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Nominal and pronominal arguments in German: a Syntax First Alignment approach

0. Introduction

The canonical order of nominal arguments in German has been an issue of debate for some time. In the present paper I argue that the default order of arguments is subject>direct object>indirect object, contrary to Lenerz (1977) and Choi (1996), who claim that the indirect object canonically precedes the direct object. I will discuss the factors that play a crucial role in determining the order of these arguments, i.e. argument status, animacy and focus status. Also, I give a descriptive overview of the arrangement of pronominal arguments, highlighting the differences between them and the nominal arguments, e.g. pronominal arguments appear towards the beginning of a clause, their order is not flexible at all and they are blind to the animacy factor.

Section 2 introduces the model I adopt, i.e. Syntax First Alignment, with the most important background assumptions taken from Newson (2010) and Newson and Szécsényi (2012).

In the last section, I will demonstrate how the distribution of nominal and pronominal arguments in German can be accounted for within the framework of SFA, as well as the other noted differences between them.

1. Nominal and pronominal arguments in German

1.1. Nominal arguments

German word order is more flexible than in English. In German all non-verbal elements can scramble. Thus, all six permutations of agent, theme and recipient are possible. This is demonstrated below:

(1)   a   ... dass Hans dem Schüler   das Buch   geliehen hat
          that Hans the   student$_{DAT}$ the book$_{ACC}$ lent   has
          '… that Hans lent the book to the student'

     b   ... dass Hans das Buch dem Schüler geliehen hat

     c   ... dass das Buch Hans dem Schüler geliehen hat

    d   ... dass das Buch dem Schüle Hans geliehen hat

    e   ... dass dem Schüler Hans das Buch geliehen hat

    f   ... dass dem Schüler das Buch Hans geliehen hat

These examples have similar meanings but of course each alternative structure denotes something slightly different. Lenerz and other scholars[1] claim that the canonical word order is represented by (1a). However, it can be argued that the arrangement in (1b) is the default, based on the observation that in sentences with two animate objects, as noted by Hoberg (1981: 68), the following one can be interpreted only as a direct object, while the preceding one must be interpreted as an indirect object. Thus, the only possible interpretation for the following sentence is that it was *Wolfgang* who was introduced to *Helga* and not vice versa:

(2)   dann   stellte   Fritz   Wolfgang   Helga   vor
          then   introduced $\text{Fritz}_{\text{NOM/SUBJ}}$ $\text{Wolfgang}_{\text{ACC/DO}}$ $\text{Helga}_{\text{DAT/IO}}$ prefix
          'then Fritz introduced Wolfgang to Helga'
          * 'then Fritz introduced Helga to Wolfgang'

Similarly, if there are two inanimate objects, the indirect object follows the direct object. This is illustrated in (3) (Zifonun et al., 1997:1520):

(3)   Die alte Poetik   ordnet das Epigramm   der lyrischen Gattung   zu
          the old poetics relates the $\text{epigram}_{\text{ACC/DO}}$ the lyric $\text{genre}_{\text{DAT/IO}}$ prefix
          'Old poetics relates epigrams to the lyric genre'

The problem with Lenerz's conclusions regarding the arrangement of objects is that he analyzes only a limited number of examples where one of the objects is animate. In most cases, the verb *geben* ('give'), for instance, takes an inanimate theme and an animate recipient. From the data reviewed above, it seems reasonable to assume that it is animacy which is responsible for the IO>DO order and thus it is not necessarily the default order. Lenerz ignores the animacy factor, therefore his conclusions are highly questionable. For instance, in (1a) the IO>DO order shows the effect of the animacy constraint, which requires that animate arguments precede inanimate arguments. The animacy constraint does not play a decisive role in (2), and (3), as the objects are either both animate or inanimate.

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[1]   See Lenerz (1977), Webelhuth (1992) and Choi (1996) for details.

Moreover, Lenerz does not take into consideration the order of pronominal arguments. As illustrated below, a pronoun indirect object must follow a pronoun direct object:

(4) weil   er es   ihr   ja wahrscheinlich gestern   gegeben hat
     because he it$_{ACC}$ her$_{DAT}$ prt probably   yesterday given   has
     'because he probably gave it to her yesterday'
     * other word orders

If the basic word order were IO>DO, it would be difficult to account for why (4) is the only grammatical option. It seems there is no reason for pronominal objects to scramble yielding the DO>IO order, as none of the arguments is focussed or differs in other aspects.

