The role of information structure in word order variation and word order change

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1. Introduction

In this paper, I propose a novel account of word order variation and word order change in terms of competition between prosodically more or less marked forms within *one* grammar (contrary to the double base hypothesis). It is argued that variation within one grammar is due to the expression of different information-structural categories and word order change involves a change in the mapping between syntactic structure and prosodic structure in which Information Structure (IS) plays a crucial role.

1.1. Word order change in German

One of the most intriguing developments in the history of the Germanic languages, next to the grammaticalization of Verb Second (V2), is the change in basic word order in English and Scandinavian. This development involved a change from the presumed Indo-European basic OV order to the basic VO order in these languages. In this scenario, German (and Dutch) retained (modulo some changes in the application of extraposition) the inherited base order.

The traditional explanation of this phenomenon is to assume that the loss of Case led to a positional marking of grammatical functions. However, this account faces serious difficulties if we consider the development of Dutch and Icelandic, since Dutch has also lost its Case distinctions but retained OV order, while Icelandic has preserved its rich Case morphology, but nevertheless changed to basic VO order (cf. Hróarsdóttir 1998 for additional discussion of this issue).

Recently an alternative approach for the change in word order in English was proposed that assumes that the change from OV to VO is due to language contact and grammar competition in Early Middle English (EME) (cf. Pintzuk 1999, Kroch and Taylor 2000). This approach is based on the so-called double base hypothesis (Pintzuk 1999) according to which word

order variation follows from the co-existence of competing grammars that differ with respect to the head parameter of VP and IP. One of the central assumptions of the double hypothesis is that VO orders are an EME-innovation that was brought about by language contact between Anglo-Saxons and the Scandinavian settlers in the 10th century.

1.2. Word order variation in Older Germanic

If we look at word order regularities in the older stages of the Germanic languages, then we find that both OV- and VO-properties already existed in Old English (OE), rendering the contact scenario from above less plausible. Furthermore, if we look at Old High German (OHG) and Old Icelandic (OI) (cf. Hróarsdóttir 1998), we find a similar kind of variation in word order suggesting that these mixed word order properties should not be treated in terms of language contact but may simply be part of the common Germanic inheritance. In the following I will restrict myself to a discussion of word order variation in OE and OHG.

The examples in (1) illustrate typical OV-properties in OE. For example, in (1a) the direct object and the verb particle precede the finite verb in final position within an embedded clause and in (1b) the non-finite verb precedes the finite auxiliary in sentence final position, as is typical in OV-languages. The same state of affairs, maybe less surprisingly, also holds in OHG, as is illustrated in (2).

(1) a. *þæt   he   his   stefne   up   ahof*   (Pintzuk 1991:71)
         that   he   his   voice   up   raised
         'that he raised up his voice'
     b. *forþon   of   Breotone   nædran   on*
         because   from   Britain   adders   on
         scippe   lædde   wæron   (Pintzuk 1991:117)
         ships   brought   were
         'because adders were brought on the ships from Britain'

(2) a. *soso zi   In   gisprochan   uuas*   (T 37, 5)
         how   to   them   spoken   was
         'how it was spoken to them'
     b. *thaz   then   alton   giqu&an   uúas*   (T 64, 13a)
         what to-the old ones   said   was
         'what was said to the old ones'

However, in both languages, we also find ample evidence of properties that one would associate with VO-languages, as is illustrated in (3) for OE and in (4) for OHG. For instance in (3a), the direct object follows the selecting verb in an embedded clause and in (3d) the manner adverb follows the verb it modifies. Both properties are typical of VO-languages.

(3)   a. *þæt   ænig   mon   atellan mæge **ealne   one   demm***
             that   any   man   relate can   all   the   misery
             (Pintzuk 1991:36)
             'that any man can relate to all the misery'

      b. *forðam   ðe   he   licettað   hi*
             because that they pretended   themselves
             unscyldige   (van Kemenade 1987:35)
             innocent
             'because they themselves pretended to be innocent'

      c. *he   ahof   þæt   cild   up   geedcucod   and*
             he   raised the   child   up   quickened   and
             ansund (van Kemenade 1987:36)
             healthy
             'he raised the quickened and healthy child up'

      d. *þæt   he   þæt   unaliefede   dod   aliefedlice*
             that   he   the   unlawful   did   lawfully
             (van Kemenade 1987:36)
             that he did the unlawful lawfully'

Similar examples can be found in OHG. For example in (4a), the subject follows the selecting verb in an embedded clause and in (4b), the participle follows the selecting auxiliary, an order that is ungrammatical in modern standard German (though there are dialects that allow for right-branching verb clusters), but typical for a VO-language.

