

ON THE ALLEGED ABSENCE OF CERTAIN AMBIGUITIES IN FREE CONSTITUENT ORDER LANGUAGES

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1 Introduction

Several grammatical phenomena in natural languages have so far not been amenable to a straightforward movement analysis within the limits of ‘standard’ generative grammar. Extraposition (Culicover & Rochemont 1990, Webelhuth 2013), scrambling (Bayer & Kornfilt 1994, Fanselow 2001), and head movement (Chomsky 2008) possess properties that are quite different from those that we find with classical cases of movement (leftward A- and A-bar movement). What these ‘difficult’ constructions seem to have in common is that they are (almost) exclusively concerned with the serialization of constituents. It is therefore tempting to assume that natural language grammars possess a separate serialization component, in addition to standard core syntax, with the rules of the former having properties quite different from the rules of the latter.

Such an idea may take various forms. Pesetsky (1998) argues for a grammatical model with a separate spellout component that has the architecture of an Optimality Theory account, while core syntax has a derivational (minimalist) shape. Rules of immediate dominance are also theoretically different from rules of linear precedence in grammatical frameworks such as GPSG and HPSG. The ingredients of c- and f-structure of LFG are very different, so that LFG also falls into the class of models that give serialization processes a special treatment.

An argument that serialization cannot be accounted for in terms of “normal” transformations can also be found in *Aspects*. Ever since I first read that argument in my 1977 introduction to linguistics class taught by Peter Staudacher, I have wanted to comment on the pertinent paragraph in *Aspects*, but for different reasons so in the course of the nearly four decades I am in linguistics now. At present, I think the data show quite nicely that the expressive power of syntax is rather limited – even though an additional linearization component is not called for.

2 Case Syncretism and Word Order

§4.4. of Chapter II of Chomsky (1965) discusses whether the strict connection between structural dominance and linear precedence that we find in standard syntactic trees and in standard syntactic rules is really adequate for natural language syntax. The chapter concludes with the claim that the free constituent order phenomenon has no real bearing on this issue. Chomsky arrives at this conclusion because free constituent order appears to have a property that “is not statable in terms of the theory of transformations” (Chomsky 1965: 127). The property in question is nowadays called ‘word order freezing.’

Consider in this respect German (1) that Chomsky uses to illustrate word order freezing with. The left-peripheral position of a German sentence (the “Vorfeld”/prefield) can be filled by either the subject (2) or the object (3) (among other choices) when the grammatical function of the phrase at the left edge is identified by morphological case (or by agreement). However, Chomsky states that when the morphology of the two noun phrases involved gives no unambiguous cue as to their grammatical functions, then only the subject can be placed into the prefield. In the absence of unambiguous morphology, word order freedom seems to disappear.

(1) *Die Mutter sieht die Tochter*
 the.nom/acc mother sees the.nom/acc daughter
 claimed to only mean: “the mother sees the daughter”

(2) *Der Vater hört den Sohn*
 the.nom father hears the.acc son

(3) *Den Sohn hört der Vater*
 the.acc son hears the.nom father
 “the father hears the son”

Being apparently unaware of the insights of Bierwisch (1963) concerning the nature of the placement of the finite verb in German, Chomsky interprets the data as follows: (2) represents the basic structure (SVO). There is a “stylistic inversion” rule of major constituents that can map (2) onto (3), but this inversion is inapplicable when “a structure” (one would nowadays say: a Phonetic Form) “is produced that might have been generated independently by the grammatical rules” (Chomsky 1965:127). Stylistic Inversion applied to (1) would not change the Phonetic Form of (1), and is therefore inapplicable to this sentence. For Chomsky, such a constraint on the applicability of the inversion transformation is, however, “not statable” in the theory of transformations, as mentioned above. Obviously, the constraint in question would have to be transderivational in nature (for each PF generated by movement M, one needs to check if could have also been built up without M), and is thus indeed incompatible with the theory of transformations developed in *Aspects*. Consequently, free constituent order cannot be the result of a transformational process if the data are properly interpreted.

