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Three German discourse particles as speech act modifiers

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Abstract

This work attempts to reduce the properties of three German discourse particles (*dp*s), *ja*, *nicht* and *etwa*, to the basic building blocks of a formal discourse model (Farkas & Bruce 2010). We propose a definition of *dp*s as speech act modifiers that restricts the space of allowed variation of their meanings, arguing against previous approaches in terms of speaker attitudes. Speech acts modified by *ja* update the *Common Ground* (*CG*) directly; previous characterizations of the epistemic status of the proposition arise as descriptions of common justifications for such an imposed *CG* update. *Etwa* and *nicht* turn open polar questions with two default resolutions into questions with only one unmarked resolution; epistemic or bouletic attitudes arise as frequent connotations.

Introduction

In this article we attempt to express the contributions of three German discourse particles by exclusively using the basic building blocks of a

current formal model of discourse, Farkas & Bruce (2010). The primary motivation behind this is to be able to propose sufficiently formal definitions as answers to two questions about (a subclass of) German discourse particles: what they contribute to an utterance and how to delimit the space of possible meanings they can assume. Below, we go into detail about the motivation and background assumptions of this approach.

We start with the central question what discourse particles (*dp*s) mean. This question has received a range of answers in the previous literature; an influential one is the proposal that *dp*s specify or modify the attitude of the speaker towards the proposition or utterance in which the particle appears (see e.g. Egg & Mursell 2016 for a short overview). Although there rarely is a proposal as to which attitudes this can or cannot encompass, at least for the three particles discussed here this usually involves epistemic notions such as knowledge, evidentiality, expectation or strength of belief. We specifically argue against such a view, for a number of reasons. The implications of e.g. a pre-theoretic description of *ja* as an epistemic particle marking the proposition as 'given, obvious or uncontroversial' (Kaufmann & Kaufmann 2012) are not innocent. Under such a view it is surprising that this epistemic particle can co-occur with a wide variety of items, expressing sometimes apparently contradictory epistemic states or attitudes, ranging from uncertainty to complete certainty:

(1) Peter ist *ja* offensichtlich/ sicherlich/ wahrscheinlich/ vermutlich/ vielleicht/ eventuell/ möglicherweise zu Hause.
'Peter is JA obviously/ for sure/ probably/ presumably/ maybe/ perhaps/ possibly at home.'

Unless the illocutionary or discourse-related aspects of the above-mentioned attitude label are not more precisely specified, it is unclear why *dp*s and standard epistemic or attitude-modifying adverbials do not behave alike, calling into question the justification for the existence of a distinct category *dp;* generally however, *dp*s are assumed to differ from these adverbs (e.g. Bayer & Obenauer 2011). Under this view, the property that *dp*s cannot be modified is surprising, as well. If a particle e.g. expresses something as obvious, or indicates heightened interest in an answer (Csipak & Zobel 2014 for *denn*) there is no a priori reason why gradations on such scales cannot be expressed via modifiers or many more related *dp*s. Therefore we assume throughout this article that any such attitude-related notions are epiphenomenal and merely frequent connotations. Let us give this heuristic the moniker *Vulcan Hypothesis*: the meanings of discourse particles do not express the attitudes, intentions, desires, beliefs or any other epistemic states of the speaker. We show below for each particle that any such proposed attitude is either a descriptive term that does not predict the particle's occurrence or a pragmatic inference that can be cancelled in appropriate

counterexamples. We take this to mean that these notions are not at the core of *dp*s' meanings.

Instead, the line of research that we want to pursue is that *dp*s *modify the speech act in which they occur.* This idea goes back to at least Jacobs (1991) where he proposes that *dp*s modify speech act operators, resulting in a speech act with distinct properties. To make this precise, we make use of the Farkas & Bruce (2010) (F&B) model to formulate hypotheses about the effect of *dp*s. In short, the F&B model represents discourse as a game where utterances or speech acts are moves that have a precisely defined effect on the playing board. The playing board consists of five components (such as the *Table* or the *Common Ground*), each designed to capture discourse-related phenomena (such as the *QUD* or mutually agreed on propositions). For each speech act, e.g. an assertion, there is an associated speech act operator that defines what effect the speech act has on the various components of the playing board. We propose that *dp*s take speech acts as arguments and modify it by applying a *single change* to the default effects that the speech act has on the playing board. To foreshadow, our proposal for *ja* changes the effect its speech act has on the *CG* (parallel to a proposal about non-restrictive relative clauses in the F&B model) while *etwa* and *nicht* modify the *Projected Set* for polar questions (parallel to the effect of assertions on this component). We elaborate in the respective sections that recasting previous proposals like this either lets previous proposals arise as frequent inferences or that it formalizes descriptive notions with the tools of

the F&B model. This approach potentially selects a subset of what has previously been classified as discourse or modal particles. This could be used for a more fine-grained distinction between functions of different classes of particles *(*e.g. *ruhig* or stressed *ja* as indicators of force in imperatives, justifying the more traditional term modal particle).

This conception of *dp*s also allows us to propose an answer to the second question, the delimitation of potential meanings that *dp*s can and cannot assume. As indicated above, if the potential meanings of *dp*s amount to the space of possible attitudes or epistemic states, the fact that there are so few of them and that they cannot be modified is unexpected. However, it is an underappreciated fact that *dps are a closed class* of a small number of functional elements (e.g. Gutzmann 2016); we take this observation to be in conflict with their de facto treatment as close relatives to other attitude indicating elements. With the above assumptions, however, *dp*s' status as a small, closed class receives a straightforward explanation. If *dp*s perform a *single* modification of a speech act, and if there are only finitely many speech acts that modify finitely many elementary discourse components, that can each only express a restricted number of states, we should expect only a small, finite number of (reasonable) *dp*s. The space of potential meanings for *dp*s is then the number of single modifications of a speech act's effect on those discourse components. No modifications of the F&B model itself are proposed, i.e. all effects make use only of the pre-existing variation in the discourse components that are independently necessary to

capture the behaviour of default speech acts such as assertions and polar questions. In other words, the attempt to reduce the contribution of *dp*s to these general components is an attempt to reduce their allowed variation. Furthermore, since this variability amounts to binary or at least discrete choices, modification or scale-like gradability is unexpected. With a restriction to theoretical concepts that are independently necessary to describe language-universal phenomena such as the effect of speech acts, *dp*s in German are also no longer a language-specific curiosity but can be viewed as overt and lexicalized grammatical reflexes of aspects of these effects that are otherwise expressed covertly or through different non-lexical means. This approach is similar in spirit to Rudin's (2020) treatment of the contribution of rising (and falling) intonation in the F&B model. He proposes that rising (or falling) intonation takes utterances as arguments, modifying the speech act to indicate absence (or presence) of speaker commitment (i.e. the effect of a speech act on the *Discourse Commitment List* component of the model). There as well as here, different grammatical reflexes contribute piecewise to the overall speech act effect.