(4)   a. *thaz gibrieuit uuvrdi   **al   these   umbiuuerft*** (T 35, 9)
             that   listed   was-SUB   all   this   mankind
             'that all this mankind was listed'

      b. *thaz   sie   uuvrdin   **gitoufit***   (T 46, 25)
             that   they   were   baptized
             'that they were baptized'

While it has been argued for English that the variation illustrated in (3) should not be accounted for in terms of assuming a basic OV-grammar plus extraposition of heavy material and really calls for the assumption of an

additional VO-grammar (cf. Pintzuk 1999), the case has never been made for OHG. The standard treatment of OHG is that of an OV-language that allowed for a greater amount of extraposition than modern German (cf. Lenerz 1984). In this connection, it is interesting to note that there is convincing evidence that OHG had a right-peripheral focus position, providing an explanation for why and when constituents follow the selecting verb in embedded clauses in OHG. Some examples of this are given in (5)–(7) from the Tatian translation. These examples are of particular interest, since they deviate in word order from the Latin original. Let us have a closer look at (5), which illustrates very well how OHG typically differs from Latin. In (5), the discourse-given DP *thin ouga* is preposed, while the constituent that carries the new important or relevant information, namely *luttar*, is put in post-finite position, to occupy the default position for a focussed constituent. (6) illustrates a case of a postverbal nominal predicate that constitutes the new information in the given context, while (7) shows the same property for a direct object.

(5)   *liohtfaz thes lihhamen ist* <u>*ouga /*</u> *oba* <u>*thin ouga*</u> **uuirdit** *luttar /*
the light of the body is the eye. if your eye becomes light,

   thanne **ist** *al thin lihhamo liohter* (T 69, 21ff.)
then is all your body brighter

   'The light of the body is the eye. If your eye becomes light, then all your body is brighter.'

   Lucerna corporis. est <u>*oculus.*</u> */ si* **fuerit** <u>*oculus tuus*</u> *simplex. / totum corpus tuum lucidum* **erit**.

(6)   *ther   giheizan   ist   **p&rus***   (T 54, 15)
who   named   is   Petrus
'who is named Petrus'
qui vocatur p&rus

(7)   *Inti bráhtun imo/ alle ubil habante / […]]/   Inti thie thár hab&un*
and brought him all sick ones   and those there had

   diuual (T 59,1)
devil

   'and they brought him all the sick ones and those that had the devil'

   &obtulerunt ei/ omnes male habentes/ […]/ &qui demonia habebant

Another important aspect of the data in (3) and (4) is that we do find not only sentences with pure OV-properties and sentences with pure VO-properties in these languages, but very often we find sentences with mixed word orders. For instance, in (3a) it can be seen that, while the direct object follows the selecting verb (and the modal), a typical VO-property, the infinitive precedes the selecting modal which is rather typical of an OV-language. In (4d), the direct object precedes the selecting verb, a typical property of an OV-language, while the manner adverb follows the verb that it modifies, which is typical of VO-languages and ungrammatical in OV-languages. Likewise in (4), while the subject follows the selecting verb (and the auxiliary), the participle precedes the auxiliary, as is typical in OV-languages.

   Given this state of affairs, at least two questions arise at this point. First, we must address the issue of how to account for mixed word orders in the older stages in these languages. This question will be dealt with in the following section. Second, we would like to know which factors led German and English to develop from a common OV/VO basis into pure OV and pure VO languages, respectively. This question will be addressed in section 3.

2.   Word order variation and IS

Our approach is to assume that OV/VO orders do not signal the presence of two grammars, contrary to the double base hypothesis (cf. Pintzuk 1991), but that the variation illustrated in (1)–(7) is due to the expression of different IS-categories within one grammar. The advantage of this approach is clear when it comes to the characterization of mixed word orders. Proponents of the double base hypothesis not only have to assume that a speaker possesses two grammars or two settings of the head complement parameter, but also that he can switch between the settings of the head complement parameter within one sentence.

   To give a concrete example, in order to derive the sequence *relate can all the misery* in (3a) proponents of the double base hypothesis have to assume that the speaker can switch from an OV grammar – in order to derive the verbal complex Infinitive > finite Modal – to a VO grammar, to account for the object in postverbal position. Note specifically, that the assumption of an OV grammar plus extraposition in this case will not be sufficient, since well-behaved OV languages like German and Dutch do not allow for extraposition of DP-arguments.

I have argued in Hinterhölzl (2004a) that word order change should not be explained as a change in the head complement parameter, since OV and VO languages differ in properties that cannot be subsumed under the head complement parameter. These properties involve the availability of heavy adjuncts in the middle field and the order and the preverbal versus postverbal positioning of event-related adverbs. Instead I have argued that word order properties are defined by prosodic properties, namely the headedness of phonological phrases.

