

Another additive particle under stress:  
German additive *NOCH*

German *noch* ('still') is a focus particle which is commonly said to have four readings, a temporal reading, a marginality reading, an additive reading and a comparative reading, cf. (1)-(4). The temporal reading has been investigated in depth focusing on the duality of *noch/still* and *schon/already*, cf. Löbner (1989), Krifka (2000). The marginality reading is considered as derived from the temporal reading by a shift of scale. Surprisingly, however, there seems to be no proposal on how to interpret the additive and the comparative reading of *noch*.

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| (1) | Es regnet noch.<br>'It is still raining.'  | temporal    |
| (2) | Osnabrück liegt (gerade) noch in Niedersachsen.<br>'Osnabrück is still in Lower Saxony.' | marginality |
| (3) | a. Otto hat noch einen SCHNAPS bestellt.<br>'Otto also ordered a schnaps.'               | additive    |
|     | b. Otto hat NOCH einen Schnaps bestellt.<br>'Otto ordered another schnaps.'              |             |
| (4) | Berta ist NOCH größer als Adam.<br>'Berta is still taller than Adam.'                    | comparative |

The additive use of *noch* occurs in two variants. In the first variant the particle is unstressed while the associated constituent carries an accent. In (3a), the associated constituent being *einen Schnaps* ('a schnaps'), it is expressed that Otto ordered a schnaps in addition to, e.g., a beer. The other variant requires an accent on the particle while the associated phrase is deaccented, cf. (3b). In this variant it is expressed that Otto ordered another schnaps, in addition to, e.g., the one he had before. Since *noch* is generally agreed to be a focus particle (cf. König 1991), a semantic analysis should be given in a focus semantic framework. This raises, however, the question of how to interpret the accent on *noch*. In this paper, an analysis of additive *noch* will be proposed which (i) explains the accent on *noch* by deaccenting requirements, (ii) makes use of ordered sets of alternatives, as suggested in Krifka (2000), and (iii) links the additive (and the comparative) reading to the temporal and the marginality reading suggesting a uniform interpretation.<sup>1</sup>

1. Similar to additive *noch*, the additive particle *auch* occurs stressed as well as unstressed. The unstressed variant is close (though not identical) in meaning to the unstressed variant of additive *noch*. In (5a), as in (3a), the particle *auch* indicates that Otto ordered some other drink in addition to the schnaps. The stressed variants clearly differ in meaning. Compare (3b) and (5b). While in the case of stressed *noch* there has to be an another schnaps ordered by Otto, in the case of stressed *auch* there has to be another person, in addition to Otto, ordering schnaps.

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| (5) | a. Otto hat auch einen SCHNAPS bestellt.<br>'Otto also ordered a schnaps.' |  |
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<sup>1</sup> The comparative reading is shown in Umbach (2009) to be an instance of the additive reading. Due to lack of space it will not be discussed in this paper.

- b. /OTTO hat AUCH einen Schnaps bestellt.

'Otto ordered a schnaps, too.'

Following Krifka (1999), stressed *auch* is associated with a contrastive topic. Thus the additional item has to be an element of the alternative set triggered by an accent on the topic constituent (i.e. /OTTO in (5b)). The accent on *auch* is considered as indicating a focus which expresses affirmation and triggers the alternatives affirmation and denial.

Unfortunately, this interpretation is not viable in the case of additive *noch*. Note, first, that additive *noch*, as well as *auch*, is anaphoric. While for unstressed *noch* in (6a) we need a preceding context such that Otto ordered something different from schnaps, for stressed *noch* the context has to be such that Otto ordered a schnaps, cf. (6b). Thus, stressed *noch* requires a preceding context expressing the same state of affairs. Suppose we consider stressed *noch* as a focus triggering an alternative set consisting of affirmation and denial. Then the alternatives in (6b) would be {Otto-did-order-a-schnaps, Otto-did-not-order-a-schnaps}, where the second one contradicts the preceding context. But since alternatives represent propositions which could have been uttered instead of the asserted one, they must be consistent with the preceding context. Therefore, the accent on *noch* cannot be interpreted as a focus triggering the alternatives affirmation and denial.