The article is organized as follows: first, we introduce Farkas & Bruce's (2010) discourse model. Subsequently we discuss the particles *ja*, *nicht* and *etwa*, in that order. In each section we briefly summarize previous proposals for the respective particle. Guided by the expectations from the above assumptions about what *dp*s can and cannot mean we discern which (aspects of the) proposals are unlikely to be their core contribution; relevant

counterexamples are then provided. We then propose definitions of how these particles modify the speech act they occur in and elaborate how previously proposed notions arise as frequent pragmatic inferences from the underlying meaning. The last section discusses the overall results in light of the above assumptions and concludes.

The discourse model

The aim of the framework by Farkas & Bruce (2010) (F&B) is to build a dynamic model of discourse that captures the effect that questions and assertions, as well as reactions to these, have on the state of discourse. They propose several components that are necessary for a description of the grammatical properties of discourse: when a speaker utters e.g. an assertion, this assertion is put on the *Table*. What is on the *Table* is up to discussion, i.e. this is the place where *Questions Under Discussion* (*QUD*) are recorded. If both participants agree on its truth, the proposition is added to the *Common Ground* (*CG*), the set of mutual commitments. Making the preliminary *Table* stage necessary captures the view of assertions as proposals, in contrast to direct *CG* updates, as put forward in Stalnaker (1978). That is, an assertion is a *proposal* to change the *CG*; however, this change will only occur once the hearer agrees with what is said.

The component where the public individual beliefs of participant *X* are recorded is called the set of *Discourse Commitments* (DC_X). Something counts as a public belief if the speaker has explicitly committed herself to the proposition (e.g. by virtue of asserting it). Private, non-publicized views are not subsumed under this notion. As an example, if A asserts *p, p* is put on the Table, but also recorded in DC_A, as something that A has committed herself to.

There is also a component that anticipates the state of the future *CG*, called the *Projected Set* (*PS*). When an assertion is put forward a future *CG* is projected that contains the existing *CG* and the proposition that has been placed on the *Table*. This indicates the form of the future *CG* if the current move receives its standard resolution (e.g. the hearer agrees). This makes it possible to express that there are default reactions to certain speech acts. Informally, this captures the anticipations of the speaker and distinguishes unmarked from marked reactions. For example, the unmarked or default response to an assertion is its acceptance, as it fits the predictions of the *PS* where the conversation is steering. Conversational states are represented graphically as in fig. 1 (2010:89):

A	**Table**	**B**
DC_A	S	DC_B
Common Ground CG	**Projected Set PS**	

fig. 1

Speech acts are conceptualized as moves that have a defined effect on the above playing board. We illustrate the model with the effect that a declarative sentence has:

(2) A: Eva is a string theorist.

We assume an idealized empty initial context state before the utterance of the declarative. Standard declaratives (which are assigned the sentential feature [D]) result in the context state depicted in fig. 2:

A	**Table**	**B**
p	⟨'*Eva is a string theorist*'[D];{*p*}⟩	
$CG_2 = CG_1$	**$PS_2 = \{CG_1 \cup \{p\}\}$**	

fig. 2

F&B propose speech act operators for sentence types; the assertion operator takes a declarative sentence as argument and works as a function from input conversation state K_i (the state before the utterance) to output states K_o (the resulting state) (2010:92):

(3) **A**(S[D], a, K_i) = K_o such that

(i) $DC_{a,o} = DC_{a,i} \cup \{p\}$

(ii) $T_o = push([S[\mathrm{D}];\{p\}], T_i)$

(iii) $PS_o = PS_i \cup \{p\}$

In English: an assertion *A*, that takes sentence *S* with declarative feature [D] as argument, uttered by speaker *a*, changes the input context state K_i to the output context state K_o in the following way:

i. the proposition *p* denoted by that sentence is added to the initial discourse commitment list *DC* by speaker *A* $DC_{a,i}$, leading to the resulting output $DC_{a,o}$

ii. the syntactic object *S*[D] plus its denotation *p* are put on top of the stack on the input *Table* T_i resulting in the output *Table* T_o where the issue whether *p* is on the top of the *Table*

iii. the input *PS* is expanded by adding *p* to each possible *CG* in it, discarding any inconsistent set.

This is the effect of standard assertions. Default polar questions such as (4) have the effect depicted in fig. 3:

(4) Is Eva a string theorist?

A	**Table**	**B**
	$\langle$*'E. is a string theorist'*[I];$\{p, \neg p\}\rangle$	
CG_1	**PS_2 = {$CG_1 \cup$ {p}, $CG_1 \cup$ {¬p}}**	

fig. 3

The syntactic object with an interrogative marker is placed on the *Table*, together with its denotation *{p,¬p}*. The *PS* computes both possible futures of the conversation, namely the *CG* enriched with the information that *p* holds, and the *CG* enriched with the information that ¬*p* holds. F&B call such a context state *inquisitive* (in contrast to a state that results after an assertion) since the *PS* sees multiple possible futures for the *CG*. This constitutes the case of a standard polar interrogative. Parallel to assertions, a polar question operator *PQ* is assumed. The definition of a standard polar interrogative is as follows, formalizing the two effects described above (2010:95):

(5) **PQ**(S[I], K_i) = K_o such that

(i) $T_o = push([S[I];\ \{p,\neg p\}], T_i)$

(ii) $PS_o = PS_i \cup \{p,\neg p\}$

These are the basic moves in F&B's framework. There are also moves that *react* to such assertions and questions, specifically confirming or reversing an assertion, and confirming or reversing a polar question. To exemplify, an assertion confirmation operator *AC* is defined as follows (2010:98):

(6) **AC** a. *Input context conditions:*

(i) $top(T_i) = [S[D];\ \{p\}]$

(ii) p in $DC_{a,i}$

b. *Change*:

AC(b, K_i) = K_o where $DC_{b,o} = DC_{b,i} \cup \{p\}$

In contrast to assertions, an *AC* places requirements on the previous context state: on top of the stack on the *Table* is the declarative sentence *S*[D] with its denotation *p*, and this *p* is in the *DC* of the other discourse participant (in this case *A*, assuming she is the one who uttered (2). Then, for discourse participant *B* to confirm this sentence that is on the *Table* in the input context state K_i means to add the proposition *p* to his own *DC.* Such a confirmation can look like this:

(7) B: (Yes,) She is (a string theorist).