Besides argument structure and the animacy factor, Røreng (2011) discusses other constraints which may determine word order. They include the specificity effect, the discourse effect, the focus-background effect and constituent length. I turn to these shortly.

As Lenerz (1977) points out, indefinite arguments follow definite ones, which is supported by the following examples:

(5) a Ich habe dem Chef   einen Kollegen   vorgestellt
         I   have the boss$_{DAT/IO}$ a   colleague$_{ACC/DO}$ introduced
         'I introduced a colleague to the boss'

     b *? Ich habe einen Kollegen$_{ACC/DO}$ dem Chef$_{DAT/IO}$ vorgestellt

In fact, indefinite arguments, if present, must be the last non-verbal element in a clause, as illustrated in by (6), where *ein Buch* ('a book') is the indefinite noun phrase and *wohl* ('probably') is an adjunct.

(6) a weil   er wohl   *ein Buch* gelesen hat
         because he probably a   book read   has
         'because he probably read a book'

     b * weiler *ein Buch* wohl gelesen hat

Røreng (2011), however, does not consider specificity as a separate constraint which can have an influence on the order of elements. In her corpus, there are examples which show the [−def] >[+def] order. She concludes that it is the information structure which plays a crucial role. She further argues that definite arguments often belong to the background part ('Hintergrund'), while indefinite arguments are generally focussed (see below).

As far as discourse effects are concerned, Røreng (2011) distinguishes between the categories 'given', 'accessible' and 'new'. An argument is regarded 'given', if it has been mentioned previously, i.e. it must have an explicit antecedent in the discourse. Elements that are assigned the category 'accessible' are constituents which can be identified by the hearer although they have not been mentioned explicitly before. 'New' elements, on the other hand, cannot be identified by the hearer (or reader), as they do not have an antecedent in the discourse. It can be observed that *given* elements always precede *new* elements (there are no counterexamples at all), *accessible* elements precede *new* elements (with very few exceptions), and there is a strong preference for the *given>accessible* order.

The focus-background division is also discussed by Jacobs (1988), who claims that German has a focus-background structure. Sentences can be divided into a focussed and a background part, with the focussed part following the background part. Røreng (2011) claims that the discourse effect and the focus-background dichotomy are not independent of each other. If a constituent is marked as 'new', while the other elements are assigned the feature 'accessible' or 'given', it will be marked as *new* in relation to them as well, so it must appear as a focus.[2] The focussed element is the rightmost non-verbal element in a sentence, c.f. (7) (Lenerz, 1993):

(7) weil   es ihm ja wahrscheinlich gestern   ein Mann$_{[focus]}$ gab
     because it him prt probably   yesterday a   man   gave
     'because probably a man gave it to him yesterday'

The agent *ein Mann* can be considered to be the 'message', introduced by the indefinite article. Therefore, the conclusion is that *ein Mann*$_{[foc]}$ is the focus, which follows the background part. In order to describe the information structure of sentences, Røreng (2011) chooses the focus-background division and ignores the discourse effects.

Finally, longer (heavy) constituents tend to follow shorter ones in German.[3] According to Røreng (2011), constituent length may have an impact on the order of the direct and indirect object as well; however, she does not consider this factor of crucial importance. Niv (1992) claims that it is possible to give a meaning-based account of heaviness. The intuition of 'heaviness' can be formalized "in terms of an aspect of the meaning of the constituents involved, namely their givenness in the discourse." (p. 287) Items that are new

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[2] Note the difference between the element which is marked 'new' and the one which is marked 'focus'.

[3] In fact, this is a cross-linguistic tendency.

to the discourse tend to be more elaborated expressions, whereas items that are given tend to be simple. A good example can be anaphoric pronouns, which refer to given information with a single (usually monosyllabic) word, e.g. *I, you, we* and *they*. This suggests that heaviness can be related to the focus-background dichotomy as well.

