

Title: A Dynamic Approach to Discourse Particles

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0. Introduction

0.1 Problem Statement

In this paper I discuss a formal semantic/pragmatic account of discourse particles. I will deal only with a subclass of these particles and will limit the discussion to one possible approach. It may well be that the approach can be applied to other particles as well or that it can be applied to other expressive devices such as certain intonational patterns (e.g. contrastive stress), to morphemes (past tense, agreement) or to words (pronouns), constructions (e.g. some uses of definite descriptions, clefts), but I will not try to show that here.

The approach in this paper is a departure from my earlier treatment in Zeevat (2002) of some particles within an optimality theoretic presupposition theory (Blutner & Jaeger 1999). That theory is a reconstruction of the standard dynamic accounts of presupposition due to Heim (1983) and Van der Sandt (1992). My treatment develops an explanation why particles like *too*, *doch* and *indeed* do not give rise to the accommodation of their presupposition, cannot be omitted in the utterances in which they occur and why their antecedents have an epistemic status that can be much weaker than being components of the common ground between speaker and hearer.

The advantage of the treatment in this paper is not so much that it gives a better account of the particles in question but that it generalizes better to other particles and that it is more economical. There are more particles that can be seen as context markers than as nonstandard presupposition triggers. More comprehensive treatments of particles would be possible by developing the notion of a speech act marker within a framework of speech act semantics. I sketch some of the issues involved in that in the final section.

0.2. Data and Method

This paper does not present new empirical data. The old data that I use are some wellknown observations on the English particle *too* (see Kripke ms), on the Dutch/German particle *toch/doch* (see Karagjosova 2001) and related particles Zeevat (2001).

In formal semantics and pragmatics, one tries to find formal linguistic and logical models that explain the intuitive valid inferences between utterances. For discourse particles, this implies that one wants to find an explanation of the inferences that they cause when they are there and that are not there when they are absent. They constitute a special problem, since there is agreement that many of them do not have a bearing on truthconditions. This has meant that discourse particles have been studied as part of notions like *Farbe* or *Beleuchtung* (a notion due to Frege that includes what we nowadays call connotation), as conventional implicatures or as elements that lead to special correctness conditions of a pragmatic nature.

In Grice (1975), conventional implicatures are primarily a category where implicatures should be put that are not conversational. Grice's test for conversational implicatures is detachability: the implicature should not depend on the choice of a particular word or construction. Conventional implicatures thereby must depend on the occurrence of specific words or constructions. There is however not a substantial theory of why certain words or constructions have conventional implicatures, not in Grice or anywhere else. Karttunen & Peters (1979) make conventional implicatures identical to presuppositions. It is clear however and later on we will discuss examples that there are other conventional implicatures. Stalnaker's (1978) idea of pragmatic correctness comes a bit closer to a theory of what is going on with discourse particles and is close to the view I am trying to express in this paper, but it also does not explain why natural language has developed particles.

Even, too, also, doch, etc. can make the utterances in which they appear pragmatically incorrect, but they can never make the sentence false. Dynamic semantics¹ of the kind that has been developed for the treatment of anaphora and presupposition seems to fare better since some of the particles have traditionally been described as presupposition triggers. In dynamic semantics, meaning becomes a function from an old information state (the common ground, what

speaker and hearer have already established to be common knowledge between them) to a new information state (the new ground consisting of the old information state together with the information conveyed by the current utterance). Discourse particles then express conditions on the old information state. If the conditions are met, the update is defined. If they are not met, the update is impossible or in a more liberal view the update leads to an error message. But this is not an unproblematic view. The update by itself is possible. Why have devices that make a possible update impossible or in the second view flawed? We need to say more about particles than just that they have this property.

The problem of discourse particles is therefore the characterization of their semantic or pragmatic contribution to the utterances in which they occur. This is not just a puzzle in pragmatics, but it is one that bears on the concept of pragmatics as such.

I will conclude that not even the dynamic notion of meaning is sufficient for explaining particles and that the proper notion of the meaning of an utterance for characterizing particles is that of the speech act analyzed in terms of conditions under which it can be carried out, the effects that are achieved if the act is taken seriously by the hearer together with the effects that the speaker intends to achieve. In this view, discourse particles are tools to indicate that other than the default settings for the conditions or intended effects apply. The view is similar to that taken in König & Requardt (1991), “A relevancetheoretic approach to the analysis of modal particles in German”, *Multilingua* 10. 6377 (1991).

