DISCOURSE PARTICLES IN RESPONSES*

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1 Introduction

The influence of discourse particles on speech acts has been the subject of much previous work (see e.g., Jacobs, 1991, or Waltereit, 2001). This paper is part of this line of research, and it aims to contribute to a deeper understanding of the mechanisms of this influence. Its focus will be on a particular instance of this influence, viz., the role of discourse particles in the interpretation of utterances as specific types of response, e.g., as denials, weak, or only partial assertions.

Discourse particles indicate the way in which their host utterance relates to its context. In this way, they mediate the integration of new information into the common ground, which is part of information structure (Krifka, 2008). One of the possibilities of relating the host utterance to the utterance context is by indicating the way in which the host utterance relates to another proposition which is salient in the context. Many discourse particles link their host utterance to this salient proposition in terms of causality. On the basis of this link, the host utterance is interpreted as a specific kind of response to this salient proposition, e.g., as a weak assertion or a denial.

This paper analyses this strategy via the example of German *schon*. Other German particles that lend themselves to an investigation in similar terms are *doch* (Meibauer, 1994; Grosz, 2010; Kaufmann and Kaufmann, 2012; Repp, 2013), *auch* (Karagjosova, 2004), and *eben/halt* (Hartog and Rüttenauer, 1982; Hentschel, 1986).

The particle *schon* is particularly challenging in this respect, because it appears in different response types, ranging from weak assertions to denials and denegations (refusals to perform a speech act). In addition, responses can be only partial, i.e., react to only a part of a proposition.

The paper will analyse how the meaning of the particle contributes to the emergence of these different response types, assuming a uniform semantic contribution of the particle (like in Karagjosova, 2004).

I will show how the different uses of *schon* emerge through the interaction of this semantic contribution with other phenomena. These phenomena include the meanings of the utterances

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linked by the particle, prosody, the common ground (Stalnaker, 1978), and general pragmatic principles (here, for ellipsis reconstruction).

In this way, one can account for a wide (but not yet exhaustive) range of uses of *schon* without having to assume ambiguity, unlike e.g. Franck (1980) or Gornik-Gerhardt (1981).

The paper is structured as follows. First the relevant data is presented in detail, showing the range of uses of *schon* in different kinds of responses (§2). Next, previous work on *schon* is discussed (§3), then the key notions of expectation and normality are defined, on which the basic interpretation of *schon* is based (§4). After defining the semantic contribution of *schon*, the derivation of the different uses of the particles is expounded in §5, and the paper closes with an outlook on further work (§6).

2 The Data: *schon* in Different Response Types

This section presents the data analysed and explained in the current paper. What this paper will not do is try and offer a complete account of the range of uses of *schon*. In particular, it will not include the uses of discourse particles in non-declarative sentences, but see Waltereit (2001) and Egg (2013) for analyses that capture these in straightforward extensions of the analyses offered for declarative sentences in the current paper.[1]

The common denominator of the uses of *schon* is that the particle never emerges in simple and unrestrained assertions. It can be used to signal a refusal to say 'yes' or 'no', to weaken an assertion, to assert or deny it only partially, or to negate it.

In (1), the response (1B) neither commits to nor denies (1A). Instead, it points out that something that would be a normal consequence of (1A) does not hold. Concretely, since A has not studied hard enough for the exam, failure should be the consequence, but B points out that this consequence will not hold, i.e., that A is going to pass the exam:

(1) A: *Ich habe nicht genug für die Prüfung gelernt.*
I have not enough for the exam learnt
'I haven't studied hard enough for the exam.'

B: *Du wirst es schon schaffen.*
you will it SCHON pass
'You will pass nevertheless.'

With accent, *schon* can be used to deny negated utterances. In these cases, the meaning of the particle's host sentence is p and the meaning of the utterance it reacts to is $\neg p$, as in (2):

(2) A: *Max ist nicht klug.*
Max is not clever
'Max is not clever.'

B: *Max ist SCHON klug.*↓
Max is SCHON clever
'Yes, he is.'[2]

[1] For instance, in many uses of discourse particles the particle links its host utterance to a felicity condition (Searle, 1969; Searle and Vanderveken, 1985) of a preceding utterance.

[2] In this paraphrase, the copula is accented. An alternative paraphrase would be "He is clever"; also with accent on the copula and with a falling intonation.

In such denials, *schon* does not express any form of unexpectedness. Moreover, the statement is not weakened in any way, which would be difficult to reconcile under an analysis in which weakness is hard-wired into the semantic contribution of *schon* (like e.g., the one of Zimmermann, 2017). This issue will be discussed further in §3. In this response, the sentence-final intonation is falling, which is indicated by a downward-pointing arrow (↓).

Accented *schon* can also signal weak assertion of affirmative utterances. Here the meanings of the host utterance of *schon* and of the utterance it reacts to are identical, as in (3). In such assertions, the sentence-final intonation is rising (↑):

(3) A: *Max ist klug.*
Max is clever
'Max is clever.'
B: *Max ist SCHON klug.* ↑
Max is SCHON clever
'He is, in a way.'

