The Restricted Access of Information Structure to Syntax – A Minority Report

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This paper sketches the view that syntax does not directly interact with information structure. Therefore, syntactic data are of little help when one wants to narrow down the interpretation of terms such as "focus", "topic", etc.

1   Introductory Remarks

For sentences such as (1), it seems evident that the movement of *who* in (1a-b) or *he* in (1c) is triggered by grammatical requirements linked to clausal typing, the scope-taking of *wh*-phrases, the assignment or checking of Case, the obligatoriness of overt subjects in finite clauses (the "EPP"), and the like. In many grammatical models, such as Minimalist syntax (Chomsky 1995) or OT (see Grimshaw 1997), this observation has been generalized and transformed into a basic architectural assumption for syntax: movement is "costly", and it thus applies only if necessary, i.e., if it is "triggered" or "licensed" by mechanisms such as feature checking, or by the need to avoid violations of principles with a rank higher than that of the ban against overt movement.

(1) a.   I do not care who you have met t

b.   a person who you have never met t

c.   He seems t to be likely t to win the game

Whether such a model of syntax can be maintained in full generality depends (among other things) on the analysis of sentences such as (2) and (3). These word order alternations are neither immediately related to mandatory aspects of sentence structure such as encoded by the EPP, nor do they satisfy grammatical needs following from formal/lexical properties of the displaced phrase (or the head agreeing with the landing site) such as a *wh*-feature. Still, the application of operations such as topicalization (2a), heavy NP shift (2b), or scrambling (3) is not arbitrary, but rather seems to reflect distinctions of information structure. It is tempting to analyze the interaction of information structure with syntax with the methods developed for (1), but this presupposes that notions such as topic, focus, givenness, etc. find a clear-cut definition in the theory of syntax.

(2) a. Mary, I really like __

     b. He showed __ to her the best pieces of his collection of striped stamps
         issued in the first half of the last century.

(3) *dass den   Schauspieler niemand   t erkannt   hat*
     that the-ACC actor   nobody-NOM   recognized has
     "that nobody recognized the actor"

The position defended here is that syntax and information structure interact very indirectly only. Syntax (proper) can therefore offer very little insight into the issue of the precise characterization of the core notions of information structure.

2 Triggering vs. Exploitation

Forces driving syntactic computations must be distinguished from the consequences of structural properties of the resulting constructions. Consider, for example, the passive. A formal analysis works with the following ingredients: Some morphological change of the verb or the presence of a certain

auxiliary makes it impossible to realize the external argument role of the verb as a primary syntactic argument; in particular, it can no longer appear in the subject position. In some languages, nothing additional happens, but in most languages, further changes are triggered. Often, the verb's capacity to govern accusative depends on the presence of an external argument, so that the direct object shifts to nominative in a passive. In many, but not all languages, this shift is furthermore accompanied by a movement of the nominative NP to the subject position.

Everything that is syntactically particular to the passive can be captured in this way. The "function" of the passive does not figure in the grammatical *computation*. Its functional aspects must be related to properties of the *resulting* structural object (see also Fanselow & Felix 1987). For example, some languages such as Lummi require that a subject must not be lower on the person-number-hierarchy than the object (Bresnan, Dingare & Manning 2001). Given that the passive demotes the external argument, it helps to avoid expressive gaps that would arise when a third person actor affects a first person patient. A further function of the passive is obvious in languages that restrict question formation or relativization to subjects. The demotion of the external argument also makes it possible to not mention it at all, so that the passive is adequate in situations in which courtesy, ignorance, or other factors favor the omission of the subject.

When the passive changes grammatical functions, the promoted object is closer to the left edge of the clause in subject initial languages, and the demoted external argument can be realized in the right periphery. Since the edges of a clause are often linked to topic and focus, the choice of a passive can also be influenced by information structure. We can link the "functions" of the passive to linear and hierarchical properties of the structural representation, but nothing is gained if we make functional aspects part of the computation.

Functional ambiguities as those of the passive are an indication that the formation of a construction is not driven by its functions. Heavy NP-Shift (hnps) is a further example. English VPs are easier to process if their longest subconstituent comes last (Hawkins 1994), and focused material also prefers positions far to the right. Corpus analyses (Arnold et al. 2000) reveal that hnps constructions are used for <u>both</u> functions. Again, no insights would be gained if one or both of these functions were made part of the grammatical computation – the functions arise as a consequence of properties of the product, for which it does not matter how the structure was generated.