1. Definitions

The particle *too* has occupied a central place in the presupposition literature, both before and after Kripke (ms) on this particle. This argument is directed at the view of Karttunen (1974) that a presupposition must be true in the context of an utterance of a sentence that contains a presupposition trigger that triggers it if it is not filtered away or stopped by a plug (filters are operators that let through some but not all of presuppositions of their arguments, plugs operators that let none of them through). This condition is always met by simple context of the trigger, like the one in (1).

John will have dinner in New York too.

What is the presupposition? If John carries so-called contrastive stress, it is the statement that somebody different from John will have dinner in New York. Now New York has many inhabitants and most of them have dinner there every night. In addition, everybody knows that. So in a normal context of utterance, Karttunen's theory (and similar theories like Gazdar (1979), Heim (1983), Stalnaker (1973) and Van der Sandt (1992) run into the same problem) predicts that the particle *too* cannot change the felicity of the utterance, because its presupposition is trivially met. But it does matter, as Kripke observes. The sentence is infelicitous if the previous conversation has not mentioned another person who will have dinner in New York.

One can try to escape from Kripke's argument by assuming a different presupposition, e.g. x is a person different from John who will have dinner in New York. This is an open formula and can only be satisfied by finding a binder for the x in the context: it is very much like a pronoun. This has been proposed by

Geurts and Van der Sandt (2001) in the context of a discourse representation theory and is compatible with Heim's approach. A problem is then that presupposition triggers in these theories generally allow the possibility of accommodation and that the most natural way for applying accommodation in this case leads to regaining the original problematic presupposition: there is somebody apart from John who will have dinner in New York too. Geurts and Van der Sandt remedy this problem by treating the free variable as a proper pronoun and argue that since pronouns do not accommodate "because they lack descriptive content", this hidden pronoun in the presupposition triggered by *too* does not accommodate either. (Pronouns indeed do not accommodate their antecedents and have little descriptive content. But not less than "the man" or "the woman", that according to these authors accommodate freely.)

This however still allows for partial accommodation: resolve the pronoun to some known entity and accommodate that the person will have dinner in New York.²

A man is walking in the park. John will have dinner in New York too.

(2) could (*must*, under the assumptions of Geurts and Van der Sandt) be treated by resolving the pronoun from the presupposition triggered by *too* to the walking man in the first sentence and by accommodating the remaining part of the presupposition, making it equivalent to (3). This prediction is not correct.

A man is walking in the park. He will have dinner in New York. John will have dinner in New York too.

The assumption that pronouns do not accommodate because of a lack of descriptive content leads to other problems as well. The particle *indeed* (or the Dutch *immers*, roughly “As you know”) presupposes the sentence in which it occurs and thus has arbitrary amounts of descriptive content. But the presuppositions of these particles cannot be accommodated anymore than the presupposition of *too*, while it seems even more artificial to assume hidden pronouns in the presupposition of these particles.

In fact, it seems a general property of presupposing particles that their presupposition cannot be accommodated. *Again* clearly has this property like *indeed*, *instead*, German/Dutch *doch/toch*, Dutch *immers* and others.

But they also have other properties that make them unlike normal presupposition triggers. First of all, they are not optional in the sense that if one finds them in a body of natural occurring text or dialogue they can just as well be omitted.

(4a,b) are examples, but one really needs to consider many cases.³

(4) a. A: Bill will come tonight.

B: John will come *(too).

b. A: Bill is ill.

B: He is *(indeed).

Second, they have a rather minimal meaning apart from their presuppositional

properties. *Again* in (5) does not inform us of anything apart from the presence in the context of an earlier occasion of failing on Mary's part. The truthconditions are the same as the sentence without the particle. It does not assert the existence of another occasion of failing. For that, we have locutions like: *for the second time*.

(5) Mary has failed again.

A third and even more puzzling characteristic is that the antecedents of some of these particles can occur in contexts that are not accessible from the position of the trigger in the sense of discourse representation theory.

(6) Mary dreamt that night that she would fail the exam and indeed she did.

None of the triggers that are central in the presupposition literature have these properties. The only exception might be the obligatory nature of the trigger. Is the use of presupposition triggers instead of nonpresupposing alternatives obligatory if the presupposition is fulfilled? I think not, but the situation is not as clear as one would like. Two examples.

(7) John believes/suspects that p .

