

Agree-relations of German Discourse Particles *ja* and *doch*

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Abstract

Die deutschen Modalpartikeln *ja* und *doch* haben folgende Eigenschaften: 1) sie drücken den Wissenszustand des Hörers aus, 2) sie sind optional, 3) sie sind sogenannte Hauptsatzphänomene (*Main Clause Phenomena*), und 4) sie nehmen Skopus über die gesamte eingebettete Proposition. Das Ziel dieser Arbeit ist es, zu diesen vier Eigenschaften der Modalpartikeln *ja* und *doch* in syntaktischer Hinsicht eine einheitliche Erklärung zu geben. Um dieses Ziel zu erreichen, werden in diesem Aufsatz drei Analyseansätze eingeführt: Sprechaktphrase (*Speech Act Phrase*, vgl. Speas & Tenny 2003 und Hill 2007), Merkmalsverteilung-Kongruenz (*Feature Sharing Agree*, s. Pesetsky & Torrego 2007), und Phasentheorie (*Phase Theory*, s. Chomsky 2000, 2001, und 2008). Mithilfe dieser drei Analyseansätze schlage ich Kongruenzrelationen zwischen Modalpartikeln, ForceP, und Sprechaktphrase vor, mit denen sich die Eigenschaften der Modalpartikeln *ja* und *doch* erklären lassen.

Key Words: German discourse particles, Speech Act Phrase, Feature Sharing Agree, Phase

1. Introduction

The German discourse particles (in German, *Modalpartikeln*) *ja* and *doch* express the knowledge state of the hearer. In other words, whether these expressions are felicitous depends on the knowledge state of the hearer. The particle *ja* expresses that the propositional content modified by *ja* is already a part of the knowledge of the hearer, and *doch* expresses that the hearer forgets the propositional content modified by *doch* (cf. Thurmair 1989, Zimmerman 2011, Repp 2013, and among many others). This nature of *ja* and *doch* can be observed in discourses (1)–(4).

(1) First brother to second brother:

Morgen wird Mama **ja** siebzig.

Tomorrow turns mum ja seventy

‘Mum turns 70 tomorrow, y’know.’

(2) Q: Who won?

A: #Peter hat **ja** gewonnen.
Peter has ja won
'Peter has won, y'know.'

(3) A: Mary went to the club.

B: Nein, Maria ist **doch** zu Hause.
No Mary is doch at home
'But Mary is at home.'

(4) A: I'm off, even if there's beer.

B: #Du gehst? Es gibt **doch** Bier.
you go there.is doch beer
'You're off? But there's beer.'

(Zimmermann 2011: 2016ff)

In (1), the particle *ja* is felicitous because the speaker's brother must know when their mother's birthday is, while (2) is infelicitous because Speaker A expects that Hearer Q does not know that Peter won. In (3), *doch* is allowed because Speaker B has a good reason to believe that Hearer A has forgotten that Maria is at home, while (4) is bad because Speaker B can infer that Hearer A has not forgotten that there is beer.

The German discourse particles are optional. In other words, the absence of the particles never leads to ungrammaticality. On the other hand, syntactic environments (as well as discourse contexts) in which the particles can appear are limited. The particles are so-called main clause phenomena (cf. Frey 2012) and some subordinate clauses do not allow the particles to appear inside them.

(5) Peter wird kommen, **sobald** es {*ja / *doch} Clara erlaubt.
Peter will come as-soon-as it ja doch Clara allows

(6) Sie versuchte, den Zug {*ja / *doch} nicht zu verpassen.
she tried the train ja doch not to miss

The data shows that the particles cannot appear in the adverbial clause introduced by *sobald* 'as soon as' (5) nor in the infinitival clause embedded by *versuchen* 'try' (6).

However, there are subordinate clauses that allow the particles to appear inside them. In (7), the particle *ja* (7a) and *doch* (7b) are observed inside adverbial clauses. As shown in (8), the particles can also appear in the clauses embedded by *sagen* ‘say.’

(7) a. Er hat die Prüfung nicht bestanden, trotzdem er **ja** recht intelligent ist.

he has the exam not passed though he ja right intelligent is

b. Max könnte etwas hilfbereiter sein, da wir ihn **doch** höflich gefragt haben.

Max could a-little more-helpful be since we him doch politely asked have

(Frey 2012: 411)

(8) a. Webster sagte, dass er **ja** niemanden gekannt habe.