- (6) a. (Otto hat ein Bier bestellt.) Und er hat noch einen SCHNAPS bestellt.

'Otto ordered a beer. And he also ordered a schnaps.'

- b. (Otto hat einen Schnaps bestellt.) Und er hat NOCH einen Schnaps bestellt.

'Otto ordered a schnaps. And he ordered another schnaps.'

2. Intuitively, the alternatives in (6a) include {Otto-ordered-a-beer, Otto-ordered-a schnaps}. In (6b), with stress on *noch*, the set of alternatives seems to be {Otto-ordered-a-schnaps, Otto ordered-another-schnaps}. If these items are in fact the alternatives, they must have been triggered by *einen Schnaps*. But why is there no accent on the NP and instead an accent on *noch*? The answer is obvious: The NP cannot carry an accent because the same NP occurred in the previous context. Hence the accent is shifted to *noch*, which is a well-known effect of anaphoric expressions (cf. Ladd 1996). Being due to shifting, the accent on *noch* does not indicate focus. Instead, the focus is on the NP, as in the case of (3a). Similar deaccenting effects have been discussed under the notion of "second occurrence expressions".

Second occurrence expressions can be handled by domain restriction accounts (e.g. Rooth 1992) where focus-sensitive operators are treated like quantificational adverbs, their quantificational domain being subject to various contextual restrictions in addition to focus. There is, however, the problem pointed out in Krifka (1995), that this account licenses deaccenting even if there is no suitable antecedent for the deaccented expression. Krifka thus suggests a copying account such that the meaning of the second occurrence expression is just a copy of its antecedent. For the copying account to give the correct results we have to assume that the second occurrence expression represents a different instance – it is type-identical but not referentially identical to its antecedent. With this proviso it seems reasonable to assume that the constituent associated with stressed *noch* triggers a set of alternatives which – due to the fact that it is a second occurrence expression – including only the meaning of the associated constituent and of the antecedent expression, {Otto-ordered-a-schnaps, Otto ordered-another-schnaps}.

3. It is generally agreed that *noch* relates to, or induces, an order, for example the order of times in the case of temporal *noch*. This is the reason why *noch* is called scalar, cf. König

(1991).<sup>2</sup> Moreover, the use of *noch* is generally said to presuppose the existence of a lower ranked element, for example in (1) a past time where it was raining. In Krifka (2000) the meaning of *noch* is rephrased in a focus semantic framework. The basic idea is that the alternatives exploited by *noch* are ordered by, e.g., time such that valid alternatives are ranked higher than the focus. Krifka does not consider the additive reading and thus does not come across the problem of second occurrence.

The analysis of additive *noch* raises, first of all, the question of what the relevant order would be. The answer is straightforward: It's the order of mentioning in the discourse. The order of mentioning is frequently aligned with secondary orderings, for example time in narratives, and degrees in the case of comparative *noch* (cf. Umbach 2009). Nevertheless, additive *noch* cannot be reduced to, e.g., time. Take (6b): There is no information on whether Otto ordered the second schnaps before or after the first one. Therefore, it will be claimed in this paper, that additive *noch* relates to the order of mentioning, which may, but need not be aligned to some contextually salient secondary order. This claim entails that additive *noch* is always anaphoric, and it distinguishes the additive reading from the temporal and the marginality reading, since the latter are insensitive to the order of mentioning (contra, e.g., Ippolito who claims for English *still* that it is always additive, cf. Ippolito 2007). Finally, the claim that additive *noch* relates to the order of mentioning explains the subtle difference in meaning between (3a) and (5a): In contrast to *noch*, the particle *auch* does not relate to the order of mentioning.