Chomsky (1965:126) himself already notes a potential problem for his argument. When *die Mutter* “bears contrastive stress,” it can be interpreted both as a subject and as an object in (1), as exemplified by (4b,c)

- (4) a. *Der Vater liebt den Sohn, und die Mutter liebt die Tochter.*
 the.nom father loves the.acc son and the.nom/acc mother loves the.nom/acc daughter
- b. *Den Sohn liebt der Vater, und die Tochter liebt die Mutter.*
 “As for the son, the father loves him, and as for the daughter, the mother loves her.”
- c. A: *Den Sohn liebt die Mutter!*
 the.acc son loves the.nom/acc mother
 “It is the son who the mother loves!”
- B: *Nein! Die Tochter liebt die Mutter!*
 No! the.nom/acc daughter loves the mother
 “No! It is the daughter who the mother loves.”

The presence of a particular contrastive stress on the phrase in the prefield is not a necessary condition for the acceptability of an object initial reading for (1), though. *Die Tochter* could also be a deaccented given object, and *die Mutter* an accented narrowly-focused subject, as in the constellation illustrated in (5)

- (5) A: *Wer liebt die Tochter?*
 “Who loves the daughter?”
- B: *Nun: Die Tochter liebt die Mutter!*
 Well The daughter loves the mother
 “Well, the mother loves the daughter.”

So, the only constellation that seems to disallow an OVS interpretation for (1) is one in which both noun phrases are accented equally. But under such conditions, normally, an object cannot be placed before a subject even in a morphologically unambiguous sentence, cf. Fanselow & Levertova (2011) and Frey (2005) for different accounts of this fact. For an object to be able to precede a subject, there (nearly always) needs to be a difference in the information status of the two arguments. Without such a difference, it is not only the case that no object-initial reading is possible in (1), without such a difference, (3) is unacceptable, too. Thus, in a wide focus context, (6B) is not a felicitous utterance!

- (6) A: What happened?
- B: *#Einen Aufsatz hat ein Wissenschaftler veröffentlicht.*
 an.acc article has a.nom scientist published
 “A scientist published an article.”

As an exception to this, objects may be fronted across subjects in wide focus contexts in order to be established as discourse topics, as in example (7) that could start a police report in the news. As the example shows, this works also in the case of a global morphological ambiguity.

- (7) *Ein weinendes Baby rettete eine Passantin gestern aus einem verschlossenen PKW auf dem Parkplatz einer Vogelbeobachtungsstation.*
 a.nom/acc crying Baby saved a.nom/acc passerby.fem yesterday out a.dat
 locked car on the parking lot a.gen bird watching center
 “A passerby rescued a crying baby from a locked car on the parking lot of a bird watching center.”

As soon as one realizes that object > subject order is always subject to pragmatic constraints, the alledged word order freezing effects disappear. Therefore, the judgments concerning (1) also do not motivate the postulation of an additional grammatical module consisting of rules of “stylistic inversion” and other rules of phonetic realization.

The purpose of these remarks is, of course, not to blame *Aspects* for not anticipating the outcome of a couple of decades of research on German word order. Rather, it is meant to illustrate that, very often, data that seems to have enigmatic properties under first inspection turns out to be amenable to a standard treatment after a thorough in-depth analysis.

3 Syncretism in Syntax, and More on Word Order Freezing

The alledged word order freezing effect explained away above involves Case syncretism: the syntactic distinction between nominative and accusative case is mirrored by a difference in morphological form only for masculine singular noun phrases. It is important to note that, while it does not affect reordering possibilities, the Case syncretism has syntactic effects, *viz.* in the domain of deletion/empty operators.

Many speakers of German respect a Case matching requirement in their formation of free relative clauses (cf., e.g., Vogel 2003) that renders only those structures acceptable in which the case assigned to the relative pronoun within the relative clause matches the Case assigned to the syntactic slot filled by the relative clause (8a,b). Morphophonological identity due to Case syncretism is sufficient for fulfilling the matching requirement: (8c) is grammatical, in spite of the fact that the free relative clause fills a nominative position in the matrix clause while the relative pronoun bears accusative Case. That *was* represent both cases makes the structure acceptable.

- (8) a. *Wer das mag liebt auch diesen Spinat.*
 who.nom that likes loves also this.acc spinach
 “whoever likes that will also love this spinach”
 b. **Wer das mag erfreut auch dieser Spinat.*
 who.nom that likes delights also this.nom spinach
 “This spinach delights anyone who likes that.”
 c. *Was du magst erfreut mich nicht.*
 what.nom/acc you.nom like delights me.acc not

Likewise, relative pronouns can be deleted in Bavarian dialects. As described by Bayer (1984), deletability is subject to a matching requirement similar to the one we saw for free relatives: the relative pronoun can be deleted only if its case matches the one of the head noun of the relative clause. But in the case of a syncretism, phonological identity of the cases suffices. Pullum & Zwicky (1986) list further cases where syncretism matters for syntactic processes,

involving, e.g., processes of deletion in coordinate structures. So the data suggests that there is a set of syntactic rules that is sensitive to syncretism, and that is thus part of a “stylistic component” different from core syntax, but it is confined to rules of phonological realization (deletion, licensing of empty operators), much in line with Pesetsky’s (1998) suggestion.