All in all, Røreng considers the DO>IO as the canonical word order which can be modified by animacy and the focus factor. The latter is ranked higher than the former (Røreng, 2011, p.214):

(8)   hierarchy of constraints   constraints
                    1.   backgrounded part >focussed part
                    2.   animate > inanimate
                    3.   direct object$_{ACC}$) > indirect object$_{DAT}$

In addition, topics can also have an impact on word order. Nagy (2013) claims that topics are assigned the discourse-oriented features [about] besides the syntactic 'argument' feature.

It is a well-known fact that in German multiple topicalisation is not allowed: only one topic can be fronted in main clauses even if there are more topic-marked elements, which is due to the fact that German is a V2 language. The first topic must be followed by the inflected verb:

(9)   a   Den Mann$_{[about]}$ hat Hans$_{[about]}$ gestern   angerufen
                the man$_{ACC}$ has Hans   yesterday called
                'Hans called the man yesterday'

        b   * Den Mann gestern hat Hans angerufen

Before dealing with the constraints which play a determining role in topicalisation, we have to distinguish between 'strong' topics and 'weak' topics. Nagy (2013) states that strong topics take the sentence-initial position and they are associated with the [contrast] feature (besides the [about] feature), which is responsible for the position of strong topics:

(10)   a   Den Mann$_{[about][contrast]}$ hat Hans gestern   angerufen
                the man$_{ACC}$ has Hans yesterday called
                (und nicht die Frau)
                and not   the woman
                'It was the man whom Hans called yesterday, and not the woman'

        b   * Hans hat den Mann$_{[about][contrast]}$ gestern angerufen (und nicht die Frau)

    c   * Hans hat gestern den Mann[about][contrast] angerufen (und nicht die Frau)

Weak topics, lacking the [contrast] feature, behave differently as they do not necessarily take the first position in a clause (compare *dem Hans* in (11a)). According to Nagy (2013), although weak topics do not determine which element will be the first argument, they do have an effect on the ordering of arguments in the 'middle field'[4]. This is demonstrated in the examples below. In all cases, the answer is preceded by the question *Wie steht's mit dem Hans?* 'What about Hans?' (Nagy, 2013):

(11) a Ich habe dem Hans[about] gestern   das Buch geliehen
           I   have the   Hans$_{DAT}$ yesterday the book lent
           'I lent Hans the book yesterday'.

     b *Ich habe gestern dem Hans[about] das Buch geliehen

     c Das Buch habe ich dem Hans[about] gestern geliehen

     d *Das Buch habe dem Hans[about] ich gestern geliehen

However, not only topics can be used contrastively, but also foci. In this case, the argument is associated with the features [new] and [contrast]. As the following example of a corrective situation shows, contrastive foci also trigger fronting Hagen (2005):

(12) A: Kerry hat die Wahl   gewonnen.
           Kerry has the election won
           'Kerry won the election'

     B: Nein, Bush[new][contrast] hat die Wahl   gewonnen
           no   Bush   has the election won
           'No, it was Bush who won the election.'

To sum, the default word order in German is subject>direct object>indirect object. However, it can be changed by the factors *animacy, focus, topic* and *contrast*.

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[4] The middle field is the part of the clause in between the inflected verb and the clause-final verb position in main clauses and between the complementizer and the verb-final position in embedded sentences.

1.2. Pronominal arguments

This section focuses the distribution of weak pronominal arguments in German. However, it is important to separate them from strong pronouns. Weak pronouns are unstressed, and according to Cardinaletti and Starke (1996), they can refer to any entity, human and non-human. Secondly, weak pronouns must have an antecedent in the discourse. In other words, they cannot introduce a new discourse referent. In addition, they are not able to be coordinated, nor modified, as illustrated by (13) and (14) respectively (Cardinaletti and Starke (1996)):

(13) *Es und diese Zeitungen hat er gekauft
      it and this newspaper has he bought
    'He bought it and this newspaper'

(14) *Sogar es ist auf den Boden gefallen.
      even it is on the floor fallen
    'Even it fell on the floor'

Strong pronouns, on the other hand, do not show these properties and their distribution can be slightly different.