If I say (7) when I know that p is the case, I am not pragmatically incorrect. I merely suggest that John does not have the appropriate epistemic access to p to warrant the use of *know*, so that using *know* is inappropriate. I would be violating Grice's maxim of quantity if John knows that p , but that is by assumption not the case here.

If we have discussed a new girl at the office, it is not incorrect for me to report that I saw John with a girl in town, instead of saying that I saw John with the new girl at the office: I may consider the connection irrelevant in the context. (I would only suggest that they are different, if the hearer would think the identity would be relevant.) To the extent that the standard triggers like *know* or *the* are obligatory, they are so because they are liable to mislead the hearer. Not using them can be a transgression of Grice's maxim of quantity.

The particles are different. They can only be used when the presupposition is there (since they do not accommodate) and their absence cannot really mislead the hearer if the presupposition is satisfied, since the presupposition is common knowledge already. Yet, it is pragmatically incorrect not to use them when their presupposition is fulfilled or to use them when the context does not contain their presupposition.

There are unclarities here, but it is obvious that *know* and *the* accommodate, have content and do not take inaccessible antecedents.

(8) John knew that Mary has failed.

(8) can be used to convey that Mary had failed. Knowledge is more than just belief with a presupposition and so has independent content. The truth of the presupposition is therefore not enough to make it necessary to use the word *know*.

(9) only is acceptable with the extra accommodation, that the content of the dream is true.

(9) Mary dreamt that she would fail the exam. Bill knows that she will.

Similar examples with *the* are given in (10a,b).

(10) a. I met the director of Peter's school.

b. Mary dreamt there was a burglar in the house. The police captured the burglar after a chase in the garden.

The first sentence can be used without Peter's school having been mentioned before and without it being known that it has a director. The second sentence of the second example can (when it is not taken as an elaboration on the contents of Mary's dream) only be understood by the extra assumption that the dream was true.

It is clear that if we want to analyze particles as presupposition triggers, we must be able to modify our presupposition theories to make it possible that the particles come out as a special case with special properties: no semantic content of their own, no accommodation, the possibility of inaccessible antecedents and the obligatory character of their use. The particles we will discuss ideally have four properties.

1. they do not contribute to the truth conditions of the sentences in which they occur.

2. their occurrence is not optional but obligatory: if they occur, they can normally not be omitted.

3. their presuppositions cannot be accommodated, i.e. they cannot be used in contexts in which they are not at least suggested or in contexts that can be reinterpreted as suggesting.

4. the antecedents of a particle presupposition can be much weaker than the antecedents of other triggers, which require that the presupposition is true in the context of the trigger.

Particles like *again* or *immers* do not meet the first and fourth condition, though they meet the second and the third. (1) and (4) are systematically connected: if a presupposing expression contributes to the truth conditions, the presupposition must hold with respect to the worlds at which the clause in which it occurs is supposed to hold. A weak antecedent does not guarantee that this is the case.

In Zeevat (2002), I propose three departures from standard presupposition theory. First, weakly accessible antecedents are generally allowed (standard triggers do not allow them, since a weak antecedent would lead to local undefinedness of the trigger), nonaccommodation is explained by Blutner's theorem (a bidirectional consequence of the constraint **Do not accommodate**), and finally I propose a number of marking constraints that require properties like *old* (the content of the sentence is true or suggested in the context) and *other* (there is another item of the same type in the context) to be marked.

2. Functional Spectrum

The marking principles for presuppositional particles are additional: there is no way we can derive them from an analysis that restricts itself to saying that they just presuppose that particular presupposition or have that particular content (if they have any).

A natural strategy towards understanding particles better is therefore to turn the argument around and investigate whether we can understand why they are like

presupposition triggers if we assume that they are markers of a relation of the content of the current sentence to the context (or to another parameter of the utterance context) and can be there because of either a functional necessity (if the relation in question is unmarked, wrong interpretations) or of a universal principle that requires the marking of the relationship (according to e.g. Haspelmath (1999), Bresnan & Aissen (2002) OT constraints require a functional grounding).

The kind of relations for which it is plausible to assume a marking principle are:

The content is already part of the common ground. (**old**, *indeed*, *immers*, *doch/toch* (*unaccented*), *ja*).

The content has been suggested to be false in the context. (**adversative**, *doch/toch*, proconcessives, concessives).

The content was denied in the common ground. (**corrective**, *sondern*, accented *wel*, *niet*, *doch*, *toch*, *do*, *didn't*).