Therefore, I will dispense with the head complement parameter and adopt the Universal Base Hypothesis (UBH) (cf. Kayne 1994), according to which all syntactic structure is head-initial. In such an approach, it is necessary to distinguish between the base order, which is universally defined as Specifier – Head – Complement, and the unmarked word order of a language. For instance, the unmarked word order in German (OV) cannot be taken to be basic property (to be identified with the base order) anymore, but has to be derived from other properties in the language.

Nespor, Guasti and Christophe (1996) propose that the head complement parameter is determined by the predominant, that is, unmarked prosodic patterns in an early phase during language acquisition (the rhythmic activation principle). More specifically, they argue that the decisive information for the child is the placement of main prominence within the phonological phrase.

In Hinterhölzl (2004a), I have adopted this approach and proposed that the unmarked word order in the phrases of a language are determined by the predominant, that is, unmarked prosodic patterns in that language.

That a language can have several unmarked prosodic patterns is shown by German. While with DPs and PPs the unmarked prosodic pattern is (weak strong) ((w s)), the unmarked prosodic pattern with VPs is (s w). It is interesting to note that APs show both types of prosodic patterns with a strong preference for the verbal pattern (s w), as is illustrated in (8). (8a) is the neutral order, while (8b) is rather marked and can only be used for specific communicative purposes.

(8)   a.   weil Hans [[auf die Maria] stolz]   ist (unmarked)
      b.   weil Hans   [[stolz [auf die Maria]] ist   (marked)
           since Hans (of the Maria)   proud (of the Maria) is
           'since Hans is proud of Maria'

In conclusion, I would like to propose that syntactic structures are not marked per se (say, in terms of complexity), but count as marked or un-

marked if they realize marked or unmarked prosodic patterns. Since the unmarked word order in a language is defined by the predominant, that is to say, the most frequent prosodic pattern in a language, a change in frequency of use of a prosodic pattern can lead to a change in unmarked word order.

This is the approach to word order change that I would like to pursue in the following section. Since the expression of IS-categories influences the default mapping between syntactic structure and prosodic structures, as I will show below, IS plays an important role in processes of word order change.

But before we take a look at issues of word order change, let me first discuss which factors determine the word order regularities in OE and OHG. There is the observation by Behaghel (1932) that pronouns and unmodified nouns tend to precede the verb, while modified nouns, PPs and other heavy material tend to follow the verb that gave rise to the generalization in (9). The question arises from which principle of grammar this tendency derives from.

(9)   Light elements precede heavy elements in OE, OI and OHG.
        (Behaghel 1932: *Das Gesetz der wachsenden Glieder*)

There is another generalization that emerged from our IS-analysis of the Tatian translation (to be revised below) that derives (9) as a mere corollary. Given that discourse-given elements are typically realized as light elements, while foccussed constituents may count as prosodically heavy elements, since they receive stress, (10) derives the tendency expressed in (9).

(10)   C   background   V   focus

The generalisation in (10) allows us to account for word order variation within one grammar by taking into account the information-structural contribution of a constituent in the discourse: for instance, a direct object will precede the verb (in embedded clauses) if it is discourse-given but will follow it, if it is discourse-new.

According to the generalisation in (9) a direct object will be placed preverbally if it is realized as a pronoun or single noun, but postverbally if it is made heavy by modification. As I have indicated above, the two conditions are not independent of each other, but it would be interesting to see which one of them is more basic (see also Hroarsdottir this volume for similar observations in OI).

2.1. Prosodic constraints and word order

In this section, I will argue that Behaghel's law can be derived from a (violable) interface condition that applies in the mapping between syntactic structure and prosodic structure. First, however, let us take note of the fact that Behaghel's law can be overwritten by syntactic requirements.

The generalisation in (10) needs to be refined for OHG in as much as contrastive foci are concerned. While new information focus is typically realized in postverbal position, contrastive focus is realized in preverbal position and seems to involve leftward movement of the finite verb, as is illustrated in (11).

(11)   C   background   contrastive focus   V   presentational focus

In this respect, OHG seems to pattern with Yiddish, which is a West Germanic language that has preserved mixed word orders. According to the description of Diesing (1997), constrastive foci pattern with background elements in occupying a preverbal position. As I have argued in Hinterhölzl (2004a), the pattern in (11) can be derived from the following assumptions about the syntax of focus. Assuming the UBH, arguments move out of the VP to be licensed in (Case-) Agreement positions. A structural focus position is located above these licensing positions. The word order facts in (11) then follow from the following assumptions:

A) The verb moves into the Focus head. B) A contrastively focused phrase moves into [Spec,FocP]. C) A constituent that represents new information focus just stays in scope of the Focus head, while D) background elements move out of the scope domain of the Focus head. This is illustrated in (12).