We have seen that there is no word order freezing in cases of syncretism, but what happens in structures in which the two noun phrases bear syntactically identical cases? Indeed, the discussion of word order freezing in the East Asian languages has focused on such situations. Thus, it has been claimed (e.g. Flack 2007) that there is no reordering in Japanese double nominative constructions such as (9a), in which both arguments bear the same syntactic case.

- (9) a. *Hanako-ga Taroo-ga kowa-i*
 Hanako-nom Taroo.nom afraid is
 “Hanako is afraid of Taroo.”
 b. **Taroo-ga_i Hanako-ga t_i kowa-i*

But such Japanese examples function more or less just like the German example that Chomsky discussed. Flack observes (and tries to explain) that the scrambled structure (9b) becomes acceptable when *Taroo-ga* is focussed, but according to the judgments of Shin Ishihara (p.c.) structures such as (10a) improve when either argument is prosodically realized as an exhaustive focus, i.e., the structure improves when prosody marks an information structure difference between the two arguments. The same effect of licensing the inversion of the two arguments arises when particles such as *-wa* or *-mo* mark a difference in information structure.

- (10) a. *jishin-ga Taroo-ga t kowa-i*
 earthquake Taroo-ga afraid is
 “Taroo is afraid of earthquakes.”
 b. *jishin-wa Taroo-ga t kowa-i*
 earthquake-top Taroo-nom afraid is
 “As for earthquakes: Taroo is afraid of them.”
 c. *jishin-ga Taroo-mo t kowa-i*
 earthquake-nom Taroo-also afraid is
 “Taroo is also afraid of earthquakes.”

It is fair to conclude that it does not matter whether the identity of case form is due to case syncretism or the identity of syntactic case: Reordering of arguments is possible even when they are formally identical, as long as the two arguments differ in informational status. But the latter is simply the standard condition on reordering.

Similar constructions can also be found in German. In the rare cases of ECM in German, the subject and the object of the infinitival clause are both marked with accusative case. (11) shows that the accusative object can easily precede the accusative subject within the embedded clause.

- (11) *dass er das Baby weder dich noch mich t halten lassen wird*
 that he the.acc baby neither you.acc nor me.acc hold let will
 “that he will let neither me nor you hold the baby”

Syntax, apparently, does not care whether the derived structures it produces involves a (global) morphological ambiguity or not when movement is at stake, but morphological ambiguity matters in the context of deletion. If there is a separate pronunciation component, it only affects the latter type of process.

4 A Ban on String-vacuous Scrambling?

In the paragraphs of *Aspects* under discussion, Chomsky not only argues for a separate stylistic component in grammar on the basis of so-called word order freezing, he also utilizes the phenomenon to illustrate the idea of a ban on deriving a syntactic object transformationally that might have also been generated ‘directly.’ While such a ban may be beyond the expressive power of core syntax in *Aspects*, the plausibility of “string-vacuous movement” has been discussed controversially in the last fifty years, and many syntactic models nowadays imply that movement should be avoided unless its application is forced by some more important grammatical constraint.

For free word order phenomena, it has been argued that there is a need for ruling out “string vacuous scrambling” (Haider 2003, Hoji 1995, Sabel 2005), which refers to a situation in which the original base order (12a) is restituted by a succession of several scrambling steps, as illustrated in (12c).

- (12) a. *dass der Mann den Adler beobachtete* →
 that the man the eagle watched
 “that the man watched the eagle”
 b. *dass den Adler der Mann t beobachtete* →
 c. *dass der Mann den Adler t t beobachtete*

The need for such a ban on string-vacuous scrambling seems to stem from considerations of scope and binding. (13) and (14) represent the standard pattern of judgments for German (cf., e.g. Frey 1993). When subject and object are linearized in normal word order (13a), there is no scope ambiguity, while the marked object > subject order (13b) is ambiguous. Likewise, a pronoun can always be bound by a c-commanding noun phrase, irrespective of grammatical function (14a,b). The marked word order (14c) shows a reconstruction effect insofar as the pronoun contained in the object may be bound by the subject despite the lack of an overt c-command relation. In normal word order, a pronoun cannot be bound by a non-commanding argument, however (14d).