Webster said that he ja nobody known have.CONJ

(Kratzer 1999: 6)

b. Meine Freundin sagte mir, dass es **doch** cool wäre, jetzt schwanger zu werden,...

my girlfriend said me that it doch cool is.CONJ now pregnant to become

(<http://www.emma.de/artikel/das-recht-auf-abtreibung-306344>)

In these cases, the particle takes scope over the subordinate proposition. In (7a), the hearer of this sentence is expected to know that the man who is talked about is really intelligent. The speaker of (7b) believes that the hearer forgets that they have asked Max politely. The particles in (8) are more complicated. In (8a), the hearer of Webster’s utterance, not the hearer of the whole utterance (8a), was expected to know that Webster had known nobody. In other words, the particle *ja* does not express the knowledge state of the speaker’s hearer, but expresses the knowledge state of Webster’s hearer. This is also the case in (8b), where the particle *doch* expresses the knowledge state of the matrix-subject’s hearer, namely, the boyfriend of the matrix-subject, who is the reporter of the sentence in this example. At the time of saying event, the reporter’s girlfriend believed that her boyfriend (the reporter of this sentence) had forgotten that being pregnant then would be cool.

The nature of the German discourse particles *ja* and *doch* that we observed in this section can be summarized as follows: (i) they express the knowledge state of the hearer, (ii) they are optional, (iii) they are so-called main clause phenomena, and (iv) they take scope over the subordinate proposition. The goal of this paper is to propose a syntactic analysis that can give a unified account for these four properties of *ja* and *doch*.

In order to achieve this goal, the next section introduces three pieces of analysis, namely, *Speech Act Phrase* (cf. Speas & Tenny 2003 and Hill 2007), *Feature Sharing Agree* (cf. Pesetsky & Torrego 2007) and *Phase Theory* (cf. Chomsky 2000, 2001 and 2008). By adopting these

frameworks, section 3 investigates the structures of German subordinate clauses and section 4 proposes the Agree-relations between German discourse particles *ja* and *doch*, ForceP, and *Speech Act Phrase*. These Agree-relations explain why the particles have the properties we have observed. Section 5 comprises the conclusion.

2. The frameworks

2.1 Speech Act Phrase

Speas & Tenny (2003) propose *Speech Act Phrase* in analogy with Larsonian VP-shell (cf. Larson 1988). By observing the behavior of speaker-oriented adverbs, binding phenomena and pronominal systems, Speas & Tenny suggest that a speech-act field exists above CP. According to them, the speaker is the agent of the speech act, the utterance content is its theme, and the hearer is its goal. The representation of *Speech Act Phrase* proposed by Speas & Tenny is illustrated in (9).

(9) [_{SAP}[_{Spec-SAP} SPEAKER] [SA] [_{saP}[_{Spec-saP} UTTERANCE CONTENT] [sa][HEARER]]]

Speas & Tenny's (2003) primary intention is to map the speaker and hearer onto the syntactic structure. Following this idea, Hill (2007) observes the word order of exclamative phrases (e.g. *oh* in English), vocative phrases and discourse particles in Romanian, Bulgarian and Umbundu (a tonal Bantu language spoken in Angola), and claims that the *Speech Act Phrase* represents the structure as in (10).

(10) [_{SAP}[_{Spec-SAP} SPEAKER] [SA] [_{saP}[_{Spec-saP} HEARER] [sa][ForceP]]]

Hill (2007) assumes exclamative phrases such as *oh* in English as a phonological realization of the SPEAKER in (10), because such phrases convey the speaker's state of mind and his/her perspective on the event or state. In Romanian, for example, an exclamative phrase *obeie* or *aoleu* convey a speaker's commiseration and/or complaint and *vai* conveys concern or panic (Hill 2007: 2080). Hill further assumes vocative phrases as a phonological realization of the HEARER in (10), because such phrases refer to the hearer. Romanian has a discourse particle *hai*, which is used as a speech act marker when the speaker wants to influence the hearer's reaction through injunction or evidentiality (ibid: 2091). Hill claims that this particle is the head of saP in (10), giving various evidence for that (e.g. this particle selects only ForceP for its complement.).

The representation in (10) accounts for the restrictions of the word order of exclamative phrases, vocative phrases, and the discourse particle *hai* in Romanian. The exclamative phrases are never preceded by the vocative phrases (11a) and the discourse particle *hai* is never followed

by exclamative phrases (11b).

(11) a. (Vai), măi Dane, (*vai), unde te duci?

oh you Dan.VOC oh where REFL go-2SG

‘Oh, Dan, where are you going?’