Note that a sentence that confirms an assertion can have the exact same semantics as the initial sentence that raised the issue on the *Table*. However, addressing an issue has a distinct discourse function which is why another operator is necessary. At this point, the issue *p* has already been raised, so reacting to it does not raise it again, but comments on the issue. Confirmation therefore does not place something on the *Table* but just adds the denotation already existing on the *Table* to its author's *DC*; congruent with the core idea of this model, addressing something on the *Table* only adds something to the speaker's *DC*, but not to the *CG* directly. In case a proposition is present in every participants' *DC*, the auxiliary move *M′*

removes the issue *p* from the *Table* and adds it to the *CG*. We leave out the definitions for complementary moves such as total denial of an assertion or both possible standard reactions to a question as they are not relevant to this article.

ja

Thurmair (1989) argues that *ja* is a *CG*-marker, indicating that the proposition is known to both speaker and hearer. This certainly accounts for one of its most standard uses:

(8) *Two friends are at a party; both know that Speaker came by car. When everybody starts to leave, Speaker offers Hearer*:
Ich bin *ja* mit dem Auto hier, ich könnte dich also mitnehmen.
'I came JA here by car, so I could give you a ride.'

Here, the speaker uses *ja* to indicate that both interlocutors know the proposition and uses this sentence as a segue to his offer. Döring (2016) models this in F&B by stating that an assertion with *ja* is only defined if the core proposition is part of the *CG.* However, Lindner (1991) points out the

use of *ja* in surprise contexts (already acknowledged by Thurmair) as problematic for a *CG* definition (roughly her ex. 13):

(9) *B is climbing a tree, followed by A. Suddenly, A notices:*
Du hast *ja* ein Loch im Ärmel!
'You've got JA a hole in your sleeve!'

In this case, the hearer is ignorant of the information and even the speaker did not know right up until her utterance. For this reason, Lindner weakens the definition to "indicating that the state of affairs in question is not controversial" and that the speaker has "evidence - observational or derived from shared knowledge - that a particular state of affairs pertains" (1991:171). The speaker "assumes at *t* that there is no proposition *q* [...] that is contradictory to the proposition [...] i.e. the speaker assumes that the addressee will not contradict him/her" (1991:173).

Although the idea of *ja* as a *CG* marker is persistent, most authors acknowledge the difficulties raised by this example. Kratzer defines *ja* as being "appropriate in a context *c* if the proposition [...] is a fact of w_c which - for all the speaker knows - might already be known to the addressee." (1999:1). Kratzer & Matthewson also note that *ja* does not require specific hearer knowledge but rather that "the speaker in *c* takes [the proposition] to be firmly established and therefore doesn't consider the question [*whether p*] to be an issue for inquiry in *c* or after *c*." (2009:13). Grosz (2014) claims

that *ja*'s meaning is a proper subset of the *dp doch*'s meaning in that both share an uncontroversiality presupposition, whereas *doch* also possesses a contrast presupposition. His definition of the uncontroversiality component is the following, arguing that both particles do not impose restrictions on the hearer's knowledge state (2014:163):

(10) The speaker in *c* takes *p* to be firmly established in w_c and therefore assumes that it is safe to discard $\neg p$ as a possible answer to the question of whether *p* or $\neg p$ holds in w_c

Kaufmann & Kaufmann (2012) call *ja* and *doch* epistemic particles, saying that it is "widely agreed" that they "commit the speaker to the belief that *p* is in some sense given, obvious, or uncontroversial" (2012:210). While noting that *ja* is in most cases used to indicate old information, they acknowledge that it can also be used to impart obvious information (2012:211, ex. 5):

(11) Du kannst *ja* zum Arzt gehen.
≈ 'You can [obviously] go to the doctor.'

So the felicity conditions of *ja* must be widened to "include information that is readily available to anyone seeking it" (ibid.). They also mention surprise examples, noting that these cases "may be amenable to an extension of that

notion to include the mere absence of conflicting information" (2012:212). Their formal definition for *ja* is as follows (ibid.):

(12) *normally* in a situation like *c*, any rational agent whose goal is to find out whether *p*, does find out whether *p* (from information already available or in the immediate surroundings).

To summarize, the clearly discourse-related definition of *ja* as a *CG* marker is challenged by surprise examples. Hearer knowledge appears to be irrelevant for the meaning of *ja*. This includes the notorious use of *ja* in discourse/topic-initial sentences where the information is new to the hearer and has to be believed at face value:

(13) Ich war *ja* gestern in der Innenstadt, und rate wen ich da getroffen habe - den Peter!
'I was JA downtown yesterday, and guess who I met there – Peter!'

Sometimes, *ja* simply marks an obvious conclusion:

(14) A: My boyfriend broke up with me.
B: Das ist *ja* blöd.

B: 'That's JA a bummer.'

The problem with the cited 'uncontroversiality' concept that supplants the previous *CG*-oriented proposals is that it is a descriptive term, not a theoretical concept and hence makes no predictions as to what situations fall under this property (similarly, what precisely counts as 'firmly established' or how much leeway is given to the idea of 'finding out'). Even the general intuition about *ja* as denoting an epistemic state of the proposition being somehow 'given, obvious or uncontroversial' is not without problems. As mentioned, *ja* can co-occur felicitously with elements that express uncertainty:

(15) Peter ist *ja* wahrscheinlich/ vermutlich/ vielleicht/ eventuell/ möglicherweise zu Hause
'Peter is JA probably/ presumably/ maybe/ perhaps/ possibly at home.'

whereas combinations of more traditional attitude-oriented adverbs lead to infelicity:

(16) ??/# Juan ist (offensichtlich/ sicherlich) (wahrscheinlich/ vermutlich/ vielleicht) zu Hause.

??/# 'Juan is (obviously/for sure)

(probably/presumably/maybe) at home.'