Subordinate clauses introduced by *aber* 'but' are highly typical for this weakly assertive usage, because they spell out why the assertion is only weak. For instance, B's response in (3) could be continued by pointing out that Max's cleverness does not show (even though this is a usual consequence of being clever). Due to the unexpected failure of this consequence, A's assertion is weak:

(4) A: *Max ist klug.*
Max is clever
'Max is clever.'
B: *Max ist SCHON klug,* ↑ *aber man merkt es nicht.*
Max is SCHON clever but one realizes it not
'He is, in a way, but it doesn't show.'

Such cases of denial and weak assertion are also attested for isolated accented *schon*. In reaction to affirmative sentences, the interpretation follows the pattern illustrated in (3). Consequently, (5) is interpreted exactly like (3), in particular, B's answer in (5) is equivalent to (3B). In such exchanges, too, there is a high frequency of subordinate *aber*-clauses following and explaining B's response.

(5) A: *Max ist klug.*
Max is clever
'Max is clever.'
B: *SCHON.* ↑ ≡ (3B)
SCHON
'He is, in a way.'

For isolated accented *schon* in reaction to negated sentences, however, the interpretation differs from the one in (2). Rather than denying the negated statement of A, it weakly affirms it. Thus, answer (6B) is not equivalent to the answer in (2). Also note also that its sentence-final intonation must be rising; (6B) cannot have a falling intonation:

(6) A: *Max ist nicht klug.*
Max is not clever

'Max is not clever.'

B: *SCHON*.↑≡ *Max* *ist* *SCHON* *nicht* *klug*.↑≢ (2B)
SCHON Max is SCHON not clever
'He is not, in a way.'

I.e., isolated *schon* in elliptical responses weakly asserts A's claims, irrespective of whether these are negated or not, in contrast to (2), where it denies A's claim.

Finally, consider another use of *schon* with gapping (Johnson, 2014), that can express both *partial assertions* of a negated utterance with a rising intonation, and *partial denials* with a falling intonation: A's claim about a kind is asserted/denied for a subkind only. For all other subkinds, the response is deliberately left open, which instantiates partial denegation.

(7) A: *Fett* *ist* *nicht* *gesund.*
fat is not healthy
'Fat is not healthy.'

B: *BUTter* *SCHON*.↓/↑
Butter SCHON
'But butter is.'/'Well, butter surely isn't.'

The use of *schon* in (7) is grounded in common ground knowledge: Speakers know that butter is a subkind of fat, and also subscribe to the expectation that properties of kinds are inherited by their subkinds.

3 Previous Work

The first approaches to *schon* like Franck (1980) or Gornik-Gerhardt (1981) analyse the different uses of the particle in terms of separate readings. Thurmair (1989) characterises the common ground of these uses as the introduction of a "semantic restriction". This intuition is compatible with the proposed analysis in that the latter introduces such restrictions in terms of a denial of expectation. At the same time, the proposed analysis will show that there are very different ways in which such a restriction emerges in the various uses of *schon*.

The analysis of Zimmermann (2017) follows the same approach as this paper in trying to identify a core meaning underlying the different uses of the particle. What is more, it tries to integrate the discourse particle *schon* and the temporal adverbial *schon* 'already' under one single core meaning, following Löbner's (1989) intuitions. The common ground between these two items is "phase quantification" in the sense of Löbner (1989, 1999): *Schon* introduces an ordered scale, in which a phase characterised by the negation of its argument p is followed by a phase characterised by p and localises the perspective or point of evaluation t_0 immediately after the change from $\neg p$ to p:

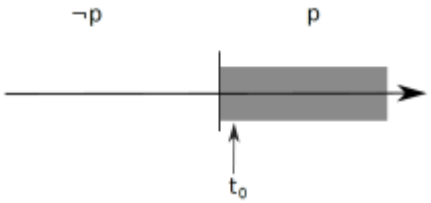

Figure 1. Phase quantification for *schon*

For the temporal adverbial, the scale is temporal, and t_0 is the evaluation time (typically, the moment of utterance). But then the sole difference between the temporal and the discourse particle use of *schon* is the scale: For the discourse particle, the scale is one of assertability.

In this way, Zimmermann (2017) wants to formalise the notion of weak assertion. Statements are not just true or untrue, they might convey different degrees of assertability, and the effect of *schon* is that the statement just barely met the threshold of being assertable. Formally, there must be more facts supporting *p* than there are facts that support $\neg p$ (according to an evaluation agency x)[3], which is rendered as "$\neg p \leq_{\mathrm{EVAL},x} p$". In this definition, "$MB_{\mathrm{CIRC},x}$" refers to a circumstantial modal base for an evaluating agency *x* in the sense of Kratzer (2012):[4]

(8) [[*schon* p]] (according to *x*) is defined if $\neg p \leq_{\mathrm{EVAL},x} p$
- $\neg p \leq_{\mathrm{EVAL},x} p = 1$ iff
$|\{q \mid q \in MB_{\mathrm{CIRC},x} \wedge q \text{ supports } \neg p\}| \leq |\{p \mid q \in MB_{\mathrm{CIRC},x} \wedge q \text{ supports } p\}|$
- if defined, [[*schon* p]] = [[p]]

This analysis considers *schon*-sentences to be weak assertions (but only under the additional assumption that the set of facts supporting $\neg p$ is not empty). Consequently, it could be directly used to analyse (3), repeated here as (9):

(9) A: *Max ist klug.*
Max is clever
'Max is clever.'
B: *Max ist SCHON klug.* ↑
Max is SCHON clever
'He is, in a way.'