The topic has been addressed before but the content gives an expansion of the earlier answer. (**additive**, *too*, *also*, *ook*, *auch*)

The topic has been addressed before, but this contribution needs to be replaced. (**replacing additive**, *instead*).

The new content addresses the inversion in polarity of the old topic (**contrastive**, *but*, *however*, *maar*, *aber*).

Are these marking strategies universal? I do not know. There are many things unknown about discourse particles and they are hard to understand even in a single wellstudied language. It suffices for our purposes to assume that there is a strong functional pressure to have ways of expressing these relations. That assumption is necessary, since otherwise it is not clear how we could have particles like the ones listed above or how they can appear so often. And we can try to see what could go wrong in the interpretation process if the particles (or other forms of marking) would not be there. This is what I try now.

Old Marking

If an old element is not marked as old, it may be interpreted as new even if it is formally identical to some old element (indefinites, tense). This will lead to copies in memory that will be treated as distinct from each other. In addition, the

original element is integrated into the semantic representation by the original interpretation process, the new version will lack the connections that were constructed there.

Adversative Marking

If the presence of a suggestion to the contrary is not noticed, this means that the suggestion to the contrary will be unchecked and can be the source of later errors. It is possible to make a connection from the contrary suggestion to the new information that makes the suggestion inactive.

Correction Marking

This should lead to the retraction of the corrected element. If this does not happen, the old and wrong information may remain active. Like suggestions to the contrary, they should be marked as corrected, since otherwise memory may give the wrong information later on.

Additive Marking

Additive marking finds an old topic and the way this was addressed before. Without the additive marking, a different topic may be assumed. Without additive marking, the two occasions of addressing the same topic remain unintegrated and can lead to wrong information due to exhaustivity effects. If the one instance is noticed, it may be assumed that that is all. Or the one instance may be noticed without the other one coming into consciousness. The fact that we know more about the topic after the new information is not exploited.

Substitution Marking

Here it is essential to make sure the two ways in which the topic is addressed are kept distinct and that the two answers are not taken as a joint answer to the same topic. It is related to correction and adversativity.

Contrast Marking

I am assuming that contrastive marking indicates that a positive answer is given to the negated current topic. If the polarity switch remains unmarked, it may be unnoticed, which can lead to misinterpretation.

These motivations suggest that it is in the speaker's interest to mark these relations: without marking, she may well be misunderstood. And it is in the hearer's interest to pay attention to the marking particles: without that, she may be confused.

3. Marking in an Optimality Theoretic Model

In optimality theoretic syntax (see e.g. Bresnan 2000 for an influential proposal), the set of wellformed sentences is given as those sentences that are optimal for a possible meaning in context, the input. Optimal for a certain input are the possible sentences that best meet a system of ordered constraints with respect to the input. The constraints are universal and particular languages impose a linear ordering on the set of constraints. A winner for a given input is one that does at least as well as any other candidate on the strongest constraints up to the next strongest constraint C on which it does better. Here we assume that everything else is captured by other constraints and that the only task that we are facing is to compare sentences with an without a particle.

Let us assume the convention around our particles is very simple: if the relation R obtains between context parameters and the current utterance, add the particle P to the utterance. (A more abstract version only asks for R to be marked somehow and so allows other marking devices apart from P : other particles, lexical material, constructions, intonation). This convention (a constraint **max(R)**) overrules a constraint against special devices (an economy constraint ***Particle**). The combination of the two constraints guarantees that P appears if and only if R holds between the content and the context parameter. From the point of view of the interpreter of the utterance, an occurrence of P indicates that R holds. Since the hearer now knows the content of the utterance and already knew the context parameters, she can make sure for herself that R holds. This check of R will force certain identifications, involving the current utterance, the common ground and the topic. The check is part of the interpreter's task of reconstructing the intentions of the speaker. It is also part of the interpreter's task of integrating the new information within her overall representation of the world and of doing so in an efficient way.

Can we now understand why there are similarities between presupposition triggers and a class of particles? What we have so far is an explanation of two properties of our particles: the fact that they do not accommodate (* **Particle**) and the fact that their occurrence is not optional but obligatory (**Max(R)**). The other thing we need to explain is the fact that they lead to a resolution process in which certain material is identified in the context. The only assumption that we need to make is that R is checked with respect to the local context. This will deal with examples like (11) where the relation *old* holds with respect to the common ground to which the subordinate clause has been added.

(11) Falls du nach Berlin kommst, triffst du ihn ja.

In case you come to Berlin, you will meet him *ja*.

