupboard.

[11] For more on different types of (pitch) accents and meanings associated with them the reader is referred to (Pierhumbert, J., and J. Hirschberg, 1990)

Mere non-monotonicity suffices.

(corrections)

(8) A: John was stung by MOSQUITOS.
B: He was stung by **bees**.

Non-monotonicity figures here too, because a sentence like

(9) He was stung by **insects**,

would be a very unnatural 'correction' of someone uttering the first sentence in (8).

(pronoun referent resolution)

(10) a. Paul called Jim a Republican. Then he insulted him.
b. Paul called Jim a Republican. Then **he** insulted **him**.

In (10a), because of syntactic parallelism, the antecedents for the pronouns *he* and *him* are determined as *Paul* and *Jim*, respectively. It is the existence of 'pitch accenting' on the same pronouns in (10b), that reverses the preferences to *Jim* and *Paul*, respectively. Without going into details, we will just say; the author shows that one of the ways to nicely account for the latter reading is to assume that the anaphora involved is non-monotonic.

Given that we are only concerned with stressed particles in this project, we leave out many different observations in the paper, narrowly focusing on what we have tried to summarize on the last couple of pages.

In section 3.3, we will try to sketch the results of transferring of the main ideas developed in Hendriks's theory to focused particles.

Chapter 3 – The Application

3.1 – Particles in the Structured Meaning Semantics

What the theory of the structured meaning semantics for focus has to say with respect to stressed particles comprises several elements, which are to be considered independently from one another. The right kind of questions to ask at this point I believe to be the following: How do we hope to apply the theory to stressed particles? In what sense at all is the theory thought to be applicable to this or that stressed occurrence of a particle? Before going to such specific 'senses' of the possible answer to these questions, a reasonable thing to do would be to try to clarify exactly what task it is that we are facing, figuratively speaking, try to get a glimpse of the animal we are after. And, the best way to go about this lies in the following reasoning pattern.

In both of the following two sentences:

(1) Mary ADMIRES actresses
(2) Nick is TOCH in Amsterdam

certain subexpressions of sentences are intonationally prominent. So, the two sentences can be said to show a similarity in terms of the assignment of the main stress to strictly one (as opposed to more than one, or to all) of the subexpressions present in the given sentence. Let us inquire just how far this intonational likeness of sentences goes. In (1), the stress falls on a verb, while it is a particle that is stressed in (2). (1) can be readily conceived of as an appropriate candidate for subjecting it to the structured meaning treatment of focus – precisely because we say that *admires* is *the focus* of this sentence. Things are not so simple with (2) on the other hand. It is not at all established what kind of stress it is that *toch* bears in (2). Is it a focal one – the question, a positive answer to which forces us to regard *toch* as the focus of the sentence; or is it something different, and *toch* is no focus, at least in the traditional sense of the word.

Three different possibilities of going about this seem to emerge. We shall go through them one by one.

3.1.1 – Not Possible

Many would subscribe to the view that the whole project is on the wrong track. We cannot hope the structured meaning semantics to provide us with any helpful insights, because stressed particles cannot be treated as foci. It is dubious whether they can be

questioned directly or be regarded as conveying 'new' information in a sentence, both of which are features commonly attributed to the focus of a sentence.

This position can be quite plausible for the reason of not having any strong evidence to the contrary. There are few cases where particles answer questions all on their own (for the large part these are yes/no questions), but it is quite hard to think of particles that *can be questioned*. Although it is possible to imagine a context in which, say, the combination of two particles - *toch wel* (*toch niet*) would serve as an answer to a question, it is a hopeless task to formulate a question in the context of (2) to which *TOCH* would be an adequate answer taken in isolation (that is, *TOCH* in (2) simply cannot be questioned. And if any particle can, it does not follow that others can).