But if the weakness of the assertion is hard-wired into the meaning of *schon*, how can the contrastive negating use *schon* as in (2), repeated here as (10), be derived, where there is no such weakness? This use, as illustrated in B's reply, does not refer to negative facts (those supporting $\neg p$) at all:

(10) A: *Max ist nicht klug.*
Max is not clever
'Max is not clever.'
B: *Max ist SCHON klug.* ↓
Max is SCHON clever
'Yes, he is.'

An empty set of negative facts would be compatible with Zimmermann's (2017) original analysis (in which $|\{q \mid q \in MB_{\mathrm{CIRC},x} \wedge q \text{ supports } \neg p\}|$ could be zero). However, this would raise the question of how to derive the weak assertions in examples like (9), as discussed above.

Second, the issue of granularity remains unsolved, which surfaces for instance in example (1), repeated below as (11).

[3] The evaluation agency would be equated with the speaker in the examples discussed in this paper. See Zimmermann (2017) for additional possibilities.

[4] Circumstantial modal bases only comprise a relevant subset of the available facts; here, those that are conditions for either *p* or $\neg p$.

(11) A: *Ich habe nicht genug für die Prüfung gelernt.*
I have not enough for the exam learnt
'I haven't studied hard enough for the exam.'
B: *Du wirst es schon schaffen.*
you will it SCHON pass
'You will pass nevertheless.'

To apply the definition in (8), facts in favour of and against B's passing the exam must be counted. But how many facts are there for e.g. the negative evidence $\{q \mid q \in MB_{\text{CIRC},x} \wedge q \text{ supports } \neg p\}$ in (11), if the exam was about European warfare 1800-1815? Two possible candidates are given in (12):

(12) a. {'A did not study the Napoleonic Wars sufficiently.'}
b. {'A did not study the War of the 2nd Coalition sufficiently,' 'A did not study the War of the 3rd Coalition sufficiently,' …'A did not study the War of the 7th Coalition sufficiently,' 'A did not study the invasion of Russia sufficiently.'}

A related issue pertains to the question of weights. Facts must be weighed, because one very serious piece of negative evidence can outweigh many positive items. For instance, in (11), a serious case of stage fright might outweigh many positive facts like having prepared the exam diligently, the examiners being very supportive, etc. See Zimmermann (2017) for a discussion of how to integrate weights into his analysis.

Still, the analysis of Zimmermann (2017) is more general than the one proposed in this paper in that it offers an integrated analysis of the discourse particle *schon* and the temporal adverbial *schon* 'already'. This integration in the framework of the proposed analysis will be the task of further research.

4 Normality, Expectation, and the Semantic Contribution of *schon*

This section discusses the underlying notions of normality and expectation and the concrete semantic contribution of *schon*.

4.1 Normality and Expectation

In this section, the notions of normality and expectation will be defined. First, defeasible implicature ">" is used to model normality:

(13) $q > p$ holds for a world w if $*(q,w) \subseteq p$ (i.e., if $\forall w'.\ *(q,w)(w') \rightarrow p(w')$)

In (13), "$*(q,w)$" refers to the q-normal worlds, in which not only q but also the usual consequences of q (according to world w) hold (Reiter 1980). Thus, the definition says that q defeasibly entails p if p is a usual consequence of q. In particular, q is a usual consequence of itself ($*(q,w) \subseteq q$), i.e., defeasible implicature is factive, including q as a consequence in q-normal worlds. Defeasible modus ponens then models expectation as (cancellable) conclusion from q and $q > p$ to p.

At this point, it seems relevant to discuss the question of whether the expression in (14) can be interpreted, following up on the discussion of Egg (2013), Repp (2013), and Zimmermann (2017):

(14) $q > \neg q$

Due to factivity of defeasible implicature, assuming (14) for a world w would mean that both $*(q, w) \subseteq q$ and $*(q, w) \subseteq \neg q$ hold, which would entail that $*(q, w) = \emptyset$. I.e., if (14) holds for w, this means that there are no q-normal worlds (according to w) whatsoever (in other words, that it is impossible for q and all its usual consequences to be true simultaneously). In sum, the expression in (14) is indeed interpretable. However, (14) emerges as a rather strong statement, which will make it unsuitable for the modelling of the semantic contribution of *schon*, which will be discussed in the second part of this section.