(12)   Assumptions about the syntax of focus (Hinterhölzl 2004a)
       [C   background [$_{FocP}$ ContrastF   V   [$_{AgrP}$ PresentationF   [VP]]]]

Coming back to the placement of constrastive foci, an illustrative example is given in (13). Note that in example (13) – which needs to receive a contrastive interpretation, since the contrast is made explicit in the context – the contrastive element is placed preverbally against the order in the Latin origin, signifying that we are dealing with an independent requirement of OHG.

(13) *thane thu fastes/ salbo thin houbit/ Inti thin annuzi thuah/ zithiu thaz*
when you fast, anoint your head, and your face wash, so that

*thu **mannon** nisís gisehan/ fastenti. úzouh **thimeno fater***
you men not appear fasting. but to your Father   (T 68, 28–32)

'[When you fast, do not be like the hypocrites…] When you fast, anoint your head and wash your face so that you do not appear to men to be fasting but to your Father'

*tu autem cum ieiunas/ unge caput tuum/ & faciem tuam laua/ ne uideatis **hominibus**/ ieiunans. Sed patri tuo*

In this context, it is interesting to note that PPs that are placed predominantly postverbally in accordance to Behaghel's law (due to their heaviness) appear preverbally when contrastively focussed, as is illustrated in (14).

(14) *b&onte nicur& filu sprehan/ sósó thie heidanon mán/ sie uuanen*
Praying be careful not to much speak, as the heathen men. they think

*thaz sie **in iro filusprahhi** / sín gihórte*   (T 67, 23–26)
that they in their many words are heard

'And when you pray, do not use vain repetitions as the heathens do. For they think that they will be heard for their many words'

*orantes autem. nolite multum loqui/ sicut &hnici.'/ putant enim quia **in multiloquio**/ exaudiantur.*

The PP in (14) comprising three words is rather heavy but nevertheless appears preverbally to express that the constituent is contrastively focussed. Despite of cases like (14), we can nevertheless assume that the restriction behind Behaghel's rule is real and we will see that it is still operative in Modern English and Modern German, albeit in different domains, as is shown in the following section.

2.2. Prosodic constraints and phases

The first question that arises with Behaghel's law is the issue of when a constituent counts as heavy. In this paper, I propose that heaviness should be identified with a branching prosodic constituent and that Behaghel's law should be properly understood as flowing out of a condition that defines the best match between syntactic structure and prosodic structure.

But first, let us look at some other instances in which heaviness has been argued to play a role in cases of word order differences between languages. I think it was Haider (2000), who first observed that adverbs in the English middle field are subject to conditions which are absent in a typical OV-language like German, as is illustrated in (15) and (16) (cf. also Hinterhölzl 2001).

(15) a. John (more) often (* than Peter) read the book
      b. Hans hat öfter (als der Peter) das Buch gelesen

(16) a. John read the book more often than Peter
      b.*Hans hat das Buch gelesen öfter (als Peter)

(15a) shows that the English middle field does not tolerate heavy constituents, while no problem arises in the German middle field (15b). More specifically, we can make the following empirical generalization: the head of the adjunct may not contain material on its right. Such adjuncts must be postponed as in (16a), while heaviness alone does not constitute a license for postposition in German (16b).

A prosodic restriction can also be used to account for the difference in the placement of event-related adverbs in German and English in general. While Time, Place and Manner adverbs appear in the order T>P>M preverbally in OV-languages, they appear in the exact mirror order postverbally in VO-languages (cf. Haider 2000, Hinterhölzl 2002), as is illustrated in (17).

(17) a.   C   T P M-V   OV-languages
      b.   C   V- M P T   VO-languages

In Hinterhölzl (2002; 2004a), I have argued that the order found in German is basic and that the English order is to be derived from the German word order in terms of successive cyclic VP-intrapositon that pied-pipes the adjunct at each step[1]. Furthermore, I have argued that VP-intraposition came about due to a stylistic rule of light predicate raising that was operative in OE and affected typically event-related adjuncts, since they were primarily realized as rather heavy NPs and PPs.

In this respect, it is interesting to note that a similar restriction also applies in German verb clusters. German verb clusters are predominantly left-branching, but right-branching verb clusters are possible as long as the most deeply embedded cluster is left-branching (cf. Hinterhölzl 1999). A case in question is given in (18a). However, once a right-branching verb cluster is

introduced, the verb cluster must be also right-branching at the next level up, as is illustrated by the contrast in (18b) and (18c).