Much the same situation obtains in regards with a question of 'new' information. In a context where, say *toch wel* (*toch niet*) serves as an answer to some question, the questioner can be said to have received the information he asked for through these particles, i.e. the speaker did convey new information through particles. However, deciding exactly which of the two particles the (conveying of) new information is associated with is at best left to a conjecture. The answer typically conveys a polarity. We deny the speaker's expectation. I.e. the new answer is either 'no' or 'yes', but whatever it is, it is against the speaker's expectation. Besides, cases like this are fairly rare, and it is even harder to think of instances in which a *single* particle would play the same role.

At any rate and despite the fact that the view of a complete inapplicability of the SMS to particles outlined above is defensible, for the next two subsections we will take a more 'optimistic' approach. Since the issue is not one of already established ones in literature, and many arguments for and against it are available, *we shall feel free to make the assumption that sentences like (2) explicate uses of particles with focal stress, and that these particles serve as foci in their respective sentences.*

3.1.2 – The Unmodified Version

In this subsection, we will make the first attempt of at least roughly outlining what the SMS would predict with respect to stressed particles. The emphasis in the process will be on staying as close to the original SMS framework as possible.

In this connection we will need to consider (1) and (2) once again. Since, under our assumption, particles are perceived as foci, it would be natural for us to expect that *admire* and *toch* will display similar properties in terms of the SMS. Recalling the relevant formalisms from the section 2.2.1, we have that the presupposition of the sentence in (1) is the existence of a set A with cardinality >1:

(3) {x | 'x is an attitude of Mary toward actresses' is coherent, well-defined, under discussion}

(where, 'x is an attitude of Mary toward actresses' ≅ φ(x)).

On our account of the assertion, the assertion (1) expresses, then, will be:

(4) {*admires*} = (3)

Similar formal representations should be possible for (2) as well. To arrive at something having (tentative) forms of (3) and (4), let us further recall that in the SMS framework the proposition expressed by (2) is viewed as a pair consisting of a property obtained by abstracting the focused expression (*toch*) and the semantics of the focused expression (i.e. the semantics of *toch* itself). When we abstract the focused expression on our way to formal representations, what remains in the place of the focused expression, that is, in the first member of the pair, is a variable (*x*), the range of which, as noted in section 2.2, is limited by a 'possible contrast' constraint. The second member of the pair then, which is the focused expression itself, indicates that having 'moved' to a position of the second member of the pair it left its *trace* in the focused position symbolized with a variable *x*. The idea is that the semantic variable *x* substituted for the focused expression can be looked at as a trace the latter left in the process of providing a formal representation in accordance with the SMS framework. Thus, *x*, in the first member of the pair, is a trace *admires* left 'before becoming' the second member of the pair in (5)

(5) < {x | 'x is an attitude of Mary toward actresses' is coherent, well-defined and under discussion}, admires >

where, the first member of the pair is the Abstract, and *admires* is the Focus:
< Abstract, Focus >.

The possible references of *x* in (5), assuming a certain semantic model, is a set of predicates contained in that model. Alternatively, when the focused expression is not a predicate, *x* could refer to other entities that exist in the model.

Now, to be able to write the rough equivalent of (5) for sentences involving focused particles and for (2) in specific, we have to assume that particles, too, leave some kind of trace behind them that can be symbolized with a 'variable'. I used inverted commas in order to indicate that a term *variable* can be employed to refer to the trace a certain particle left after it only by maintaining a considerable flexibility in usage. Whatever it is that particles leave in the focused positions cannot be denoted by logical variables that, normally, refer to entities in a model, or are otherwise provided with a legitimate set to range over. While providing of such a set is easily possible for these variables, it is difficult to get an intuitive idea of what ξ stands for in (6), which is an equivalent of (5) for (2)

(6) < {ξ | 'Nick is ξ in Amsterdam' is coherent, well-defined and under discussion}, toch >

where 'Nick is ξ in Amsterdam' ≅ φ(ξ); the first member of the pair is the Abstract *toch* being the Focus.

What's ξ ? – would be a natural question that we find hard but not impossible to answer. After browsing all syntactically allowed expressions in the position of ξ in (6) we can come up with a following open-ended list:

(7) Nick is finally in Amsterdam
Nick is (un)fortunately in Amsterdam
Nick is, like I told you, in Amsterdam
Nick is, as noted above, in Amsterdam
Nick is, as expected, in Amsterdam
Nick is back in Amsterdam
Nick is always/sometimes/never in Amsterdam
Nick is ill in Amsterdam
and etc.

