

Wird schon stimmen! A degree operator analysis of *schon*

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Abstract: The article puts forward a novel analysis of the German modal particle *schon* as a modal degree operator over propositional content. The proposed analysis offers a uniform perspective on the semantics of modal *schon* and its aspectual counterpart meaning ‘already’: Both particles are degree operators expressing a scale-based comparison over relevant alternatives. The alternatives are determined by focus in the case of aspectual *schon* (Krifka 2000), but are restricted to the polar alternatives p and $\neg p$ in the case of modal *schon*. Semantically, modal *schon* introduces a presupposition to the effect that the circumstantial conversational background contains more factual evidence in favor of p than in favor of $\neg p$, thereby making modal *schon* the not at-issue counterpart of the overt comparative form *eher* ‘rather’ (Herburger & Rubinstein 2014). The analysis incorporates the basic insights from earlier analyses of modal *schon* in a novel way, and it also offers new insights as to the underlying workings of modality in natural language as involving propositions rather than possible worlds (Kratzer 1977, 2012).

1. Introduction

German is (in)famous for its rich inventory of discourse and modal particles, such as e.g. *ja*, *doch*, *wohl* (Zimmermann 2011), *schon*, *eh*, *halt*, and *denn*. The discourse particles *ja*, *doch*, and *denn* make direct reference to the preceding discourse structure and/or the general utterance setting; see e.g. Egg & Zimmermann (2013), Rojas Esponda (2013), Kaufmann and Kaufmann (2012), among many others. Particles with a modal flavor, by contrast, such as the particles *wohl* and *schon*, contribute not at-issue information on the epistemic state of the speaker (and/or addressee) regarding the proposition expressed (DeVaughGeiss 2014). Moreover, some particles, such as *doch*, are restricted to a single discourse-semantic function, whereas others appear to lead a double life and seem to have different semantic functions or interpretations, depending on context. The two modal particles *wohl* and *schon*, for instance, appear to have the adverbial degree modifiers *wohl*, which corresponds to English *well*, and the aspectual operator *schon* as their respective homonymous counterparts.

This article presents a unified analysis of the particle *schon* in its modal and aspectual guises. Occurrences of aspectual and modal *schon* are illustrated in (1) and (2), respectively (CAP+ \ marks the location of focus pitch accent). Intuitively speaking, aspectual *schon* in (1) compares a state of raining with a preceding state of not raining in the temporal domain.

- (1) Es REG\net **schon**_{ASP}, eben hat noch die Sonne geschienen.
it rains already just.now has still the sun shone
‘It’s RAINing already. Just a minute ago, the sun was still shining.’

The evaluative modal *schon* in (2), by contrast, relates the opposite propositions ‘St.Pauli is a good team’ and ‘St.Pauli is not a good team’ in the modal domain of what the speaker rather thinks to be the case.

- (2) Q: What do you think about St.Pauli?
A: Das ist **schon** ‘n gutes TEAM\ . / Das ist **SCHON**\ ‘n gutes Team.
That is PRT_{MOD} a good team that is PRT_{MOD} a good team
‘Well, they are a good TEAM, alright/ They ARE a good team, but...’

The examples in (3) show that modal *schon* is not restricted to stative predicates, nor to subjective evaluating predicates, such as *be a good team*. In fact, in many cases, *schon* allows

for either an aspectual or a modal interpretation, depending on the context, the position of focus accent, and global differences in the f_0 -contour of the clause. (3ai.ii) shows how differences in accent placement can help to distinguish between the two interpretations, whereas (3b) shows that there are also cases of genuine ambiguity.¹

- (3) ai. Yasemin hat **schon**_{ASP} Aishe und AnNETT\ eingeladen.
 aii. Yasemin hat **SCHON**_{MOD} Aishe and Annett eingeladen.
 Y has PRT A and A invited
 i. ‘Yasemin has already invited Aishe and Annett.’
 ii. ‘Yasemin did invite Aishe and Annett alright, but’
 b. Q: How is Luca doing at the boarding school?
 A: Er hat sich **schon** ganz gut EIN\gelebt.
 he has himself quite well adjusted
 i. He has already adjusted quite well.’
 ii. ‘He has adjusted quite well, alright.’

At first sight, the two interpretations of *schon* in (1) to (3) would seem to be sufficiently distinct in order to warrant an analysis as homophonous lexical entries with different semantic interpretations; see e.g. König (1977), Löbner (1989, 1999), Jacobs (1991), and Ormelius-Sandblom (1997) for proposals along these lines. Moreover, an account in terms of lexical ambiguity would appear to receive support from the English paraphrases, in which the two occurrences of *schon* translate into distinct lexical elements.

At the same time, the variability observed in the prosodic realization of modal *schon* in (2) and (3) shows clearly that the modal interpretation of the particle is not contingent on a particular prosodic realization, pace Féry (2010). This finding does not support the assumption of two prosodically distinct lexical items, namely unstressed aspectual *schon* and stressed modal *schon*, as has been proposed for other particles; see e.g. Abraham (1991). Furthermore, adopting a wider cross-linguistic perspective, German is not the only language to feature a particle triggering both modal and aspectual interpretations. Other cases in question are the Catalan particle *ja* (Castroviejo & Mayol 2012) and, possibly, Hungarian *majd* (Kiefer 2012), which likewise give rise to aspectual and modal interpretations. These cross-linguistic findings suggest that the semantic relation between aspectual and modal *schon* may be closer than often thought, and that the quest for a unified semantic analysis of aspectual and modal *schon* may not be in vain.

This article puts forward a unified semantic analysis of aspectual and modal instances of *schon*, with a particular focus on the sentence-evaluating nature of modal *schon*. The unified analysis accounts for the observable parallels between aspectual and modal instantiations of *schon*, namely for their inherent alternative-sensitivity, their scalar nature, and their not at-issue-ness. At the same time, it provides a principled account of the major difference, namely the presence or absence of temporal ordering of alternative propositions on an abstract timeline. The unified analysis is based on a modified version of Krifka’s (2000) analysis of aspectual *schon*_{ASP} as a scale-alignment particle, which will be generalized to modal *schon*_{MOD}. In the end, both instantiations of the particle will be analyzed as focus-sensitive degree operators that trigger not at-issue inferences in the sense of Simons et al (2010) and Tonhauser et al. (2013). To be concrete, *schon*_{MOD} will be analyzed as the not at-issue

1 In general, the prosodic realization patterns with both particles are very flexible, depending on context and focus-background structure; see section 4 for more discussion of the prosodic facts. A prosodic pattern that appears to be generally excluded with modal *schon* is the pattern with focus accent on the subject. In the variant of (3b) in (i), for instance, the particle is unambiguously interpreted as aspectual *schon*.

(i) LUCA\ hat sich schon ganz gut eingelebt.
 ‘LUCA has already adjusted quite well.’

counterpart of the modal comparative expression *eher* ‘rather’, which has been convincingly analyzed as evaluating the validity of a proposition p against its negation $\neg p$ in Herburger & Rubinstein (2014). The not at-issue entailment of modal *schon* in (2A), according to the present analysis, is informally paraphrased in (4):

- (4) \Rightarrow St.Pauli are rather a good team than not.
not at-issue

The analysis proposed will be shown to account for all the observable properties of the modal particle *schon*_{MOD}, including secondary pragmatic effects, its distribution in discourse, and its interaction with information structure and prosody. More importantly from a theoretical perspective, the analysis of modal *schon* constitutes a novel empirical argument in favor of Kratzer’s (2012) propositional view of modality in natural language, which maintains that sets of possible worlds are too coarse-grained for modelling the meaning of modal expressions in natural language.

The article is structured as follows. Section 2 introduces the relevant semantic properties of aspectual and modal *schon*, with a focus on parallels and – apparent – differences between the two occurrences of the particle. Section 3 constitutes the core of the article. It puts forward the unified analysis of *schon* as an alternative-sensitive degree operator on focus scales. It also shows in detail how this analysis can account for the semantic properties of modal *schon*. Section 4 discusses the interaction of *schon* with information structure and prosody. The article concludes with a discussion of general theoretical and empirical implications of the analysis in section 5, and a summary in section 6.

2. Semantic properties of *schon*_{MOD} and *schon*_{ASP}: Parallels and differences

This section introduces the interpretive properties of the two instantiations of the German particle *schon*. Section 2.1 focuses on semantic properties that are shared by modal and aspectual *schon*. Section 2.2 discusses two – apparent – differences between the two particle occurrences, together with a critical evaluation.

2.1 Semantic parallels between *schon*_{MOD} and *schon*_{ASP}

Both aspectual and modal *schon* contribute not at-issue meaning to the overall interpretation of the containing utterance (Simons et al. 2010). The at-issue and not at-issue inferences of aspectual *schon* and modal *schon* are informally stated in (5) and (6), respectively.

- (5) Es regnet **schon**_{ASP}.
 It rains already
 ‘It’s raining already.’
 at-issue: It’s raining at t_0 .
 not at-issue: It wasn’t raining before t_0 .
- (6) St.Pauli ist **schon**_{MOD} ein gutes Team.
 St Pauli is PRT a good team
 ‘St Pauli are a good team alright, but...’
 at-issue: St Pauli are a good team.
 not at-issue: St Pauli are rather a good team than not.

We demonstrate the not at-issue status of the meaning of aspectual *schon* by applying the family of sentences (FoS) – test from Simons et al. (2010). The examples (7a-c) show that the meaning contribution of aspectual *schon* is invisible to negation, question operator, and conditional operators, respectively, and projects to the global level.

- (7) a. Es ist nicht der Fall, dass es **schon**_{ASP} regnet.
 it is not the case that it already rains
 ‘It’s not the case that it’s already raining.’
 at-issue: it’s not raining at t_0 .
 not at-issue: it wasn’t raining before t_0 . (= ex.(5))
- b. Regnet es **schon**_{ASP}?
 rains it already
 ‘Is it raining already?’
 at-issue: {it’s raining at t_0 , it’s not raining at t_0 }
 not at-issue: it wasn’t raining before t_0 . (= ex.(5))
- c. Falls es **schon**_{ASP} regnet, müssen wir uns beeilen.
 if it already rains must we us hurry
 ‘If it is already raining, we have to hurry up.’
 at-issue: if it’s raining at t_0 , we have to hurry up.
 not at-issue: it wasn’t raining before t_0 . (= ex.(5))

The meaning of aspectual *schon* does not register at the level of at-issue meaning in (7a-c), such that these sentences do not have the interpretations ‘It’s not the case that it wasn’t raining before’, ‘Is it the case that it wasn’t raining before?’, and ‘If it wasn’t raining before and is raining now we have to hurry up’, respectively. Rather, the meaning contribution of the particle is constant across the different embedding environments, which finding constitutes a reliable diagnostic for not at-issue entailments.

Turning to modal *schon*, the FoS-tests do not apply for the very reason that the invisibility of the particle to the higher operator incurs a semantic mismatch: The at-issue and not at-issue inferences are contradictory and, hence, cannot both hold at the same time. This is illustrated for negation in the unacceptable sentence (8):²

- (8) *Es ist nicht der Fall, dass St.Pauli **schon**_{MOD} ein gutes Team ist.
 it is not the case that St Pauli PRT a good team is
 at-issue: It’s not the case that they are a good team.
 not at-issue: they are rather a good team than not.

Still, the not at-issue nature of modal *schon* can be tracked by applying another test from the vast literature on modal operators and subjective predicates (Stephenson 2007, Rett 2012). In particular, it is impossible to reject or deny the meaning contribution of modal *schon*, as illustrated in (9). Example (10) shows that the denial-of-acceptance test works the same for aspectual *schon*, highlighting again the semantic parallel between the two occurrences of *schon*.

- (9) A: St.Pauli ist **schon**_{MOD} ein gutes Team.
 ‘St Pauli are a good team, alright.’
 B: Das stimmt ja gar nicht. Die sind doch sauschlecht!
 ‘That’s not true! They are a lousy team!’
 B’: # Das stimmt ja gar nicht! Es sprechen nicht mehr Faktoren dafür, dass sie gut sind, als dafür, dass sie schlecht sind.’