A reviewer points out that an interpretation of 'It is known that Peter is maybe at home' is conceivable, avoiding potential contradictions. However, a *CG*-interpretation of *ja* is already ruled out for independent reasons above. The examples are used to illustrate that even if one retreats to a speaker-attitude account, such an epistemic stance does not behave like any other known attitude, leading to further difficulties. While a more discourse-related version of obviousness is not logically excluded, this is not the path we want to pursue. Under the principles we assumed in the first section we expect any attitude-related aspects in the use of *ja* to be pragmatic inferences, with its actual contribution to be found elsewhere.

There is in fact one robust, discourse-related property of *ja*, namely its inability to occur in direct answers to questions.

(17) A: Wie heißen Sie?

A: 'What's your name?'

B: #Ich heiße *ja* Joe.

B: #'My name is JA Joe.'

(18) A: Where's Peter?

B: #Er ist *ja* zu Hause.

B: #'He is JA at home.'

This is difficult to explain for attitude-related accounts of *ja* since attitude-modifiers have no problem occurring in answers ('*Peter is obviously/for sure at home.*' as response to the above question). An intuitive understanding of uncontroversiality also would not suffice since epistemic authority over one's own name can usually be assumed. Asking for a person's name could also be performed as conversation starter even if the other person's name is visible on his name tag. Still, the use of *ja* in the answer is excluded. The possibility of being able to find out the information is therefore not relevant for the use of *ja*. The above ban persists even if the inquirer knows the answer already (e.g. in teacher-student contexts and rhetorical questions) and hence cannot be due to pragmatic infelicity (a *CG* account, if it were not ruled out already by surprise examples, would need to provide independent reasons why *ja* is still infelicitous in said contexts).

We turn now to our proposal about how speech acts are modified by *ja*. The ban from appearing in answers to questions indicates that whatever the function of *ja* is prevents it from interacting with the *QUD*. Since we assume that *dp*s modify the effect of speech acts on the discourse components we conclude that the *Table* and the *CG* for which it serves as an intermediate stop are the components relevant for *ja*. We propose the following: *ja* modifies a move by adding to its effects that it places its

denotation into the *CG* directly (this idea is similar to the one expressed in Viesel 2015). Remember the assertion operator:

(19) **A**(S[D], a, K_i) = K_o such that

(i) $DC_{a,o} = DC_{a,i} \cup \{p\}$

(ii) $T_o = push([S[D]; \{p\}], T_i)$

(iii) $PS_o = PS_i \cup \{p\}$

Thus, a *ja*-assertion has the following effect:

(20) **ja(**A(S[D], a, K_i)**)** = K_o such that

(i) $DC_{a,o} = DC_{a,i} \cup \{p\}$

(ii) $T_o = push([S[D]; \{p\}], T_i)$

(iii) $PS_o = PS_i \cup \{p\}$

(iv) $CG_o = CG_i \cup \{p\}$

Note that in default cases of the F&B model the *PS* can be automatically calculated from the content of the *Table* and is therefore redundant information added to moves for expository reasons. Specifying the *DC* and the *Table* in this case is mostly redundant as well since the *CG* is (at least) the union of all shared public commitments and any issue resolved by an element of the *CG* is removed from the *Table.* Therefore, the only non-trivial effect of a *ja*-assertion is to place the proposition into the *CG* (we

come back later to the question why we only add the *CG* effect instead of letting it replace the *Table* effect).

This formalization achieves several things. Let us first derive the one robust empirical property of *ja*, its non-occurrence in answers. One of the crucial assumptions F&B make in their model is that assertions are *proposals* to update the *CG*. This is hard-coded into the model by the existence of the *Table*, and the fact that *Table* and *CG* are two distinct components. They emphasize this proposal nature, saying that "[c]haracterizing ordinary assertion as proposing additions to the *cg*, rather than actually changing it, is necessary in order to make room for the large variety of conversational moves that react to assertions" (2010:82). In order to raise or address an issue, one has to take the route via the *Table*. It is crucial to note that a negative or positive answer to a question does not remove the issue from the *Table* but only via (explicit or implicit) agreement by the originator of the question. That predicts that one place where an effect as proposed here for *ja* is not allowed to take place is in answers to questions since it violates fundamental assumptions of the model's discourse components. This prediction is borne out. There is an exception to the above ban, however, namely in the presence of attitude-indicating elements:

(21) A: Where's Peter?

B: Vielleicht ist er *ja* zu Hause.

B: 'Maybe he is JA at home.'

(22) A: Is Lubos innocent?

B: Offensichtlich *ja* nicht!

B: 'Obviously JA not!'

The crucial question in this case is what is placed on the *Table* in the B sentences of the above examples (an issue already mentioned in Farkas 2007). The assumption that *Attit(p)* (i.e. the attitude the speaker expresses towards the proposition) is placed on the *Table* would predict that what is under discussion is the speaker's attitude and not the core proposition. This is clearly not how these sentences are interpreted. A *no*-answer to a sentence *Attit(p)* commits the speaker to ¬*p*, not to a position about the hearer's epistemic stances. It is therefore reasonable to assume that in these cases *p* alone is placed on the *Table*. Döring (2016) proposes that discourse commitments in general are stored directly in the *CG*, noting that "commitments do not have to be negotiated on the table: If a speaker commits to a proposition, this commitment usually is not questioned. So, the commitment can immediately be added to the common ground" (2016:34). If we take the above elements to specify (properties of) the speaker's commitments this would mean that *Attit(p)* is placed into the *CG* directly. This is in any case a reasonable assumption since speaker attitudes are not under discussion and cannot be reacted to via normal (non-meta) linguistic means. We can reasonably assume that *ja* takes scope over these attitude-

modifying elements, as can be inferred e.g. from their unmarked word order:

(23) Peter ist *ja* offensichtlich/ vermutlich/ vielleicht/ wahrscheinlich/ sicherlich zu Hause.
'Peter is JA obviously/ presumably/ maybe/ probably/ surely at home.'

An account (that is beyond the scope of this article) of how epistemically modified propositions evade the *Table* (while making the core proposition at issue) together with the assumption that *ja* exerts its effect on the maximal element in its scope predicts that the conditions for the occurrence of *ja* in these cases are trivially satisfied. This also constitutes one reason for letting *ja* merely add the *CG* effect instead of replacing the *Table* function.