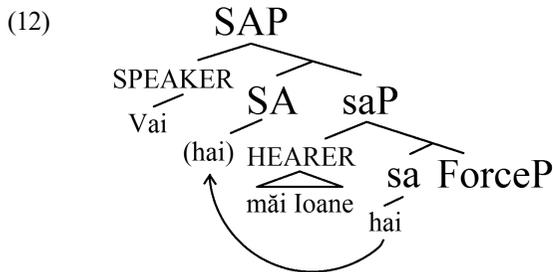
b. (*hai) Vai, (hai) măi Ioane, (hai) că nu te crede nimeni!

hai oh hai you Ion.VOC hai that not you believes nobody

‘My god, Ion, give it up, nobody believes you!’

(Hill 2007: 2099)

The particle *hai* can precede the vocative phrase (11b). According to Hill (2007), this is a result of (optional) head movement of *hai* from the sa-head to SA-head. The structure of the speech-act field of (11b) is illustrated in (12).



Though German has no such particle as *hai* in Romanian, the same restrictions of word order of exclamative phrases and vocative phrases are observed, as in (13). The typical examples of German exclamative phrases are *ach*, *hui*, *tja*, *pfui*, and among many others. *Ach* conveys a speaker’s surprise or pain, *hui* conveys pleasure and/or surprise, *tja* conveys concern or resignation, and *pfui* conveys unpleasantness or indignation.

(13) a. (Hui), Peter, (*hui) du bist aber groß geworden!

wow Peter wow you are but tall become

b. (Tja), Maria, (*tja) das ist das Leben.

oh Maria oh that is the life

As shown in (13), exclamative phrases are never preceded by vocative phrases also in German, which suggests that German has *Speech Act Phrase*, too. This paper adopts Hill’s version of *Speech Act Phrase* (10) and assumes that main clauses always have SAP and saP even if they are

not phonologically realized, following Speas & Tenny (2003), Hill (2007), and Miyagawa (2012).

2.2 Feature Sharing Agree

Feature Sharing Agree is a mechanism of Agree proposed by Pesetsky & Torrego (2007). In the framework of Chomsky (2000, 2001), two sorts of features are assumed: interpretable valued features and uninterpretable unvalued features, as shown in (14). Chomsky (2001) formulates this assumption as in (15) and the mechanism of Agree devised by Chomsky is illustrated in (16).

(14) $iF [val]$: interpretable, valued $uF []$: uninterpretable, unvalued

(15) A feature F is uninterpretable iff F is unvalued.

(Chomsky 2001: 5)

(16) Agree (Assignment version; following Chomsky 2000, 2001)

- (i) An unvalued feature F (a probe) on a head H scans its c-command domain for another instance of F (a goal) with which to agree.
- (ii) If the goal has a value, its value is assigned as the value of the probe.

On the other hand, Pesetsky & Torrego (2007) assume four sorts of features, which are shown in (17). The bold-faced ‘uninterpretable valued features’ and ‘interpretable unvalued features’ are disallowed in the framework of Chomsky.

(17) $uF \text{ val} : \text{uninterpretable, valued}$ $iF \text{ val} : \text{interpretable, valued}$
 $uF [] : \text{uninterpretable, unvalued}$ $iF [] : \text{interpretable, unvalued}$

(Pesetsky & Torrego 2007: 269)

Assuming these four features, Pesetsky & Torrego (2007) propose *Feature Sharing Agree*, as formulated in (18).

(18) Agree (Feature sharing version)

- (i) An unvalued feature F (a probe) on a head H at syntactic location α ($F\alpha$) scans its c-command domain for another instance of F (a goal) at location β ($F\beta$) with which to agree.
- (ii) Replace $F\alpha$ with $F\beta$, so that the same feature is present in both locations.

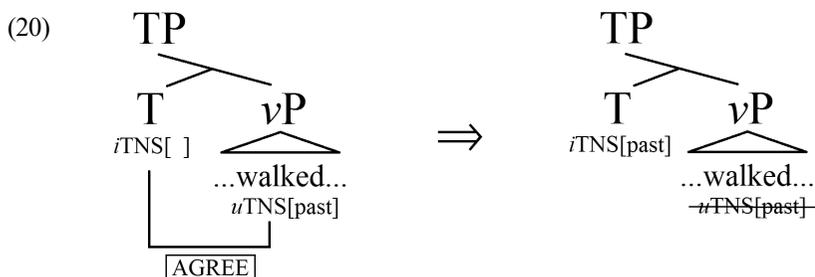
(Pesetsky & Torrego 2007: 268)

The essential difference from Chomsky’s framework is that this system enables a probe to turn into a goal, unless the feature of the probe is deleted. As for the deletion of uninterpretable features, Pesetsky & Torrego (2007) adopt Chomsky’s (2000, 2001) view (19).