(18) a.   *weil er den Text muß lesen können*
        since he the text must read can
        'since he must be able to read the text'
   b.?? *weil er den Text [[müssen [lesen können]] wird]*
        since he the text must read can will
        'since he will have to be able to read the text'
   c.   *weil er den Text [wird [müssen [lesen können]]]*
        since he the text will must read can
        'since he will have to be able to read the text'

The formation of verb clusters is motivated by the following two licensing requirements (cf. Hinterhölzl 2006): dependent verbs move into dedicated positions in the V-domain to be temporally linked and to check the subcategorisation of the selecting verb. $F2^0$ is responsible for temporal linking and Asp^0, the highest head in the V-domain, is responsible for checking the subcategorisation of the matrix verb.

    In this approach, left-branching verb clusters are derived if the dependent verbs are spelled out in the highest Specifier, as is illustrated in (19a), while right-branching verb clusters are derived if the dependent verbs are spelled out in the lower Specifier (19b). The only exception to this rule are verb clusters comprising an IPP-infinitive (an infinitive that replaces a part participle). These verb clusters are obligatorily right-branching, since in this case, there is a null morpheme that moves to the highest head in the V-domain, stranding the dependent verbs in the lower Specifier, as is illustrated in (19c).

(19) a. [AspP **lesen können**] muss [F2P *lesen können*] [VP]]]
   b. [AspP *lesen können*] muss [F2P **lesen können**] [VP]]]
   c. [AspP   0-hat [F2P [lesen können] [VP]]]

The interesting question now is what the generalisation illustrated in (18bc) results from. In any event, the generalisation cannot be derived from a hard syntactic condition in West Germanic, since we can find many instances that violate it, as is the case with IPP-infinitives in West Flemish. (20) illustrates a right-branching verb cluster headed by *willen* which itself sits on a left-branch with respect to the selecting auxiliary *een*.

(20)   *dan   ze   toch   kosten [[willen   [dienen*
       then   they   but   could   want-IPP   that
       boek   kuopen]]   een]
       book   buy   have
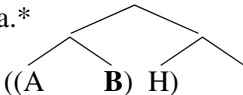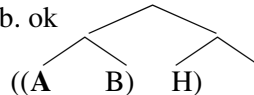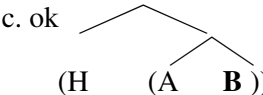   'if they only could have wanted to buy that book'

A possible solution is to relegate the contrast in (18bc) to a violable inter-face condition that determines the best match between a given syntactic structure and a prosodic output structure. Given that left- and right-branching verb clusters are mapped onto left- and right-headed phonologi-cal phrases, a possible candidate for such an interface condition is (21).

(21)   Mapping Condition between syntactic structure and prosodic struc-ture:
       A right-headed phonological phrase (in a verb cluster) must sit on a right branch with respect to the syntactic head that is to become its prosodic sister

(21) can probably be formulated in a more elegant way. But it is meant to account for the patterns in (22). The patterns in (22) indicate the deeper reason that probably lies behind the condition in (21): once fixed, stress tends to stay in a peripheral position within a certain domain.

   (22b) is okay, since stress remains left-peripheral and (22c) is okay, since stress remains right-peripheral, while stress in (22a) is neither left-nor right-peripheral, unless H itself is stressed. (18b) violates the condition in (21). The violation can be circumvented, if the (already) right-branching verb cluster is spelled out in the lower Specifier, as is the case in (18c).

(22)   a.*   ⌒   b. ok   ⌒   c. ok   ⌒
       ((A   **B**) H)   ((**A**   B)   H)   (H   (A   **B**))

Note, however, that condition (21) is a condition that can be taken to apply in the V-domain and in the I-domain (excluding the subject) in VO-languages. In fact, (21) can be used to rule out (15a), since *more often than Peter* is a right-headed prosodic constituent that sits on left branch with respect to the verb phrase that is to become its prosodic sister. Since Ger-man tolerates heavy adjuncts and arguments in the middle field, this condi-tion cannot be taken to apply in the German middle field, but – as we have seen above – is still active in the German V-domain. Why should that be so?

In this respect, it is interesting to note that prosodic constraints can apply phasewise and can thus hold in one phase while not being operative in another phase. The crucial evidence comes from restrictions on VP-topicalization in German. As is illustrated in (23), topicalized right-branching verb clusters exhibit an interesting contrast. In general, the topicalization of a right-branching verb cluster leads to ungrammaticality, unless it comprises an IPP-infinitive, in which case the topicalization is rather marked but grammatical.