Let us note right away that the last one of these clauses is syntactically quite different from the rest of the group, which in its turn, can be broken down into smaller ones based on the different sorts of things these expressions say about Nick's being in Amsterdam. All of them (including the last one) somehow *modify* Nick's being in Amsterdam. Yet, these modifiers vary a great deal. For instance, there is a clear 'temporal subgroup' comprising *always, sometime* and *never*; *finally* together with *(un)fortunately* would also be classified as forming a separate group; same holds for expressions like: *as expected, as noted above, like I told you* and etc. While modifier classification not being our particular concern for the time being, we can note that particles show a considerable similarity with the last group - an observation that can help us in grasping meaning of particles in general, and as a result, in improving our intuitions as to what ξ can be taken to stand for in (6).

It is difficult to state precisely what makes us perceive the closeness between expressions like *as expected*, *as noted above*, *like I told you* and particles, but it is obvious that these two undoubtedly are more like each other in the position of ξ, than like other modifiers. One proposal along these lines could be that both particles and parenthetical expressions relate the sentence they appear in to the rest of discourse, and thus, do not contribute to the propositional content of the sentence. If this is so, the presupposition of (2) presented here as (8)

(8) {ξ | 'Nick is ξ in Amsterdam' is coherent, well-defined and under discussion}

(where, 'Nick is ξ in Amsterdam' ≅ φ(ξ)), could be interpreted as

(9) ξ is a (coherent, well-defined and under-discussion) way in which the fact of Nick's being in Amsterdam can be sitting in the context

The assertion expressed by (2) in such a case would be:

(10) *{toch}* = (8)

that is to say:

(11) *toch* is the actual (coherent, well-defined and under-discussion) way in which the fact of Nick's being in Amsterdam sits in the context

The above, indeed, would look like a plausible scenario, but there is a severe problem waiting if we pursue this line. It consists in existence of particles with, so to speak, negative values: *niet*, *never*, *almost* and etc.[12] The difficulty is that when any of these is in the position of ξ , we can no longer talk about Nick's being in Amsterdam. In the case of, for instance, *niet*:

(12) Nick is niet in Amsterdam

the presupposition is no longer that *niet* is a way in which the fact of Nick's being in Amsterdam sits in the context. Moreover, with (12) we assert that Nick is *not* in Amsterdam. Thus, it is not just the issue of a set of expressions that can be substituted for ξ in (8) that yet needs to be settled, but the very fact of Nick's being in Amsterdam.

It is noteworthy that a similar complication arises with other terms in the focused position.[13] There, it is a requirement of not giving focus the existential presupposition. As already noted, this would prevent us from considering *NOBODY* as an alternative to the focused *MARY* in (13)

(13) MARY admires actresses

which is not the kind of result we would want to arrive at in the SMS, or in the AS for that matter. In fact, it was precisely because of this that in both these theories focus is given a weaker, non-existential presupposition.

For our case with particles this has a consequence, that it makes it impossible to interpret the presupposition as in (9), unless we restrict the access to ξ for negative-value particles. Since there is no good reason for doing so, it would seem that there is no other way of constructing the presuppositional set other than based exclusively on categorical sameness (which corresponds to the constraint of well-definedness; while disposing of two other constraints of coherence and being under discussion). That is, any expression belonging to the same grammatical category with the focus will be a member of the presuppositional set. This last result is not something characteristic only of particles. The fact that the existential presupposition is too strong for non-particle foci, puts the relevant

[12] Dutch counterparts of these English particles, of course

[13] This should not be understood as pertaining to the concept of the *(fixed) focus position* in a sentence. By 'other terms in the focused position' we just mean foci other than particles. The problem of the *(fixed) focus position* does not concern us in this paper.

presuppositional sets of these in largely the same situation.[14] So, formulating of presupposition for particle foci as in (9) should be rejected, very much like the existential presupposition is rejected for non-particle foci.