Functional ambiguities also characterize the first position in German clauses, which can be filled by unmarked subjects, by topics and by foci. Even discontinuous NPs are pragmatically ambiguous. *Bücher* 'books' can be a (contrastive) topic or a (corrective) focus in (4). In addition, (4) can answer questions such as "what have you bought?", "what have you done?", and even "what happened?", which shows that NP discontinuity is compatible with a focus on the complete NP, or the VP and TP dominating it (Fanselow & Lenertová 2006, Puig Waldmüller 2006). The formation of discontinuous noun phrases opens a potential for different informational functions to the parts of the noun phrases, but that potential need not be made use of.

(4)   *Bücher   hab   ich   mir   ein paar   __   gekauft.*
        books   have   I   me   a   couple   bought
        "I've bought some books."

The presence of (massive) functional ambiguities makes it unlikely that these functions play a role in the generation of a construction. At least for the core of the syntax, we can exclude the "strong" functionalist view according to which some syntactic operations are <u>triggered</u> by aspects of information structure such as a "focus" feature.

A "weak" functionalist view assumes that movement is triggered by formal aspects only (such as the EPP feature), but it allows that the positions targeted by movement may be grammatically linked to information structure, either because they are specifiers of heads related to information structure (see Rizzi 1997, Pili 2000, Frey 2004), or because features linked to information structure are checked as a by-product of movement (Fanselow 2002). The weak functionalist view may be the majority position in (minimalist) syntax, but a number of observations indicate that a stronger independence of the mechanics of syntax and information structure is called for. For example, Pereltsvaig (2004) shows that in Italian and Russian predicative clauses, DP- and AP-topics must appear at the left edge of the clause while they occupy different structural positions. In other words, it is only the linear position, but not the exact hierarchical constellation, that matters for information structure here. The preverbal focus position of many SOV languages is also not structurally identical for objects and subjects: the focused elements stay in their respective base positions (the VP-complement for objects, and the specifier of vP/TP for subjects), and acquire the preverbal status when elements separating them from the verb (objects and adverbs, in the case of subjects) are scrambled to the left. Results of syntactic processes can be exploited by distinctions of information structure, but this does not show that these processes are triggered by them.

3   The Nature of Exploitation

Even if syntax is not driven by information structure, the mechanisms by which properties of constructions are exploited in the interest of expressing information structure must be made precise, and, at least in principle, in this context it could be determined which notions of information structure are relevant for syntax.

In the previous section, we saw that linear order rather than structural hierarchy matters for information structure. This could be captured in terms of constraints aligning the edges of phrases with categories such as focus or topic. Even this extremely weak version of functionalism seems untenable – at least for German, and at least for clause-internal material. Word order responds to prosodic requirements rather than to information structure. Since prosody is the primary means of realizing information structure in German, there is a relation between syntax and information structure, but it is indirect. We will discuss various layers of structure in German sentences, beginning with vP, and working our way up to and beyond CP.

In his seminal study on German word order, Lenerz (1977) argues for a decisive role of focus in licensing word order variation. In a somewhat simplified version of his model, X may precede Y if X precedes Y in the "normal" order determined by argument structure, or if X > Y means that old information precedes new. The informational notions are fixed by several tests, such as question-answer congruence. If "focus" is defined as that part of an utterance that corresponds to the *wh*-phrase in the (implicit) question which the utterance answers, then "reordering" (compared to normal order) is licensed if it leads to a more rightward position of the focus.

German is a subject > object language. Therefore, (6a) is a good answer to (5a), because the subject precedes the object, but (6b) is acceptable, too, because the given object precedes the new subject. In contrast, (6b) is not an answer to (5b): in such a context, (6b) violates both subject > object and old > new.

(5) a. *Wer   hat den   Hubert eingeladen?*
         who-NOM has the-ACC Hubert invited
         "Who invited Hubert?"

b.   *Wen   hat der   Gereon eingeladen?*
        who-ACC has the-NOM Gereon invited
        "Who did Gereon invite?"

(6) a.   *Ich denke, dass der   Gereon den   Hubert eingeladen hat.*
        I   think   that   the-NOM Gereon the-ACC Hubert invited   has

b.   *Ich denke, dass den Hubert der Gereon eingeladen hat.*
        "I think that Gereon invited Hubert."

This restriction on scrambling affects vP (Fanselow 2001, Haider & Rosengren 2003), or at most vP and TP. Two remarks are in order. First, reordering within TP is optional. Up to now, no condition has been identified that forces scrambling, as Haider & Rosengren (2003) show. Second, the focus-related constraint on reordering within TP can be understood easily in terms of accent placement. There are various theories of accent placement in the German vP or TP (Cinque 1993, Samek-Lodovici 2005, Féry & Kügler 2006, among others) which all more or less imply that the "main" accent should be as far to the right as possible. The constraint is violable in the sense that it does not rule out the realization of base-generated "normal" order. However, it constrains movement (scrambling) because an application of movement within TP must not make the structure worse with respect to accent placement. The constraint does not trigger movement, and it is only indirectly linked to information structure – the relevant concept is the right alignment of main stress in the German clause (vP/TP), and not "focus" (while stress is of course related to information structure). Many further OV scrambling languages function in more or less the same way (see also Büring 2006).