2 The same argumentation applies to modal *schon* in the scope of question and conditional operators, which leave it open of whether or not *p* holds.

‘No, that’s not true! There are no more reasons to think that they are good than there are reasons to think that they are lousy.’

- (10) A: Es regnet **schon**_{ASP}.
 ‘It’s raining already.’
 B: Nein, das stimmt nicht! Es regnet gar nicht!
 ‘No, that’s not true! It’s not raining at all!’
 B’: # Nein, das stimmt nicht. Es HAT (vorher) geregnet.³
 ‘No, that’s not true! It WAS raining earlier on.’

The second semantic parallel lies in the alternative-sensitivity of both particle instantiations. In particular, both particles are inherently comparative: they serve to map the at-issue prejacent of the clause onto a contextually given scale, against a background of salient alternatives. Same as focus-sensitive exclusive and scalar particles (Beaver & Clark 2008), aspectual *schon* operates over different kinds of scales, depending on context. This is illustrated in (11a-c) for fully ordered scales, partially ordered scales, and pre-ordered scales, respectively:

- (11) a. Yasemin hat **schon**_{ASP} DREI\ Bücher gelesen.
 Yasemin has already three books read
 ‘Yasemin has already read THREE books.’
 ⇒ *Y reads 3 books > Y reads 1 or 2 books*
- b. Yasemin hat **schon**_{ASP} AI\she und AnNETT\ eingeladen.
 Yasemin has already Aishe and Annett invited
 ‘Yasemin has already invited Aishe and Annett.’
 ⇒ *invitation of Aishe and Annett > invitation of Aishe, Annett, etc.*
- c. Yasemin ist **schon**_{ASP} POST\doktorandin.
 Yasemin is already postdoc
 ‘Yasemin is already Postdoc.’
 ⇒ *being postdoc > being graduate student, being undergrad, ...*

Modal instances of *schon* also compare different alternatives, but they are more restricted in their association behavior: modal *schon* is verum-like in associating with full propositions only, comparing them to their respective polar alternatives:

- (12) Yasemin HAT **schon**_{MOD} / hat **SCHON**_{MOD} drei Bücher gelesen.
 Yasemin has PRT has PRT three books read
 ‘Yasemin has read three books alright, but ...’
 ⇒ *Y. having read 3 books > Y. not having read three books.*

In certain contexts, modal *schon* appears to associate with narrow foci as well, as illustrated in (13) and in (14), the latter example a variant of (11b).

- (13) Q: How about it? Is Sachartschenko a general or just a sergeant?
 A: He is a SERG\gant!

³ The felicity of (iB), which expresses a rejection of at-issue information, shows that the infelicity of (10B’) cannot be attributed to the placement of verum focus accent on the auxiliary:

(i) A: It didn’t rain earlier on.
 B: Nein, das stimmt nicht. Es HAT vorher geregnet.
 ‘No, that’s not true! It WAS raining earlier on.’

B: Nein! Der ist **schon_{MOD}** GeneRAL\ . Das merkt man bloß nicht.
 No He is PRT general that notice one only not
 ‘No, he’s a general alright. Only, you wouldn’t know it.’
 ⇒ S. is a general > S. is a sergeant (⇒ not a general)

- (14) A: I have heard that Yasemin invited [#](only) AI\she after all.
 B: Nein, sie hat **schon_{MOD}** AI\she und AnNETT\ eingeladen, wie geplant.
 No she has PRT Aishe and Annett invited as planned
 ‘No, she invited Aishe and Annett alright, as planned.’
 ⇒ Y. invited Aishe and Annett > Y. invited only Aishe (⇒ not Aishe and Annett)

Even in such cases, though, modal *schon* is only licit if the context entails $\neg p$, thus allowing for *schon* to compare the polar counterparts p and $\neg p$. This is most clearly seen in (14), in which modal *schon* requires the contextual presence of the exclusive particle *only*, expressing that *Yasemin didn’t invite Aishe and Annett*.⁴ We conclude that modal *schon* is lexically restricted in its association behavior: it can only associate with the two polar propositional alternatives p and $\neg p$, which it compares. This is reminiscent of the discussion in Eckardt & Speyer (2014: 3f.) of bleached focus operators, such as optative *only* and exasperated *even* in questions, which are restricted to range over the two polar propositional alternatives as a result of grammaticalization. See section 3.7 for more discussion of this point and additional data.

2.2 Semantic differences between **schon_{MOD}** and **schon_{ASP}**

The most striking difference between the two particle instantiations appears to lie in the presence of temporal ordering with aspectual *schon*, and the absence thereof with modal *schon*. Aspectual *schon* typically imposes a temporal ordering on the focus alternatives as preceding the prejacent of *schon*, cf. (15a) from Krifka (2000). By contrast, modal *schon* does not normally impose a temporal ordering on the alternatives compared. In particular, (15b), on its modal interpretation, does not entail that St.Pauli was not a good team before.

- (15) a. Es regnet **schon_{ASP}**.
 ‘It’s raining already.’
 ⇒ not raining <_{TEMP} raining
- b. St.Pauli ist **schon_{MOD}** ein gutes Team.
 ‘St.Pauli is a good team alright.’
 //⇒// St.Pauli not good ≤_{TEMP} St.Pauli good

These generalizations on temporal (non-)ordering are in need of refinement, though, as will be shown shortly.

The second difference concerns differences in the focus association behavior of the two particle instantiations. As pointed out in 2.1, aspectual *schon* can associate with foci of various sizes, whereas modal *schon* only associates with the two polar alternatives $\{p, \neg p\}$. To be concrete, modal *schon* imposes a modal ordering in the form of a speaker-based

4 Additional evidence for this conclusion comes from the clefting example in (i): Modal *schon* is illicit in this focus-background clefts, in which the narrowly focused cleft pivot is contrasted with an explicit focus alternative:

- (i) A: Whom did Mary invite? Did she invite Sebastian?
 B: *Nein, es ist schon Moritz, den sie eingeladen hat.
 no it is PRT Moritz whom she invited has
 INTENDED: ‘No, it is Moritz after all whom she invited.’

evaluation of the validity of p as compared to $\neg p$. Based on this fact, and based on the absence of temporal ordering with instances of modal *schon*, most researchers treat the two instances of *schon* as synchronically unrelated; see e.g. König (1977), Löbner (1989, 1999), Jacobs (1991). However, the possibility of a diachronic relation via grammaticalization from aspectual *schon* to modal *schon* is explicitly entertained in Ormelius-Sandblom (1997).

Still, in other discourse environments, the two occurrences of *schon* behave on a par. For instance, both are sensitive to Contrastive Topic (CT)-structures (Büring 2003) in parallel ways, as long as modal *schon* is able to express a comparison at the propositional level (p , $\neg p$). Intuitively, aspectual *schon* in (16) maps the alternatives *x wrote TWO books* and *x wrote ONE book* on a contextually given entailment scale, whereas modal *schon* in (17) compares the two alternatives *St.Pauli IS a good team* and *St.Pauli is NOT a good team* on a different scale. See section 3.7 for more discussion of this point.

- (16) CEM/ hat EIN\ Buch geschrieben, und MEH/met (vorher) **schon** ZWEI\
 ‘CEM wrote ONE book and MEHmet (earlier) already wrote TWO.’
 [x wrote 1 book] \leq [x wrote two books]
- (17) LE/verkusen ist KEIN\ gutes Team, aber St. PAU/Li ist **SCHON**_{MOD}\ ein gutes Team.
 ‘LEverkusen is NOT a good team, but St.Pauli IS.’
 [St.Pauli is not a good team] \leq [St.Pauli is a good team]

Notice, too, that there is no temporal ordering of the focus alternatives with aspectual *schon* in (16), contrary to what was observed in connection with (15a) above. In particular, in (16) it is the prejacent of *schon* that is temporally ordered before the contextual focus alternative, and not vice versa. This strongly suggests that temporal alignment is NOT a necessary ingredient of the lexical meaning of aspectual *schon*. Given the parallel distribution in (16) and (17), and given the absence of temporal ordering effects with aspectual *schon* in (16), we conclude that the two particle instantiations may have the same underlying meaning after all. If so, the temporal ordering that is typically observed with aspectual *schon* and the modal ordering observed with modal *schon* would be but two different surface instantiations of the same underlying comparative/scalar semantics of the particle *schon*. This is the central insight lying at the heart of the unified degree operator analysis of *schon* to be presented in section 3.

2.3 Other semantic properties of *schon*_{MOD}

Before the formal analysis of *schon* is presented in section 3, let us briefly attend to some further properties of modal *schon*. The purpose of this digression is to provide evidence against competing analyses of modal *schon* that have been proposed in the literature, thus paving the way for the analysis to come.

To begin with, unlike the discourse particle *doch* (Egg & Zimmermann 2012), modal *schon* is not discourse-contrastive, pace Egg (2012, 2013). In (18), modal *schon* occurs in an affirmative statement confirming a previous assertion to the same effect. The contrastive particle *doch* is ruled out in the same environment.

- (18) A: St.Pauli are a good team!
 B: Ja, die sind **SCHON**_{MOD} / # **DOCH** ‘n gutes Team, aber ...
 Yes they are PRT PRT a good team but
 ‘Yes, they are a good team alright, but...’

Secondly, modal *schon* is not discourse-anaphoric, again pace Egg (2012, 2013). Unlike *doch*, modal *schon* does not require a suitable discourse antecedent, as shown in (19)

(19) A: Tell me something about St.Pauli!

B: Die sind **schon** ‘n gutes Team.
‘They are a good team alright.’

Finally, and importantly, instances of modal *schon* are illicit in contexts expressing or implying absolute certainty on the side of the speaker regarding the truth of *p* (20ab), and with direct perception reports with a strong evidential basis (21).⁵

(20) Context: I am convinced... / Everything points to the fact...

a. #dass St.Pauli **schon**_{MOD}/**SCHON**_{MOD} n‘ gutes Team ist.
that St.Pauli PRT PRT a good team is
‘...that St.Pauli is a good team alright.’

b. #dass Peter **schon**_{MOD}/**SCHON**_{MOD} den Test bestanden hat.
That Peter PRT PRT the exam passed has
‘...that Peter passed the exam alright.’

(21) A to B on hearing the doorbell:

Es hat **schon**_{MOD}/**SCHON**_{MOD} an der Tür geklingelt.
It has PRT PRT at the door rung
INTENDED: ‘The doorbell has rung alright.’

The obvious reason for the infelicity of these examples lies in the not at-issue meaning contribution of modal *schon*, which expresses as weakened commitment on the side of the speaker (Féry 2010), and which hence clashes with the absolute speaker certainty expressed or implied by direct perception. Notice that the infelicity holds for subjective predicates of personal taste (20a), as well as for more objective episodic predicates (20b, 21). Notice, too, that (21) would become felicitous in case B did not hear the doorbell ring and expressed her doubt to this effect:

(22) A to B: Even if you didn’t hear it ... / Even if you don’t believe it ...

Es hat **SCHON**_{MOD} an der Tür geklingelt!
‘..., the doorbell has rung alright...’

These observations will prove crucial for the analysis to come.

3. Unified account: *schon* as a discourse-sensitive degree operator

This section puts forward a unified account of aspectual and modal *schon* as discourse-sensitive degree operators. Its point of departure is the analysis of aspectual *schon* in Krifka (2000). The unified analysis receives cross-linguistic support from the existence of particles with a comparable flexible semantic behavior in other languages, such as Catalan *ja* (Castroviejo & Mayol 2012) and, possibly, Hungarian *majd* (Kiefer 2012). Sub-sections 3.1 and 3.2 lay out Krifka’s original analysis of aspectual *schon* as a focus-sensitive scale alignment particle that imposes an intrinsic ordering on the proposition containing *schon* and its focus alternatives, depending on some contextually given measure. Sub-section 3.3 adds some more empirical observations, eventually leading to a generalization of Krifka’s analysis. Sub-section 3.4 extends the analysis to instances of modal *schon*, and shows how the analysis

5 All these examples are felicitous on an aspectual interpretation of *schon* (‘already’), with the sentences exhibiting the temporal ordering effects typical of aspectual *schon*.

accounts for its semantic behavior. Sub-section 3.5 investigates the interaction of modal *schon* with other modal expressions, and sub-section 3.6 discusses the interaction of modal *schon* with subjectively and objectively evaluated propositions. Sub-section 3.7 takes a closer look at the interpretation of modal *schon* in contrastive topic environments, before sub-section 3.8 concludes with a comparison of the present analysis with earlier analyses of modal *schon*.