- (13) a. *dass ein Professor jeden Studenten kritisiert* only: $\exists V$
 that a.nom professor every.acc student criticizes
 “that a professor criticizes every student”
 b. *dass einen Studenten jeder Professor kritisiert* $\exists V$ and $\exists A$
 that a.acc student every.nom professor criticizes
 “that every professor criticizes a student”
 (14) a. *dass jeder_i seine_i Mutter liebt*
 that everyone.nom his mother loves
 “that everyone loves his mother”

- b. *dass jeden_i seine_i Mutter liebt*
 that everyone.acc his mother loves
 c. *dass seine_i Mutter jeder_i liebt* (cf. (15a))
 d. **dass seine_i Mutter jeden_i liebt* (cf. (15b))

(14) exemplifies the janus-faced nature of scrambling very clearly: it creates new binding options (cf. 14b)) and behaves like A-movement in this respect, but it also allows reconstruction (14c) and thus also functions like A-bar-movement.

Suppose, e.g., that scope is determined according to a rule such as (15), in the spirit of Aoun & Li (1993) and Frey (1993).

- (15) α can take scope over β if α c-commands β or a trace of β .

(15) forces us to exclude string vacuous scrambling. If (14d) also had the derivation (16), the object should be able to take scope over the subject, and bind the pronoun embedded in it. Therefore, it seems that we need to rule out a string vacuous series of applications of scrambling in order to predict that structures that appear in normal order are not scope ambiguous and show no “reconstruction” effects for binding.

- (16) *seine_i Mutter jeden_i liebt* →
jeden_i seine_i Mutter t_i liebt →
seine_i Mutter_j jeden t_j t_i liebt

This argument in favor of a ban on string-vacuous scrambling faces a number of serious difficulties. First, as observed by Krifka (1998), scope inversion *is* possible in sentences with nominative > accusative order when they are pronounced with the fall-rise contour characteristic of sentences involving a contrastive topic. Why this contour should be able to lift the ban against string-vacuous scrambling is fairly unclear, in particular, because it can be linked freely to *any* syntactic structure and thus cannot be considered a prosodic effect of scrambling (as Sabel 2005 has suggested).

Bans on string vacuous movement have often been discussed in the literature. The simplest case of a string vacuous movement can be easily dealt with in a derivational framework in terms of a statement affecting a single rule application: α cannot move to β in Γ if the PF of the resulting structure Γ' is identical to the PF of Γ . By such a formulation, (17a) would have to be chosen as a structure for a subject question rather than (17b).

- (17) a. I wonder [_{CP} [_{TP} who came]]
 b. I wonder [_{CP} who [_{TP} t came]]

But the case of string-vacuous scrambling is more complex. After all, the individual scrambling steps do change the word order of the syntactic object they apply to – it is only by their combination that the original order may be restored. A constraint that is meant to block such a constellation is necessarily transderivational in nature. For each structure Δ with the sequence ... $\alpha\beta$..., with α, β in derived positions, we need to check if there is a grammatical structure Δ' which differs from Δ only in that α, β occupy base positions. In that case, Δ' would have to be assumed to block Δ .

relative order. Thus, it has been argued (den Besten & Webelhuth 1990) that incomplete verb phrase fronting as in (22) is an instance of remnant movement: the arguments are scrambled out of the verb phrase before the latter is moved to Spec,CP. Note that the arguments evacuated from VP reappear in their base generated order in (22).

- (22) [t₁ t₂ geküsst] dürfte wer₁ das Mädchen₂ haben
 kissed might someone the girl have
 “someone might have kissed the girl”
 gegeben hat der Peter der Maria das Buch nicht
 given has the.nom Peter the.dat Mary the.acc book not

If the licensing of parasitic gaps as in (23) involves the scrambling of arguments to the left of the adjunct infinitival (cf., e.g., Mahajan 1990), we again must conclude that scrambled phrases may surface in their original order .