      In a series of papers culminating in Frey (2004), Werner Frey has argued that the Lenerz model needs to be elaborated by the postulation of a position above TP for sentence topics, to the left of sentence adverbials; see also Haftka

(1995). According to Frey, the notion relevant for topic placement is "aboutness", as proposed by Reinhart (1981, 1995). In front of the topic position, Frey (2005) assumes a position for contrastive phrases. This is in line with a fairly old observation (not really acknowledged in the literature before Haider & Rosengren 2003) that "new material" can be fronted to the left periphery of the middle field under restricted circumstances.

The existence of a position for aboutness topics, preceding subjects and sentence adverbs, is not beyond doubt, however. On the empirical side, closer scrutiny reveals that the ordering facts of German do not really support, and sometimes even refute, the postulation of such a position (see Fanselow 2003, 2006). In a recent acceptability rating experiment with auditory presentation, Caroline Féry and the present author could not reproduce basic judgment patterns implied by Frey's model.

Nearly all observations concerning topic placement in Frey (2004) involve the positioning of topics relative to sentence adverbs. Engels (2004) shows, however, that the position of topics relative to sentence adverbs is better explained if the latter are analyzed as focus sensitive operators; cf. also Fanselow (2006). Frey (2004) concedes that a focus sensitive use of sentence adverbs is required for certain constructions. The approach proposed by Engels is thus more parsimonious in terms of the number of uses postulated for sentence adverbs, but also in terms of the number or notions relevant for serialization: reference to a notion of topic can be avoided (a conclusion which Engels does not draw in general, however).

We will comment on contrasted XPs at the left periphery of the middle field in the next section, and turn directly to Spec,CP, the position preceding the finite verb in main clauses. Spec,CP can be filled in various ways: by the highest element of the argument hierarchy in a clause (usually, the subject) or by any adverb or PP preceding the highest argument in normal order (temporal and

sentence adverbs). These elements are those that appear at the left edge of the middle field without special pragmatic licensing. In addition, any element that can be scrambled to the left edge can show up in Spec,CP, too. We therefore find "given" objects and clause-mate topics in both slots. The generalization capturing all cases is that the leftmost element of the middle field can also show up in Spec,CP; see Fanselow (2002), Frey (2004, 2005) and Müller (2004) for different accounts, taking up basic insights of Bhatt (1999). These proposals have in common that the movement of the leftmost element of the middle field to Spec,CP is a purely formal operation, unrelated to pragmatic factors going beyond the licensing of being the leftmost element of the middle field.

Focused elements appear in Spec,CP, too, as the question-answer pair in (7) reveals. The focused object *die Bibel* cannot have reached the leftmost position of the middle field by scrambling (because it bears the main accent), so it has moved there on a path different from the one described above.

(7)   *Was   hat Maria gekauft*?
        what has Mary   bought

        Die Bibel hat   Maria gekauft.
        the   bible has   Mary   bought
        "What did Mary buy? Mary bought the bible."

Similarly, sentence topics originating in embedded clauses cannot reach the matrix Spec,CP via scrambling, because scrambling is clause-bound. Consequently, sentences such as the second one of (8) have a different derivation. Frey (2005) states that topics from embedded clauses must bear a pitch accent and be contrastively interpreted.

(8)   *Ich erzähl Dir was über Maria.*
       "Let me tell you something about Mary."

       Der   Maria meint Peter dass wir helfen sollten.
       the-DAT Mary   means Peter that   we   help   should
       "Peter thinks that we should help Mary."

The factor licensing focus preposing as in (7) once again is prosodic in nature. Building on observations of Büring (1997), Krifka (1994) and Jacobs (1991), Fanselow & Lenertová (2006) argue that "focus"-fronting is a movement crucially affecting accented rather than focused categories. The first argument is that *parts* of the focus-XP rather than the focus-XP itself can be fronted as long as they bear the focus accent. We already saw this above: (4) may be interpreted with VP- or TP-focus, even though only the stressed part of the object is fronted. The second observation is that meaningless material (i.e., parts of idioms) can be fronted to Spec,CP as long as it bears an accent. Finally, the locality constraint on fronting does not involve pragmatic criteria; rather, so-called focus fronting cannot cross accented phrases. German thus has no focus movement in a strict sense, rather, the operation transports the leftmost XP with a falling accent to Spec,CP. Prosody links the latter property to information structure, so there is an indirect link between syntax and focality.

Similar arguments apply to topic fronting. As Jacobs (1996) observes, topic fronting can be partial as well, and even parts of idioms, i.e., meaningless XPs, can be fronted when the full idiom denotes the topic and when its fronted part bears the rising accent. Both topic and focus movement thus go for prosodic rather than pragmatic properties.