3.1 Krifka (2000): Aspectual *schon* as a scale-alignment particle

Krifka puts forward a uniform analysis of the aspectual particles schon_{ASP} ‘already’ and noch_{ASP} ‘still’ as focus-sensitive scale alignment particles. The central function of scale alignment particles consists in imposing an intrinsic ordering \leq_A on the salient alternatives to the focus constituent, thereby mapping the focus constituent and its focus alternatives on some contextually relevant scale. Moreover, the particles introduce a presupposition to the effect that the focus alternatives are at most as high on the scale (*already*), or at least as high on the scale (*still*), as the ordinary focus value. The lexical entry for *schon* ‘already’ is shown in (23):

$$(23) \quad \text{ALREADY}(\langle B, F, \leq_A \rangle) \Leftrightarrow \langle B, F, \leq_A \rangle, \text{ defined iff } \forall X \in A [X \leq_A F] \quad (\text{Krifka 2000:404})$$

The workings of (23) are illustrated in (24) to (26) for fully ordered scales, pre-ordered scales, and partially ordered scales, respectively:

(24) Lydia ist **schon** DREI Monate alt (ALT: 1, 2, 3 months old)
 ‘Lydia is already three months old.’
 ORDERING_{ALT} “less or equal”: $\{ \langle 1,1 \rangle, \langle 1,2 \rangle, \langle 1,3 \rangle, \langle 2,2 \rangle, \langle 2,3 \rangle, \langle 3,3 \rangle \}$

(25) Context: Peter’s career is taking off like a rocket.
 Jetzt ist Peter **schon** im B-TEAM. (ALT: Youth team, C-team, B-team)
 now is Peter already in the B-team
 ‘By now, Peter’s already in the second team.’
 ORDERING_{ALT} “less or equal”: $\{ \langle Y,Y \rangle, \langle Y,C \rangle, \langle Y,B \rangle, \langle C,C \rangle, \langle C,B \rangle, \langle B,B \rangle \}$

(26) Yasemin hat **schon** AIshe und CLArA eingeladen. (ALT: A, C, A+C)
 Yasemin has already Aishe and Clara invited
 ‘Yasemin has already invited Aishe and Annett.’
 ORDERING_{ALT} “less or equal”: $\{ \langle A,A \rangle, \langle C,C \rangle, \langle A,A+C \rangle, \langle C,A+C \rangle, \langle A+C, A+C \rangle \}$

The following variant of (25) shows that ordering and corresponding scales are context-dependent:

(27) Context: Peter’s career is going down the drain.
 Jetzt ist Peter **schon** im B-TEAM. (ALT: National team, A-team, B-team)
 ‘By now, he’s already in the second team.’
 ORDERING_{ALT} “more or equal”: $\{ \langle N,N \rangle, \langle N,A \rangle, \langle A,A \rangle, \langle N,B \rangle, \langle A,B \rangle, \langle B,B \rangle \}$

Following Löbner (1989), Krifka (2000:406) additionally assumes a monotonic mapping between alternatives A and times t, such that for all alternatives A, A’, if A is ordered before A’ on \leq_A then A precedes A’ on the temporal scale T. Furthermore, the alignment of \leq_A with T is taken to be part of the presupposition of aspectual *schon* ‘already’, giving (28):

$$(28) \quad \text{ALREADY}(\langle B, F, \leq_A \rangle) \Leftrightarrow \langle B, F, \leq_A \rangle, \text{ defined iff } \forall X \in A [X \leq_A F] \text{ and } \leq_A \text{ is time-aligned.}$$

This analysis directly extends to instances of sentences referring to structured sequences of events, as in (29) from Krifka (2000:406f.), in which “the previous events of the opera [are] ordered in the sequence in which they are canonically performed” (ibid.):

(29) You are always so late to the opera! Othello **already** found the handkerchief.

Given the lexical entry of *already* in (28), all relevant alternative events in the sequence must be located at a time before Othello finds the handkerchief. Furthermore, the analysis in (28) accounts for cases when *schon*_{ASP} associates with propositional alternatives: In the absence of context, the presence of *schon* in (30) will induce an ordering of the polar opposites *not-p* and *p*, which are temporally aligned, such that the state of not-raining precedes the state of raining. The resulting interpretation is verum-like in comparing polar opposites.⁶

(30) Es REGNET schon. (ALT: raining, not-raining)
 ‘It’s raining already.’
 ORDERING_{ALT}: {<not-rain, not-rain>, <not-rain, rain>, <rain,rain>}

Krifka’s (2000) analysis of aspectual particles as scale-alignment particles is also attractive from a conceptual perspective in at least two respects. First, aspectual *schon* ‘already’ imposes constraints on the licit focus alternatives, and thus on discourse structure, by imposing an intrinsic ordering on the focus alternatives. This closely resembles the analysis proposed for focus particles in Beaver & Clark (2008), who claim that such particles map focus alternatives to entailment scales or, equivalently, to orderings. Exclusive particles (*only*) exclude all focus alternatives that are stronger on some contextually given scale. Scalar particles (*even*) resemble *schon* in presupposing that the asserted alternative is the strongest among the contextually salient focus alternatives. Given this parallel, it should come as no surprise that the two particles show a certain affinity and frequently occur together:

(31) Maria hat **sogar schon** fünf Bücher gelesen.
 Mary has even already five books read
 ‘Mary has even read five books already.’

Likewise, exclusive particles can give rise to aspectual interpretations in many languages, including English (König 1991):

(32) He **only** arrived at 3 o’clock.

Secondly, the inherently asymmetric ordering semantics of aspectual *schon* easily translates into a comparison degree semantics. As indicated in (33), ordered relations are asymmetric:

(33) Ordered(R): $\forall \langle x,y \rangle \in R [x \neq y \rightarrow \langle y,x \rangle \notin R]$

6 The verum-like nature of such cases is evidenced by the fact that – in out-of-the-blue utterances – the main focus accent is preferably realized on the verb, even in sentences that otherwise show a different focus placement in contexts with neutral sentence focus, cf. (ia) vs (ib), which are modelled after examples in Kadmon & Sevi (2010:19):

(i) Q: What’s happening?
 a. Pavarotti SINGT schon
 ‘Pavarotti’s SINGing already.’
 b. PAVAROTTI singt.
 ‘PAVAROTTI’s singing.’

Asymmetric relations are, however, at the heart of each and every comparison: The adjectival comparison in (34) is true iff and for every degree d to which Peter is tall, there is an identical or larger degree d' to which Mary is tall, but not vice versa.

(34) Mary is taller than Peter.

As a result, the height of Peter is ordered lower than the height of Mary on the lexically given scale of ordered tallness degrees: $\text{height}(\text{peter}) \leq_{d\text{-TALL}} \text{height}(\text{mary})$. In the same vein, aspectual *schon* can be considered as expressing an implicit comparison (*less than, more than*) between an asserted alternative and its focus alternatives, or between polar alternatives ($p, \neg p$), on some contextually given scale. It is this inherently comparative nature of aspectual *schon* that will provide the basis for the unified analysis of aspectual and modal *schon*.

3.2 Lack of temporal alignment and generalized orderings

In spite of its initial appeal, there are a number of problems with the analysis in (28), and in particular with the postulated obligatory alignment between ordered alternatives and the temporal scale T . Firstly, the examples in (24) to (27) all involve bi-directional mappings between the intrinsic ordering scale and the temporal scale T , such that an explicit specification of temporal alignment would appear to be superfluous. For instance, the alternative of being 3 months old in (24) must be located at a later point in time than any of its contextual focus alternatives. This suggests that the alignment condition with T can be dropped from the core meaning of aspectual *schon*, as it is recoverable from inherent properties of the ordered alternatives themselves. In a similar way, the additional temporal alignment in (28) seems superfluous with the ordered event sequences in (29), in which the temporal sequencing appears to be at the heart of the ordering relation \leq_A . Third, there is no temporal alignment with the cross-sentential use of aspectual *schon* in (16). Here, the event of writing two books associated with *schon* is located at an earlier point in time than the salient focus alternative *write one book*, even though *two books* is ordered higher than *one book* on the relevant scale of focus alternatives. All taken together, these observations suggest that the temporal alignment effects frequently observed with aspectual *schon* might be better treated as pragmatic implicatures, which, being impliatures, should be cancellable in appropriate contexts.

The biggest problem for the temporal alignment analysis in (28), however, arises in connection with what Löbner (1989) called Type3-instances of aspectual *schon*. In contrast to what has been shown so far, the temporal alignment of the ordered alternatives is reversed with Type3-occurrences of *schon*, such that the focus alternatives *ranked lower* according to the interpretation scheme in (28) are aligned with *later* time intervals. For instance, the lower-ranked and weaker alternatives (Tue, Wed) in (35) are NOT temporally aligned with T in this order, but rather follow the asserted focus alternative (Mon).

(35) Maria ist **schon** am MONtag angekommen. (ALT: Mon, Tue, Wed)
 Mary is already on Monday arrived
 ‘Mary has already arrived on MON\day.’

In reaction to this problem, Krifka (2000:411) proposes an intensionalised analysis of aspectual *schon* on which the particle presupposes an ordering of alternative intensionalised developments B , that is relations between events and times, in terms of their relative speed. As indicated in (36), any alternative developments $B(i)$ must be at most as fast as the asserted development $B(i')$.

(36) $\forall X \in A \forall i \forall i' [B(i)(X)(\xi) \wedge B(i')(F)(\xi) \rightarrow B(i) \leq B(i')]$

with i, i' intensional indices, B, B' development relations between events and times, and ξ an event or time argument.

Importantly, the presupposition in (36) makes no more direct reference to the temporal scale. Temporal alignment effects arise only indirectly through the notion of development speed. For instance, the presence of *schon* in (35) compares the development of Mary's arrival on Monday with alternative developments on which she arrives some time later, and specifies correctly that any alternative development is at most as fast as the asserted development; see Krifka (2000) for details.

Crucially, the analysis in terms of speed-ordered developments easily accounts for the more basic examples in (24) to (27) and (29) as well. For instance, being 3 months old at time t involves a faster development of growing older than being 2 months old at the same time t . Moreover, the analysis also accounts for more problematic example involving cross-sentential comparisons, such as (16) above: clearly, the development speed of Mehmet writing two books at t is faster than the development speed of Cem writing one book at $t' > t$.⁷ In addition, the analysis neatly captures the verum focus example in (37), from Mittwoch (1993), which shows that aspectual *schon* is NOT a phase particle, pace Löbner (1989). In the given context, there is no earlier time interval such that the negated proposition *not(American(my husband))* is true. Nuclear pitch accent on *already* is indicated by ‘’.

- (37) A: I've applied for American citizenship.
B: Is your husband also applying?
A: He is already American, for he was born in America.

Finally, the analysis accounts for cases in which aspectual *schon* associates with sentence focus. In the context in (38), the sentence with *schon* expresses the fact that the development of the event of Peter doing the dishes is faster than that of the alternative developments (doing the laundry, doing homework):

- (38) Context: After lunch, Peter was supposed to do the dishes, do the laundry and do his homework. What has he done already?
- A: Er hat *schon* abgewaschen.
3SG has already wash.up
'He has already done the dishes.'