As (15), repeated from the previous section, demonstrates, the order of weak pronominal arguments is less flexible than that of nominal ones. The pronominal subject must immediately precede the pronominal direct object, which must immediately precede the pronominal indirect object:

(15) weil   er es   ihr   ja   wahrscheinlich gestern   gegeben hat
    because   he it$_{ACC}$ her$_{DAT}$ particle probably   yesterday given   has
    'because he probably gave it to her yesterday'
    * other word orders

Interestingly, the animacy factor does not have any effect on word order, as opposed to what can be observed with full nominal phrases. In (15) above, the inanimate pronoun *es* must precede the animate pronoun *ihr*. Secondly, weak pronominal arguments appear towards the left edge of sentences, which is demonstrated in (16). In main clauses they typically follow the inflected verb and they cannot be separated from it, only by a (non-pronominal) subject:

(16) a Heute gibt die Frau   es   ihr
        today gives the woman it$_{ACC}$ her$_{DAT}$
        'The woman is giving it to her today'

b * Die Frau gibt heute es ihr.

c * Heute gebe das Geld   ich ihr
today   give the money I$_{NOM}$ her$_{DAT}$
'I am going the money to her today'

Weak pronouns appear immediately to the right of either the finite verb (V1 or V2) or the sentence-initial complementizer. Another consequence of this is that pronominal objects precede nominal objects irrespective of animacy or thematic role (case):

(17) a Ich stellte   ihn   dem Kind   vor
I   introduced him$_{ACC}$ the   child$_{DAT}$ prefix
'I introduced him to the child'

a' * Ich stellte dem Kind ihn

b   Ich stellte   ihm   das Kind   vor
I   introduced him$_{DAT}$ the child$_{ACC}$ prefix
'I introduced the child to him'

b' * Ich stellte das Kind ihm

c   Ich gab   es   dem Kind
I   gave it$_{ACC}$ the   child$_{DAT}$
'I gave it to the child'

c' * Ich gab dem Kind es

The facts that pronominal arguments are blind to the animacy factor and that they precede other nominal arguments will be accounted for in section 3 after SFA has been introduced.

2. The architecture of Syntax First Alignment

Syntax First Alignment is based on Alignment Syntax (Newson 2004), which is a restricted Optimality Theoretic grammar. In SFA, the general structure generator (GEN) generates a finite set of output candidates, i.e. the candidate set, for a given input. The input carries all the information necessary for the interpretation of expressions, so it is regarded as the interface with the semantic component of the grammar. The candidates are evaluated by a set of constraints. Vocabulary insertion takes place only after the optimal candidate is found. The architecture of SFA is shown in (18):

(18) input → GEN → candidate set → EVAL → optimal candidate → vocabulary insertion

↓

semantic interpretation
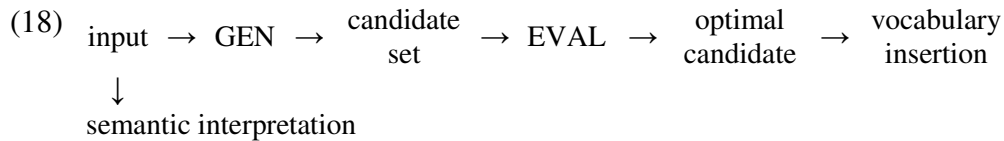
According to Newson and Szécsényi (2012), input elements are taken from a universal stock of basic units, which are referred to as Conceptual Units (CUs). These come in two types: a syntactically homogenous set of roots and a heterogeneous set of functional units (FCUs), such as tense and aspect. Roots represent descriptive semantic content; while, functional units carry functional content. Root CUs (RCUs) make up what are traditionally called nouns, adjectives and verbs. A root is usually represented with the symbol '√' and capital letters indicating its content, e.g. √TABLE. FCUs on the other hand are limited in number and are represented between square brackets, e.g. [past]. Newson and Szécsényi (2012) add that "dependency relationships are also stated in the input, for example relating a particular tense to a particular root".

GEN imposes linear orderings on the input elements, as it is assumed in SFA that syntactic expressions have no constituent structure. Also, GEN is not allowed to add any element which is not present in the input to a candidate. Consequently, the candidate set will always be finite. On the other hand, there may be input elements which are absent from the output. However, this would violate the relevant faithfulness constraint.