Consequently, the presuppositional set for (2) will be constructed based on categorical sameness of its members and will look something like this:

(14) {toch, niet, wel, inderdaad, immers, …}

Rejecting (9) practically means that we reject *any* possibility of stating the presupposition in form of (9) for sentences like (2). In the meantime, we agree that we do have the presuppositional set (or the abstract) however constructed. Taken together, the last two sentences naturally lead us to a sufficiently modified version of the SMS for focused particles, which will be the subject of the next subsection.

Otherwise, if we want to adhere to the original SMS framework trying to maintain most of its features unchanged, we have to make room for the additional constraint to the effect that negative-value particles are not allowed in the presuppositional set, a constraint the motivation behind which is at least dubious.

3.1.3 – The Modified Version

In a modified version of the SMS proposed in this subsection we agree on the following terms for the sentence in (2):

- we are not in the position to state the presupposition in terms of abstracting the focused *TOCH* (the idea of presupposition in the SMS); we cannot talk about the members of the presuppositional set satisfying the relevant presupposition function, because no such function can be stated in the first place

- we have the presuppositional set constructed exclusively on the criterion of the categorical sameness (hence negative-value particles are included)

- the form *Nick is* ξ *in Amsterdam* can be maintained for purposes of convenience (ξ simply indicating the position where other members of the presuppositional set can be inserted), but not for forming the presupposition

Let us now briefly sketch what picture we have arrived at up to this moment. Taking into account the terms listed above, we roughly have that the speaker's choice of a certain particle from the presuppositional set {toch, niet, wel, inderdaad…} is unexplainable, because we cannot state what the presupposition is when they are absent

[14] largely and not exactly, because in case with non-particle foci, along with the basic constraint of well-definedness, there are constraints of being under discussion and the constraint of *coherence*. The coherence constraint is redundant for presuppositional sets made up from particles in view of the lack of referential meaning for these entities.

from the sentence. More accurately, the problem is broader: we do not yet understand why the speaker uses particles at all, for the context which the speaker is in, is familiar to the hearer as well (this does not pertain to negative value particles, the effect of the presence of which is quite obvious for the propositional content of the sentence).

Thus, we seem to have a good bunch of questions along these lines. Here are two of them:

- If not indicating how the sentence sits in the context (the possibility which we rejected), what role does the speaker play when uttering a particle as a part of the sentence uttered?

- How do we account for the fact that, for instance *toch*, depending on whether it is focused or not in the position of ξ, has different 'ranges of usage'?

Both of these and other hypothetical questions we will try to answer in chapter 4, where we propose a possible step toward a solution within the modified version of the SMS.

In the next two sections of the paper we will try to 'squeeze out' any additional observations we hope to find in two other theories, that will be tuned up for dealing with particles.

3.2 – Particles in the Alternative Semantics

We will not launch a detailed exploration of the outcomes that application of the theory of the Alternative Semantics to particles may bring. As argued in section 2.3, the AS and the SMS show a considerable similarity in terms of constraining the choice of the semantic variable (i.e. focus alternatives) to be substituted for the focused expression.

It will suffice to say that, given the basic function of evoking alternatives for focus, the focus semantic value of

(1) Nick is TOCH in Amsterdam

will be:

(2) $[[\text{Nick is TOCH in Amsterdam}]]^{f}$ = the set of propositions of the form "Nick is ξ in Amsterdam",

any analysis of which will have to necessarily go through the inquiring into the nature of the proposition *Nick is ξ in Amsterdam*. This, in its turn, takes us back to section 3.1, where such an analysis is undertaken, albeit in the SMS framework.

If, nevertheless, the reader can foresee any differences between the two approaches, we expect them not to be as drastic as to cause principal modifications in our reasoning over the matter.

3.3 – Particles in Hendriks's Theory

3.3.1 – A Counterexample

Although we believe that the Non-Monotonic Anaphora Hypothesis (NAH) proposed by Hendriks does provide a key to interestingly accounting for a variety of linguistic phenomena, it seems that this theory too, is not without its counterexample. Let us recall one of Hendriks's examples discussed earlier:

(1) John was stung by MOSQUITOS.
He was stung by **bees**.