Summing up, there are two important ingredients to the revised analysis of aspectual *schon* in Krifka (2000). Firstly, *schon* is treated as an intensional operator that takes an intensionalized meaning component (B) as its semantic argument. Secondly, the revised analysis of *schon* involves a much more abstract notion of ordering, here a comparison of development speeds, which severs the tight relation of *schon* and temporal ordering found in the original analysis. What seems crucial is, rather, that aspectual *schon* always expresses a comparison on some contextually given scale. This naturally raises the question of whether the particle *schon* can

7 This correctly rules out the occurrence of *schon* with slower developmental paths as in (i):

(i) #Cem hat zwei Bücher geschrieben und Mehmet hat **schon** ein Buch geschrieben.

#'Cem has written two books, and Mehmet has already written one book.'

Interestingly, the slightly modified version in (ii) with the additive particle *auch*, also 'added' is licit in German:

(ii) Cem hat zwei Bücher geschrieben und Mehmet hat **auch schon** ein Buch geschrieben.

'Cem has written two books and Mehmet has also already written one book.'

We postpone the analysis of (ii) to another occasion.

also make reference to contextual scales that have nothing to do with temporal developments at all.

3.3 Generalizing the analysis: aspectual *schon* as a generalized degree operator

Taking the analysis of aspectual *schon* as a scale-alignment particle in Krifka (2000) as our point of departure, it is possible to arrive at an even more general comparison-based meaning for aspectual *schon* and other instantiations of this particle. We do so by showing, first, that *schon* is not licensed whenever the context does not make a comparison class available. This provides evidence for the inherently comparative nature of *schon*. Following this, we discuss cases in which *schon* does express a comparison between focus alternatives, but which do not involve an ordering in the domains of temporal intervals or developments.

Consider first the example in (39), in which the focus alternatives (baker vs butcher) are not intrinsically ordered, assuming that the two professions are of equal value in terms of social prestige, income etc.. Crucially, the explicit temporal ordering is insufficient for licensing a comparison of alternatives with *schon*.⁸

- (39) A: What is Peter's profession?
 B #*Früher* war er BÄCK\er, aber *heutzutage* ist er **schon** FLEI\scher.
 before was he baker but nowadays he is already butcher
 'Before he was a baker, but nowadays he's already a butcher.'
 (necessary ALTs: baker \leq butcher)

This shows, again, that temporal ordering is of lesser importance for the licensing of *schon*. What IS relevant is the comparative ordering of alternatives.

This is also apparent with occurrences of *schon* as a so-called degree particle (König 1977). With stative and locative predicates, *schon* expresses intrinsic orderings in terms of geographical or political distances, as illustrated in (40a) and (41a), with truth conditions and presuppositions as indicated in (40b) and (41b), respectively:

- (40) a. Kreuzlingen ist **schon** 50 KM entfernt.
 Kreuzlingen is already 50 km away
 'Kreuzlingen is already 50 kms away.'
- b. = 1 iff Kreuzlingen is 50ks away from the speaker;
 defined iff $\forall X \in \text{ALT}_{\text{DIST}}: X \leq_{\text{DIST}} 50\text{km}$
- (41) a. Kreuzlingen ist **schon** in der SCHWEIZ, aber viel näher als Stuttgart.
 Kreuzlingen is already in Switzerland but much closer than Stuttgart
 'Kreuzlingen is already in Switzerland, although closer than Stuttgart.'
- b. = 1 iff Kreuzlingen in Switzerland; defined iff $\forall X \in \text{ALT}_{\text{COUNTRY}}: X \leq_{\text{DIST-POL}} \text{Schweiz}$

It is clear that these geographical statements do not express a comparison on the temporal scale, or in the domain of developments. Rather, *schon* induces an ordering on the domain of spatial distances in (49a), specifying that all alternative distances in the context must be shorter or equal to 50 kms, i.e. Kreuzlingen is relatively far from the speaker regarding the other distances under consideration. Likewise, in (41a), *schon* induces an ordering in the

⁸ Due to the presence of *schon*, (39) will only be felicitous on the assumption that the profession of butcher is superior to the profession of baker on *some* contextually given scale, such as income, social prestige, work conditions etc.

domain of political distances (DIST-POL), measured by intervening borders, with the asserted alternative Switzerland being ranked higher (politically further away) as the only contextually relevant alternative, Germany. In other words, the particle *schon* in these examples induces the same ordering on, or comparison of, focus alternatives as was observed in sentences with a temporal or developmental ordering. What is common to all instances of *schon* considered so far, then, is the implicit comparison of the asserted focus denotation with the contextually relevant focus alternatives on some scale, which may be temporal, or development-related, or related to geographical or political distance. (42) is another example, this time expressing comparison on the scale of genealogical distances in the Prussian dynasty. The sentence is felicitous in a context in which the ancestry of Frederick the Great is under discussion.

- (42) Der Große Kurfürst war **schon** der *Urgroßvater* von Friedrich dem Großen.
 ‘The Great Elector was already the great-grandfather of Frederick the Great.’
 ALT = {father, grandfather, great-grandfather}

Same as in all the other examples with *schon*, the ordering in (42) is imposed by a requirement that the contextually salient focus alternatives be located lower than, or at most as high as the asserted alternative, on some scale.

We take this implicit comparison to be the core meaning of all instances of the particle *schon*, which is properly analyzed as a generalized degree operator. On all its occurrences, the degree operator *schon* introduces a presupposition which requires for all of the contextually salient focus alternatives to be lower on some intrinsic or, in the absence thereof, a contextually given scale. The alternatives are either logically entailed or implicated by the at-issue meaning component in the spirit of Beaver & Clark (2008). Adopting the structured meaning analysis from Krifka (2000), the generalized meaning of the comparative degree operator *schon* is given in (43):

- (43) Generalized meaning of *schon* as a scale-related degree operator:

$$\llbracket \text{schon} \rrbracket^C \langle \text{BG}, \text{F}, \leq_A \rangle = \text{BG}(\text{F}); \text{defined iff } \forall X \in A_C [X \leq_A \text{F}]$$

In many cases, the relevant scale is determined by the intrinsically scale-related properties of the lexical meaning of the expression in focus, which often denotes directly into comparable semantic dimensions, such as age, numbers, distances, size, weight etc. When the lexical meaning of the focused constituent does not make a scale available, default reasoning procedures and contextual information can give rise to temporal orderings, as in (30) (*It’s raining already*), or to orderings in terms of developmental speed, as in (16) (*Mehmet has already written two books*). Moreover, the underspecified lexical entry in (43) accounts for the reversal in temporal orderings found with focused temporal adverbs, as in (35), repeated:

- (35) Maria ist schon am MONtag angekommen.
 ‘Mary has already arrived on MON\day.’

In (35), the asserted resultant state of Mary’s having arrived on Monday is ranked higher on the earlier-than scale than all its intensional alternative states involving later points of arrival (Tue, Wed, ...), and it entails them (44a). By contrast, alternatives with earlier points of arrival on the later-than scale are not entailed (44b), and hence ruled out as viable focus alternatives:

- (44) a. Mary has arrived on Monday \Rightarrow Mary has arrived on Tuesday/Wednesday etc.
 b. Mary has arrived on Monday \nRightarrow Mary has arrived on Sunday

Since the validity of the entailments is dependent on the perfectivity, or boundedness, of the event in action, the affinity of *schon* to sentences expressing perfective aspect focus follows directly:

- (45) A: When will Peter repair the bike?
 B: Er HAT es schon repariert.
 3SG has it already repaired.
 ‘He has ALREADY done so.’

3.4 Extending the analysis: Modal *schon* as a modal degree operator

The analysis of the particle *schon* as a generalized scale-related degree particle in (43) extends directly to modal *schon*, which crucially involves a modal dimension of comparison. The proposal, in a nutshell, is that next to lexically determined scales, and in addition to pragmatically or contextually-induced scales involving temporal ordering or development speeds, there is also a modal scale of comparison available when *schon* associates with a proposition p . The modal scale is constructed on the basis of a modal ordering source $\leq_{\text{EVAL},x}$, which evaluates the validity of asserting p , in comparison to $\text{not-}p$, in light of the factive evidence made available by the circumstantial modal base to an evaluating agency x (Kratzer 2012). The formal definition of \leq_{EVAL} is given in (46), which specifies that, given the available facts q_1, \dots, q_n in the circumstantial modal base MB, the number of facts supporting p available to x is greater than the number of facts supporting $\text{not-}p$. Informally, the semantic import of (46) translates as ‘rather p than $\text{not-}p$ ’:⁹

$$(46) \neg p \leq_{\text{EVAL},x} p = 1 \text{ iff } |\{q \mid q \in \text{MB}_{\text{CIRC},x} \wedge q \text{ supports } \neg p\}| \leq |\{q \mid q \in \text{MB}_{\text{CIRC},x} \wedge q \text{ supports } p\}|$$

The definition of \leq_{EVAL} in (46) incorporates the restricted association of modal *schon* to polar alternatives, which was already observed in sub-section 2.1: the modal comparison \leq_{EVAL} is inherently restricted to compare p with its polar opposite $\text{not-}p$. The definition of the modal ordering source $\leq_{\text{EVAL},x}$ in (46) is compatible with the syntactic analysis of modal *schon* in Ormelius-Sandblom as attaching to the highest verbal projection (in modern minimalist terms, vP), which is propositional in nature. Moreover, the definition in (46) provides a formalization of a number of informal semantic characterizations of the function of modal *schon* from the descriptive literature: Thurmair (1989:150), for instance, sees the basic function of modal *schon* in the restriction of possible counter-arguments to the proposition expressed. These are the circumstantial facts supporting $\neg p$ in (46). For König (1991:185), *schon* is “a marker of assertive strength that is used in problematic contexts, in contexts, that is, where the prima facie evidence goes against the assumption expressed by the sentence with *schon*”. Again, the prima facie evidence against p is explicitly registered in (46).

9 The formalization in (46) is simplifying as it builds on the idealizing assumption that the available facts will support p (or $\text{not-}p$) to the same degree. In reality, different facts will support p (or $\text{not-}p$) to varying degrees, with some facts constituting stronger evidence for p , and others constituting weaker evidence for p . A more precise formalization should therefore also incorporate a weighing of facts as indicated in (i), which does not involve a comparison of cardinalities, but a comparison of the sums of weighted factors. For simplicity, assume that the numeral function n is a constant function mapping the individual propositions constituting evidence for or against p on the numerical value ‘1’:

$$(i) \leq_{\text{EVAL},x}(p) = 1 \text{ iff } \sum (W_i \times n(q_{p,i})) - \sum (W_j \times n(q_{\text{not-}p,j})) > 0; \text{ with } q_{p,i}, q_{\text{not-}p,j} \in \text{MB}_{\text{CIRC},x}$$

Alternatively, the content of (i) could also be modelled by means of so-called *credence functions* (Pettygrew 2011), which would assign different (x -oriented) probabilities to p and $\text{not-}p$, respectively. However, credence functions as formal objects seem to be derived from more basic psychological facts, given that the semantic content of a credence function related to p depends essentially on the factive or circumstantial evidence for or against p that is available to a given attitude holder x at a given time t .

The workings of (46) are exemplified by looking at the St.Pauli example in (2), repeated as (47a). The evaluative claim in (47a) is arrived at on the basis of considering the available facts regarding the strengths and weaknesses of this football team in (47b). Importantly, the facts supporting p outnumber those in favor of $not-p$, i.e. the ineffective strikers, thus satisfying the definedness condition in (47c):

- (47) a. St.Pauli ist **schon**_{MOD} ‘n gutes Team.
‘St.Pauli is a good team, alright.’
- b. Im Angriff sind sie zwar schwach_{q1,not-p}, aber sie haben eine gute Abwehr_{q1,p}, eine gute Nachwuchsarbeit_{q2,p}, und super Zuschauer_{q3,p}.
‘The strikers may be ineffective, but they have a good defense, talented youth players, and excellent supporters.’
- c. $\llbracket \text{St.Pauli ist schon ein gutes Team} \rrbracket^{\text{Spkr}} = 1$ iff St.Pauli is a good team; defined iff $\forall q \in \{\text{St.Pauli is a good team, St.Pauli is not a good team}\}: q \leq_{\text{EVAL,Speaker}} \text{St.Pauli is a good team}$.