(19) Once an uninterpretable feature agrees with its counterpart, it can and must delete.

According to Pesetsky & Torrego, the syntax identifies the features as probes not because they are uninterpretable, but because they are unvalued. In other words, the valuation is the request from the syntax. Conversely, the deletion of uninterpretable features is the request from the semantics. If the uninterpretable features are sent to the semantics without being deleted, the derivation crashes because the uninterpretable features are illegible to the semantics. These assumptions lead to an interesting conclusion, which Pesetsky & Torrego (2007) fail to mention. Namely, the interpretable unvalued features (iF []) do not lead to ungrammaticality, even if they remain unvalued until the end of the derivation. Since those features are (inherently) legible to the semantics, the derivation does not crash even if they are sent to the semantics without being valued. This point plays a crucial role when we analyze the German discourse particles in section 4.

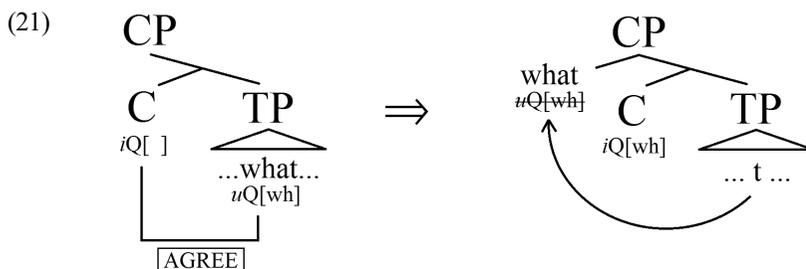
Before progressing to the next subsection, the phenomena that can be analyzed with *Feature Sharing Agree* are introduced. The first example is the interpretation of tense. In the literature, there is a consensus that the locus of tense interpretation is a distinct T node (e.g. von Stechow 2005, Giorgi 2010, and among many others). Consequently, we can assume that T has an interpretable tense feature, while the finite verb bears the morphology that makes tense distinctions. This relationship between T and the finite verb is captured through the Agree-relation illustrated in (20).



The interpretable unvalued tense feature ($iTNS[]$) is a probe, solely because it is unvalued. The feature $iTNS[]$ searches its counterpart and finds *walked*, which has an uninterpretable valued tense feature ($uTNS[past]$). As a result, an Agree-relation is established and the interpretable

unvalued tense feature ($iTNS[]$) at T is valued, while the uninterpretable valued feature ($uTNS[past]$) at *walked* is deleted. The interpretation of past tense is due to the interpretable valued tense feature ($iTNS[past]$) at T.

The second example is the interpretation of interrogative clauses. The locus of the mood interpretation is a distinct C node (cf. Truckenbrodt 2006 and Gallego 2007). As in the case of T, we can assume that C has an interpretable mood feature. Under this assumption, the wh-movement can be analyzed as in (21).



In (21), the interpretable unvalued question feature ($iQ[]$) has an EPP property and attracts the wh-phrase.¹ After the Agree-operation, the interpretable question feature at C is valued as [wh], while the uninterpretable question feature at the wh-phrase is deleted. If there is no wh-phrase in the clause, the interpretable unvalued question feature ($iQ[]$) cannot be valued as [wh] and remains unvalued. In this case, the clause is interpreted (not as wh-question but) as a yes/no question as default.²

2.3 Phase Theory

Space restrictions do not permit a description of the entire sketch of *Phase Theory* (cf. Chomsky 2000, 2001, and 2008). Instead, this subsection introduces *Phase Impenetrability Condition* (PIC), which plays a crucial role in our analysis of the German discourse particles in section 4. The formulation of PIC by Chomsky (2000) is (22).

(22) Phase Impenetrability Condition (PIC)

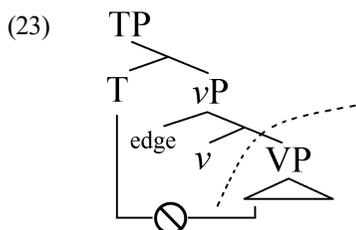
In a phase α with head H, the domain of H is not accessible to operations outside α , only H and its edge are accessible to such operations.