4. Adopting Krifka's (2000) proposal for additive *noch* would be highly attractive since it would yield a unified analysis. The ranking of the alternatives suggested by Krifka naturally accounts for the fact that *noch* relates to a scale. Instead of presupposing a lower ranked element (for example, a past time where it was raining), the focus is required to be the minimal element in the order of alternatives, thereby capturing implicature triggered by *noch* (for example, in (1), that it might soon stop raining). However, the minimality requirement poses a serious problem in the case of additive *noch*. Regardless of whether we consider the unstressed or the stressed version, the antecedent, which is obligatory for additive *noch*, will be ranked lower according to the order of mentioning (that is, Otto-ordered-a-beer <sub><mention</sub> Otto-ordered-a-schnaps in (6a), and Otto-ordered-a-schnaps <sub><mention</sub> Otto-ordered-another-schnaps in (6b)), simply because it is an antecedent.

So do we have to give up the requirement that the focus is ranked lower than the rest of the alternatives? That depends on what we consider alternatives to be. From the alternative semantics point of view alternatives include any expression of the appropriate type substituted for the focused item. But we already imposed a constraint when rejecting the idea that accented *noch* is a focus, where it was argued that alternatives must be consistent with the context. Krifka seems to maintain an even narrower notion taking alternatives to be "assertions that, given the common ground and the informational interest of the interlocuters, could have been made at the current point of conversations." (Krifka 2000, section 3).

Due to the general informativity requirement, this conception would exclude alternatives which have already been realized in the discourse, for example the antecedent alternative in the case of additive *noch*. The minimality requirement for the focused element will therefore be confined to the set of *open alternatives*, that is, those which can be realized in future discourse.

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<sup>2</sup> where the notion of 'scalar' is not restricted to likeliness.

5. Give the prerequisites discussed above – (a) the constituent associated with stressed *noch* triggers type-identical alternatives, (b) the alternatives are ordered according to mentioning, and (c) the focus is minimal with respect to the open alternatives – the meaning of additive *noch* – stressed as well as unstressed – can be spelled out as shown in (7).

- (7)  $[[noch \alpha]]^0 = [[\alpha]]^0$ ,  
 presupposing (i)  $x <_A [[\alpha]]^0$ , where  $x \in \text{Alt}(\alpha)$  and is a free variable to be bound on update;  
 (ii)  $\forall y \in \text{open-Alt}(\alpha). [[\alpha]]^0 <_A y$ .

(where  $<_A$  represents the order of alternatives, which is irreflexive, and  $\text{open-Alt}(\alpha)$  represents the open alternatives, that is, those which are neither entailed nor refuted by the preceding discourse.)

The crucial question is, of course, whether the interpretation in (7) is sufficiently general to capture the temporal (and the marginality reading) of *noch*. The obstacle is the anaphoricity condition in (i), which for temporal and marginality *noch* would have to be relaxed such that it requires mere existence. But we might also turn the tables and argue that, if there is an antecedent alternative the additive reading is possible. That would account for the fact that, even if world knowledge suggests a temporal reading, the additive reading is licensed provided that there is suitable antecedent, cf. (8a). More importantly, even if world knowledge suggests a temporal reading, *noch* has to be accented if there is a type-identical antecedent, cf. (8b). This suggests that the additive reading is a kind of fall-back strategy which is applicable provided that there is a suitable antecedent.

- (8) a. (Es gab ein Gewitter,) und es REGNET noch.  
 'There was a thunderstorm and it is still raining.'
- b. (Es hat den ganzen Tag geregnet,) und es regnet NOCH.  
 'It rained all day and it is still raining.'

To conclude, in this paper an analysis of additive *noch* is proposed which explains the accent on *noch* by deaccenting requirements, makes use of ordered sets of alternatives, and links the additive reading to the temporal and the marginality reading suggesting a uniform interpretation. The analysis explains the difference between additive *noch* and *auch* ('also') and, moreover, emphasizes the role of deaccenting in establishing alternatives.

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