(23) a.?*   *[müssen [lesen können]] wird er den Text*
              (ok *lesen können müssen wird*)
              must read can will he the text
      b.?   *[haben [lesen wollen]] wird er den Text*
              (* *lesen wollen haben wird*)
              have read want-IPP will he the text
              'he will have wanted to read the text'

The violation in (23a) cannot be accrued in the C-domain, since the C-domain in German does tolerate right-branching prosodic constituents. Thus the violation must have been induced in the V-domain. A violation of (21) can then be taken to be induced in a phase-based derivation, if we make the assumption that the Aspect phrase (and not the vP as in Chomsky 2001) constitutes the edge of the strong VP-phase. Since we can assume that topicalization involves movement from one strong phase (the VP) into the next strong phase (the CP), it must be taken to be subject to the Phase Impenetrability Condition, given in (24b).

Phase Condition (Chomsky 2001)
(24) a. Evaluation for a phase is done at the level of the next highest strong phase
      b. *Phase Impenetrability Condition* (PIC)
         The complement of a strong phase *a* is not accessible to operations at the level of the next highest strong phase *b*, but only the head and the edge of *a* are

Given the PIC, extraction of the right-branching verb cluster must take place via the highest Specifier in the V-domain, namely [Spec,AspP]. In this position, however, the verb cluster will induce a violation of the mapping condition in (21), which will result in ungrammaticality if there is an alternative that does not violate it. Since the verb cluster could have been spelled-out as a left-branching verb cluster, (23a) is ungrammatical. Since

IPP-infinitives only allow for right-branching verb clusters, there is no derivational alternative in the case of (23b), thus the resulting topicalization is prosodically marked but grammatical.

This solution, however, is only feasible in a framework in which Spell-out applies cyclically, including the cyclic, that is, phasewise application of conditions that map syntactic structure onto prosodic structure. More specifically, we have seen above that interface conditions can apply phasewise in the sense that they may hold in one phase (the V-domain in German) without holding in another phase (the I-domain, or middle field, in German).

In conclusion, word order variation can be accounted for by the differential expression of IS-categories within one grammar and word order preferences (Behaghel's law) are due to violable interface conditions that define the ideal mapping between syntactic structure and prosodic structure in the course of the derivation. As we have seen above in the case of contrastive foci, information-structural restrictions play a crucial role in this mapping.

3.   Word order change and IS

Given the discussion of the previous section, the development of German is to be described as one in which certain factors led to the non-application of the prosodic constraint in the German middle field allowing for the Spell-out of branching constituents in the preverbal domain, while the development of English is to be described as one in which certain (other) factors not only led to the retention of the prosodic constraint in the middle field but also caused light (non-branching) constituents like pronouns to be spelled out in the postverbal domain.

I will concentrate here on discussing the potential factors that can help us understand the development of German. As far as the development of English is concerned, I will only discuss it in so far as to make plausible why the pertinent factors working in German did not have the same effect in the history of English.

Given the presence of both a preverbal and a postverbal focus position, we can assume that OHG had two unmarked word order patters: due to focus restructuring (cf. Hinterhölzl 2004a) preverbal focus will give rise to prosodic phrases of the type (s w) and postverbal focus will give rise to prosodic phrases of the type (w s). Hence, if we can identify a factor that led to the occurrence of more and more focussed (stressed) preverbal constituents, then we can envisage a slow development in which certain word

order patterns become more and more marginalized to a point where post-verbal stressed constituents are prosodically highly marked such that they can only be used for specific communicative purposes.

In the following, I would like to argue that this factor was the grammaticalization of the definite determiner. Following this line, we have to consider a development from the system in (12) above, in which noun phrase interpretation was signalled by syntactic position to a determiner system which signals noun phrase interpretation with morphological means.

First, note, that the morphological system that became grammaticalized is not congruent with the distinction between given and new discourse referents (that was embodied in the syntactic system in (12)), since the definite determiner came to signal that the discourse referent – whether given in the discourse or discourse-new – is uniquely identifiable in the context. Thus, the development of this morphological determiner system has blurred the original information-structural distinction of (nominal) arguments.

The orginal distinction between definites, however, is still visible in the scrambling rule of modern German. Haider and Rosengren (1998) note that neither definiteness nor specificity can be taken to be triggers of scrambling, citing examples like (25), where a specific indefinite NP in (25a) and a definite NP in (25b) seemingly occur in their base position.

(25) a. *wenn* *wer* *eine* *rothaarige* *Frau* *sucht*
          if   someone   a   red-haired   woman seeks
          dann *ist* *das* *Maria*
          then   is   it   Maria
          'if someone seeks a red-haired woman, then it is Maria'
      b. *dass* *er* *wem* *ihr* *Kleid* *gezeigt* *hat,* *hat*
          that   he   someone her   dress   shown   has,   has
          Maria *nicht* *gefallen*
          Maria   not   pleased
          'that he has shown someone her dress, hasn't pleased Maria'

Note, however, that their examples only involve NPs that must be characterized as discourse-new. While they are right about definiteness not being a trigger for scrambling, they are wrong about specificity. If specificity is understood as memberhood in a set that is given in the discourse (cf. Enç 1991) it can be taken as a valid trigger of scrambling. In conclusion, only discourse-given DPs may scramble; DPs that are discourse-new, even when

they are uniquely identifiable (by binding or bridging, for instance) stay in the focus-domain and receive stress (cf. Hinterhölzl 2004b).