If we make the assumption that a hearer can only be satisfied with an interpretation if she would generate the same sentence from the interpretation as the speaker has done,⁴ it follows that she must also check R with respect to the interpretation. This is enough to establish that there is a resolution process prompted by discourse particles that identifies material in the local context or the contexts around it like the common ground.

Let us go through each of the relations in detail.

Old markers

Old refers to the presence of the content of the sentence in the common ground. It may be there directly, but it can also be just suggested: it is the opinion of somebody, the content of a dream, of a suggestion or even an iteration of these things.

is the content of the current utterance, CG the common ground.

$\text{old}(\text{CG}, \text{c})$ holds iff $\text{CG} \models \text{suggested}(\text{c})$.

The relation suggested) can be defined by a recursive definition, using a set $\{O_1, \dots, O_n\}$ containing operators like *dream*, *suggest*, *believe*.

$$(12) \text{ suggested}() \vee O_1 \vee \dots \vee O_n \vee \text{ suggested}$$

Each of the particles does more than just mark R , almost by definition in this case. *Indeed* indicates the presence of better evidence for , *immers* makes a reason for assuming the current discourse pivot (the discourse element to which the current utterance is related by a discourse relation, normally the previous utterance), *doch/toch* without accent makes the old information subject of discussion again, *ja* presents it as common ground between speaker and hearer (and allows further causal or other connections based on that). This makes it hard for *immers*, *ja* and unaccented *toch/doch* to have antecedents which are merely suggested.⁵ What they have in common is that they mark the old relation. There must however be a point to bringing up old material again and the particles differ with respect to the sort of point they allow.

Adversative Markers

Adversativity means that the content of the current utterance goes against material that was already present in the common ground. This can happen in the weak sense because material was there which normally has the negation of content as a consequent. It can also be that the negation of the content is present in the sense that it is just an element of the common ground or that the common ground suggests that material.

adversative(CG, ϕ) holds iff $CG \models \text{presumably}(\text{not } \phi)$ or $CG \models \text{suggested}(\text{not } \phi)$

The truth of *presumably*(p) on an information state requires that $CG \models \phi_1, \dots, \phi_n$ and that $\phi_1 \dots \phi_n$ together constitute a reason for thinking that p , while at the same time the CG must not support a similar argument for *not* p .

The easiest case is that of full concessives. The complement of the concessive clause gives the argument for not and also chooses *presumably* instead of *suggested*. Since the complement of the concessive connective is presupposed, it can be treated as part of the common ground. Proconcessives (e.g. isolated *though* in English) indicate that the complement is highly activated. Here the other branch based on *suggested* is necessary. Compare (11):

(13) Mary dreamt that she failed the exam. She had passed though.

It seems impossible to construe dreams as arguments for the truth of its propositional content. So this is really a nonconcessive adversative reading of *though*. If there is a grammaticalization path here, one would expect it to go from proper concessives to the vaguer adversative meanings.

Accented *doch/toch* is adversative. Partly these are proconcessives with a normal stress (like *trotzdem*, *nevertheless*, *desondanks*), partly *doch/toch* has contrastive stress contrasting with an activated negative version of the current sentence. The real puzzle with *doch* and *toch* are the unaccented cases that can be proper *old*markers without the slightest trace of adversativity (14a.). These can probably be connected to affirmation questions with a positive bias, elicited by an apparent opposite opinion of the interlocutor as in (14 b.).

(14) a. Ich bin nächste Woche doch verreist. Kannst
du meinen Unterricht übernehmen?

You know that next week I am away. Can you take over my teaching?

A: Ich werde es ihm nächste Woche sagen.

A: I will tell him next week.

B: Dann bist du doch verreist?

B: But you are away then, isn't it?

Though *doch* is here appropriate because *B* seems to imply that what *A* said is false, it also expresses that according to *B* the common ground is that *A* is abroad next week. Reanalysis as an old marker is thereby possible.

Another example of this use of unaccented *doch* is given in (15).

- (15) Wenn er doch hier ist, kannst du es ihm auch selbst fragen.
When he is here anyway, you can ask him yourself.

Corrections

Proper corrections are simple. They require that the content is false in the common ground.

correct(CG) holds iff $CG \models not$.

The correction relation is an extreme case of adversativity: the best reason for believing that is false is knowing that it is. At the same time unlike the weaker possibilities for adversativity, the current sentence is then not consistent with the common ground. The intended change to the common ground is a combination of retraction of *not* and the addition of *as* as a replacement.