(Chomsky 2000: 108)

Chomsky (2001: 13) proposes a different (and complicated) version of PIC, but this paper adopts PIC in (22) in order to simplify the discussion, because both PICs make the same prediction

regarding our analysis.

Chomsky (2000, 2001, and 2008) defines vP and CP as Phases. As for vP , for example, the complement of v is not accessible from the outside of vP . Only v and its specifier (edge) are accessible, and T cannot agree with any element in VP. This is illustrated in (23).



In this paper, we adopt split-CP hypothesis devised by Rizzi (1997) and define vP and ForceP as Phases, following Authier (2013).

This section has introduced three pieces of analysis, namely, *Speech Act Phrase*, *Feature Sharing Agree*, and *Phase Theory*. These three devices are essential for our analysis of the German discourse particles in section 4.

3. The structures of German subordinate clauses

Before we analyze the German discourse particles, this section investigates the structures of German subordinate clauses in order to treat the particles in subordinate clauses.

Frey (2012) investigates German adverbial clauses and claims that some adverbial clauses have ForceP, while others do not. According to Frey (2012), German adverbial clauses with ForceP do not allow pronouns in the clause to be bound by a quantifier outside the clause (24b), cannot come into the scope of negation (25b) or question (26b), are not compatible with a main clause without sentence accent (27b), and are unable to be used as an answer to a question (28b). Conversely, these are all possible for the clauses without ForceP (24a)–(28a). Frey suggests that these differences can be attributed to the nature of ForceP of the adverbial clauses, whose domain is not c-commanded by the element in the TP of the main clause.

- (24) a. Kein Linguist_i sollte Bier trinken, **wenn** er_i Durst hat.
 no linguist should beer drink when he thirsty is (no ForceP)
- b. *Kein Kollege_i wirkt richtig erholt, **obwohl** er_i lange im Urlaub war.
 no colleague appears really recovered although he long on holiday was
 (with ForceP)

- (25) a. Peter wird nicht kommen, **sobald** er kann, sondern **sobald** es Clara erlaubt.
 Peter will not come as-soon-as he can but as-soon-as it Clara allows
 (no ForceP)
- b. *Peter wird nicht kommen, **obwohl** er arbeiten muss, sondern **obwohl** er schlafen sollte.
 Peter will not come though he work must but though he sleep should
 (with ForceP)
- (26) a. Geht Peter nach Hause, **weil** er müde ist?
 goes Peter to house because he tired is (no ForceP)
- b. *Geht Peter nach Hause, **da** er müde ist?
 goes Peter to house for he tired is (with ForceP)
- (27) a. Peter fährt nach Paris, **weil** er dort eine KonfeRENZ besucht.
 Peter goes to Paris because he there a conference visits (no ForceP)
- b. #Peter fährt nach Paris, **da** er dort eine KonfeRENZ besucht.
 Peter goes to Paris since he there a conference visits (with ForceP)
- (28) Warum bleibt Hans zu Hause?
 why stays Hans at house
- a. **Weil** seine Frau krank ist.
 because his wife sick is (no ForceP)
- b. ***Da** seine Frau krank ist.
 since his wife sick is (with ForceP)
- (Frey 2012: 407ff)

When we apply these tests to German complement clauses, their behavior is the same as the adverbial clauses **without** ForceP (29a–e). In other words, German complement clauses allow pronouns in the clause to be bound by a quantifier outside the clause (29a), can come into the scope of negation (29b) and question (29c), are compatible with a main clause without sentence accent (29d) and are able to be used as an answer to a question (29e).

- (29) a. Kein_i Kollege denkt, dass er_i richtig erholt ist.
 no colleague thinks that he really recovered is
- b. Er hat nicht gedacht, dass er arbeiten muss, sondern dass er schlafen soll.
 he has not thought that he work must but that he sleep should

- c. Sagte Peter, dass er müde ist?
 said Peter that he tired is
- d. Maria sagte, dass sie eine Konferenz besucht habe.
 Maria said that she a conference visited have.CONJ
- e. Was würdest du in diesem Fall glauben?—Dass Fritz gelogen hätte.
 What will.CONJ you in this case believe that Fritz lied have.CONJ

However, we should not conclude that German complement clauses have no ForceP. In the literature, ForceP is assumed to be the locus of a mood feature (cf. Rizzi 1997 and Authier 2013). In (29d), the mood of the complement clause is conjunctive, while the main clause is declarative. This suggests that the complement clause has own ForceP with a distinct mood feature.