On Hendriks's account, non-monotonic anaphora is capable of explaining the fact that a sentence like:

(2) He was stung by **insects**,

is not perceived as a 'natural' correction of the speaker uttering the first sentence in (1). (In such a case, we would have *monotonic* anaphora, for we assume that 'bees ARE insects', that is, the entity denoted by *bees* is contained in the entity denoted by *insects*.)

Let us now imagine a context in which a wife, annoyed by her husband's lately increasing alcoholism, complains to her friend, Jane about it. A resulting dialogue is given below:

(3) a. Husband: No, don't believe her, Jane, it was just one bottle of wine.
b. Wife: It was not one bottle, they were bottles.

Naturally, unable to judge the type of accenting on the expression *bottles* by ear in (3), we have to go by way of comparing it to the exchange in (1). It is obvious, that the two exchanges are at least 'very similar', if not altogether identical. Hence, we are justified into thinking that whatever accent it is that *bees* bears in (1) (according to Pierrehumbert and Hirschberg (1990), it is a L+H* accent – a common one in corrections), the very same type of accent is present on *bottles* in (3). And if so, then we are dealing with a case of *monotonic* anaphora marked with L+H* accent, because the discourse referent of the expression *a bottle* is clearly a proper subset of the discourse referent of the expression *bottles*, this in turn meaning, that the NAH does not work with cases like in (3).

There seems to be another counterexample along these lines.

(4) A: Look, there is a lioness in the dark corner of the cage.

B: It's not a lioness, it's lion.

With (4) too, the NAH would make wrong predictions, as the discourse referent of the expression 'lioness' is commonly conceived of as being the subset of the discourse referent associated with the expression 'lion', i.e. the anaphora involved is monotonic *lion* being marked with an L+H* accent.

However, counterexamples just constructed threaten only *one* of the 'fields of application' for the NAH, namely, corrections. At present, we will not investigate whether other directions of application are vulnerable to similar counterexamples as well. Although, it is our personal (and hence biased) opinion, that a counterexample only provides a proof for the existence of some objective regularity, here, of the fact, that in the most of cases, L+H* accent *is* associated with non-monotonic anaphora.

3.3.2 – From links to focus

Most of the attention in Hendriks's theory goes to the notion of link. The current thesis is concerned with focus, more in particular, particle-focus. At a first glance, it may seem inconceivable to try to locate the point at which the two could intersect. We wish to emphasize the following point.

Forgetting for the moment that the specific claim the NAH makes pertains to the *nature* of anaphora marked with L+H* accent, let us highlight the other important side of it: whatever the type of anaphoric relations involved, the NAH connects up two very distinct phenomena to each other: stressed subexpression(s) of a sentence and the general phenomena of anaphora. And what it basically says, is that (certain kind of) stress on the former signals the latter. We mean that in the case for instance (1)

(1) Where can I find cutlery?
The **forks** are in the cupboard.

thanks to the NAH we can say that the L+H* accent on *forks* signals the fact that we are dealing with non-monotonic anaphora. But, based on the same theory, we can also make a weaker claim of a more general nature, namely, that the fact of the expression *forks* being stressed gives us a clue that there is an anaphoric relation to be looked for in the context (in this specific case non-monotonical, but not necessarily). Thus, whenever we come across a stressed expression in a sentence we are justified to immediately 'test' it on the 'anaphoric virus'. Such a test can be launched with focused particles as well.

One obstacle on our way to the point we are trying to reach is a question: But, the term 'focused particles' implies that particles are foci of sentences, and hence, marked with H* accent, not with L+H* one, used to mark links. And this is significant, since although presently we abstract away from non-monotonicity of anaphora, the requirement that the type of stress be L+H* accent is still there.

To do away with this question we once again give the example from section 2.3.

(2) Paul called Jim a Republican. Then **he** insulted **him**.