Doch/toch with contrastive stress is one correction marker. Others are Dutch *wel* and *niet*, English *do* and *do not* (all with contrastive stress). The German *sondern*

(the correcting version of *but*) is special by not requiring contrastive stress itself.

Additive Markers

I will treat additivity as the reopening of an old topic to which new material addressing it is added. The common ground must remember the topic, and the propositions that addressed it. The fact that the content of the current utterance is added to what we had already is and not replacing it, is not a question of context marking, but a separate intention of the speaker. *additive(CG,)* is therefore a combination of a complex relation to the common ground and a special intention.

The relation is between the common ground, a topic and a proposition. The topic must be such that addresses it. The proposition must be the strongest to hold on the common ground that addresses the topic, and the common ground must “remember” that the proposition addressed the topic. This calls for a special

predicate $\text{addressed}(, T)$ that finds a topic T that the current proposition is addressing and the proposition that according to the common ground settles the topic.

$$(16) \text{CG} \models \text{addressed}(, T)$$

The predicate should entail: $\text{CG} \models \text{and}(\text{address}(,T) \text{ and } \text{address}(,T))$ and there should not be a such that $\text{CG} \models , \models$ but not \models which also addresses T .

On a proper model of topic, addressing should be a formal relation between the formal topic and the sentence. E.g. on a model of topics where they are Hamblinstyle questions (i.e. the set of their possible answers) a proposition addresses a topic if it is member of the topic.

The intention of the speaker is that now the conjunction of and becomes the information that the common ground has about the topic. I.e. $\text{addressed}(, T)$ will be false on the new common ground and $\text{addressed}(\&, T)$ will be true. Close to

additive markers in functionality are “*other* markers” like *another* in *Another girl walked in*. If we think of the noun *girl* as a topic that is addressed by the indefinite, their treatment is formally the same. But whether it makes no sense to think of the noun as an additional topic, I do not know.

Replacing Additive Markers

Replacing additive markers like *instead* are only different in the intention. We here want the effect that the proposition that used to address our topic is replaced by the current proposition , so that afterwards the common ground makes *addressed(,T)* true and *addressed,T)* false.

The choice between additive and replacing additive markers explains the relative uncomfotability of antecedents that are only suggested for markers like *too*, *also* and *instead*. If in (17a) one uses *too*, the suggestion is that Sue is in Spain next to John, if in (17b), one uses *instead*, one suggests that the dream is false. Leaving out the particle completely as in (17c) is not an improvement. We now no longer mark that the topic has been addressed before.

- (17) a. Mary dreamt that John is in Spain. (?) Sue is also in Spain.
- b. Mary dreamt that John is in Spain. (?) Sue is in Spain instead.
- c. Mary dreamt that John is in Spain. (?) Sue is in Spain.

In (18) we see how subtle this is. The situation (A and B are children in a secret phone call) makes it clear that B's parents do not know about the other child. And many people find the example mildly anomalous.

- (18) A: My parents think that I am in bed.
- B: My parents think that I am also in bed.

I conclude that *too* and *instead* are not just context markers, but also speech act markers for the specialized speech act of adding to/replacing in an old topic. This would explain the data in (16).

Contrast Markers

The most complicated relation I consider here is contrast. One can wonder whether connectors like *but* are really particles. In German, *aber* (but) also appears in later positions in the sentence and an extensive corpus study (Schoesler 2002) reveals that there is no essential difference in these uses, which are translatable by *echter* in Dutch or by *however* in English. This suggests that like concessive connectors, they are particles. My provisional analysis, derived from Umbach (2001), goes as follows, using the format above.

Let CG be the discourse pivot (when a coordination *but* is the marker, this is just the first conjunct) and let $\text{CG} \models \text{addressed}(T)$. is contrastive iff it directly or indirectly addresses $\text{negate}(T)$. Here, $\text{negate}(T)$ is the topic that is addressed by the negation of any formula that addresses T . For example in the view of Hamblin (1973), we can obtain $\text{negate}(T)$ from T by replacing T 's elements by their negations.

We can say that the sentence S indirectly addresses a topic T iff the common ground updated with the information that S settles its own topic T entails an element of the topic.