- (23) a. dass er den Studenten ohne vorher e gekannt zu haben einstellte
 that he the student without before known to have hired
 “that he hired the student without having known him”
 b. dass er dem Kind das Buch anstatt e e zu geben weggenommen hatte
 that he the.dat child the.acc book instead to give away-taken had
 “that he had taken away the book from the child instead of giving it to him”

Crucially, as observed by, e.g., Fanselow (2001), *all* sentences in which the arguments α and β appear in an order identical with their base linearization lack ambiguities of scope and reconstruction effects, irrespective of whether α and β could still occupy the positions they were merged in (as may be the case for (13a)) or whether they have both undergone scrambling (as in, e.g. (24)).

- (24) geküsst könnte jemand jeden haben only: $\exists V$
 kissed could someone everyone have

The conclusion is inevitable that the absence of scope ambiguities in cases like (13a) and (24) cannot be linked to a ban on string-vacuous scrambling but must be due to some other constraints governing the interaction of PF and LF (cf., e.g., Bobaljik & Wurmbrand 2012, Fanselow 2012 for such proposals). But if scope and binding facts are unrelated to the presence of scrambling traces, the major reason for disallowing string vacuous scrambling sequences disappears! The complex derivation (18b-e-f-a) with ‘completely invisible’ scrambling can therefore be tolerated.

Finally, the argumentation against string vacuous scrambling suffers from the same difficulty that we have already discussed for the interaction of scrambling and morphological ambiguity: scrambling is not an operation that can be applied arbitrarily, rather, it serves various purposes, and it is hard to imagine that a fully string vacuous scrambling could fulfil any of these purpose. In (25), scrambling arguably applies in order to allow focal *am Samstag* to appear as much to the right as possible – the two arguments scramble around the high temporal adverb with changing their relative order. But what could be the reason for order-preserving scrambling in (26)? It has

no effect whatsoever on the placement of accented and deaccented material that governs much of German scrambling.

- (25) *dass das Kind den Vater am SAMStag besuchte*
 that the child the father at-the Saturday visited
 “that the child visited the father on SATURDAY”
- (26) a. *dass das Kind den Vater besuchte*
 b. *dass das Kind den Vater t t besuchte*

If the constraints governing scrambling apply directly to surface structure, and if they consist of ordering statements such as nom > acc, definite > indefinite, etc., they could not possibly distinguish between (26a) and (26b), but a general dispreference for movement would rule out (26b). In a derivational interpretation of the constraints, the two scrambling steps mapping (26a) on (26b) might be motivated by different constraints, so that C1 first triggers the movement of the object before the subject, and C2, the movement of the subject across the preposed object. E.g., the constraints animate > inanimate and definite > indefinite make different predictions for the linear arrangement in (27). Müller (2000) and Titov (2013) argue that the various constraints are ranked. Interpreted derivationally, this implies that a lower ranked constraints could not move a phrase if that implied the violation of a higher-ranked constraint. Only in the (presumably) rare case of two constraints having equal weight could we get into a potential loop of scrambling operations.

- (27) *dass der Stein ein Kind beunruhigt*
 that the stone a child worries

5 Conclusion

When I first read *Aspects* in 1977, its interest seemed to be more or less historical in nature, having been replaced by Generative Semantics or Case Grammar on the one hand, and by Montague Grammar, on the other, and semantics seemed to be much more appealing to a beginning linguist than syntax. Still, the Pisa lectures were only 2 years away, starting a fascinating expansion of syntax research that would dramatically increase our knowledge of the limits of natural language grammar.

Aspects, so it seems to me now, was just the right preparation for this. It developed a very precise syntactic model that was quite constrained in nature – recall, e.g., the strict connection between serialization and hierarchy imposed by the phrase structure component, but recall also the quite restricted nature of the transformational component that did not allow, e.g., transderivational constraints to be employed. When such more complex tools appeared necessary in a certain domain, Chomsky proposed to isolate these more complicated regularities from syntax proper.

Our discussion of free constituent order has shown that there is no need for transderivational accounts in syntax, or at least not in the domain that we considered. I take the situation with scrambling to be representative: when you look at a poorly analyzed data set, you may get the impression that it has odd properties. Closer inspection then reveals that there is an option for analyzing the data in a conservative fashion. Also, the data teaches us that it is always very

helpful to not simply formulate a putative constraint in prose, but to try and formulate it in every detail.

Of course, one cannot show that this conclusion can be generalized, given the limited space here. But other examples come to mind in which architecturally complex constraints on rule application have evaporated, like the Minimal Link Condition that had, eventually, to be given up. After all, the general strategy in *Aspects* for rule applicability was not so bad after all: a rule can be applied whenever the phrase marker in question has a certain, locally determined property. Full stop. No further fancy stuff required.

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