The notion of a domain plays an important role in the present framework. Domains are not structural units and differ from phrases in a number of respects. Furthermore, they are not necessarily continuous strings, as they may be interspersed by members of other domains. The notion of domains is useful if we wish to determine the position of an element with respect to more than one element. Domains, however, are not made up of just any kinds of elements. Newson (2010) defines domains as "sets of input elements which share a given property" (p.32). For example, the predicate domain (D_{pred}) is made up of a predicate root and all the arguments and adjuncts associated with it. On the other hand, the argument domain (D_A), as proposed by Newson (2013), consists of arguments which are associated with a given predicate.

There are only two types of constraints distinguished in SFA: faithfulness and alignment constraints. Faithfulness constraints are responsible for the identity between the input and the output. They are violated if an element which is part of the input is absent from the output. Generally, faithfulness constraints are ranked high; otherwise, a lot of input elements would end up

deleted from the output, which would be problematic for the hearer to recover the intended meaning.

The alignment constraints determine the position of target elements with respect to hosts, which can be single elements or domains – see (19) and (20), respectively. There are three basic relationships: precedence, subsequence and adjacency:

(19) a xPy 'x precedes y'   violated by y...x order

   b xFy 'x follows y'   violated by x...y order

   c xAy 'x is adjacent to y'   violated by every CU which intercedes
                 between x and y

When the host is a domain, the constraints can be defined as below, following Newson and Szécsényi (2012):

(20) a xPD_y 'violated by every member of the domain which precedes x'

   b xFD_y 'violated by every member of the domain which follows x'

   c xAD_y 'violated by every member of the domain which is not adjacent to x'

(20a), for instance, forces *x* to be at the front of the domain preceding all domain members. The constraint in (20c) is best satisfied with the target surrounded by the domain members. It is then adjacent to two of the members, one on either side, which is the maximum adjacency possible.

As far as late lexical insertion is concerned, there are four principles which determine what can spell out a given string of conceptual units if there is no exact match between that string and the vocabulary item. First, it is a basic condition that only contiguous sequences can be spelled out by a single vocabulary item. In addition, it is also assumed that vocabulary insertion is 'root centric', which means that the process starts with the root CUs, spelling these out with those contiguous FCUs that the vocabulary entry allows for. Remaining FCUs are spelled out separately.

The third principle is the principle of Minimal Vocabulary Access. This says that if you can spell out a sequence of features with one vocabulary item instead of two, do it with one.

The last principle is called the Superset Principle, which says the best fitting match for a sequence of features is that vocabulary item associated with all the features in that sequence, though it may also be associated with features not present in that sequence. For example, let us assume that the sequence which has to be spelled out is <x,y,z> and the candidates that can possibly

spell it out are <X,Y>, <X,Y,Z,W> <X,Y,W>. According to the Superset Principle, the best fitting match will be <X,Y,Z,W> (although it is associated with an extra <W> feature), because it contains all the features of the sequence <X,Y,Z> and there is no other item associated with a smaller superset of the target sequence.

2.1. The argument domain

SFA does not operate with notions like subjects, objects, etc, nor with theta-roles, e.g. agent, theme, patient, etc. Instead, I will use the terms argument 1, 2 and 3. It is assumed that complex events comprise sub-events arranged in a sequence: the first event precedes the second one, which in turn precedes the third one. The arguments related to the first (causing) sub-event will be referred to as argument 1, and that to the next as argument 2.

It is assumed that there is an argument CU (a relator) - [arg1], [arg2] or [arg3] - which associates a nominal root with a particular (verbal) predicate. I will refer to the domain that consists of the argument features that are associated with a single predicate as the *argument domain* (D_A). We want the first argument to precede the second argument and the second argument to precede the third argument. This can be achieved by the following constraints:

(21) $[arg1]PD_A > [arg2]PD_A > [arg3]PD_A$

The first constraint, for example, is violated by every member of the argument domain which precedes [arg1]. The nominal root which the argument feature is typically associated with in the input must be adjacent to this argument feature and precedes it. However, the argument feature and the associated nominal root can be separated and thus be lexicalized by two different vocabulary items. According to Nagy (2013), this is what happens in outputs that involve left dislocation. She claims that the resumptive pronoun in these constructions spells out an argument CU, while the nominal root which is associated with it will be syntactically separated. Thus, in the following sentence, for instance, *him* spells out [arg2], which lacks root content, while *Sam* lexicalizes the nominal root which is associated with it.