I illustrate the analysis by (19). In (19a.) the second conjunct directly addresses the topic of the first sentence: who was ill. I will assume that this as the topic of the first conjunct also in (19b.) and (19c.). In (19b.) we can construct the topic of the second as e.g. *Who was fit as a fiddle?* or *Was John as fit as a fiddle?* In both cases the answer entails that John was not ill. In (19c.) the topic of the second conjunct is something like: *What about John?* The fact that the answer

John went to the party settles the topic entails that he was not ill. The fact that the negation of the topic of the first conjunct must be addressed implies that a weaker topic (e.g. *Did John go to the party?*) cannot be chosen.

- (19) a. Mary was ill but John was not.
- b. Mary was ill but John was as fit as a fiddle.
- c. Mary was ill but John came to the party.

With Umbach, I hold that the concessive uses are derived.⁶

In (20), a. can be rephrased by b.

- (20) a. Although Mary was ill, John went to the party.
- b. Mary was ill, but John went to the party.

Here *but* is reanalyzed as a proconcessive, taking its antecedent from the first conjunct. This requires that the common ground makes Mary's illness a reason for thinking that John would not go to the party (it may be known that in such cases he feels his duty is at home). My idea is that these readings find their origin in one way in which topics may arise, by causal connection. If you know Mary and John, the fact that Mary goes to the party makes it likely that John will go

there as well. So in that case the contrastive *but* in (21) can relate to a causally related topic: did John and Mary go to the party. (A separate adversative marker is not necessary anymore.)

(21) Mary goes to the party, but John (however) did not.

A simple treatment of *and* along the same lines is to say that *and* forces the second conjunct to at least indirectly address the same topic (this is consistent with the analysis of GomezTxurruka to appear).

4. Broader Framework: speech act markers

Polysemy of discourse markers arises when the same discourse marker marks two different relations of the content of the current sentence with the common ground. But this is polysemy only if we consider an isolated sentence, in a particular common ground polysemy can only arise if more than one relation marked by the particle obtains between content and common ground. In practice, polysemy should not be very important. Example (14b) is interesting in this respect. It expresses both disagreement with what the first speaker suggests (a function of accented *doch*) and the fact that the absence of the first speaker is already common ground. Both relations seem to be constructed and it is not easy to find examples like (14a) where adversativity is not constructible. Replacement of *doch* by *ja* in (14a) is possible.

(14) a. Ich bin nächste Woche doch verreist. Kannst du meinen Unterricht übernehmen?

You know that next week I am away. Can you take over my teaching?

A: Ich werde es ihm nächste Woche sagen.

A: I will tell him next week.

B: Dann bist du doch verreist?

B: But you are away then, isn't it?

I have discussed so far what is context marking if we assume that syntax tells us to mark certain relations of the current utterance to context parameters like topic and common ground and if the interpreter's task is just to reconstruct the speaker intention. We have assumed that the presence of context markers is largely

explainable by the difficulties facing the hearer in properly integrating the current utterance with the information that she has already got. Particles in this view regulate the proper construction of interpretations and in particular the proper integration of the interpretation in memory.

The presuppositional character of some of the particles is basically the reconstruction by the hearer of the relation marked by the particle under which the utterance is made. This forces the identification of a topic or a proposition in the common ground. There is no accommodation because the parameters are overt: it makes no sense to warn the hearer about a relation that does not obtain. Suggestions can open topics and address them. That is enough to understand why old, adversative and additive markers can take indirect antecedents.

It is therefore not necessary to invoke presupposition theory for the analysis of discourse particles. In fact, one may wonder whether presupposition or presupposition trigger must be considered to be a natural class in linguistics, since, after all, the triggers normally considered in the presupposition literature

fall into at least three classes: the ones considered here, referential devices like definite descriptions and the lexical presupposition triggers, like *bachelor*, all three with a different projection behavior.

An attempt to understand particles as presupposition triggers also runs into the problem that many are not. It is clearly the case that more particles can be analyzed as context markers. But this should not fool us into thinking that context marking is all there is to particles. Very obviously many discourse particles mark other aspects of speech acts. The clearest case are markers like Chinese *ma* that makes questions out of assertions as in (23).

(23) Ni hao ma?

You good QUESTIONPARTICLE.

Are you OK?

Or take the unaccented *wel* in Dutch as in (24).

(24) Het komt wel goed.

It'll be fine.

The particle tones down the preconditions of normal assertion (the speaker has to believe to know what she is telling the hearer) to mere undersupported belief. This like a repetition or a correction is a specialization of the speech act of assertion.