When German complement clauses have ForceP, what functional phrase makes the (b) examples in (24)–(28) bad? It must not be ForceP, since the examples in (29) are all grammatical. A likely candidate is SAP, which was introduced in section 2. We can assume that the adverbial clauses in (a) examples in (24)–(28) or the complement clauses (29a–e) do not have SAP, while the adverbial clauses in (b) examples in (24)–(28) have SAP. Because a speech act introduces a new discourse structure (cf. Kamp & Reyle 1993), the items in SAP cannot be bound by the quantifier in another SAP (24b), each SAP must have sentence accent (27b), and SAP cannot be used as an answer (28b). SAP cannot come into the scope of negation (25b), because a speech act cannot be negated. The reason why SAP cannot be a part of a question (26b) is that SAP has own speech act and must be distinct from the speech act of the main clause.

When we are on the right track, the structure of a complement clause is (30a). For ease of comparison, (30b) illustrates the structure of the adverbial clauses in (b) examples in (24)–(28).

- (30) a. [saP [Spec-saP HEARER] [sa][ForceP]]
 b. [SAP [Spec-SAP SPEAKER] [SA] [saP [Spec-saP HEARER] [sa][ForceP]]]

(30a) assumes the presence of saP and HEARER in the complement clauses. At first sight, it is problematic for this assumption that German complement clauses are incompatible with vocative phrases (31).

- (31) Peter sagte zu Maria, [(**Maria,*) dass er niemanden gekannt habe].
 Peter said to Maria Maria that he nobody known have.CONJ

However, the unavailability of vocative phrases is not attributed to the absence of saP, but to the

absence of SAP. The vocative Case of HEARER is checked through the Agree-relation (i.e. probe-goal relation) between the SA-head and HEARER.³ When there is no SAP, the HEARER cannot have its Case checked; therefore, the HEARER cannot be realized overtly.

On the other hand, an adverbial clause with SAP is compatible with exclamative phrases and vocative phrases (32b), while the adverbial clause without SAP is not (32a). This difference is expected when we assume that the exclamative phrase is the overt SPEAKER and that the vocative phrase is the overt HEARER, as in section 2.

- (32) a. *Peter wird kommen: Ach, (Maria,) **sobald** es Clara erlaubt.
 Peter will come oh Maria as-soon-as it Clara allows
 b. (?)Peter wird kommen: Ach, (Maria,) **obwohl** er krank ist.
 Peter will come oh Maria though he sick is

Last but not least, this section further discusses the structure of adverbial clauses that have no SAP. We saw that the absence of SAP, not ForceP, allows the (a) examples in (24)-(28) to be grammatical. Can we then maintain Frey's original claim, which suggests that the adverbial clauses in (a) examples in (24)-(28) have no ForceP? The answer is yes, because such adverbial clauses cannot have their own sentence mood distinct from main clauses (33a). Conversely, the adverbial clauses with SAP (and ForceP) can have its own sentence mood (33b).

- (33) a. Peter **wird** kommen, **sobald** es Clara {**erlaubt** / ***erlaube**}.
 Peter will come as-soon-as it Clara allows allow.CONJ
 b. Cedo Margetic **will** den Fang gar nicht an die grosse Glocke hängen,
 Cedo Margetic wants the quarry really not on the big bell hang.INF
obwohl er natürlich stolz **sei**.
 though he of-course proud be.CONJ

(A12/JUN.11192 St. Galler Tagblatt, 25.06.2012, S. 36; Der grosse Fang)⁴

In (33), the main clauses are in the indicative mood. The adverbial clause in (33b) is in the conjunctive mood, while the adverbial clause in (33a) in conjunctive mood leads to ungrammaticality. This suggests that the adverbial clause in (33a) has no ForceP and its sentence mood is dependent on the ForceP of the main clause.

The discussion of this section is summarized as follows. The adverbial clauses in (b) examples in (24)-(28) have full-fledged structures: SAP, saP and ForceP. The complement clauses lack SAP, but have saP and ForceP. The adverbial clauses in (a) examples in (24)-(28) do not

have SAP, saP nor ForceP (i.e. they have “reduced CPs” in terms of Haegeman 2006).

4. Analysis—the Agree-relations of the discourse particles

Based on the structures suggested in section 3, this section proposes Agree-relations of German discourse particles, which can explain the nature of *ja* and *doch*.