Conversely, the use of modal *schon* is not warranted if the number of facts in support of $not-p$ is larger than the number of facts supporting p , as evidenced by the infelicitous continuation in (47d) (unless, of course, strong forwards outweigh anything else):

- d.# Sie haben zwar eine schwache Abwehr_{q1,not-p}, praktisch keine Nachwuchsarbeit_{q2,not-p} und ein mieses Publikum_{q3,not-p}, aber im Angriff sind sie stark_{q1,p}.
‘The defense may be lousy, they may have practically no talented youth players, and the supporters are terrible, but their strikers are good.’

The analysis of modal *schon* as a modal degree operator over the modal scale of evaluative comparison between p and $not-p$ makes additional correct predictions concerning the distribution and semantic behavior of this particle. First, the specific meaning contribution of *schon* depends on the kind of intrinsic or extrinsic ordering/scale, and on the presence of relevant alternatives indicated by focus accenting. It follows that any additional interpretive effects, such as e.g. mirativity, weakened commitment, or positive evaluation (Féry 2010, Egg 2012, 2013) are not mandatory semantic effects, but pragmatically derived as conversational implicatures; see Krifka (2000) for a similar claim regarding aspectual *schon*_{ASP}.

Secondly, given that the evaluative ordering $\leq_{\text{EVAL,x}}$ in (46) is not speaker-centered, the analysis correctly predicts that modal *schon* can occur embedded under attitude verbs, as in (48a). In such cases, *schon* selects the denotation of the matrix subject as attitude holder. Likewise, the availability of a shifted interpretation of modal *schon* in the indirect attitude report (48b) is predicted, where the modal evaluation of the *schon*-sentence is attributed to Yasemin.

- (48) a. Peter findet, dass St.Pauli **schon** ‘ne gute Mannschaft ist.
‘According to Peter, St.Pauli is a good team after all.’
- b. Yasemin war sehr aufgebracht: Cems Verhalten war **schon** eine Zumutung.
‘Yasemin was really upset: Cem’s was being quite impertinent indeed.’

Third, instances of modal *schon* can co-occur with the explicit expression of exhaustive quantification over the modal base, for instance with the adverbial sentence modifier *insgesamt* ‘all in all, all factors considered’:

- (50) Insgesamt ist St.Pauli **schon** eine gute Mannschaft.
 ‘All in all, St.Pauli is a good team.’ ≈ ‘All factors considered, there are more facts supporting *p* than *not-p*.’

The adverbial phrase *insgesamt* in (50) makes explicit the otherwise implicit assumption that *all* facts *q* in the circumstantial modal base are taken into consideration in the evaluation in (46). This typically leads to domain widening effects (Kadmon and Landman 1993), as illustrated in (51):

- (51) St.Pauli sind oft mies, aber [#](insgesamt) sind sie **schon** ‘ne gute Mannschaft.
 St.P are often terrible but all-in-all are they PRT a good team
 ‘St.Pauli are often terrible, but all in all they are a good team, alright.’

Just based on the information conveyed by the first sentence, the use of modal *schon* would not be licit in the second clause were it not for the explicit consideration of additional facts. In this connection, notice that exhaustive quantification with *insgesamt* is illicit with objective, episodic statements, such as (52).

- (52) #Insgesamt ist Lorient **SCHON** tot.
 All in all is Lorient PRT dead
 ‘All in all, Lorient is dead, alright.’

We will return to the infelicity of (52) in sub-section 3.5, which discusses occurrences of modal *schon* in objective statements.

The generalized degree operator analysis of modal *schon* also accounts for the fact that the particle is illicit in contexts expressing absolute certainty, as well as in direct perception reports; cf. (20) and (21) above. In contexts of absolute certainty, in which the circumstantial basis is uncontroversial in the face of, for instance, direct perceptual evidence, the use of *schon p* would be misleading, as it points to the existence of facts supporting *not-p*. This is comparable to the observed infelicity of the modal auxiliary *must* in direct perception reports, as discussed e.g. in von Stechow and Gillies (2010). Conversely, the use of modal *schon* is expected to be obligatory in evaluating statements that are based on potentially conflicting evidence, because of the interpretive constraint MAXIMIZE PRESUPPOSITION (Heim 1991). Although more empirical work is required, the prediction seems to be by and large borne out. For instance, there is a strong preference for the occurrence of the particle *schon* in (53), a variant of Kratzer’s (1977) *deer*-example, if the sentence is to express a bias towards *p* in a context with an inconsistent premise set:

- (53) In Bayern können Bauern [?](*schon*) für ihre Schafe haften.
 in Bavaria can farmers PRT für their sheep be.liable
 ‘In Bavaria, farmers can be liable for their sheep (despite some evidence to the contrary)’

The preferred occurrence of *schon* in (53) indicates that there are reasons to believe either that farmers are not liable, or else that it is impossible that farmers are liable, depending on the syntactic attachment site of *schon*. The factual base for thinking that *not-p* could be based, for

instance, on a minority verdict that does not hold farmers liable; see Kratzer (1977, 2012) for discussion.

Finally, the fact that modal *schon* expresses the speaker's evaluative bias for p over $\neg p$ directly accounts for why modal *schon* is licit in p -biased declarative questions (Gunlogson 2002), as illustrated in the reproachful (54a), but not in neutral yes/no-questions (54b). (54b) only allows for an aspectual interpretation of *schon*.

- (54)a. Sie wissen **schon**_{MOD}, dass links abbiegen hier verboten ist?
 you know PRT that left turn here forbidden is
 'You know very well that it's forbidden to turn left here?'
- b. Wissen sie **schon**_{ASP}, dass links abbiegen hier verboten ist?
 know you already that left turn here forbidden is
 'Do you know already that it's forbidden to turn left here?'

A plausible scenario for a felicitous utterance of (54a) would be the following: The speaker has seen the addressee turning left (evidence for $\neg p$). There is a No Turn-sign (evidence pro p), and the speaker has reason to believe that addressee has seen the sign (pro p), and – being able to drive a car – knows what the sign means (pro p). Given that the facts supporting p outweigh those supporting $\neg p$, the presupposition of *schon* is satisfied.

3.5 Interaction with modal elements

As already indicated in connection with (53), modal *schon* exhibits an affinity for root modal expressions with a circumstantial modal base (Kratzer 1991, 2012), with which it interacts in systematic ways.¹⁰ For instance, modal *schon* induces a reassuring effect with the future auxiliary *werden* 'will' (54a) and a weakening effect with circumstantial *können* 'may' (55a) (Kratzer 1991). These pragmatic effects result from a local construal of *schon* with the core proposition p , the semantic argument of the modal auxiliary, thereby pointing to conflicting evidence for $\neg p$ in the modal base.¹¹ For instance, (54a) underlines the speaker's conviction that p holds at t' even in the presence of facts supporting $\neg p$ at t , thereby giving the utterance a feeling of reassurance.

- (54) a. Keine Sorge! Bela wird **schon** kommen!
 'No worries! He will come for sure.'
- b. $\llbracket(54a)\rrbracket^{t,w} = 1$ iff $\forall w' \in \text{MAX}_{O,\text{INERTIA}}(\cap \text{MB}_{\text{CIRC}}(w,t))$: $\exists t' > t$: $\text{come}(B, t')$ in w' ;
 defined iff $\forall q \in \{\neg \text{come}(B, t'), \text{come}(B, t')\}$: $q \leq_{\text{EVAL}, \text{Spkr}} \text{come}(B, t')$

10 With epistemic modals, by contrast, the presence of modal *schon* is most often illicit, as illustrated in (i):

(i) #Der Mörder muss/wird schon ein Kampfsportler ein.
 the murderer must/will PRTa martial arts expert be

Sentence (i) is ill-formed on the preferred narrow scope construal of *schon* (see main text below) because it is impossible to epistemically reason that p in the presence of facts supporting $\neg p$ in the modal base, as required by the presence of *schon*. Recall that the modal auxiliaries *must* and *will* express universal quantification over the modal base. The alternative interpretation of modal *schon* with wide scope over the epistemic modal will also be illicit in most cases, as it is not clear what kind of facts would constitute evidence that the speaker's reasoning procedure is incorrect. To the extent that (i) can be used felicitously at all, it will convey a certain moment of self-doubt on the part of the speaker, namely that she finds it conceivable that her epistemic reasoning may be wrong.

11 The frequent occurrence of modal *schon* in future-marked sentences may be taken as indirect evidence for a modal analysis of future marking as in Matthewson (2006), who derives future interpretations from a circumstantial modal base with inertial or buletic ordering sources; cf. (54) to (56).

Likewise, example (55), which is modelled after an example in Kratzer (1991:646) points out the possibility that p (= hydrangeas grow here) in the presence of facts supporting $\neg p$, thereby weakening the force of the possibility statement.

- (55) a. Hier können **schon** Hortensien wachsen.
‘There may be hydrangeas growing here, alright.’
- b. $[[55a]]^w = \exists w' \in \text{MAX}_{\emptyset} (\cap \text{MB}_{\text{CIRC}}(w))$: GROW(HYD) in w' ;
defined iff $\forall q \in \{\neg \text{GROW}(\text{HYD}), \text{GROW}(\text{HYD})\}$: $q \leq_{\text{EVAL, Spkr}} \text{GROW}(\text{HYD})$

Notice that evidence for $\neg p$ at the same time constitutes evidence in favor of *not-possible that* p , for which reason the local and wide scope construal of *schon* with existential modal *können* ‘can’ in (53) and (55) are for the most part indistinguishable.

Considering next the interaction of *schon* with the deontic necessity modal *müssen* ‘must’ in (56), *schon* can likewise take narrow or wide scope relative to the modal auxiliary. If *schon* takes only narrow scope over the core proposition p (= farmers are liable), the sentence points to the fact that the deontic rule system, requiring p , is still valid in spite of factual evidence for $\neg p$. The local construal is supported by the continuation in (56i). If *schon* takes wide scope over the modal auxiliary, the sentence says that there are some facts casting doubt on the validity of the deontic rule system, i.e. doubt on the speaker’s assumption that the best deontically accessible worlds are indeed worlds in which farmers are liable for their sheep. This construal is supported, for instance, by the continuation in (56ii).

- (56) In Bayern **müssen** Bauern **schon** für ihre Schafe haften.
in Bavaria must farmers PRT for their sheep be.liable
‘In Bavaria, farmers will/must be liable for their sheep (alright).’
- i. ..., auch wenn Bauer Meier es nicht tut.
‘...even if farmer Meier is not liable.’
- ii. ..., auch wenn einige Rechtsanwälte das bestreiten.
‘... even if some lawyers dispute this fact.’

For illustration, the formal analysis of the wide scope interpretation is given in (57):

- (57) $[[56a]]^w = \forall w' \in \text{MAX}_{\text{O, DEONT}} (\cap \text{MB}_{\text{CIRC}}(w))$: liable(farmers) in w'
defined iff $\forall q \in \{\neg \forall w' \in \text{MAX}_{\text{O, DEONT}} (\cap \text{MB}_{\text{CIRC}}(w))$: liable(farmers) in w' ,
 $\forall w' \in \text{MAX}_{\text{O, DEONT}} (\cap \text{MB}_{\text{CIRC}}(w))$: liable(farmers) in w' }:
 $q \leq_{\text{EVAL, Spkr}} \forall w' \in \text{MAX}_{\text{O, DEONT}} (\cap \text{MB}_{\text{CIRC}}(w))$: liable(farmers) in w'

The presupposition says that the factual evidence in favor of the validity of the deontic rule system outweighs the evidence against it.

Finally, the account for modal auxiliaries carries over directly to occurrences of modal *schon* in imperatives, cf. (58), in which the particle takes scope under the illocutionary operator, and gives the imperative an exasperated, or exhortative note.

- (58) Sag **schon**!
say PRT
‘Oh, come on. Say it!’

Because of the inherent comparative nature of *schon*, an utterance of (58) acknowledges the fact that there are circumstantial facts supporting $\neg p$, i.e. the proposition that the addressee

does not tell the speaker what she wants to hear. Among such facts could be, for instance, a previously displayed unwillingness on the side of the addressee to comply with the request.