But why should the grammaticalization of a definite determiner have an influence on the unmarked word order? There are three observations that fit nicely into an explanatory pattern of this kind. First, recent studies of the grammaticialization of the definite determiner (cf. Oubouzar 1992, Leiss 2000, Demske 2001) agree that the definite determiner – derived from the demonstrative pronoun – first appears in contexts with pragmatic definite interpretations in OHG. The pertinent distinction between pragmatic and semantic definites stems from Löbner (1985). While semantic definites are uniquely identifiable on the basis of their lexical meaning (functional concepts), pragmatic definites are uniquely identifiable in the context by being discourse given.

The grammaticalization of the definite determiner starts in the earliest OHG-texts and is concluded in Notker (early 11th century), in which text all semantic groups of nouns (including abstract nouns and uniquely referring expressions) appear with the definite determiner. The slow stepwise process of grammaticalization can be examplified by the occurrences of the definite determiner in Otfrid. In this text, the definite determiner regularly appears with pragmatic definites, that is, in discourse-anaphoric uses, as is illustrated in (26), while with semantic definites, the determiner is still missing, as is illustrated in (27). Examples are taken from Demske (2001).

(26) a. *ein   burg   ist   thar   in   lante…*   (O.I.11.23)
          a   town   is   there   in   country
          'there is a town in the country'

      b. *zi   theru   steti   fuart   er   thia   druhtines*
          to   this   city   leads   he   the   Lord's
          muater   (O.I.11.26)
          mother
          'he leads the Lord's mother to this city'

(27) a. *tho   ward   himil   offan*   (O.I.25.15)
          there   became   sky   open
          'there the sky opened'

      b. *inti   iz   hera   in   worolt   sante*   (O.I.13.5)
          and   it   here   into   world   sent
          'and sent it here into the world'

      c. *in   ira   barm   si   sazta*   [*barno bezista*](O.I.13.10)
          in   her   lap   she   placed   child   most-beloved
          'she placed the most-beloved child in her lap'

The second observation concerns another statement by Behaghel (1932), given in (28), who notes that noun phrases with a determiner are introduced preverbally.

(28)   Behaghel (p. 79): 'Substantiva mit Pronomen stehen auf der Seite der einfachen Wörter; zum Teil mag das daher rühren, dass ihnen der Artikel früher fehlte.'

Behaghel's observation is in line with the stepwise grammaticalization from pragmatic definites to semantic definites, since discourse anaphoric NPs are typically realized preverbally in OHG. We now can envisage a development in two phases, as sketched in (29).

(29)   phase 1: the determiner is introduced preverbally for discourse-given referents
       phase 2: the use of the determiner is extended to all uniquely identfiable NPs, which are placed according to the pattern in phase 1 preverbally

There are two consequences of interest in such a scenario. A) more DPs appear preverbally, which due to focus restructuring strengthen the prosodic pattern (s w) and B) preverbal DPs have a profound effect on the prosodic make-up of the language, since they introduce right-branching constituents on a left branch.

We can assume that when the determiner is first introduced in discourse anaphoric contexts, it will carry stress (with the discourse anaphoric noun being destressed), such that the initial introduction of determiners in the preverbal domain does not violate the prosodic condition in (21). However, as the determiner is grammaticalized it becomes deaccented and stress will be placed on the noun per default (on the basis that lexical heads are stronger than functional heads) giving rise to more and more right-branching constituents in the preverbal domain.

The scenario sketched in (29) makes the following prediction: there should be a stage where an increased number of focused DPs appear preverbally but focused predicates (predicative adjective, nouns and participles) still appear predominantly in postverbal position. This prediction is borne out since the verbal cluster including predicative elements predominantly remained right-branching till the Early New High German period (cf. Ebert 1986).

The third observation that supports this scenario concerns the time frame of these two developments. Bolli (1975), Borter (1982) and Näf

(1979), investigating the development of the German sentence bracket, note that in the late OHG Notker text a larger number of Accusative objects start to be placed in preverbal position. This is exactly the same period in which the definite determiner has become fully grammaticalized.

If this scenario for German is correct, then the question arises why the grammaticalization of the definite determiner did not have the same effect in the history of English and in the development of the Scandinavian languages.