(22) √SAM   √WOMEN[arg1]   √LOVE   [arg2]
       Sam   women   love   him

I assume that personal pronouns behave in the same way, see Csontos (2014). That is, they can be seen as the realization of the [arg] CUs themselves. Note that they must have an antecedent as well. In a similar vein,

Newson (1998) claims that "the input element which gets pronounced as a pronoun is not itself a fully specified NP". For instance, the following vocabulary entry can be proposed for *him*:

(23)   him ↔ [arg2]

In the next section, we will see that the argument domain has an important role. The assumptions that have been made about pronouns will make it possible to give an alternative analysis of certain phenomena related to them.

3. Nominal and pronominal arguments in the light of Syntax First Alignment

It has been argued that, from an argument point of view, we have the word order [arg1] > [arg2] > [arg3]. The constraints in (20) can account for this phenomenon.

In the previous section it was observed that the [arg2] > [arg3] order can be overridden by the animacy factor, i.e. animate arguments precede inanimate arguments. This can be formulated as follows:

(24)   aPi (animate arguments precede inanimate arguments)

Table (25c) illustrates the interaction of the relevant constraints:

(25)   a   dass Hans[arg1] das Buch[arg2] dem Schüler[arg3] geliehen hat

　　　 b   dass Hans[arg1] dem Schüler[arg3] das Buch[arg2] geliehen hat

　　　 c

		[arg1]PD$_A$	aPi	[arg2]PD$_A$	[arg3]PD$_A$
	(25a)		* (!)	*	**
☞	(25b)			**	*

The third factor requires the (non-contrastive) focus to be the rightmost non-verbal element in a clause following the backgrounded part. In terms of Syntax First Alignment, this means that the focus must follow the predicate domain (D$_{pred}$), which comprises all the dependents of a predicate, and the predicate itself, as discussed above. I propose that foci are associated with the feature [new] in the input, c.f. Røreng (2011) in section 1.1. This CU is responsible for the fact that focussed elements appear towards the end of a sentence. This can be formalized as in (25):

(25)   [new]FD$_{pred}$

This constraint must be ranked below the constraint which determines the position of the verb, i.e. vFD$_{pred}$[5]; otherwise, the verb would not be the last element in an (embedded) clause. Compare (7) – repeated below as (26):

(26) weil   es ihm ja   wahrscheinlich gestern   ein Mann$_{[focus]}$ gab
     because it him particle probably   yesterday a   man   gave
     'because probably a man gave it to him yesterday'

It can also be observed that the subject takes the penultimate position in a sentence when it is focussed. Consequently, [new]FD$_{pred}$ must be ranked over [arg1]PD$_A$:

(27)   vFD$_{pred}$ > [new]FD$_{pred}$> [arg1]PD$_A$ > aPi> [arg2]PD$_A$ > [arg3]PD$_A$

The following tableau illustrates the interaction of these constraints introduced above[6]:

(28) a   weil es ihm ja wahrscheinlich gestern ein Mann$_{[focus]}$ gab

      b   weil ein Mann$_{[focus]}$ es ihm ja wahrscheinlich gestern gab

      c   weil es ihm ja wahrscheinlich gestern gab ein Mann$_{[focus]}$

      d

	vFD$_{pred}$	[new]FD$_{pred}$	[arg1]PD$_A$	[arg2]PD$_A$	[arg3]PD$_A$
☞ (28a)		*	**		*
(28b)		*****(!)		*	**
(28c)	*(!)		****		*

It was previously demonstrated that strong topics (or contrastive topics) and contrastive foci occupy the first position in a clause. This can be achieved by proposing a constraint which requires the CU with a [contrast] feature to precede the predicate domain:

(29)   [contrast]PD$_{pred}$

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[5]   Newson (2013) gives a more detailed analysis of the order of verbs and inflectional elements in matrix and subordinate clauses.

[6]   I do not include the animacy constraint here for the sake of simplicity, because in case of pronouns they do not have any effect. I am going to discuss in the next section why this is so.