A formal theory of speech acts is not the aim of this paper. I will sketch what it would involve. We assume that there are at least three dimensions. The first dimension is the set of preconditions for the speech act: what must be the case with the context of the utterance for it to be possible to carry out the speech act. The second dimension is the aim that the speaker wants to achieve with his speech act. The third is the effects that the speaker achieves with the speech act independently of whether she reaches her full aim, but by just making it successfully. These are the minimal effects of the speech act and are the ones that are achieved if the act was successfully performed, even if the intended response of the hearer did not take place.

Context marking affect the first dimension: the preconditions of the speech act and changes the defaults assumed there. We have seen that the two varieties of additive marking (*too* versus *instead*) also affect the second and third dimension. With *too*, we intend to bind an old topic question to a new value that is obtained by adding the value specified in the sentence to the old value. With *instead*, we intend to replace the old value by the value specified in the sentence. This also affects the third dimension: in the case of *too* the speaker endorses the old value of the topic in addition to the value specified in the sentence, whereas, in the case of *instead*, she disagrees with the old value and only expresses her belief to know that the value is as expressed in the sentence.

Default assertions have the following preconditions, intentions and minimal effects. It is tempting to think that all other speech acts derive from this notion of standard assertion by overriding some of the default settings.

Assertion: p

Preconditions:

the common ground contains no reason for thinking that p is true or false.

the hearer wants to know the answer to a new topic question Q

p settles Q

Intention:

that it become common ground that p

Minimal effect:

to make it common ground that the speaker believes to know that p .

Adversative, additive and oldmarking can change the preconditions. We obtain corrections and reconfirmations when the adverse or old information is in the common ground itself. Additive markers make the topic question old. Other markers (*wel, maybe, schon*) change the operator under which the new information enters the common ground from *the speaker believes to know* to weaker ones: *the speaker thinks it is probable that, the speaker thinks there is a chance that* or *the speaker thinks that*. The effect of an accepted weakened assertion of this kind can also be different: *it is probable that, there is a chance that, speaker and hearer think that*.

Particles, intonation and syntax can be used to mark different kind of questions. This by itself leaves the preconditions intact. (They can be changed by particles and in special confirmation questions, e.g. ones that want confirmation of old material in the common ground). Let us go through some questions.

- (25) a. Du bist doch verreist?
 b. Kommt Bill wel?
 c. He is ill, isn't he?
 d. Is Bill coming?
 e. Isn't Bill coming?
 f. Is Bill coming or not?
 Is Bill coming or Mary?
 Who is coming?

In (25a.) the preconditions are different. The hearer has suggested that p is false, the speaker believes to know that p . The speaker intends that the common ground contain p , but offers the hearer the option to give other information instead. In (25b.) the speaker expresses her doubt about a common ground fact that p and intends that it be removed. In (25c.) the speaker intends to make it common ground that p , believes p but does not believe to know that p . In (25d.) the speaker intends to make it common ground that p , but does not have any evidence for p . In (25e.) the speaker proposes to make $notp$ common ground without believing to know it. In (25f,g.) the speaker proposes to make one of the two alternatives into common ground, suggesting to know that one of them is the case. (25h.) can be seen as the same speaker's proposal but for more alternatives, again suggesting that one of them is true.

Yet other markers (performative verbs, please) turn the assertion into a promise or a request.

In promises and requests, the intention and the preconditions are the same (or can be thought of as the same since p becomes a fact in the common ground after the promise or request is accepted). But the minimal effect is different: the speaker wants p to be true.

It should be clear that especially this last section is very sketchy. The concept of a speech act semantics as a successor to dynamic semantics however seems well worth going for as a framework for characterizing particles.

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Endnotes

1. The discourse representation theory of Kamp and the file change semantics of Heim are the first instances of dynamic semantics. This paper follows a slightly more abstract version: the update semantics introduced in Veltman (1996).

2. I thank Nick Asher (p.c.) for this argument.

3. Corpus work by Tim Kliphuis and myself suggests that omitting them nearly always leads to awkwardness, or to differences in the implicatures.

4. This is the central assumption of bidirectional optimality theory, where both

interpretation and generator are constrained by optimality theoretic constraints but the only proper winners are ones where the interpretation wins for the given form and the generation wins for the given interpretation.

5. This makes a proper account of them dependent on a constraint **Defined** requiring that the semantic material is not undefined.

6. This can be doubted. Prof. Asiatini noticed (p.c.) that in Georgian the concessive and contrastive uses of *but* are lexicalized in a different way. This shows at least that normal language users do not conflate the two uses and that contrastive markers do not always allow concessive interpretations.