As far as Scandinavian is concerned, Leiss (2000) in her interesting study on the relation between (verbal) aspect and (nominal) definitness notes that in OI the definite determiner first appears with discourse-new NPs that are not to be read as indefinites, hence in postverbal position. Thus we can conclude that – while the introduction of the definite determiner lead to the strengthening of the prosodic pattern (s w) in OHG – the very same process lead to the strengthening of the prosodic pattern (w s) in OI, explaining why the two languages have developed in opposite directions.

The case of the development in English is more difficult to deal with. Philippi (1997) notes that the literature on OE suggests that the language did not have a definite or indefinite article, making use of demonstratives and numerals instead. Also van Kemenade (p.c.) reports that the definite determiner was grammaticalized in English at least 100 years later than in German. So, while the grammaticalization of the definite determiner in German was completed at the end of the OHG-period, the grammaticalization of the determiner in English must have started in the beginning of the ME-period.

OE had two demonstrative pronouns s*e* ('that') and *þes* ('this'). Hroarsdottir (2006) reports that the demonstrative *se* which had different Case forms in OE was split into two invariant forms, *the* (article) and *that* (demonstrative) at the turn of the OE to the EME-period. Thus, it is possible that the English definite determiner took a different path of grammaticalization than the German one. We can assume that *the* was unaccented and therefore was placed with its containing noun phrase postverbally in accordance with the condition in (21). More research on the development of the definite determiner in English is necessary to evaluate the validity of this scenario, but I think it has enough initial plausibility to provide an interesting alternative to the improbable standard scenario that tries to relate word order change with the loss of Case morphology in the history of English.

Above, I have provided a plausible scenario for why the prosodic condition in (21) was not restricted to the V-domain in the history of English (as

it was in the history of German), but what is still missing at this point is an explanation for why English has also started to postpone light elements, like pronouns.

At this point I can only speculate about the origin of this development. But it stands to reason that language contact was at issue in this case, since at the end of the OE-period the Anglo-Saxon pronoun system was partially replaced with Scandinavian pronouns. Weak Scandinavian pronouns (nowadays), as is evidenced by the phenomenon of object shift, are enclitic elements that are spelled out in the smallest domain that contains a suitable host, with a suitable host being the head of the phase that the pronoun belongs to, that is, the verb in the VP and the preposition in the PP (cf. Hinterhölzl (to appear)).

This explanation is supported by the fact that V2-second (before its loss) is generalized in the northern contact area in the EME-period in that the pattern *Topic pronoun finite verb*, in which the Old Saxon pronoun can be analyzed as proclitic element on the verb, is replaced with the pattern *Topic finite verb pronoun*, in which the EME-pronoun can be analyzsed as enclitic element on the verb (see Kroch and Taylor 2000 for more details on this development).

4. Conclusions

The paper presents a number of novel ideas about the relation between grammar and prosody and the role that information-structure plays in language change. First it is argued that unmarked word order is determined by prosodic properties. Since information-structural constraints play a crucial role in the mapping between syntactic structure and prosodic structure, IS can help us to gain new insights into processes of word order change.

For instance, we have seen that what counts as unmarked word order in a language may be influenced by focus articulation, since the order focus > verb can strengthen the prosodic pattern (s w) in the middle field.

Furthermore, I have argued that interface conditions, like the condition in (21) are violable or best match conditions, leading to marked and unmarked syntactic structures. Since speakers, on the one hand, generally prefer unmarked structures and, on the other hand, tend to use marked structures to achieve particular communicative goals in specific communicative situations, we derive that in most stages there will be some sort of competition of marked and unmarked forms within one grammar.

While the strive towards prosodic unmarkedness might be the source for word order tendencies, the strive towards prosodic markedness might be one explanation for why we find variation in the domain of syntax, particularly in terms of word order and prosodic phrasing.

In general, a marked form *a* will be weeded out by an unmarked form *b* if it does not give rise to a different interpretation from *b*. It follows that a marked **syntactic** form will only be grammaticalized if it can be identified with a distinct **pragmatic** interpretation. Possibly, this is the reason for why IS-categories are imported into the syntax in grammaticalization processes. In conclusion, if these general observations are on the right track, then the conception of narrow syntax as a computational system that only (or predominantly) operates on formal features (Case and phi-features) seems misguided to me und must be rejected on the basis of the above observations on word order change.

Note

1. In this approach a modern English sentence, like (ia), is derived as is illustrated in (ib-e).
(i)   a.   John visited them in Vienna on Friday
         b.   […[on Friday [in Vienna [John visited them]]]]
         c.   […[on Friday [[John visited them] in Vienna t_{VP}]]]
         d.   […[[John visited them] in Vienna] on Friday]
         e.   [$_{IP}$ John$_i$ [[[[$_{VP}$ t_i visited them]$_k$ in Vienna t_k]$_j$ on Friday t_j]]

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