4.2 The Semantic Contribution of *schon*

On the basis of modelling normality and expectation, it is now possible to offer a definition of the semantic contribution of *schon*. Central to this definition is the observation that *schon* introduces abnormality in the non-truth-conditional part of its meaning, modelled here as a use condition (see Grosz, submitted, for further discussion of this design choice), viz., that in the actual world w, its host utterance interpretation is in conflict with an expectation of the speaker S.[5]

Abnormality emerges because of an underlying unfulfilled expectation of the speaker S, which can – but need not – be based on common ground knowledge, e.g., in (11) and (7), which is repeated as (15):

(15) A: *Fett ist nicht gesund.*
fat is not healthy
'Fat is not healthy.'
B: *BUTter SCHON.* ↓/↑
butter SCHON
'But butter is.'/'Well, butter surely isn't.'

This expectation takes the form of a defeasible implication introducing a conflict between the particle's host utterance and a proposition q, which is salient in the utterance context and serves as a (not necessarily verbalised) anaphor for the particle.

The conflict between the two propositions arises in w because S believes that the particle's host utterance meaning p is the opposite of a usual consequence of q in w. This leaves open whether q actually holds but indicates that it would have to be abnormal if it were true:

(16) [[schon(p)]] is defined in w if the speaker S believes $*(q, w)(w) \longrightarrow \neg p(w)$, with q being salient in the utterance context. If defined, [[schon(p)]] = [[p]].

The proposition q can arise from various sources, most prominent are previous utterances (often immediately preceding, like in the small dialogues (1)-(7)). Felicity conditions or presuppositions of such utterances can also provide this proposition q (see Waltereit, 2001; Karagjosova, 2004; Repp, 2013; Egg, 2013). Further possibilities, which have, to my knowledge, not received any attention in the literature so far, are gestures, facial expressions, or other previous

[5] See Gutzmann (2015) for a formalisation of semantic construction that includes the interaction of truth-conditional content and use conditions.

actions of the hearer. For instance, (11B) could also be uttered in a context in which an examiner reacts to a look of despair of an examinee.[6]

Similarly, *schon*-utterances that seem to be out of the blue, like Zimmermann's (2017:1) example (17), relate to a salient proposition *q* too:

(17) *Wird schon stimmen!*
will SCHON add.up
'I suppose it adds up.'

This example refers to a calculation and can only be uttered in a context in which the speaker himself or another interlocutor, harbours doubt about whether the calculation is actually correct. In other words, *q* in this example is something like "The calculation might be wrong".

Another possibility of identifying a salient *q* in the context deserves more detailed discussion here: It shows up in *schon*-utterances as reactions to questions like the one in (18):

(18) A: *Was hältst du von St. Pauli?*
what think you of St. Pauli
'What do you think of St. Pauli?'
B: *St. Pauli ist schon eine gute Mannschaft.*
St. Pauli is SCHON a good Team
'Well, they are a rather good team.'

Zimmermann (2017) uses such examples in order to argue against an analysis of *schon* as relational (i.e., relating its host utterance to another salient proposition). He argues that there is no relation between B's reaction and A's question, which would mean that the effect of *schon* on its host utterance could not be explained in terms of reference to another salient proposition in the context.

While I do agree that this example shows that a *schon*-utterance indeed need not relate to a concrete preceding utterance directly, I claim that it nevertheless proves that *schon* is relational: Most importantly, B's statement does not occur "out of the blue" and is not independent of context; instead, B reacts to (and weakly asserts) one of the possible answers to question (18A) about the quality of St. Pauli (a German soccer team), viz., that they are a good team. I.e., my explanation of (18) would be that potential answers to an immediately preceding question can be salient in the respective context.

In addition, the fact that it is exactly the positive answer to (18A) that B reacts to, might be based on the observation that St. Pauli triggers more emotions than the average German soccer club. In the concrete situation, a belief of B that A is biased towards a positive evaluation of St. Pauli could be based on different kinds of evidence, e.g., that B assumes that A supports them, or that A has himself uttered a positive evaluation about them previously.

If B just had the intention of voicing his opinion about St. Pauli "out of the blue", assuming that his audience was not emotionally attached to the club, he would use linguistic hedges like *ziemlich* 'quite' in case he wanted to downtone his evaluation, as illustrated in (19). This shows that even in cases like (18), *schon* is indeed relational:

(19) *St. Pauli ist eine ziemlich gute Mannschaft.*
St. Pauli is a quite good team

[6] The observation that *q* need not be identical to the meaning of a preceding utterance but can be introduced in different ways is also modelled in Repp's (2013) definition of the semantic contribution of the related discourse particle *doch*.

'St. Pauli are a rather good team.'

5 Explaining the Uses of *schon*

5.1 *Schon* in Full Responses

In (11), repeated here as (20), B's response neither explicitly commits to A's statement, nor explicitly denies it. This is a case of *denegation* (Cohen and Krifka, 2014; Krifka, 2015).

(20) A: *Ich habe nicht genug für die Prüfung gelernt.*
I have not enough for the exam learnt
'I haven't studied hard enough for the exam.'

B: *Du wirst es schon schaffen.*
you will it SCHON pass
'You will pass nevertheless.'