To sum up, the above proposal, together with independently necessary assumptions about attitude-modifying adverbials, correctly predicts the behaviour of *ja* in question-answer pairs. It is also transparent how previous proposals about the epistemic status of the proposition arise as cancellable pragmatic inferences. To impose a *CG*-update requires some form of justification. The most uncontroversial way is if *p* is in the *CG* already which leads to the common use of *ja* as an apparent *CG* marker. (Note that under a strict reading of our definition, a *dp* as *CG* marker is not possible since it would place restrictions on preceding contexts, not just

modify a speech act effect.) Direct visual evidence or obvious conclusions can serve as other justifications. However, no single justification is a necessary condition in every utterance, a problem that the current approach avoids. Instead, the above proposal formalizes notions such as 'uncontroversial' or 'firmly established'.

A remaining question is what constitutes felicitous contexts for *ja* if raising or directly addressing an issue necessarily has to proceed via the *Table*. In the following answer by a teacher to the question '*What are we going to do today*' by her class, waiting outside the gym:

(24) Es regnet *ja*, wir werden also heute nicht rausgehen.
'It rains JA, so we won't go outside today.'

the clause containing *ja* does not address the *QUD* directly, providing only justification for the following clause. It is those utterances that do not interact directly with the *QUD* that are potential contexts for *ja.* For this reason, *ja* often appears in side remarks and sentences that add background information or set the stage for the main issue. In the following all-new, discourse-initial utterance, the *ja*-utterance simply serves as segue for the actual issue the speaker wants to raise:

(25) Ich war *ja* gestern in der Innenstadt, und rate wen ich da getroffen habe - den Peter!

'I was JA downtown yesterday, and guess who I met there – Peter!'

A sole assertion with *ja* without a follow-up contribution by the speaker is infelicitous. A hearer will expect a follow-up statement as the main point.

(26) A: #Ich war *ja* gestern beim Friseur. *[End of speaker turn]*
A: #'Yesterday, I was JA at the barber's.'
B: ...so?

That is, as long as *ja* does not raise the main issue or resolves an existing issue directly, it is allowed to occur. That some clauses do not interact with the *QUD* is a known effect for other phenomena such as appositives. A recent account of appositive content by AnderBois et al. (2015) for dynamic semantic frameworks such as F&B analyses e.g. non-restrictive relative clauses as imposed *CG*-updates, in contrast to the proposal nature of at-issue content.

(27) Andrew Wiles, who proved Fermat's Last Theorem, received the Fields Medal.

In their analysis, the content of the matrix clause is placed on the *Table* as a proposal to update the *CG* while the relative clause updates the *CG* directly.

This is parallel to the effect proposed for *ja* here. This presents the possibility of *ja* as an overt appositive content marker. While investigating this possibility in depth is beyond the scope of this paper, we mention here a few parallels between *ja* and non-restrictive relative clauses.

First, their account predicts that *ja* is able to occur in every appositive construction that is syntactically able to host a *dp*. For non-restrictive relative clauses this appears to be true at first glance; we are not aware of counterexamples. A second issue are possible reactions to utterances with *ja*. As a first approximation, different linguistic means than a negative answer are necessary to refute non-at-issue content, e.g. for (27):

(28) B: Wait a minute, I thought he proved the Riemann Conjecture.

However, both '*No'* and '*Wait a minute!'* are possible reactions to *ja*-utterances:

(29) A: Peter war *ja* letztens im Park Sanssouci und -
A: 'Peter has JA been to Park Sanssouci recently and - '
B: Wait a second, I thought he's been to Park Babelsberg.
B': No, he hasn't.

While this appears problematic for the non-at-issue nature of *ja*-utterances at first, an intriguing parallel can be found here, as well, as discussed by AnderBois et al. Refuting content of a non-restrictive relative clause directly becomes possible in an utterance-final position, despite their effect as direct *CG*-updates. (their ex. 47/49, adapted):

(30) A: His husband, who had prostate cancer, was being treated at the Dominican Hospital
B: ?? No, he had lung cancer.
B': No, he was being treated at the Stanford Hospital.

vs.

(31) A: He took care of his husband, who had prostate cancer.
B: No, he had lung cancer.
B': No, he took care of his brother.

This indicates that linear adjacency to the challenged material is a relevant factor in determining possible responses. Since *ja* can modify full utterances, i.e. matrix clauses that are not embedded in contrast to relative clauses, directly adjacent responses are always possible in those cases, and a similarly extended range of reactions is expected (it might also be another reason to let the *ja*-assertion affect the *Table* at least notationally).

To conclude, even though the current proposal does not depend on an exact parallelism, effects like the one proposed here for *ja* are known and required for other phenomena that also display additional similarities.

etwa* & *nicht

nicht

We turn now to the particles *etwa* and *nicht* which we argue, following Gieselman & Caponigro (2013), represent two sides of the same coin. We start with *nicht.* The idea of *nicht* as a *dp* follows Thurmair's (1989) original classification. As Thurmair describes, the sentences below invariably convey that the speaker thinks that the positive proposition is true or strongly suspects a positive answer:

(32) Ist mein Baby *nicht* wunderschön?
'Isn't my baby beautiful?'

(33) Hat Peter *nicht* Marie eingeladen?
'Didn't Peter invite Mary?'

(32) is in essence a rhetorical question, only allowing for a positive answer. (33) expresses the expectation of the speaker that she thought Peter invited Mary. In these examples, *nicht* does not express propositional negation like its homophonous counterpart, i.e. a rough paraphrase of (33) is "*Peter invited Mary, am I right?*" and not "*Peter did not invite Mary, am I right?*".

Elements that are homophonous to negation that have a similar meaning as this particular German *nicht* have also been observed in English and other languages under the label high/preposed negation (Ladd 1981, Romero & Han 2004, more recently Goodhue 2019 and AnderBois 2019). While the present proposal is independent of whether it also applies to other languages, the semantic properties of high negation proposed in the literature are highly parallel to the ones of *nicht*. We therefore treat it as the same phenomenon as null hypothesis and only discuss properties from the previous literature where *nicht* behaves equivalently. We start by providing an overview of the literature and then elaborate on the reasons why we depart from some of the assumptions of previous approaches.