3.6 Modal *schon* in objective and super-objective assertions

The analysis of modal *schon* as a generalized degree operator comparing the available evidence for and against *p* is particularly well suited to account for instances of *schon* in sentences with subjective predications and evaluations, such as *be a good team* in (2), repeated as (59):

- (59) St.Pauli ist **schon** ‘n gutes Team!
 St.Pauli is PRT a good team
 ‘St.Pauli is a good team, alright, but...’

With subjective predications, it will be typically fairly easy to conceptualize the simultaneous presence of evidence for and against *p*. In light of this, it may come as a surprise that *schon* is also readily available in more objective sentences with non-gradable predicates, such as (60ab), the truth-conditional content of which is supported and objectively verifiable by the external states of affairs obtaining in the world of utterance:

- (60) a. Die Ukraine ist **schon** ein unabhängiger Staat.
 the Ukraine is PRT a sovereign nation
 ‘Ukraine is a sovereign nation, alright.’
- b. Lorient ist **schon** tot.
 Lorient (famous German comedian, †22.08.2011) is PRT dead
 ‘Lorient is dead alright.’

The explanation for this – at first sight – puzzling fact is that even though the propositional content of (60ab) is subject to objective verification, at least in principle, some people might still think otherwise and mistakenly commit to its negative counterpart $\neg p$ for a variety of reasons.¹² That is, *schon* in objective statements is frequently employed in order to dispel a mistaken belief on the side of the addressee, once more underlining the essential function of modal *schon* in common ground management (Krifka 2008). Why would *schon* be licit in such cases, given the definition of modal evaluation in (46)? It is licit because an interlocutor’s implicitly or explicitly manifest belief that $\neg p$ constitutes by itself factual evidence in favor of $\neg p$ in the circumstantial modal base, at least with interlocutors that have an equal standing in terms of knowledge, social status etc. There are two major ways in which an interlocutor’s (assumed) belief $\neg p$ can become manifest in the modal base: It may be supported by the presence of strong external factual evidence suggesting $\neg p$. Or else, it may be triggered by an explicit subjective commitment to $\neg p$, which may or may not be supported by factual evidence. For instance, the evidence for $\neg p$ in (59b) may come in the form of external facts such as frequent (posthumous) occurrences of Lorient on TV and/or a posthumous award. Together, these facts conspire to suggest that $\neg p$, which is then counterbalanced by the presence of *schon* in (60b), indicating that *p* in fact holds in spite of evidence to the contrary. The second licensing source of *schon* in objective statements, namely an interlocutor’s subjective commitment to $\neg p$, is frequently encountered in arguments as to whether or not *p* holds, as illustrated for (60a) in (61):

12 See also Herburger & Rubinstein (2014: 559f.) for parallel observations concerning the licit occurrence of the German propositional comparative operator *eher* ‘rather’ in sentences containing non-gradable predicates. See sub-section 5.2, where the operator *eher* will be analyzed as the at-issue counterpart of modal *schon*.

- (61) A: It seems to me that the Ukraine is no longer a sovereign country.
 B: Doch, die Ukraine IST **schon** ein unabhängiger Staat.
 PRT the Ukraine is PRT an independent nation
 ‘But Ukraine is a sovereign nation, alright (even if they have lost control over their eastern borders and part of the country is occupied by Russian soldiers).’

This line of reasoning not only accounts for the occurrence of modal *schon* in objective statements, but it also allows for the prediction that the use of *schon* should be considered deviant in the case of asymmetric interlocutor relations, such as, for instance, between (condescending) teacher and student, expert and layperson etc. In such cases, a commitment to $\neg p$ on the part of the inferior discourse participant should not be taken as serious evidence for $\neg p$ by the superior interlocutor. This is illustrated for the layperson-expert scenario in (62).

- (62) Naive Western observer: The Donbass no longer belongs to Ukraine.
 Ukrainian ambassador: Doch, der Donbass gehört (??schon) zur Ukraine.
 but the Donbass belongs PRT to Ukraine
 ‘Well, the Donbass belongs to the Ukraine, alright.’

Crucially, an occurrence of *schon* in (62), although not altogether ruled out, would significantly weaken the rhetorical position of the ambassador, thus undermining her overall political goals. This is because the use of *schon* indicates that the Westerner’s remark is taken serious by the ambassador as potential evidence for $\neg p$. From the perspective of rhetoric usage, then, the use of *schon* has a more general pragmatic effect of diplomatic politeness when occurring in debating contexts: in such contexts, the occurrence of modal *schon* frequently signals that the speaker considers his interlocutors to be on equal terms, and that she is therefore willing to give their potentially conflicting position some serious consideration. Again, this highlights the essentially discourse-managing nature of modal *schon*.

Finally, we correctly expect the modal particle *schon* to be incompatible, or highly marked, with super-objective statements. Super-objective statements have a propositional content that should be objectively verifiable to anybody, and hence so evident that it is hard to believe that anybody would think otherwise, cf. (63):

- (63) ^{??} Die Erde dreht sich **schon** um sich selbst.
 the Earth spins itself PRT around itself
 ‘The Earth spins around itself, alright.’

However, given that even the truth of (63) is debated by some,¹³ absolutely infelicitous instances of modal *schon* are rare. A good candidate may be (64), the truth of which should be evident to everybody except for the most ardent Cartesian thinkers.

- (64) #Du und ich sind **schon** hier.
 you and I are PRT here
 ‘You and I are here alright.’

3.7 Modal *schon* in contrastive statements

13 See, for instance, https://www.youtube.com/watch?v=ulWpRwLP_p0, for an attempt at proving that the Earth does not rotate.

In connection with the contrastive statements in (17), repeated here, it was argued that modal *schon* compares the proposition that St.Pauli is a good team with its negated counterpart, as in all other cases discussed so far.

- (17) LE/verkusen ist KEIN\ gutes Team, aber St. PAU/li_{CT} (ist) SCHON\ (ein gutes Team).
 ‘LEverkusen is NOT a good team, but St.Pauli IS.’
 [St.Pauli is not a good team] ≤ [St.Pauli is a good team]

Occurrences of *schon* in contrastive statements are extremely common in German. In all such cases, *schon* takes on the flavor of a verum operator. A naturally occurring example and its constructed counterpart with verum focus are shown in (65ab):

- (65) a. SMS haben keine Seele, Postkarten dagegen schon.
 text messages have no soul postcards however PRT
 ‘Text messages have no soul, but postcards do.’
<http://www.welt.de/reise/staedtereisen/article114545631/SMS-haben-keine-Seele-Postkarten-dagegen-schon.html>; last accessed 15-09-14
- b. SMS haben keine Seele, Postkarten HABEN eine Seele.
 text messages have no soul postcards have a soul
 ‘Text messages have no soul, but postcards do.’

The verum focus variant in (65b) and the English paraphrase might suggest a discourse-anaphoric approach to instances of *schon* in contrastive statements: on this alternative account, *schon* would function as a placeholder for the positive predication $P = \lambda x. x \text{ is a good team}$, which is the negated counterpart of the explicit antecedent $\neg P = \lambda x[x \text{ is not a good team}]$ from the preceding context. *Schon* would indicate the presence of the negated antecedent, and compare the degree to which the polar predications apply to the subject of the clause containing *schon*.

The discourse-anaphoric analysis of *schon* makes a clear prediction: the mere contextual presence of the negated predication $\neg P$ should be sufficient for licensing *schon* in the contrasting affirmative clause, as is the case with genuine instances of verum focus. By contrast, the analysis of modal *schon* as an adsentential propositional operator comparing the polar propositions (p vs $\neg p$), is more restrictive regarding the licensing of *schon* in contrastive sequences. It predicts only such sequences to be felicitous, or unmarked, in which the assertion of the antecedent clause entails or implicates that $\neg p$. As argued above, it is the assertion of the antecedent clause that constitutes the crucial circumstantial evidence in support of $\neg p$, thereby licensing the occurrence of *schon* in the contrasting affirmative statement that p .

The following data show that the prediction of the polar propositional account is borne out. Unlike with instances of verum focus, not any pair of contrastive sentences with different topics and predications of opposite polarity licenses modal *schon*. In particular, the occurrence of *schon* is deviant in (66), without further context, as context A and the explicit antecedent proposition in p do not entail or implicate that $\neg p$. Notice the felicity of the English paraphrase with verum focus:

- (66) A: I heard that the exam was easy. How was the outcome?
 B: # Der faule Peter hat nicht bestanden. Die GUTEN/ Schüler SCHON\
 the lazy Peter has not passed the good students PRT
 ‘Lazy Peter didn’t pass. The good students DID (pass).’

The same is illustrated in (67ab). Notice that the examples differ only regarding the relative order of the respective sub-clauses. In (67a), the asserted fact that the fastidious guests did not drink the champagne implicates that they did not drink anything cheaper either. In this way, the assertion of the first sub-clause constitutes sufficient circumstantial evidence in favor of $\neg p = \lambda w. \text{the guests did not drink the cheap booze}$, thereby licensing the occurrence of *schon* in the second clause. By contrast, in the reversed order in (67b), the assertion of the fact that the fastidious guests did not drink the cheap stuff does not constitute evidence for the expectation that they would not drink the nice Champagne either, and, as a result, the occurrence of *schon* in the second clause is deviant in the absence of circumstantial evidence for $\neg p$:¹⁴

- (67) a. Die verwöhnten Gäste tranken nicht den teuren Champagner,
the fastidious guests drank not the expensive Champagne
den billigen FUSEL/ SCHON\
the cheap booze PRT
‘The fastidious guests didn’t drink the expensive Champagne, they DID drink the cheap booze.’
- b.# Die verwöhnten Gäste tranken nicht den billigen Fusel,
the fastidious guests drank not the cheap booze
den teuren CHAMPAGNER/ SCHON\
The expensive Champagne PRT
‘The fastidious guests didn’t drink the cheap booze, they DID drink the expensive Champagne.’

Based on the observable variation in the licensing of modal *schon* in (65) to (67), we conclude that the modal comparative operator *schon* always compares polar opposites at the propositional level.

3.8 Modal *schon* and the notion of CONTRAST: Comparison with alternative accounts

We conclude the analysis of modal *schon* as a special instantiation of the generalized alternative-sensitive degree operator with a brief comparison to alternative accounts. Most importantly, the present analysis retains the core insight that modal *schon* typically expresses a notion of contrast between p and $\neg p$, while deviating from earlier analyses in important ways.

The present analysis of modal *schon* as a modal comparative degree operator shows some similarities with the analysis in Ormelius-Sandblom (1997), which also treats *schon* as a modal discourse-sensitive operator. The two analyses differ, however, regarding the precise

14 The following three caveats are in order concerning the empirical facts: First, since the relevant meaning contribution of *schon* is presupposed, speakers will always have the option of accommodating the presupposed content by assuming that there be some (unknown) circumstantial evidence supporting $\neg p$. Second, speakers are at liberty to re-interpret examples such as (67b) in an ironic fashion. Third, speakers may insert a silent *aber* ‘but’ in order to license otherwise unwarranted occurrences of *schon*: the contrastive operator expresses a contrast to the proposition p as part of its lexical meaning. Thereby, occurrences of contrastive *aber* will automatically license any occurrence of modal *schon*. Because of these considerations, it is difficult to identify clearly infelicitous instances of *schon* in minimal pairs such as (67ab). At the same time, given that all three factors incur additional processing costs, the minimal pairs will always exhibit asymmetries, with one member of the pair being more marked, or more deviant than the other. The mere existence of such asymmetries constitutes conclusive evidence in favor of the modal operator analysis proposed here over the discourse-anaphoric analysis.

meaning contribution of *schon*. Unlike in the analysis in Ormelius-Sandblom (1997: 106), slightly adapted in (68), the meaning of modal *schon* on the present analysis does not express the double negation of *p*.