This denegation is couched in pointing out that the host utterance of *schon* denies an expected consequence of (20A), viz., that insufficient studying usually leads to failing. This expectation is based on global common ground knowledge and holds for w by universal instantiation.

Denying a consequence does not logically entail that the cause does not hold, so it leaves open the question of whether the cause actually holds but casts a certain amount of doubt on it, as it is presented as unexpected in the light of the unfulfilled consequence, which justifies the denegation. This illustrates the way in which discourse particles contribute to a very suave communication style. The discourse effect is that the common ground is not updated by (20A), because both A and B would have to commit to this statement for such an update of the common ground.

In (10), repeated here as (21), the host utterance expresses a flat denial of A's statement. This denial is not weak in any way and is not based on an underlying unfulfilled expectation:

(21) A: *Max ist nicht klug.*
Max is not clever
'Max is not clever.'

B: *Max ist SCHON klug.* ↓
Max is SCHON clever
'Yes, he is.'

The denying force of (21B) emerges because q equals $\neg p$. This dependence between the two utterances linked by *schon* is responsible for the intuition that there seems to be no implicature in the speaker's belief anymore, although the particle semantics given in (16) involves such an implicature. The reason for that is that the implicature is trivialised to $*(\neg p, w)(w) \rightarrow \neg p(w)$ for (21), which is true by factivity of defeasible implicature. This seeming disappearance of an implicature also characterises similar uses of the discourse particle *doch* (Egg and Zimmermann, 2012).

The next use of *schon* as in (9), repeated in (22), expresses *weak assertion*:

(22) A: *Max ist klug.*
Max is clever
'Max is clever.'

B: *Max ist SCHON klug.*↑
Max is SCHON clever
'He is, in a way.'

The assertive character of B's response in (22) is based on the fact that *schon* relates identical propositions. The source of the weakness lies in this identity, since, with $q = p$, the semantic contribution of *schon* characterises B's belief as (23):

(23) $*(p, w)(w) \rightarrow \neg p(w)$

Since normal p-worlds are p-worlds due to the factivity of defeasible implicature (i.e., $*(p, w)(w)$ would have to imply $p(w)$), (23) means that $*(p, w)(w)$ is false. In other words, B believes p is abnormal in w. Being abnormal in (16) means that while the claim is true, some of its potential usual consequences do not hold. To justify the weakness of the assertion, it is typically elaborated by spelling out the usual consequences that do not hold. This explains why this use of *schon* is normally accompanied by an *aber*-clause like in (24B), which repeats (4B).

(24) B: *Max ist SCHON klug,*↑ *aber man merkt es nicht.*
Max is SCHON clever but one realizes it not
'He is, in a way, but it doesn't show.'

These cases of weak assertion show why *schon* requires the speaker to believe an implicature only for the actual world w, as indicated in (16): $*(q, w)(w) \longrightarrow \neg p(w)$, where q is the salient proposition in the context, and p is the meaning of the host utterance of *schon*.

If *schon* involved the global implicature $q > \neg p$ in its semantic contribution (16), this implicature would emerge as $p > \neg p$ for (22) and (5), repeated as (25). Due to factivity of defeasible implicature, this implicature would express that according to w, p could not be normal in *any* world, which would be too strong to express the belief of the speaker in (22) or (25).

(25) A: *Max ist klug.*
Max is clever
'Max is clever.'
B: *SCHON.*↑
SCHON
'He is, in a way.'

The intonation of (22) and (25) contributes to their interpretation as only weak assertions. The host utterance of the particle carries a sentence-final fall-rise contour H* L-H% (FRC), which is the German counterpart of Hirschberg and Pierrehumbert's (1986) rise-fall-rise contour (Féry, 1993). Following Constant (2012), these contours are focus operators which assert that the alternatives cannot be claimed safely.

In (22) and (25), the focus of the contour operator is on the particle. This means that B refrains from alternatives to his response, which would include the verum operator $\lambda p.\, p$ or possibly the falsum operator of Repp (2013) $\lambda p.\, \neg p$ (as elements of the alternative set of the interpretation of *schon*), i.e., full assertion and denial.

5.2 *Schon* in Elliptical Responses

In many cases, *schon*-utterances are elliptical. While the particle is accented as new, given material

is elided and can be reconstructed with reference to the utterance that the *schon*-utterance reacts to. The simplest instance of such an ellipsis is instantiated in (25) above. In this case, the elided material in (25B) extends over the whole of (25A), yielding – after reconstruction – an interpretation of (25B) as a weak assertion of (25A) that follows the pattern of (22).

While there is only one reconstruction option for (25B), accented isolated *schon* in reaction to negated sentences like in (26), seems to allow two kinds of reconstruction: including the negation in (26A) or not. Both possibilities are attested in the fully verbalised discourses (27a), which is a repetition of (21), and (27b):

(26) A: *Max ist nicht klug*.
'Max is not clever.'
B: *SCHON*.↑
'He is not, in a way.'