There is little evidence for a direct impact of information structure on German syntax. This is hardly surprising: distinctions of information structure are primarily coded in prosodic terms. There is no need for additional syntactic encoding, but syntax is sensitive to prosodic differences. The leftmost accented

phrase (be the accent falling or rising) can move to Spec,CP, irrespective of whether it bears an information structure function or not, and scrambling must not worsen the violation profile of a sentence for the constraint that aligns the nuclear accent of the clause with the right edge of TP. Probably, other intonation languages behave in the same way (see Fanselow & Lenertová 2006 for a crosslinguistic overview, and Williams 2003 for a prosodic view of Heavy NP Shift in English). Facts may be different when we consider the domain above CP (Left Dislocation, Hanging Topics) in German; see Frey (2005) for a discussion. In this domain, German grammar may fall in line with the syntax of topic prominent languages such as Chinese or Japanese.

4   Can and Should We Go Beyond the Licensing of Exploitation?

Scrambling and the fronting of accented XPs to Spec,CP are *optional*, i.e., the prosodic factors (correlated with information structure) are necessary but not sufficient conditions for movement. Can we identify factors that trigger fronting? If such factors exist but are left unidentified, one runs the risk that even the very indirect licensing function of information structure that we observed is non-existent – it could be a side effect of other factors truly responsible for displacement.

Frey (2005) has brought the notion of "contrast" into the discussion of German word order. According to him, focus fronting and long topic movement are only possible when there is an (additional, implicit) contrast involved. Thus, he considers (9c) an odd answer to (9a) in a normal context.

(9) a.   *Wo   liegt Köln?*
            where lies   Cologne
            "Where is Cologne situated?"

b.   *Köln   liegt   am   Rhein.*
Cologne lies   on-the Rhine
"Cologne is on the Rhine river."

c.   *Am Rhein liegt Köln.*

The effect is certainly subtle – it may involve not more than the existence of a contextually salient set of alternatives from which the answer selects. We can front the focus if it picks an answer from that set, but also, one should add, when we reject such a presupposition.

Drubig (2003) claims that focus fronting is always confined to situations in which there is a delimited set of contextually salient alternatives. For German, fronting is still just an option under such circumstances, so that reference to 'contrast' at best narrows down the set of contexts in which movement is possible. However, an XP can move in German even when contextually salient contrast sets cannot be assumed. Contexts normally do not specify alternative sets for names for new students, yet (10b-c) are perfect answers to (10a). (11) illustrates the same point: a noun phrase referring to a quantity can be fronted even though it is not likely that contexts establish salient alternative sets here.

(10) a.   *Wie heisst die neue Studentin?*
           "What is the name of the new student?"

b.   *Anna Lesinski heisst   die Gute.*
     A.   L.   is-called the good

c.   *Anna Lesinski denk   ich dass sie heisst.*
     A.   L.   think   I   that   she is-called

(11)   *Wieviel kosten der Roman von Anna und die Gedichte von Peter?*
        "How much do the novel by Anna and the poems by Peter cost?"

> *40 Euro kosten die beiden Bücher zusammen.*
> 40 euro cost   the both   books   together
> "The two books cost 40 Euro together."

"Contrast" is thus not necessary for focus fronting in German. Is the notion of exhaustiveness that Kiss (1998) identifies as being crucial for Hungarian more successful in capturing the conditions under which XPs are fronted in German? We have already observed that accented objects, or even accented parts of objects, can be fronted in VP- or TP-focus contexts, which shows that it is more the phonological shape rather than the pragmatic status of an XP that determines whether it can be fronted. The series of sentences in (12) is a possible answer to "what did you do on Sunday?", and it shows that "exhaustivity" is at best a property of a full utterance, but not a property of an individual sentence with focus fronting.

(12) *Nun, Zeitung   habe ich gelesen, ich hab den Wagen gewaschen, ich*
       well newspaper have I   read   I have the car washed   I
       habe telefoniert,   und so weiter…
       have talked-on-the-phone and so on
       "Well, I read the newspaper, I washed the car, I had some phone conversations, and so on …"

"Focus" fronting does not have to be licensed by additional pragmatic properties in German – at least, such extra conditions have not been identified so far. This is what one expects if focus placement is driven by prosodic factors in German.

5   Conclusions

Our discussion of German word order has led us to conclude that information structure is *not* encoded in syntax in German, at least not within CP. Prosody defines the limits of word order variation in German, and the link between prosody and focus/topic creates the impression, albeit incorrect, that German

syntax responds to information structure. For this reason, a closer look at German syntax also will not help in gaining a clearer understanding of the notions of information structure.

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