The literature that we review here briefly (Romero & Han, Goodhue, AnderBois) shares certain basic assumptions even though the proposals differ in detail. First, all authors assume that high negation is still a form of negation. The difference in meaning comes about since it is structurally higher than standard negation. The proposals differ more strongly in how exactly this leads to the new meaning contribution. However, a second shared assumption is that the meaning of high negation questions comes

about via pragmatic inference/implicature. In Romero & Han, high negation gives rise to an epistemic VERUM operator which the negation scopes over. In their approach, this leads to unbalanced question partitions. Reasoning via Gricean Maximes and principles of economy leads the hearer to assume that such a sentence is only felicitous when resolving an epistemic conflict. The pronounced content of such questions, "*Are you not sure that we should add to CG that p?*", asks the hearer for reasons to doubt *p*; therefore, *p* must be the speaker's belief (or bias) and ¬*p* the hearer's. Goodhue's account is quite similar, except there is an epistemic operator *O* instead, and the pragmatic reasoning involves conversational principles of utility. AnderBois' approach uses two-tiered semantics that distinguishes between main and projected issues (*QUD*s) that utterances can raise/resolve and steer the conversation towards. High negation questions are cast as raising the same issue as default polar questions, while not projecting a secondary issue towards which it steers the conversation. Reasoning over the utility of projected issues leads to the bias contribution: default polar questions steer the conversation towards a positive resolution; since high negation questions do not, they give more importance to the negative answer. Such a move is felicitous where there is a tension between the speaker's prior belief and new evidence. A bias for a positive answer arises as a default preference for maintaining one's beliefs.

The last shared assumption is that the core contribution of higher negation (whether it is framed as positive belief, bias, answer expectation etc.) is invariably present in all occurrences.

However, as far as we can see the last two assumptions are a contradiction in terms. Since the above accounts rely on pragmatic reasoning, the question arises why this meaning contribution cannot be cancelled if it is a conversational implicature. The pragmatic reasoning from the compositional object to the pragmatic inference is also by no means inevitable in all three accounts presented here. In Romero & Han's (and similarly, Goodhue's) account, the denotation of a high negation question is to ask the addressee if she is sure or not to add *p* to the *CG,* whereas the resulting inference is one of speaker bias. Even if such an inference were to arise, there is no reason why it cannot be cancelled. A bias for positive or negative resolution arises in default polar questions with positive/negative polarity. This notion of bias, however, is markedly different from the one in high negation questions, as all authors agree: the former can be cancelled, the latter cannot. The same criticism applies to AnderBois' approach: there is no reason why a question that does not privilege any form of resolution is not understood as the ultimate open question. Even if it were not, it should in any case be even easier to cancel such a bias than in polar questions, contrary to fact. We therefore conclude that a lexical account of its contribution is necessary. We take the invariable question bias that results if high negation appears in a sentence to *be* its meaning.

Let us address an at first sight unwanted consequence. It is clear that by this classification, *dp nicht* bears no resemblance any more to standard negation. That is, it is not the same item which by virtue of being in a different syntactic position than usual results in a different meaning than it would in a lower position. The result is two apparently accidentally homophonous items with completely different meanings. As Goodhue puts it, several languages possess high negation and "this remarkable cross-linguistic fact merits explanation" (2019:1). However, it is a defining feature of German *dp*s that they virtually all have homophonous counterparts, usually other particles like conjunctions and adverbial elements to which they are historically related (e.g. Bayer & Obenauer 2011). To illustrate, *ja* has counterparts in a homophonous answer particle, a stressed version used only in imperatives and a tag marker. In this light, the fact that in German a proposed *dp* has a homophonous counterpart is not a problem but rather expected. The fact that propositional negation is universally available in the world's languages further demystifies the cross-linguistic appearance of this homophony and rather hints at a common route of grammaticalization. To conclude the argument, we treat *dp nicht* like *dp etwa* in the next section whose homophony to its truth-conditional counterpart meaning *circa* or *roughly* is not deemed to be in need of a synchronic explanation.

Let us now illustrate the merits of a lexical account of *dp nicht*: on the one hand, it gets rid of the oxymoron of an uncancellable conversational implicature and explains why its presence always contributes the same

meaning. This is a favourable outcome. On the other hand, it avoids several difficulties that arise from treating 'high negation' as negation. First, there is so far no mechanism or motivation why negation is moved to a higher than usual position. *Dp*s on the other hand are assumed to modify speech acts in the line of research pursued here and therefore scope high by default. Secondly, there is also no reason why placing negation higher in the structure leads to the presence of an epistemic or verum operator (AnderBois' proposal does not suffer from this problem). Another question that is to our knowledge not discussed is why high negation can only appear in questions. Standard negation can appear in every sentence type. If high negation and standard negation are the same item, leading only to different effects by negating different complements, high negation should be able to appear in imperatives and assertions as well, an apparently unaccounted phenomenon. For *dp*s on the other hand, idiosyncratic distribution across sentence types is again an expected and unsurprising property.

The only approach mentioned that avoids those difficulties is the one by Gieselman & Caponigro that differs strongly from the ones previously presented: they makes use of Gunlogson's (2008) framework for discourse structure; treating them as *dp*s, they describe *nicht* (and its polar opposite *etwa*) as imposing discourse conditions regarding the evidence and beliefs of the speaker. Gunlogson accounts for rising declaratives by proposing contingent commitment, a weaker form of commitment that lets the speaker commit to the proposition only as long as it is supported by the authority of

the addressee. This models the in-between character of rising declaratives as declaratives that require an answer like questions. The discourse effect of a question with *etwa* and *nicht* is similar in Gieselman & Caponigro's approach in that it adds a contingent commitment to the commitment set of the speaker, with the additional requirement that the speaker has some prior evidence for p ($\neg p$ in the case of *etwa*). Although our approach is similar by treating *nicht* as modifying discourse functions, we reject this proposal based on its reliance on notions like evidentiality.

We turn now to determining the core contribution of *nicht*. AnderBois (2019) provides a detailed and critical overview of the various contributions of high negation proposed in the previous literature which he groups into four categories: the first is a perceived emphasis on the truth of the proposition; we will not address this pragmatic connotation here. The second is contextually given negative evidence going against the speaker's bias/belief (AnderBois' ex. 35).

(34) A: Okay, now that Stephan has come, we are all here! Let's go!
B: Isn't Jane coming?

As AnderBois discusses such a tension is not a necessary condition for the use of *nicht* (see e.g. (32) where no tension is present). Additionally, we are not concerned here with the situations in which *nicht* can be strategically

used but its meaning. This leaves two major notions that AnderBois distinguishes (although the distinction is not necessarily always made overtly in the literature): one is the speaker attitude towards the proposition which runs under different names like positive prior belief, a positive epistemic/doxastic implicature or a bias towards the truth of the proposition. The other is a bias in the sense of an expectation/desire for a positive answer. We attempt to show that notions concerning both speaker's beliefs and desires are cancellable.