(27) a. A: *Max ist nicht klug*.
'Max is not clever.'
B: *Max ist SCHON klug*.↓
'Yes, he is.'

b. A: *Max ist nicht klug*.
Max is not clever
'Max is not clever.'
B: *Max ist SCHON nicht klug*.↑
Max is SCHON not clever
'Admittedly, he isn't.'

However, the only possible reconstruction of (26B) follows the pattern of (27b), i.e., includes the negation, which returns a weak assertion with the corresponding sentence-final rising intonation. A reconstruction without the negation, which would amount to a denial of (26A) like in (27a) is ruled out, and no downward intonation is possible for *schon* in (26).

This restriction of the possible reconstructions for cases of ellipticial *schon*-responses to negated utterances like in (26) can be put down to the fact that ellipsis reconstruction is a discourse phenomenon. So are discourse particles, because they typically link up discourse segments too, mostly, utterances by different interlocutors.

As a discourse phenomenon, ellipsis reconstruction favours high attachment over low attachment (due to visibility in discourse structure), i.e., if there is a choice between two potential reconstructions, the larger one is chosen. Frazier and Clifton (2005) confirm this empirically for embedded sentences. E.g., in (28) the second sentence has a preference for the reconstruction (and interpretation) "Fred said Mary left, too" over the reconstruction "Fred left, too":

(28) *John said Mary left. Fred did too.*

For isolated particles in response to negated utterances in cases like (26), this preference for larger reconstructions means that the reconstruction that includes the negation is preferred.

This preference can be reconstructed formally in terms of the notion of *maximal common theme* (MCT; Asher et al., 2001; Hardt et al., 2013), which models a maximal common ground of two expressions.

First, a *common theme* (CT) of two semantic expressions is derived by applying a sequence of

generalisations to them (like deletions of or λ-abstractions over terms).

Expressions are ordered partially by specificity "$\ll$": $p \ll q$ (p is more specific than q) iff a sequence of generalisations applied to p yields q. A CT r of p and q is an MCT of p and q if they have no CT r' that is more specific (such that $r' \ll r$).

E.g., for the narrow reconstruction of the ellipsis in (28) as "Fred left", semantic representations of the two sentences and their MCT are given in (29a-c). The semantics of *say* is rendered in terms of the two-place predicate **say**′, whose arguments are a term and a proposition (set of possible worlds), here, the proposition that Max is leaving:

(29) a. $\mathbf{say}'(\boldsymbol{j}, {}^{\wedge}\mathbf{leave}'(\boldsymbol{m}))$
b. $\mathbf{leave}'(\boldsymbol{f})$
c. $\lambda x.\, {}^{\wedge}\mathbf{leave}'(x)$

The MCT (29c) results from three deletions (of the matrix predicate and its first argument in (29a) and the first argument of the intension of the verb in (29b))[7] and two λ-abstractions (over the argument position of ${}^{\wedge}\mathbf{leave}'$ in either of the resulting expressions).

For the broad reconstruction "Fred said Mary left", the semantic representations of the two sentences are given in (29a) and (30a), their MCT, in (30b). The MCT can be derived by λ-abstracting over the first arguments of the matrix verbs:

(30) a. $\mathbf{say}'(\boldsymbol{f}, {}^{\wedge}\mathbf{leave}'(\boldsymbol{m}))$
b. $\lambda x.\, \mathbf{say}'(x, {}^{\wedge}\mathbf{leave}'(\boldsymbol{m}))$

Reconstruction options for ellipses are selected in terms of their MCT's: If several reconstructions of the ellipsis are available, first derive for each of them the MCT for itself and the expression containing the antecedent, like in (29c) and (30b).

If these MCT's can be ordered by specificity, the option with the most highly ranked MCT is chosen, for (28), the broad reconstruction, because the corresponding MCT is more specific than the one of the narrow reconstruction: (30b) $\ll$ (29c).[8]

For (26), one must first derive the MCT for a reconstruction without negation ("Max ist SCHON klug"). The semantic representations for the utterances in (26) and their MCT are specified in (31a-c). Their MCT is derived by λ-abstracting over the propositional operators in (31a-b):

(31) a. $\neg\mathbf{klug}'(\boldsymbol{m})$
b. $\mathbf{schon}'(\mathbf{klug}'(\boldsymbol{m}))$
c. $\lambda p.\, p(\mathbf{klug}'(\boldsymbol{m}))$

The reconstruction with negation ("Max ist SCHON nicht klug") has (31a) and (32a) as semantic representations of the utterances. For their MCT (32b), **schon**′ in (32a) is deleted:

(32) a. $\mathbf{schon}'(\neg\mathbf{klug}'(\boldsymbol{m}))$
b. $\neg\mathbf{klug}'(\boldsymbol{m})$

Since (32b) $\ll$ (31c), the reconstruction with the negation is chosen, which explains the interpretation of (26).

This rule may be restricted to specific discourse relations, most prominent among them

[7] This presupposes that $\mathbf{leave}'(\boldsymbol{f})$ can be paraphrased as ${}^{\wedge}\mathbf{leave}'(\boldsymbol{f})(w_0)$, for the world of evaluation w_0.