As mentioned in section 1, the particle *ja* expresses that the propositional content modified by *ja* is already a part of the knowledge of the hearer, and *doch* expresses that the hearer forgets the propositional content modified by *doch*. Adopting *Feature Sharing Agree*, I assume that the particles *ja* and *doch* have uninterpretable valued knowledge-state features like (34) respectively.

(34) *ja*: $uK[\text{know}]$ *doch*: $uK[\text{forget}]$

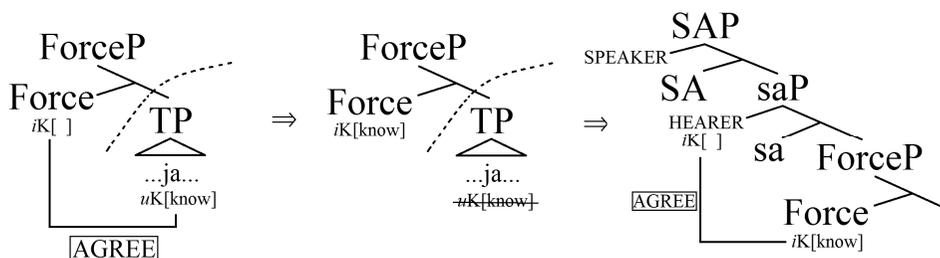
Coniglio (2011) suggests that the German discourse particles agree with a Force-head. In order to implement his idea under our framework, I further assume that a Force-head has an interpretable unvalued knowledge-state feature (35). The same feature is assumed in the HEARER, as in (36).⁵

(35) Force: $iK[]$

(36) HEARER: $iK[]$

Under these assumptions, the derivation of a main clause with a particle *ja* proceeds as in (37). The Force-head agrees with *ja* and is valued as $iK[\text{know}]$, while the uninterpretable feature $uK[\text{know}]$ at *ja* is deleted. Subsequently, the HEARER agrees with Force and is valued as $iK[\text{know}]$. As a result, it is interpreted that the proposition is already a part of the knowledge of the hearer. Intuitively, the Agree-operation between Force and *ja* establishes an implication that the proposition of ForceP is known by someone, and the Agree-operation between Force and HEARER specifies who he/she is.

(37)



When the particle appears inside a complement clause (38), the derivation is shown in (39). In (38), *ja* expresses that the proposition of the complement clause is a part of the knowledge of Maria. In this case, the SPEAKER in (39) is Georg, the HEARER₁ is Hanna, and the HEARER₂ is Maria. Neither Force₁ of the main clause nor the HEARER₁ (Hanna) can agree with the HEARER₂ (Maria) due to the vP-Phase of the main clause. As a result, it is interpreted that the complement proposition is a part of the knowledge of Maria. The features at the HEARER₁ and Force₁ remain unvalued but never lead to ungrammaticality, since the features are interpretable and do not make the derivation crash (cf. the discussion in section 2.2).⁶

(38) Context: Georg heard Peter tell Maria that he knew nobody as she expected.

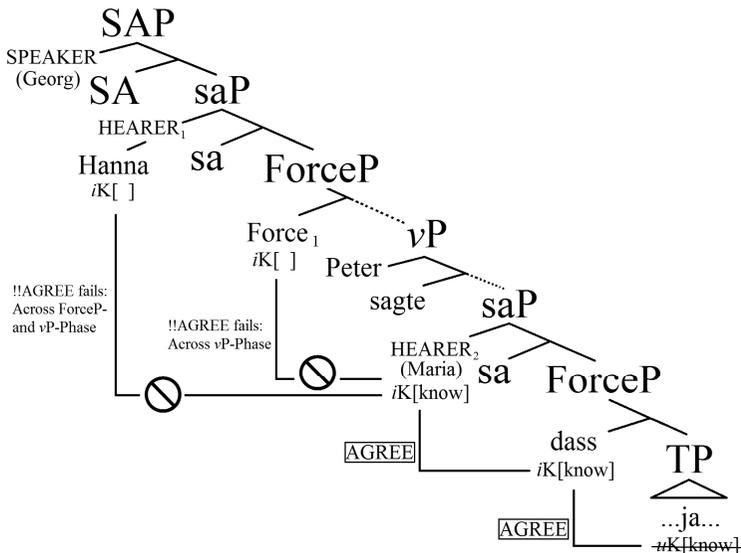
Georg reports to Hanna:

Hanna, Peter sagte (zu Maria), dass er **ja** niemanden gekannt habe.