It is possible to use *nicht* in genuine information seeking questions:

(35) *Question online about how to certify knowledge of Microsoft Office for job applications without paying a lot of money*
Gibts *nicht* vielleicht einen Online-Test, der aber trotzdem seriös genug ist, um ihn in den Lebenslauf zu setzen?
'Isn't there maybe an online test that's still professional enough to put it in your CV?'*

*https://www.gutefrage.net/frage/fuer-den-lebenslauf-microsoft-office-kenntnisse-nachweisen (18 March 2021)

Here the person who is asking does not know of any such possibilities (hence their question) s/he merely rather wants the outcome to be positive.

In the following example, the speaker attitude is not epistemic but bouletic in nature:

(36) Mir ist langweilig. Hättest du *nicht* Lust, klettern zu gehen?
'I'm bored. Wouldn't you like to go climbing?'

Here, knowledge or even belief about the truth of the proposition is not necessary (just as Gieselman & Caponigro's requirement of prior evidence), and mere desire for its truth suffices in the above examples. However, it is equally possible to find cases where a positive answer is the one that is known or believed but not desired:

(37) A: Are you up for a LAN-party tomorrow?
B: Müssen wir *nicht* fünf Essays für Morphologie bis Freitag schreiben?
B: 'Don't we have to write five essays for morphology until Friday?'

Nonetheless, it is still the case that in all these examples one question resolution receives a privileged status although it cannot invariably be based on a single notion of likelihood or desired outcome. What remains is the expectation of a positive answer to a question with *nicht.* The F&B model allows us to encode the privileged status of a specific answer while also

circumventing the problem of defining the source for speaker expectation by using the *PS*. F&B introduce the *PS* so that "the anticipatory nature of certain conversational moves is captured" (2010:88). The task of the *PS* is to identify privileged future states; e.g. while many reactions are possible to an assertion, confirmation has a special or default status. This is captured by the *PS* projecting confirmation as the privileged future state. This is invariant even where a contradiction by the interlocutor is expected. Default polar questions project both members of their denotation as possible answers since both options are equally privileged (as far as grammar is concerned).

We propose that it is this abstract, grammatically relevant form of default resolution, independent of likelihood-based expectation, that *nicht* expresses. Just as confirmation is the default response to an assertion, the default reaction to a *nicht*-question is the answer that confirms the proposition expressed in its radical. Formally, *nicht* modifies moves to project only their positive sentence radical, turning a polar question from projecting two possible futures $\{p, \neg p\}$ into one where it only projects p.

(38) **nicht(**PQ(S[I], K_i)**)** = K_o such that

(i) $T_o = push([S[I]; \{p, \neg p\}], T_i)$

(ii) $PS_o = PS_i \cup \{p\}$

As for the previously proposed meanings for *nicht* it is plausible that they arise as common inferences from the underlying meaning. A prior belief that *p* is the case, or a desire for it to be so are plausible reasons to ask a question with a privileged outcome. That a question that is biased towards confirmation can appear in contexts where a prior belief is apparently challenged is a natural use. That the relevance of the truth of such an issue receives emphasis in such a situation is also expected.

etwa

Finally, we turn to *etwa* which in Gieselman & Caponigro's conception is the opposite side of the coin. The proposed contributions of *etwa* are parallel to the ones for *nicht* except for the reversed polarity. Thurmair gives the following example for the use of *etwa* which in its discourse particle use can only occur in polar interrogatives (1989:170, translation for all her examples by us):

(39) Uwe: Gestern war 'Dallas' vielleicht wieder spannend!
Uwe: "Dallas' was exciting again, yesterday!'
Mona: Was?! Schaust du dir den Quatsch *etwa* an?
Mona: 'What?! Do you watch that nonsense ETWA?'

She paraphrases the contribution of *etwa* as indicating that Uwe's utterance contradicts Mona's prior assumptions about his TV habits. For the use of *etwa*, the speaker needs some form of evidence that *p* could be the case. What causes the speaker to pose a question with *etwa* is the conflict between their prior expectation and the current evidence that they are faced with (this is the reverse to prior positive belief and tension with negative evidence in the case of *nicht*).

Another connotation that accompanies the use of *etwa* is that the speaker expects or hopes for a negative answer, or conversely, fears a positive answer. Further examples illustrate this (ibid.):

(40) *Max puts on his jacket:*
Bea: Willst du *etwa* jetzt noch weggehen? Es ist 1 Uhr!
Bea: 'Do you ETWA want to go out now? It's 1am!'

(41) Die Whisky-Flasche ist schon wieder leer. Trinkst du *etwa* heimlich?
'The whisky bottle is empty again. Are you ETWA drinking secretly?'

To summarize, Thurmair (1989) takes the contribution of *etwa* to be the following: the speaker has evidence that *p* (and is surprised about that), and the speaker expect(ed) ¬*p* to hold and hopes that ¬*p* be the case. We pursue

the same strategy as with *nicht* by trying to show that those are cancellable contributions. What remains is the abstract notion of question bias which we argue is informed by but nonetheless independent of notions like expectations and wishes.

As already conceded by Thurmair (1989) there are examples where the negative attitude towards *p* is almost absent. The following example shows that the opposite can be true where the speaker wishes *p* to be the case:

(42) *Party guests arrive with an enormously large cake.*
Host: Ist der *etwa* für mich?
Host: 'Is that ETWA for me?'

While in the above example modesty requires projection of a *no*-answer, it shows that *etwa* can felicitously be used where the speaker hopes for a positive answer. Csipak & Zobel (2014) construct similar examples and argue that only a change in the likelihood assigned to contrasting beliefs is necessary. They propose that *etwa* signals that the speaker realized she mistakenly believed the negative answer to the question to be more likely than the positive one.

While Thurmair talks about the (prior) expectation of $\neg p$ and evidence for *p*, Gieselman & Caponigro (2013) argue that *etwa* requires (prior) evidence for $\neg p$, with no mention of a necessary conflict between

expectation and evidence. Their example involves a situation in which famous German actresses visited a school but the speaker has some evidence to believe a specific actress was absent and can felicitously ask (their ex. 1b and 4):

(43) War Veronica Ferres *etwa* gestern auch an der Schule?
'Was Veronica Ferres also at school yesterday by any chance?'