(68) $\llbracket \text{schon} \rrbracket(p) \approx$ It is not a fact that not *p*

Rather, the intuitively felt negation of $\neg p$ comes about in a more indirect way, namely through the presupposition that there is more evidence for *p* than for $\neg p$. In addition to capturing the uniform comparative nature of *schon* on all its occurrences, another advantage of our analysis is that it does not rely on the ill-understood and problematic concept of a factuality operator FAKT (ibid.). The relevant facts for evaluating *p* in comparison to $\neg p$ simply enter the analysis as part of the circumstantial modal base, same as with other modal expressions.

Contrasting with Egg's (2012, 2013) analysis, given in (69), modal *schon* does not require a discourse antecedent, let alone a contrastive one, thus setting it apart from the inherently contrastive discourse particle *doch*.

(69) $\llbracket \text{schon} \rrbracket(p)(q)$; defined iff both *p* and *q* hold, *p* is evaluated positively, and according to the common ground *C*, $q > \neg p$,
with *p* = *schon*-proposition, *q* = discourse antecedent

This was already discussed in connection with (18) in section 2.3 and is shown, again, in (70):

(70) A: St.Pauli hat gewonnen. B: SCHON / #DOCH
 ‘St.Pauli won.’ ‘Well yes, but..’

Finally, pace Féry (2010), modal *schon* does not indicate a penumbra of uncertainty. In particular, it does not express a weakened epistemic commitment on the side of the speaker, unlike *wohl*, cf. (71) (Zimmermann 2004, 2008).

(71) St.Pauli ist **wohl** / #**schon** ein gutes Team, aber vielleicht auch nicht.
 St.Pauli is PRT PRT a good team but possibly also not
 ‘St.Pauli (would be a good team) / # (is a good team alright), but possibly not.’

Rather, by using *schon*, the speaker indicates her firm commitment to *p*, whilst acknowledging that there might be reasons to think that $\neg p$. The present treatment of modal *schon* readily accounts for the discourse-alleviating effects of *schon*.

4. Interactions with information structure and prosody

This section takes a brief look at the different prosodic realizations of the modal particle as unaccented *schon_{MOD}* and accented *SCHON_{MOD}*, respectively. Both realizations were already illustrated in (2), repeated here for convenience.

(2) Das ist **schon** ‘n gutes TEAM. / Das ist **SCHON** ‘n gutes Team.
 i. *schon*: ‘They are a good TEAM, alright.’
 ii. *SCHON*: ‘They ARE a good team, alright.’

Given that the not at-issue contribution of *schon* is the same in both variants, the prosodic differences do not point to the existence of two separate lexical items. Rather, the differences in prosodic realization impose different information-structural requirements on the context, which are in full parallel to sentences without the particle *schon*. From this it also follows that the occurrence of the accented variant *SCHON* does not constitute evidence against the

characterization of *schon* as expressing not at-issue meaning, which – by its very nature – cannot be in focus (Simons et al. 2010).

Following Féry (2010), we argue that accenting of *schon* follows for independent information-structural reasons. In particular, the nuclear pitch accent on *SCHON* does not indicate a focus on the particle, but rather that the rest of the clause is explicitly or implicitly given and, hence, deaccented. This is the case, for instance, in typical verum focus environments, in which the propositional content of the *schon*-clause has been explicitly discussed in the preceding context, cf. (72ab):

- (72) a. Q: Is St.Pauli a GOOD team? OR St.Pauli is a GREAT team!
 A: Ja, das ist SCHON ‘ne gute Mannschaft. (#schon)
- b. A: St.Pauli is not a GOOD team!
 B: Doch! Die sind SCHON ‘ne gute Mannschaft. (#schon)

Alternatively, a nuclear pitch accent on *schon* can mark the accommodation of an implicit QUD to a more general question or request for information (Büring 2003, Roberts 1996/2012), as indicated in (73), which constitutes an instance of implicit givenness.

- (73) A: Tell me something about St.Pauli!
 QUD_{impl}: Are they any good?
 B: Das ist SCHON ‘ne gute Mannschaft. (*schon* # with QUD_{impl}; OK without)

Conversely, the nuclear pitch accent is located elsewhere in the clause, as was the case, for instance, in (2), (13B) and (14B) above, whenever the polar opposites *p* and $\neg p$ are compared in contexts with a narrow focus on another constituent. An example is given in (74), in which the context question induces a contrastive narrow focus on the verb, thereby triggering focus accent on the verb in the *schon*-sentence:

- (74) A: Did Peter WALK or did he RUN?
 B: Er ist **schon** (eher) geRANNT. (#SCHON)
 he is PRT rather ran
 ‘He ran, alright.’

As always, the presence of *schon* induces a comparison of the propositions *p* (= Peter ran) and $\neg p$ (= Peter didn’t run), with $\neg p$ being equivalent to *q* (= Peter walked) in this context with narrow contrastive focus on the verb. It is this focus-induced equivalence that is responsible for the impression that *schon* compares the actions of Peter running and Peter walking in (74B).

Summing up, the observable variation in the prosodic realization of the modal particle *schon* as either accented or unaccented does not point to the existence of two different lexical items. Rather, the (non-)accenting of *schon* follows for independent information-structural reasons: The particle carries accent when the entire proposition is given, as e.g. in verum focus contexts. Conversely, it does not carry accent whenever there is a narrow contrastive focus elsewhere in the clause. This concludes the discussion of the modal particle *schon*.

5. Theoretical implications and further empirical findings

This section discusses an important theoretical implication of the analysis of modal *schon* as a modal degree operator, together with a number of additional empirical observations in support of the analysis proposed. Most importantly, the *schon*-data constitute a novel argument in favor of Kratzer’s (2012) claim that the premise sets of modal operators should be modelled

as sets of propositions rather than as sets of possible worlds (section 5.1). The *schon*-facts are therefore of relevance for the analysis of modality in natural language in general. Second, the not at-issue expression *schon* has an at-issue counterpart in the form of the comparative form *ehér* ‘rather than’, with which it frequently co-occurs, and which confirms the underlying comparative nature of modal *schon* (section 5.2). Third, the pair of modal *schon* and *ehér* is not the only pair of modal concord expressions, which give rise to parallel semantic inferences whilst differing in the (not) at-issue status of these inferences (section 5.3).

5.1 On the semantic nature of premise sets

Kratzer (1977, 2012) argues convincingly for the view that premise sets, or modal bases, consist of sets of propositions rather than of sets of possible worlds. Her concrete example involves the interpretation of (75) in the context of the conflicting instructions given by different teachers in (76):

(75) Given the recommendations, the students must practice flying.

(76) A: The students practice striding (p) and flying (q). (Te Miti)
 B: The students do not practice striding ($\neg p$). (Te Kini)

Kratzer (2012) shows that it makes a difference for the truth assessment of (75) whether the recommendations of Miti enter the premise set as one proposition ($\{p \wedge q\}$) or as two propositions ($\{p, q\}$), even though the sets of possible worlds corresponding to these two propositional sets, i.e. $\cap\{p \wedge q\}$ and $\cap\{p, q\}$, respectively, are identical for all propositions p and q . In the first case, Miti advises the students to stride and fly together, i.e. no flying without striding. In the second case, Miti advised the students to stride or to fly, where these two activities are not necessarily linked. Given the latter interpretation, (75) will come out as true as $q = \text{the students fly}$ is entailed by the premise set consisting of p , q and $\neg p$. Given the former, (75) will come out as false as q does not follow from $p \wedge q$ and $\neg p$. The same argument can be, and has been made with respect to rational belief revision (Rott 2001), which leads Kratzer (2012:19) to conclude: “Representing the content of recommendations, claims, beliefs, orders, wishes, etc. as premise sets thus offers the priceless opportunity to represent connections between propositions in a given premise set. The content of such speech acts and attitudes can now be seen to have an inherent structure that encodes which propositions stand and fall together under challenge. This structure is lost if information contents are directly represented as sets of possible worlds, as is common in possible worlds semantics, following the lead of Hintikka (1962).”

Crucially, the same can be observed for the meaning of the modal degree operator *schon*, as laid out in sub-section 3.4. In particular, the definition of $\leq_{\text{EVAL},x}$ in (46), repeated, makes crucial reference to propositions in the modal base, which are counted (or added as weighted factors) as factors for or against p .

$$(46) \neg p \leq_{\text{EVAL},x} p = 1 \text{ iff } |\{q \mid q \in \text{MB}_{\text{CIRC},x} \wedge q \text{ supports } \neg p\}| < |\{q \mid q \in \text{MB}_{\text{CIRC},x} \wedge q \text{ supports } p\}|$$

This counting (or adding) operation cannot even be formulated over infinite sets of possible worlds. We conclude that the modal particle *schon* on the present analysis constitutes another argument in favor of modeling modal premise sets in terms of propositions.

5.2 An at-issue counterpart: *ehér* ‘rather than’

Assuming a degree operator analysis for modal *schon*, the particle can be considered the *not at-issue counterpart* of the comparative modal adjectival expression *ehér* ‘rather than’ in the analysis of Herburger & Rubinstein (2014: 562). These authors assign the denotation in (77)

to the positive form of the adjective *eh*, where *z* stands for the attitude holder.¹⁵ In a second step, the authors derive the meaning of (78a) in (78b) by applying the standard two-place comparative operator *-er (als)* ‘-er than’ to the positive proposition and its negated counterpart.

(77) $\llbracket eh \rrbracket^z = \lambda p. \lambda d. z$ is d-ready to believe p

(78) a. St.Pauli ist eher eine gute Mannschaft (als nicht).
 ‘St Pauli is rather a good team than not.’

b. = 1 iff $\max(\lambda d. z$ is d-ready to believe $p = \lambda w. \text{St.Pauli is a good team in } w) >$
 $\max(\lambda d. z$ is d-ready to believe $p = \lambda w. \text{St.Pauli is not a good team in } w)$

According to (78b), (78a) comes out as true if the maximal degree to which the attitude holder *z* is ready to believe *p* exceeds the maximal degree to which she is ready to believe in $\neg p$. In other words, the attitude holder *z* is more ready to believe in *p* than in $\neg p$. If the notion of *degree of readiness to believe in p* or $\neg p$ is reconstructed in terms of the number of facts supporting *p* and $\neg p$, respectively, in the circumstantial modal base, this comes very close to the present analysis of *schon* in terms of the \leq_{EVAL} -function in (46). This immediately accounts for the fact that modal *schon* is easily paraphrasable in terms of *eher* ‘rather than’, cf. (4), and for the fact that the two expressions frequently show up together, cf. (79). The main effect of the co-occurrence of two expressions of (almost) like interpretation in (79) is mainly rhetoric or emphatic in nature.

(79) St.Pauli ist **schon eher** ein gutes Team
 St.Pauli is PRT rather a good team
 ‘St.Pauli is really rather a good team (than not).’

Crucially, though, the comparative form *eher* differs from modal *schon* in introducing an at-issue entailment.¹⁶ This can be easily seen from the fact that, unlike with *schon*, the meaning contribution of *eher* is visible to negation, question operators, and conditionals, cf. (80a-c):

(80) a. Es ist nicht der Fall, dass St.Pauli **eher** ein gutes Team ist als nicht.
 ‘It’s not the case that St.Pauli is rather a good team (than not).’

b. Ist St.Pauli **eher** ein gutes Team (als nicht)?
 ‘(In your opinion), Is St.Pauli rather a good team (than not)?’

c. Wenn St.Pauli **eher** ein gutes Team ist (als nicht), gewinnen sie gegen Union.
 ‘If St.Pauli is rather a good team (than not), they will win against Union.’

15 That is the speaker in matrix declaratives, the addressee in questions, or, with embedded occurrences of *eher*, the denotation of the matrix subject (Herburger & Rubinstein: *ibid.*); see the discussion of parallel facts observed with *schon* in connection with (48) in sub-section 3.4.

16 A second difference concerns the fact that the at-issue operator *eher* is not restricted to express comparisons of the polar opposites *p* and $\neg p$. As shown by the following Bible-quotation from Marc 10.25, *eher* can compare different propositions of arbitrary content:

(i) **Eher** geht ein Kamel durch ein Nadelöhr, als dass ein Reicher in das Reich Gottes gelangt.
 ‘It is easier for a camel to go through the eye of a needle than for a rich person to enter the kingdom of God.’