[8] (29c) can be derived from (30b) by removing the matrix predicate and its first argument in (30b), and then λ-abstracting over the argument of the embedded predicate.

PARALLEL and CONTRAST, both of which are based on structural similarity. The difference between them is that discourse entities linked by PARALLEL are semantically similar, while entities linked by CONTRAST are semantically dissimilar (Asher and Lascarides, 2003:168ff.). E.g., (28) is a clear case of the relation PARALLEL, whereas it is CONTRAST that links the two utterances in (26): The utterances share the core proposition (of Max being clever) but differ in the grade of assertability they assign to it.

5.3 *Schon* in Partial Responses

The discussion of the different response types in §5.1 and the account of the resolution and interpretation of elliptical *schon*-responses in §5.2 pave the way for the analysis of (15), repeated here as (33).

(33) A: *Fett ist nicht gesund.*
fat is not Healthy
'Fat is not healthy.'
B: *BUTter SCHON.* ↓/↑
butter SCHON
'But butter is.'/'Well, butter surely isn't.'

First, the example highlights the crucial role of intonation in the interpretation of *schon*-utterances. It is only the intonation that distinguishes the use of (33B) as partial denial or assertion, both of which are based on different reconstructions of elided material. The analysis must explicate this effect and the interaction of intonation and semantics.

The second challenge posed by this example is to account for the observation that B's response is only partial, asserting or denying only a part of A's statement while explicitly refraining from taking a stand on the remainder of this statement. This is linked to the role that *schon* plays in these responses, in particular, how its semantic contribution (reference to an unfulfilled expectation of the speaker) is used in order to introduce a partial response.

The first step in this account is the assumption, suggested in Cohen and Erteschik-Shir (2002), that the subjects in (33) denote kinds. Then one can identify the underlying common ground implicature, on which the use of *schon* is eventually based, as the global expectation (34) that properties attributed to kinds also tend to hold for their subkinds ("$\sqsubseteq_K$" expresses the subkind relation).

(34) $\forall P \forall k \forall k'.(k' \sqsubseteq_K k \wedge P(k)) > P(k')$

In the concrete example (33), the relevant underlying implicature is (35) by universal instantiation, the expectation that if fat is not healthy, butter (as a subkind of fat) should likewise be unhealthy:

(35) $\neg\mathbf{healthy}'(\mathbf{fat}') > \neg\mathbf{healthy}'(\mathbf{butter}')$

It will be shown in detail how this expectation is not fulfilled in the two interpretations of (33), which is the reason for using *schon*.

In the remainder of this subsection, the two different intonation possibilities of understanding the answers in (33) will be expounded in detail. What they have in common, in any case, is the accentual prominence of both elements, the subject and the particle, which follows from the fact that they are new elements, whereas any other material is given and hence elided, which calls for reconstruction in suitable ways.

First, I will discuss the denial version with the falling-intonation interpretation, (33)↓, and then move on to the weak assertion version (33)↑ with the rising-intonation interpretation.

5.3.1 *Schon* in Partial Denials

In (33)↓, the response includes a partial sentence (or S-)topic (Féry, 1993; Büring, 1997) with rising pitch L*+H, here, on the first syllable of *Butter* 'butter'. The intonation marks *Butter* as a contrastive topic.

In addition, the specific intonation of the subject in (33B)↓ implicates that the question of unhealthiness is still open for other kinds of fat (the "residual topic" in Büring's terminology), which explains the interpretation of (33B)↓ as only partial.

However, since the two contrasting utterances are expressed by different speakers, and since the first speaker did not intend his utterance as the first element in a contrasting pair, this first element of the pair (33)↓ does not intonationally mark topic and focus. Consequently, the identification of the parallel elements for topic and focus of (33B)↓ cannot rely on intonational cues in (33A), but must be effected independently.

To this end, one can use the condition that the semantic contributions of (33A) and (33B)↓ must be identical after existential quantification over topic and focus and the corresponding elements in both utterances, which is introduced as e.g., "E-closure" in Merchant (to appear).

This condition can only be met if one assumes that not only the subjects are parallel, but also that the parallel element for the discourse particle in (33B)↓ is the negation of (33A). Both are propositional operators of the same type. After existential quantification, the contributions of both utterances are as presented in (36):

(36) $\exists k \exists p.\, p(\mathbf{healthy}'(k))$

Since the reconstruction of (33B)↓ does not include the negation of (33A), the reconstruction is like in (37):

(37) A: *Fett ist nicht gesund.*
fat is not healthy
'Fat is not healthy.'

B: *BUTter ist SCHON gesund.*↓
butter is SCHON healthy
'But butter is.'

In other words, the contrastive focus on *schon*, which marks it as the element corresponding to and contrasting with the negation, blocks a maximisation of the reconstruction that includes negation like in the case of (26).[9] But since (33A) introduces a negated statement, and B's answer, which addresses part of it, does not include negation, the answer emerges as a partial denial.