The contrastive feature cannot be interpreted independently, it must occur either alongside an [about] or a [new] feature. This also means that the input which contains a [contrast] feature but no [about] or [new] feature will be uninterpretable and thus ungrammatical. Nagy (2012) assumes the constraints in (30):

(30)   a   [contrast]A[about]

      b   [contrast]A[new]

As (31), repeated from section 1, shows, strong topics precede subjects:

(31)   Den Mann[about][contrast] hat Hans gestern   angerufen (und nicht die Frau)
      the manACC   has Hans yesterday called   and   not   the woman
      'It was the man whom Hans called yesterday, and not the woman'

This means that the constraint in (29) must be ranked higher than [arg1]PDA.

Secondly, weak topics, i.e. topics which are associated only with an [about] feature, tend to be the left-most elements in the middle field. The following example from the previous section illustrates this:

(32)   Ich habe dem Hans[about] gestern   das Buch geliehen
      I   have the HansDAT yesterday the book lent
      'I lent Hans the book yesterday.'

I assume that the constraint in (33) below is responsible for the position of weak topics:

(33)   [about]PD_pred

As weak topics do not influence the position of the subject, we have to conclude that (33) is ranked lower than [arg1]PDA. To sum, all of the constraints which determine the positions of nominal arguments in a clause are listed in (34):

(34)   [contrast]PD_pred / [new]FD_pred > [arg1]PDA > [about]PD_pred > aPi > [arg2]PDA > [arg3]PDA

After analysing nominal arguments, let us discuss pronominal arguments. I have already assumed above that the default word order is identical in case of nominal and pronominal arguments; however, while the order of the former

can be influenced by the animacy constraint, the latter cannot be. Also, animacy has no effect on the order of a nominal and a pronominal argument, either. Other factors (such as topicalisation), on the other hand, have the same influence on nominal and pronominal arguments – see later.

The difference between nominal arguments and pronominal ones is that the latter lack roots. The intuition, therefore, is that the animacy features need a root to attach to and are therefore not realized on pronouns:

(35) [(in)animate]A√

Secondly, weak pronouns tend to appear at the left edge of the clause, as opposed to foci, for instance. In this respect they behave like weak topics, as they do not necessarily have to be fronted, see (36). This is not surprising given that pronouns usually represent 'old' information, already having an antecedent in the discourse. I assume that pronouns are – by nature – associated with the [about] feature in the input, just like weak topics and this CU is responsible for their position.

(36) Der Mann hat *mich*[about] vorgestellt
      the man   has me   introduced
      'The man introduced me'

Pronouns can be associated with the [contrast] feature, but in this case they can rather be regarded as strong pronouns, as they are stressed. The contrastive feature also triggers fronting:

(37) *Mich*[about][contrast] hat der Mann vorgestellt
      me   has the man   introduced
      'The man introduced me'

It can be seen that the [about] feature affects the position of pronouns as well. However, we still need to explain why (topicalized) nominal roots follow pronouns which are associated with the same [about] CU, irrespective of their argument roles (cf. (38) and (39a)) or whether they are animate or inanimate (cf. (41) and (42)), and can be preceded only by the subject:

(38) a   Der Mann hat mich[about] der Frau[about]   vorgestellt
          the man   has me   the woman$_{DAT}$ introduced.
          'The man introduced me to the woman'

      b   *Der Mann hat der Frau[about] mich[about] vorgestellt

(39) a Der Mann hat mir[about] die Frau[about] vorgestellt
         the man has me$_{DAT}$ the woman$_{ACC}$ introduced
         'The man introduced the woman to me'

     b *Der Mann hat die Frau[about] mir[about] vorgestellt

(40) a Der Mann hat es[about] der Frau[about] gegeben
         the man has it$_{ACC}$ the woman$_{DAT}$ given
         'The man gave it to the woman'

     b *Der Mann hat der Frau[about] es[about] gegeben

(41) a Der Mann hat es[about] der Stadt[about] gegeben
         the man has it$_{ACC}$ the city$_{DAT}$ given
         'The man gave it to the city'

     b *Der Mann hat der Stadt[about] es[about] gegeben

This means that another constraint has to be introduced which requires nominal arguments to follow the argument domain along with their argument feature. The constraint in (42) and (43) yield the desired results. The former must outrank the latter.