Hendriks convincingly shows that non-monotonicity explains how the pronouns *he* and *him* marked with boldface resolve to their antecedents *Jim* and *Paul*, respectively. But the point is different: if we are in a position to say that we have a case of non-monotonic anaphora in (2) it trivially follows, that we have a case of anaphora in (2). Now let us inquire into the nature of accenting on the pronouns. We expect it to be L+H* stemming from the fact that non-monotonic anaphora is present. However, we note that the prosodic pattern of the second sentence in (2) is identical to that of (3)

(3) Then BILL insulted TOM

in which *Bill* and *Tom* clearly are foci, and hence marked with H* accent according to (Pierrrehumbert and Hirschberg, 1990). There is no difference between the pronouns in (2) and proper names in (3) accenting-wise. This means, we can freely assume *he* and *him* in (2) to be foci of the sentence in which they appear and be marked with H* accent. All in all we have, that (non-monotonic) anaphora is 'paired up' with H* accent in (2). We do not at all intend to insist that the pronouns in (2) necessarily bear H* accent; our position is that is it at least debatable on equal odds whether it is a L+H* or H* accent that the expressions *he* and *him* are marked with in (2). (Interestingly, Hendriks himself is reluctant to explicitly call the accenting on these pronouns as L+H* accent; on page 71, he uses a more general term of 'pitch accenting', which leaves room for the possibility of imagining H* accent under the cover of 'pitch accenting').

Similar reasoning applies to the example we already mentioned in the previous subsection.

(4) a. John was stung by MOSQUITOS.
b. He was stung by **bees**.

Even if we concede that it is non-monotonicity that explains L+H* accenting in corrections (our counterexamples argued against this point), the objection might well be that the new information in (4b) is associated with the expression *bees*, which, then, is the focus of the sentence, and hence, marked with H* accent.

What we have arrived at is the following statement of a general kind: generalizing the NAH (i.e. disposing of its two parameters: 1. anaphora involved is non-monotonic 2. prosodic prominence of necessity implies L+H* accenting) provides us with a 'legal right' to look for anaphoric possibilities in dealing with stressed expressions, be it a L+H* accent or H* accent; naturally, this subsuming foci of sentences. In other words, we can launch the 'anaphoric virus test' whenever we encounter focused expressions (and, in correspondence with the main assumption of this paper to the effect that particles are considered foci – with focused particles as well) without being unreasonable. We will call this result a generalized version of the Non-Monotonic Anaphora Hypothesis – GNAH. The GNAH can be formulated as:

(5) If the expression is stressed, it is anaphoric.

More specifically:

a) If the expression is stressed but is not the focus (e.g. links) of a sentence, it is anaphoric to a different entity.
b) If the expression is stressed and is the focus of a sentence, it is anaphoric to alternatives it evokes.

Chapter 4 - Toward a Solution

4.1 – The proposal

Earlier, in section 3.1, we mentioned that we still did not understand what particles, and *toch* in specific, *mean*. It was agreed, that once in the focused position of a sentence we could think of constructing the presuppositional set in a certain way (based on categorical sameness of its elements), but this did not give us much insight into the *meaning* of *toch*. We start this chapter by asking exactly this question: what meaning can we ascribe to *toch*?

We propose to define the meaning contribution of *toch* as a trivial operator P_A, which takes the proposition obtained after abstracting *toch* and maps it to itself.[15]

Formally, this can be represented as:

(1) $P_A: \quad \phi \rightarrow \phi$

$P_A(\phi) = \phi$

Thus, for the proposition *Nick is in Amsterdam* obtained after abstracting *TOCH* in *Nick is TOCH in Amsterdam*, we get:

(2) P_A(Nick is in Amsterdam) = Nick is in Amsterdam

To further illuminate the function this operator performs, we say that for (3):

(3) Nick is TOCH niet in Amsterdam,

uttered by someone who has been challenged on his previous statement that Nick is not in Amsterdam, *TOCH*, defined as P_A, maps even this negated proposition *Nick is niet in Amsterdam* to itself