Hanna Peter said to Maria that he ja nobody known have.CONJ

‘Hey, Hanna, Peter said, “I knew nobody, y’know,” to Maria.’

(39) (Matrix TP and VP omit for reasons of space.)



The analysis proposed in this section accounts for the four properties of the German discourse particles *ja* and *doch* that we noted in the first section: (i) they express the knowledge state of the hearer, (ii) they are optional, (iii) they are main clause phenomena, and (iv) they take scope over the subordinate proposition. The reason for (i) is that the knowledge-state feature of the particle ($iK[val]$) values the feature of the HEARER at Spec-saP ($iK[]$) as a result of *Feature Sharing Agree*. (ii) The particles are optional (i.e. their absence never leads to

ungrammaticality), because the features at the HEARER and Force that agree with the particles are interpretable features ($iK[]$), which do not make the derivation crash even if there is no particle for them to agree with. (iii) The particles are main clause phenomena, because their uninterpretable features ($uK[val]$) cannot be deleted if there is no Force to agree with. This means that the particles cannot appear in the clauses that have no ForceP. In section 1, we observed that the subordinate clauses such as (40) and (41) do not allow the particles to appear inside them.

(40) Peter wird kommen, sobald es {*ja / *doch} Clara erlaubt.

Peter will come as-soon-as it ja doch Clara allows

(41) Sie versuchte, [den Zug {*ja / *doch} nicht zu verpassen].

she tried the train ja doch not to miss

The adverbial clause in (40) does not have ForceP (cf. the discussion in section 3) and thus the particles make the derivation crash, because their uninterpretable features cannot be deleted. The Force of the main clause is not accessible to the particle due to the vP -Phase of the main clause. The particles cannot appear in (41) for the same reason. As indicated by Inaba (2007: 59ff) and Wurmbrand (2014: 282ff), the infinitival clause embedded by *versuchen* ‘try’ has only VP or at most vP .⁷ Therefore, the particles in (41) have no accessible Force to agree with and their uninterpretable features make the derivation crash. Lastly, (iv) the particles take scope over the subordinate proposition, because the uninterpretable feature at the particle is deleted and its value is interpreted at (the HEARER and) Force which immediately dominates the subordinate TP-proposition. In terms of semantics, the composition of the meaning of the particle and the proposition is done at the subordinate ForceP (and saP).

5. Conclusion

This paper investigated the German discourse particles *ja* and *doch* and showed that their intricate nature can be attributed to $uK[val]$ (the uninterpretable valued knowledge-state features) at the particles and their Agree-relations. Although German discourse particles seem to be targets of semantic and pragmatic theory, this paper has shown that they can be analyzed within the framework of syntactic theory when we adopt *Speech Act Phrase, Feature Sharing Agree* and *Phase Theory*. The result of this paper suggests that syntactic theory has the potential to clarify not only pure syntactic phenomena but also (apparent) semantic and pragmatic ones.

Notes

- ¹ In the framework of Chomsky (2000, 2001 and 2008), the question feature is uninterpretable and deleted after the Agree-operation. This analysis is unable to explain why the clause is interpreted as a question.
- ² The interpretation of a yes/no question as default is not claimed by Pesetsky & Torrego (2007), as they do not mention anything about unvalued features' remaining and being sent to the semantics.
- ³ Hill (2007) suggests that the vocative Case is checked through the spec-head relation between the HEARER and sa-head. However, such a checking system cannot be implemented under the current framework of Minimalism (cf. Pesetsky & Torrego 2007; Chomsky 2000, 2001, and 2008).
- ⁴ The data (33b) is from COSMAS II, a German corpus system that is designed and managed by the Institute of German Language (in German: *Institut für Deutsche Sprache*).
- ⁵ An important question is why such a knowledge-state feature is absent at the SPEAKER. We may attribute the reason for it to the existence of modal verbs. Namely, the language system can express the speaker's knowledge state through modal verbs and thus does not need such features at the SPEAKER.
- ⁶ One might ask how *iK[]* will be interpreted when it is sent to the semantics without being valued. In section 2.2, we note that the interpretable question feature (*iQ[]*) is interpreted as a yes/no question as default. The default value of *iK[]* may be assumed as [ignorant] when the clause is declarative, because a canonical declarative clause adds a new proposition to the knowledge of the hearer (cf. Stalnaker 1978).
- ⁷ Wurmbrand (2014) proposes a special *vP* that cannot select a subject nor assign the accusative Case for the infinitival clause embedded by *versuchen* 'try.'

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