(42) [arg]A√$_n$

(43) √$_n$FD$_A$

(42) guarantees that roots and their argument CUs will not be separated, while (43) ensures that all roots will be placed towards the end of the domain with respect to cases where there is no root (i.e. a pronoun). This constraint must be ranked below [arg1]PD$_A$, as both pronominal and nominal subjects can precede pronominal objects. On the other hand, the ranking of (43) cannot be determined with respect to [about]PD$_{pred}$, because we get the same results irrespective of which one outranks the other. We can add the constraint in (43) to the ones introduced above:

(44) [contrast]PD$_{pred}$ / [new]FD$_{pred}$ > [arg1]PD$_A$> [arg]A√$_n$ > √$_n$FD$_A$ > [about]PD$_{pred}$ > [(in)animate]A√ > aPi > [arg2]PD$_A$ > [arg3]PD$_A$

The tableaux below demonstrate the interaction of these constraints, which predict the correct order, compare (45) and (46):

(45) a Der Mann[arg1] hat es[about][arg2] der Frau[about][arg3] gegeben

     b Der Mann[arg1] hat der Frau[about][arg3] es[about][arg2] gegeben

c Es[about][arg2] hat der Mann[arg1] der Frau[about][arg3] gegeben

d

	[arg1]PD_A	√_nFD_A	[about]PD_pred	[arg2]PD_A	[arg3]PD_A
☞ (45a)		**	***	*	**
(45b)		***(!)	***	**	*
(45c)	*(!)	*	**		**

(46) a Der Mann[arg1] hat ihr[about][arg3] das Baby[about][arg2] gegeben

b Der Mann[arg1] hat das Baby[about][arg2] ihr[about][arg3] gegeben

c

	[arg1]PD_A	√_nFD_A	[about]PD_pred	[arg2]PD_A	[arg3]PD_A
☞ (46a)		**	***	*	**
(46b)		*** (!)	***	**	*

When the nominal object is not a topic (and thus lacks the [about] feature), both √_nFD_A and [about]PD_pred would favour the pronoun > nominal object order. If the pronoun is used contrastively, as in (47), the higher ranked [contrast]PD_pred constraint will have to be satisfied:

(47) a *Mich*[about][contrast][arg2] hat der Mann[arg1] vorgestellt

b Der Mann[arg1] hat *mich*[about][contrast][arg2] vorgestellt

c

	[contrast]PD_pred	[arg1]PD_A	√_nFD_A	[about]PD_pred	[arg2]PD_A
☞ (47a)		*			
(47b)	*(!)		*	*	*

Finally, let us take a look at an example where the focussed nominal subject must follow both the pronominal direct and indirect object. I repeat the relevant example below, as well as some other possible permutations:

(48) a weil   es[about][arg2] ihm[about][arg3] ja   wahrscheinlich gestern
because it   him   [particle] probably   yesterday
ein Mann[new][arg1] gab
a   man   gave
'because probably a man gave it to him yesterday'

b weil *ein Mann*[new][arg1] es[about][arg2] ihm[about][arg3] ja wahrscheinlich gestern gab

c weil ja es[about][arg2] wahrscheinlich gestern *ein Mann*[new][arg1] ihm[about][arg3] gab

d		[new]FD$_{pred}$	[arg1]PD$_A$	√$_n$FD$_A$	[about]PD$_{pred}$	[arg2]PD$_A$	[arg3]PD$_A$
☞	(48a)		**		*		*
	(48b)	*****(!)		**	***	*	**
	(48c)	*(!)	*	*	******		**

(48) also demonstrates that pronouns do not always have to be used contrastively in order to appear at the leftmost edge of a clause.

4. Conclusion

We have seen that there are a lot of factors which have an effect on German word order: argument status, animacy status, focus and topic status. The features [arg1,2,3], [new], [about], [contrast] and [animacy] play a crucial role in determining the arrangement of the relevant arguments. The notion of the predicate domain and the argument domain are also important, because most of the elements are aligned with respect to them. In the present article I claimed that the position of pronominal arguments, among others, depend on the fact that they are inherently associated with the [about] feature and they lack the animacy feature.

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