(4) P_A (Nick is niet in Amsterdam) = Nick is niet in Amsterdam

At this stage, even a sympathetical reader very much inclined to accept our proposal regarding *toch*, would naturally have the question: But on this account, defining *toch* as a trivial operator amounts to saying that the meaning contribution of this particle is zero. No sentence would show difference in meaning whether it has *toch* in it or it does

[15] Interpreting the core meaning of the German particle *selbst* as the identity function on the domain of objects is proposed in the most elegant fashion in Regine Eckardt (draft). We view our current hypothesis, which is much indebted to and evidently less elegant than Eckardt's initial proposal, as nonetheless original way of dealing with the problem.

not. Why, then, should one subscribe to such analysis? Or, put in another way, of what benefit is it for us to equate *toch* with a trivial operator defined as above? If *toch* is a *trivial* operator as we say, it would do no harm to just omit it, this not resulting in changing the sentence meaning-wise.

This is where we return to focus. We agree; *toch* in principle can be omitted if we are only concerned with the *proposition* expressed by a sentence. But, although not meaning much, toch in the focused position provides the possibility of evoking alternatives, just like any other denoting expression.

At this point, quite naturally, two distinct cases are identified, when we deal with focused *toch* and when *toch* is unstressed.

4.2 - Focused *toch*

It seems, focused *toch* has several properties that can be discussed more or less independently from each other.

First of all, according to the modified version of the SMS, focus on *toch* evokes alternatives from the set A, which we already looked at earlier: {wel, inderdaad, niet, immers …}. The construction of this set proceeds based exclusively on the criterion of categorical sameness corresponding to the well-definedness constraint, that is, for all $a \in A$

$\lambda x\, \varphi(x)(a)$ is well-defined.

Since toch is defined as a trivial operator P_A, 'evoked alternatives' can be understood as other operators constituting alternatives to P_A. The first intuitively appealing operator that one would think constitutes an alternative to P_A, is the operator performing the function directly opposite of P_A. It will be symbolized as P_N .

We define P_N as an operator that takes the proposition and maps it to its negated counterpart.

Formally, this would look like the following :

(5) $P_N : \quad \phi \rightarrow \neg\phi$

$P_N (\phi) = \neg \phi$

Niet is one of the particles expressing P_N . For the proposition *Nick is NIET in Amsterdam*, we would have:

(6) P_N (Nick is in Amsterdam) = Nick is NIET in Amsterdam / Nick is niet in Amsterdam

(The difference between focused *niet* (i.e. NIET) and *niet* concerns the issue of adversativity, which will be addressed below).

We note, that particles we earlier referred to as negative value ones (e.g. never, almost, etc.) also express P_N .

Apart from fairly intuitive P_N, it is hard to think of other operators that would be perceived as alternatives to P_A. In this way, only particles expressing P_N are identified as alternatives to focused *toch* from the set A. This result is in accord with another observation, that focused *toch* is *always an adversative particle*.

An adversative reading for *TOCH* can be illustrated by the following exchange:

(7) a. A: Nick is niet in Amsterdam
b. B: Nick is TOCH in Amsterdam

TOCH 's adversativity can be nicely derived by the combination of the modified SMS version that we claim works with particles and the proposal made in this chapter regarding defining meaning of particles as operators. We start with noting that *TOCH* in (7) has an adversative reading only in virtue of the fact that the previous utterance had *niet* in the position of *TOCH* in it. But, this is also true of other negative value particles, that is, *any particle expressing* P_N .

Expressing an adversative reading seems to be the function of focus in the case of particles.

Evoking of alternatives that are limited to expressions of opposite polarities (the ones expressing P_A, and the ones expressing P_N) has the power of 'reducing' focused particles to the phenomenon of anaphora. This is why, when we have a sentence containing, for example, focused *niet,* we are certain to find previous utterance to which it is anaphoric. Since the sentence

(8) Nick is NIET in Amsterdam,

is likely to have been uttered after the utterance of

(9) Nick is in Amsterdam

which has no particles, we assume that *NIET* in (8) is anaphoric to the whole sentence in (9).