It seems that this difference follows from the fact that at-issue *eher* requires the overt expression of both propositional arguments, unlike not at-issue *schon*, which cannot be used to combine two sentences.

Moreover, the meaning contribution of *eher* can be directly challenged:

- (81) A: St.Pauli ist **eher** ein gutes Team.
 ‘St Pauli is rather a good team.’
 B: Das stimmt nicht! Die Mannschaft hat viel mehr negative als positive Seiten.
 ‘That’s not true! There are many more negative than positive aspects to the team!’

By contrast, the only way for making the content of modal *schon* at-issue is by means of meta-linguistic quotation:

- (82) Wenn du sagst: *schon*, heißt das, es gibt auch Gründe zu denken dass nicht-p?
 ‘If you say ‚*schon*‘, are there also reasons to think that not-p?’

To conclude, the present degree operator analysis of modal *schon* directly accounts for the similar behavior of *schon* and its at-issue counterpart *eher*.

5.3 At-issue/Not at-issue pairs

The final question to be addressed is whether the existence of the close modal comparative counterpart *eher* would not constitute an argument against the proposed analysis of modal *schon*. After all, why would natural language be so overly expressive as to code the same meaning content in the form of two distinct lexical items, albeit at different levels of meaning representation? Whatever the reason, some closer scrutiny shows that the *schon-eher* pair is not the only pair of modal expressions that only differ in the at-issue status or not at-issue status of their lexical content: DeVeaugh-Geiss (2014) argues that the epistemic expressions *werden* and *wohl* both express a weakened commitment to the propositional content *p* in assertions. Whilst *wohl* does so in the form of a not at-issue inference, the epistemic weakening expressed by the modal auxiliary *werden* is part of the at-issue meaning of the clause. Empirically, this is evidenced by the fact that the meaning of *werden* is visible to higher semantic operators, as illustrated in (83ab), whereas the meaning of *wohl* is not; cf. Zimmermann (2004, 2008) for extensive discussion of the latter point.

- (83) a. Es ist nicht der Fall, dass Hein auf See sein **wird**. (NEG>werden)
 it is not the case that Hein at sea be will
 ‘It’s not the case that Hein will/may be at sea.’
 b. **Wird** Hein auf See sein? (Q > werden)
 will Hein at sea be
 ‘Would Hein be at sea?’

In other words, whilst the epistemic state of the speaker is not at-issue in *wohl*-assertions, it may very well be in *werden*-assertions. In such assertions, the modal verb *can* be used to draw attention to the relative certainty of the speaker regarding *p*.

Given the above, it should not come as a surprise that the *wohl-werden* pair resembles the *schon-eher* pair in that both modal expressions frequently co-occur, thereby giving rise to modal concord effects (Zejlstra 2008). This is illustrated in (84a), which, for all intents and purposes, is synonymous to (84b). Importantly, the co-occurrence of both forms in (84a) does not result in an additional weakening of the modal relation of epistemic uncertainty,

- (84) a. Hein **wird wohl** auf See sein.
 Hein will PRT at sea be
 b. Hein ist **wohl** auf See.
 Hein is PRT at sea.

On the analysis in DeVeugh-Geiss (2014) and on the present analysis here, the occurrence of modal concord in (84a) is accounted for: the two expressions introduce the same semantic content at different discourse-semantic levels, thereby reinforcing each other.¹⁷

Summing up, the existence of other pairs of modal elements that express the same content at the at-issue or not at-issue-level of meaning, respectively, provides additional evidence for the claim that the modal particle *schon* and its at-issue counterpart *eher* share the same basic meaning: They denote modal degree operators that express a comparison of the available facts for and against the proposition expressed by the clause they occur in.

6. Conclusions

In this paper, I have proposed a uniform analysis of the German aspectual particle *schon* ‘already’ and its modal counterpart *schon* ‘alright, rather’. The uniform account is based on a generalization of Krifka’s (2000) analysis of aspectual *schon* as entailing focus alternatives on contextually given or intrinsically ordered scales. The modal particle *schon* is analyzed as denoting a modal degree operator ranging over the available propositions or facts in the circumstantial modal base: *Schon* expresses the presupposition that the number of facts in support of *p* exceeds the number of facts in support of not-*p*. The proposed analysis makes modal *schon* come out as the not at-issue counterpart of the at-issue modal degree operator *eher* ‘rather’, as recently discussed in Herburger and Rubinstein (2014). The analysis accounts for all the semantic and discourse-semantic properties of modal *schon*, including pragmatic and rhetoric effects. Moreover, it is superior to previous accounts by Ormelius-Sandblom (1997), Féry (2010), and Egg (2012, 2013) in terms of empirical coverage and generality. Finally, the analysis of modal *schon* as comparing the available circumstantial evidence for or against a given proposition *p* has repercussions for the analysis of modal expressions in general: It supports the propositional view on modal reasoning, as recently defended in Kratzer (2012).

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References

- Beaver, David & Brady Clark (2008), *Sense and Sensitivity. How Focus Determines Meaning*. Blackwell. Oxford.
- Büring, Daniel (2003), On D-Trees, Beans and B-accents. *Linguistics and Philosophy* 26:511-545.
- Castroviejo, Elena & Laia Mayol (2012), Conclusion, consequence and solutionhood: the semantics of three Catalan connectives. In Ana Aguilar et al. (eds.), *Proceedings of Sinn und Bedeutung* 16(1). MIT Working Papers in Linguistics. 157-168.
- DeVeugh-Geiss, Joseph (2014), *Wohl and the Semantics of Assumptions*. MSc thesis. Dept. of Linguistics. Universität Potsdam.

¹⁷ The modal concord facts appear to be at odds with the observation that presupposed content can no longer be asserted, given that it is already entailed by the common ground. If so, the meaning contribution of *schon* should perhaps be treated as a not at-issue conventional implicature (Potts 2005), which does not require licensing by the preceding context.

- Eckardt, Regine & Augustin Speyer (2014), Information Structure and Language Change. In Caroline Féry & Shinichiro Ishihara (eds.), *The Oxford Online Handbook of Information Structure*. DOI: 10.1093/oxfordhb/9780199642670.013.23
- Egg, Markus (2012), Discourse particles at the semantics-pragmatics interface. In Werner Abraham & Elisabeth Leiss (eds.), *Modality and Theory of Mind elements across languages*. De Gruyter. Berlin. 297-333.
- Egg, Markus (2013), Discourse particles, common ground and felicity conditions. In Daniel Gutzmann & Hans-Martin Gärtner (eds.), *Beyond expressives: Explorations in use-conditional meaning*. Brill. Leiden. 127-151.
- Egg, Markus & Malte Zimmermann (2012), ‘Stressed out! Accented discourse particles - the case of DOCH’. In Ana Aguilar et al. (eds.), *Proceedings of Sinn und Bedeutung 16(1)*. MIT Working Papers in Linguistics. 225-238.
- Féry, Caroline (2010), Information structure of *schon*. In Thomas Hanneforth and Gisbert Fanselow (eds.), *Language and Logos. A Festschrift for Peter Staudacher*. Akademie-Verlag. Berlin. 160-175.
- von Fintel, Kai & Anthony S. Gillies (2010), Must...stay...strong! *Natural Language Semantics* 18: 351–383.
- Herburger, Elena & Aynat Rubinstein (2014), Is ‘more possible’ more possible in German? *Proceedings of SALT 24*:555–576.
- Hintikka, Jaakko (1962). *Knowledge and Belief*. Cornell University Press. New York.
- Jakobs, Joachim (1991), On the semantics of modal particles. In Werner Abraham (ed.), *Discourse Particles: Descriptive and theoretical investigations on the logical, syntactic and pragmatic properties of discourse particles in German*. John Benjamins. Amsterdam. 141-162.
- Kadmon, Nirit & Fred Landman (1993), Any. *Linguistics and Philosophy* 16(4):353–422.
- Kadmon, Nirit & Aldo Sevi (2010), Without Focus. *Baltic International Yearbook of Cognition, Logic and Communication, Vol. 6*: 1–50. DOI: 10.4148/biyclc.v6i0.158
- Kaufmann, Magdalena & Stefan Kaufmann (2012), Epistemic particles and performativity. *Proceedings of SALT 22*:208–225.
- Kiefer, Ferenc (2012), Some observations on the Hungarian adverbial particle *majd*. *Acta Linguistica Hungarica* 59:427–438.
- König, Ekkehard (1977), Temporal and non-temporal uses of *noch* and *schon* in German. *Linguistics and Philosophy* 1:173-198.
- König, Ekkehard (1991), *The Meaning of Focus Particles. A Comparative Perspective*. Routledge. London.
- Kratzer, Angelika (1977), What “must” and “can“ must and can mean. *Linguistics and Philosophy* 1:337–355.
- Kratzer, Angelika (1991), Modality. In Arnim von Stechow & Dieter Wunderlich (eds.), *Handbuch Semantik/Handbook Semantics*. De Gruyter. Berlin. 639-650.
- Kratzer, Angelika (2012), *Modals and Conditionals. New and revised perspectives*. Oxford University Press. Oxford.
- Krifka, Manfred (2000), Alternatives for Aspectual Particles: Semantics of still and already. *Berkeley Linguistics Society Meeting* 26:401–412.
- Krifka, Manfred (2008), Basic Notions of Information Structure. *Acta Linguistica Hungarica* 55:243–276.
- Löbner, Sebastian (1989), German *schon* - *erst* - *noch*: An integrated analysis. *Linguistics and Philosophy* 12:167-212.
- Löbner, Sebastian (1999), Why German *schon* and *noch* are still duals. *Linguistics & Philosophy* 22:45-107.
- Ormelius-Sandblom, Elisabeth (1997), The Modal Particle *schon*: Its Syntax, Semantics and Pragmatics. In Toril Swan & Olad J. Westvik (eds.), *Modality in Germanic Languages: Historical and Comparative Perspectives*. De Gruyter. Berlin. 75-133.
- Pettigrew, Richard (2011), Epistemic utility arguments for probabilism. In Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy*, Winter 2011 edn.
- Potts, Christopher (2005), *The logic of conventional implicatures*. Oxford University Press. Oxford.
- Rett, Jessica (2012), On modal subjectivity. *UCLA Working Papers in Linguistics, Papers in Semantics* 16:131-150.

- Roberts, Craige (2012), Information Structure: Towards an integrated formal analysis of discourse. *Semantics and Pragmatics* 5(6):1–69. First published in 1996 as OSU Working Papers.
- Rojas-Esponda, Tania (2013), A QUD-account of German *doch*. In Urtzi Etxeberria et al. (eds.), *Proceedings of Sinn und Bedeutung 18 in the Basque Country*:359–376.
- Rott, Hans (2001). *Change, Choice and Inference. A study in Belief Revision and Nonmonotonic Reasoning*. Oxford University Press. Oxford.
- Simons, Mandy, David Beaver, Judith Tonhauser & Craige Roberts (2010), What Projects and Why. In Li, Nan and David Lutz (eds.), *Proceedings of Semantics and Linguistic Theory* 20:309-327.
- Stephenson, Tamina (2007), *Towards a theory of subjective meaning*. PhD thesis, MIT.
- Thurmai, Maria (1989: *Modalpartikeln und ihre Kombinationen*. Niemeyer. Tübingen.
- Tonhauser, Judith, David Beaver, Craige Roberts & Mandy Simons (2013), Towards a taxonomy of projective content. *Language* 89(1):66–109.
- Zeijlstra, Hedde (2008), Modal Concord. In Masayuki Gibson & Tova Friedman (eds.), *Proceedings of SALT XVII*. CLS Publications. Ithaca, NY.
- Zimmermann, Malte (2004), Zum Wohl. *Linguistische Berichte* 199:253-286.
- Zimmermann, Malte (2008), Discourse Particles in the Left Periphery. In Philippa Cook, Werner Frey, Claudia Maienborn & Benjamin Shaer (eds.), *Dislocated Elements in Discourse*. Routledge. Oxford. 200-231.