The second challenge is to explain the use of *schon*. In this case, the particle points out that a potential consequence of a preceding utterance (that fat is unhealthy) does not hold, viz., that butter as a subkind of fat should be unhealthy, too. This is incompatible with the general expectation (35), also held by the speaker, which by universal instantiation holds for the evaluation world, too.

Whether B intends his response as a counterexample in order to refute A's statement in its entirety, or whether he just wants to point out that this statement cannot be asserted with full force, can only be diagnosed in a concrete context; (33)↓ would be compatible with either possibility.

5.3.2 *Schon* in Partial Assertions

In (33B)↑, the intonation of the subject is different: B's answer starts with H* on the accented first syllable of *Butter*, which is followed by a rise L-H% on *schon*. I analyse this intonation pattern as another instance of the FRC intonation, which stretches over the whole utterance. This account

[9] See Repp (2009) for a comprehensive account of the interaction of gapping and negation.

follows closely the analysis of Constant (2012), who showed similar patterns of the English equivalent of the FRC operator extending over larger stretches of utterances.

Semantically, this characterises *Butter* as the focus of the FRC operator, i.e., B wants to restrict his statement only to butter, and explicitly refrains from commenting on other kinds of fat (the alternative set).

The next step is the reconstruction of the elliptical utterance (33B)↑. In this case, the interpretation of B's response is not influenced by intonation as in the case of (33B)↓. Consequently, the preference for larger reconstructions that was expounded in detail for (26) applies here as well, thus including the negation as part of the statement about butter, as illustrated in (38):

(38) A: *Fett ist nicht gesund.*
fat is not healthy
'Fat is not healthy.'
B: *BUTter ist SCHON nicht gesund.*↑
butter is SCHON not Healthy
'As for butter, it is not indeed.'

In this constellation, both utterances introduce a negation, which brings about the interpretation of (33B)↑ as a partial assertion.

Finally, it remains to explain the use of *schon*. In this case, the implicature it refers to in a world *w* is (39):

(39) $*(\neg\mathbf{healthy}'(\mathbf{fat}'),\mathrm{w})(\mathrm{w}) \rightarrow \mathbf{healthy}'(\mathbf{butter}')(w)$

In prose: If *w* is normal with regard to fat not being healthy (all the usual consequences of fat not being healthy hold), then butter should be healthy. Since in such normal worlds the opposite consequence must be true according to (35), the premiss must be false, i.e., not all usual consequences of fat being unhealthy hold in *w*.

Since B explicitly refrains from commenting on the unhealthiness of other subkinds of fat, this suggests that these unfulfilled usual consequences of fat being unhealthy are based on other subkinds of fat being healthy. And, indeed, it is possible to spell this out in suitable *aber*-clauses that continue B's answer, e.g. (40):

(40) *aber das gilt nicht für Sonnenblumenöl*
but this is.valid not for sunflower.oil
'but this does not hold for sunflower oil'

To conclude, the decisive role of intonation for the interpretation of *schon*-utterances has been shown in detail in this subsection, in example (33).

6 Conclusion and Outlook

In sum, the analysis in this paper has expounded how a comparatively simple uniform semantic contribution of the discourse particle *schon* can account for a wide range of uses of the particle, if one takes into account the interaction of this contribution with the semantics of the utterances linked by the particle, their intonation, and general pragmatic principles.

The next step in this line of analysis will be its extension in two ways. First, there are further uses of *schon* not yet covered by the analysis, for instance, the use of *schon* in conditional clauses like the example of Gornik-Gerhardt (1981) below.

(41) *Wenn wir schon Polstermöbel kaufen, dann wenigstens richtige.*
if we SCHON upholstery buy then at.least proper
'If we go as far as buying upholstery, then it should at least be proper'

Second, there are more discourse particles in German with accented uses, e.g., *wohl* and *eben*. *Wohl* expresses only partial commitment to an utterance (Zimmermann, 2009), as seen in (42). The particle *eben* characterises its host utterance as the reason for a salient proposition in the context, as illustrated in (43), where Max's impoliteness explains why he does not greet others:

(42) *Max ist wohl in Hamburg.*
Max is WOHL in Hamburg
'Max is in Hamburg, I presume.'

(43) A: *Max* grüßt *nicht.*
Max say.hi not
'Max does not say hi.'
B: Er *ist eben unhöflich.*
he is EBEN impolite
'Well, you know he's impolite.'

In (44), accented *wohl* (mostly with *sehr* 'very') refuses a negation just like *schon* in (21), while (45) shows that accented *eben* (occuring only in isolation) states that the logical relation between two utterances is causation, not denial of expectation:

(44) A: *Max ist nicht da.*
Max is not here
'Max is not here.'
B: Er *ist sehr WOHL da.*
he is very WOHL here
'Yes, he is.'

(45) A: *Du bist so streng als Lehrer, dabei hast du selbst Kinder.*
you are so strict as teacher also have you self children
'You are so strict as a teacher, although you have children of your own.'
B: *EBEN.*
EBEN
'That is exactly the reason why (instead of being a counterargument).'

Further work will have to explain the relation between the interpretations of the accented and the unaccented versions of these particles.

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