Parallel to their treatment of *nicht*, they propose that a question with *etwa* adds a contingent speaker commitment with the additional requirement that the speaker have some prior evidence for $\neg p$. The literature therefore appears contradictory; at least it is unclear if what Gieselman & Caponigro call evidence is not better termed speaker expectation. In (42) e.g., it is difficult to find what the source of the negative evidence is. Take (44):

(44) *A couple is walking around in the MOMA. One of them notices a particularly unconventional piece*:
Soll das *etwa* Kunst sein?
'Is that ETWA supposed to be art?'

Here, all available evidence points towards a positive answer. With *etwa*, the speaker insinuates judgement by expressing preference for a negative

answer. As with *nicht*, this indicates that the relevant attitude need not be epistemic but can border on a bouletic/deontic reading:

(45) Ist das *etwa* deine Vorstellung von Anstand?
'Is that ETWA your idea of decency?'

In conclusion, while a negative answer is projected in every case, its motivation can range from prior expectation (40), hope (41) or a bouletic preference bordering on rhetorical questions (44-45), yet the polar opposite of each attitude can appear if it is not the source of negative projection (44, 42, 42, respectively).

As with *nicht*, we circumvent attempts to find an all-encompassing description of potential speaker states by reducing the meaning of *etwa* to the independent grammatical primitive of unmarked utterance resolution and by relegating questions of possible motivations for such an utterance to pragmatic considerations. The formal account of *etwa* is equivalent to the one of *nicht*, modulo the reversed polarity. A polar question modified by *etwa* projects only a default negative resolution $\{\neg p\}$ in its *PS*.

(46) **etwa(**PQ(S[I], K_i)**)** = K_o such that

(i) $T_o = push([S[I]; \{p, \neg p\}], T_i)$

(ii) $PS_o = PS_i \cup \{\neg p\}$

As with *nicht*, similar but polar opposite contexts are natural occurrences of *etwa* such as resolving tension, eliciting a specific answer or insinuating a bias. However, what informs the bias and what motivates a speaker to use a bias question should not be accounted for in a semantic account of its meaning.

To conclude this section, a comment on the evidence used throughout this article. A reviewer raises the relevant question whether we indeed got rid of attitudes since they still play an influential role in the argumentation for the final definition. While this is true, all attitudes have only been used *ad absurdum*, not to argue for yet another attitude, showing that *no* attitude is uniquely predictive of a *dp*'s use. The reviewer comments that the predictions of the F&B model, with the current approach to these *dp*s, are not fully understood, that it could not a priori predict e.g. if *etwa* can be used in questions where one hopes for one but expects the opposite answer, or the other way around; or which responses are ungrammatical. The aim of this article is to reduce *dp* effects to structural properties of discourse. The ban of *ja* in answers provides good negative evidence that its effect violates a fundamental principle of discourse grammar. Negative evidence in the case of *etwa*/*nicht* is admittedly harder to come by since the *PS* provides only a markedness ranking for resolutions without grammatically excluding some. However, the same situation obtains with the assertion operator. Assertion confirmation as unmarked resolution is a reasonable assumption, yet negative evidence is hard to come by. But the

assertion operator is not expected to predict (meta-theoretic reasoning over issues such as) whether assertions convey a hope or likelihood of confirmation or fear of contradiction (since its confirmation projection stays constant in both confrontational debates and dialogues with like-minded people). If we accept a privileging of resolutions as part of our discourse grammar and a *dp*'s effect is an altered privileged response (while resisting any attempt to base this ranking on some attitude), then we should not expect the theory to predict such speaker states for the use of those *dp*s, either. We illustrated above that none of the previously proposed attitudes are primitive notions of grammar. We therefore view it as a merit, not a problem, that the F&B model has nothing to say about these connotations.

Conclusion

We set out to reduce *dp*s to the primitives of the F&B model, driven by the motivation to replace descriptive attitude-based notions with formally defined discourse effects. For each of the three particles, their apparent indication of a speaker attitude can be cancelled in an appropriate context. We take the fact that such counterexamples can be found in the general case as indicator that it is a useful heuristic to treat such notions as epiphenomenal ('*Vulcan hypothesis*'), as well as validation for the criticism towards attitude-based approaches expressed in the first section.

Moreover, every particle was found to alter the discourse behaviour of its host utterance, true to their name. With the proposed discourse effects it was still transparent how the respective attitudes arise as frequent inferences; that no single such notion has to be the necessary and sufficient condition for a particle's use, however, is an advantage of this discourse approach. We have taken the ban on *ja* in answers as indicator that the particle modifies its host utterance's interaction with the *QUD*, parallel to a proposal about non-restrictive relative clauses in the F&B model; a welcome reduction of superficially distinct phenomena if this parallelism turns out to be exact. Some form of epistemic justification for an imposed *CG* update is expected, but no single one is necessarily present in every utterance. The effect that *etwa* and *nicht* indicate a privileged answer to a polar question could be modelled using the *PS*. A polar question that has an unmarked default resolution in the negative or positive supersedes a definition of bias in terms of epistemic or bouletic attitudes. Such stances are predestined to inform biases but again do not represent the core contribution of these particles. If the current approach to (a subset of) German *dp*s is on the right track, investigating the speaker attitudes of typical contexts for a particle can only be descriptive work since one would otherwise conflate secondary effects with the *dp*'s actual contribution.

The modelling of *dp*s as speech act modifiers also makes it possible to propose an answer to the question what the allowed variation of the meaning of *dp*s is (the second motivation behind this article). If *dp*s can

only cause a single modification to the way speech acts affect the discourse components, their variation is significantly restricted due to the small number of these components, and their status as a small, closed class of elements follows naturally. This work focused on two components, the *Table* and *CG* that model the (non-)interaction with the *QUD* and the *PS* that captures default resolutions of speech acts. The particle *ja* encodes the marked version of the binary choice whether a move contributes a *QUD* (i.e. whether or not it interacts with the *Table*); the particles *etwa* and *nicht* each subtract one possible default resolution to an open polar question, realizing both options of the simplest form of variation in the *PS* for questions. Put differently, if one would have to formulate hypotheses about potential variation within these components for non-standard speech acts, the above effects would be natural examples.

Further research is required to determine which other particles can be described using the definitions proposed here, and which discourse components they interact with.

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