The main idea of this section, that focus is a means to express adversativity of a particle is, interestingly, in line with the Generalized version of the Non-Monotonic Hypothesis formulated in subsection 3.3.2, the second principle of which holds; 'If the expression is stressed and is the focus of a sentence, it is anaphoric to alternatives it evokes'. This is precisely what we seem to have here: only certain alternatives are evoked

because of P_A and P_N, and the only way of accounting for adversativity of a focused particle, is to assume it to be anaphoric to its alternatives (of different polarity)

4.3 – Unstressed *toch*

The question as to why *toch* is to be part of a sentence uttered, given the trivial nature of its meaning (which we attempted to answer in the previous subsection for focused cases) is still open for unstressed uses.

One proposal is 'Zeevat's Generalization':

(1) If a particle has a trivial meaning (i.e. identity function / trivial operator defined as above) and is unstressed, it is like *ja* (in German) in expressing that its argument is common ground between the speaker and the hearer.

This is to say, that unstressed *toch* is used by the speaker to mark the 'old' material, indicating that it is the information already shared by the interlocutors. It can also be understood as the speaker's appeal to the hearer that the material marked with *toch* is something that is quite independent of the issue being discussed currently. In either case, the speaker expects that the hearer will not argue the information.

The Georgian particle *khom*, as well as *ki* have the same unstressed uses. So, (1) is not a generalization from just the German *ja*, but also from the Georgian *khom* / *ki*.

Another proposal is that, *toch* acts like a distressed proconcessive, i.e. anaphor. We mean cases when the speaker utters sentences of the form: 'although P, Q'. Unstressed t*och* marks Q in such clauses. However, it should be noted that *toch* in these cases is 'a little more stressed' (but being prosodically by far less prominent compared to focused instances) than uses of *toch* explicated in the first proposal. Two Georgian particles *khom* and *ki* figure here also.

In both of the proposals made in this subsection, *toch* stayed true to its definition of a trivial operator.

Chapter 5 – Conclusions

- One of the main results we suppose to have achieved in this paper, is a confirmation of the initial suggestion that particles are capable of serving as foci of the sentences containing them. From Chapter 2 onwards, taking this suggestion as the assumption for the rest of the paper, we explored the possibility of applying the theory of the structured meaning semantics for focus in the version of Jackendoff to stressed occurrences of particles. The theory was sufficiently modified in order to be able to deal with particles. The criterion of categorical sameness alone was identified as the way to construct the presuppositional set; the definition of presupposition and assertion was made more precise.

- Having proposed to define the meaning of *toch* as a trivial operator mapping the proposition of the sentence in which it appears to itself, we stayed in line with the SMS spirit, which views the meaning of a clause as being structured from 'two meanings' – the property of a focus-abstracted part of the sentence, and the semantics i.e. the *meaning* of the focused expression. Making a parallel to an example with a non-particle focus

  BILL went to the party,

  we not only say that, *BILL* performs the function of evoking alternatives but, that it also contributes to the proposition expressed by the sentence in the essential way. The difference between *BILL* and *TOCH* consists in the fact that with *TOCH* there is no 'essential contribution', there is only a trivial one.

- Results of the alternative semantics for focus being adjusted to stressed particles have been predicted not to be principally different, due to the similarity this theory shows with the SMS when it comes to conditions constraining the choice of the semantic variable for focus (focus alternatives).

- By way of a counterexample, it has been shown, that L+H* accent is not limited to cases where it signals non-monotonic anaphora, as is claimed by the Non-Monotonic Anaphora Hypothesis. It has been argued, that neither is an L+H* accent the only available option indicating (non-monotonic) anaphora to be present in the context. In particular, an H* accent was demonstrated to be playing the same role. Taking this into account, the NAH was generalized into a version where it only claims the existence of anaphoric relations faced with prosodically prominent expressions (hence, including foci).

- Lastly, expressing the adversativity of a particle was identified as the main function of focus with respect to particles. It has been shown that the GNAH and the approach of defining *toch* as the operator P_A predict similar results, namely, that the focused term should be viewed as anaphoric to alternatives it evokes.

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