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Object order and the Thematic Hierarchy in older German¹

Abstract

The relative order of dative and accusative objects in older German is less free than it is today. The reason for this could be that speakers of the direct predecessor of Old High German organized the referents according to the Thematic Hierarchy. If one applies a Case Hierarchy Nom>Acc>Dat to this, the order Nom – Dat – Acc falls out. It becomes apparent that the status of the Thematic Hierarchy is not a factor governing underlying word order, but a factor inducing scrambling. Arguments from binding theory, whose validity is discussed, indicate that the underlying order is ‘accusative before dative’.

1. Introduction

This paper is concerned with the relative position of accusative (direct) and dative (indirect) object full noun phrases in the history of German. The central hypothesis, which was brought forward in Speyer (2011), is that German underwent a period in which the relative order was relatively rigid – this period includes Old and Middle High German (OHG; MHG) and the earlier parts of Early New High German (ENHG), while only from the 16th century onward we notice a considerable variability. In Speyer (2013) it was also shown that the new ‘freedom’ in positioning is mostly a phenomenon of written German, whereas in spoken German (and in written texts that are highly influenced by the spoken register, voluntarily or not) even today the order ‘dative object before accusative object’ (Dat > Acc) is almost the norm, far outnumbering the order ‘accusative object before dative object’ (Acc > Dat).

The main goal of this paper is to present a theory why the order of objects in older stages of German was relatively rigid. This can be explained by the concept of Thematic Hierarchy in the tradition of Dowty (1991), as further devel-

¹ This paper elaborates on material that I have presented at the Historical Corpora conference in Frankfurt, December 2012. Parts of this material were presented also at talks at the universities of Cologne, Göttingen, and Saarbrücken between March 2011 and July 2012 as well as the Linguistic Evidence 2012 conference at Tübingen in February 2012. My thank goes to the audiences at this talks and other colleagues, especially Jost Gippert, Roland Hinterhölzl, Michael Job, Jürgen Pafel, Ingo Reich as well as an anonymous reviewer, for their comments and suggestions. All remaining errors are my responsibility.

oped by Primus (2002a; 2002b; 2004; 2011). In addition to that, this paper follows a secondary goal, closely related to its main goal, viz. to address the question whether the Thematic Hierarchy determines the base order or is rather a factor for short scrambling. There is evidence in favor of the second option, namely the binding argument known from, e.g., Müller (1999). This argument was attacked, e.g., by Rothmayr (2006), so in order to use it it is necessary first to discuss whether Rothmayr's criticism is valid (which we will see is not the case).

The paper is organized as follows: In section 2, after mentioning some factors that influence the object order in Modern German (ModG), the central evidence that suggests that the object order was relatively rigid is reviewed. Section 3 offers an explanation in terms of thematic roles and the Thematic Hierarchy as known from Dowty and Primus. Section 4 addresses the question what the status of the factor is and what the consequences for the underlying structure are. The discussion is briefly summarized in section 5.

2. Evidence for the lacking freedom of relative object order

Part of the evidence was already presented in Speyer (2011 and 2013). I summarize here the pieces of evidence relevant for the present purposes and add some new evidence in Tables 1 and 2.

Let us say first a word about word order in ModG.² The influential factors that are under discussion are numerous.³ Alongside factors that are grammatical in the stricter sense (such as: the subject usually stands before the objects, the dative object tends to stand before the accusative object, pronouns are put before lexical noun phrases, and so on) there are factors of a more cognitive-semantic nature (such as: agent first, animated referents before inanimate referents, etc.) and pragmatic / information-structural factors (topic before comment, given information before new information, etc.). In an earlier paper (Speyer 2011) I concentrated on the interaction between the factor that an unmarked order arises if the dative object stands before the accusative object (referred to as *Object Condition*) with what I call *Animacy Condition* (animated referents are mentioned before inanimate referents) and the tendency

² I use the traditional term word order here, although it is clear that the discussion mostly centers on the relative order of constituents.

³ On factors cf., e.g., Lenerz (1977); Lötscher (1981); Höhle (1982); Zubin/Köpcke (1985); Reis (1987); Fortmann/Frey (1997); Hoberg (1997); Musan (2002); Primus (2004, 2011).

that given information is placed before new information, dubbed here *Givenness Condition*. In the present paper I keep to this selection.⁴

None of these factors dominates the other in ModG. In short, we observe an acceptable constituent order if at least one of those conditions is fulfilled. Nevertheless, the Object Condition (or, rather, grammatical factors in general) plays a slightly more central role in that a Dat>Acc order is unmarked in any case, no matter whether the Animacy or the Givenness Condition are obeyed or not, whereas sentences with the order Acc>Dat are unmarked only if the Givenness Condition is fulfilled (Lenerz 1977). The same goes for the Animacy Condition: There is a set of systematic exceptions from the Object Condition, in verbs such as *aussetzen* ‘subject s.o. to s.th.’, or *ausliefern* ‘surrender s.o. to s.th.’. Here, Acc>Dat is the unmarked order (1).

- (1a) ... *weil der Sportlehrer die Schüler*
 because the PE-teacher [the pupils]_{ACC}
 dieser unmenschlichen Gefahr aussetzte.
 [this inhuman danger]_{DAT} subjected
- (1b) ?*... *weil der Sportlehrer dieser unmenschlichen Gefahr*
 because the PE-teacher [this inhuman danger]_{DAT}
 die Schüler aussetzte.
 [the pupils]_{ACC} subjected
 ‘because the PE-teacher subjected the pupils to this inhuman danger.’

As typically the accusative object denotes a person that is subjected or surrendered to something abstract or at least non-personal, the unmarked word order results from the Animacy Condition in these cases.

So the picture is quite complex in Modern German. A closer look on the historical stages of German might help to evaluate the factors. The null hypothesis would be that German behaves diachronically like English or the Romance languages in that it drifts from a relatively ‘free’ word order to a word

⁴ A factor which is necessary to include in future work is definiteness. A central question in this context is whether the definiteness effect (i.e. that definite NPs stand before indefinite NPs; cf. also Lenerz 2002) is due to definiteness in a semantic sense or to the formal marking of definiteness. In the latter case we should expect the definiteness effect to play a role only after the definite article had developed. Presently the investigation of this question is under progress.

order mostly governed by grammatical factors. Note that ‘free word order’ does not mean that anything goes or that German is non-configurational or the like,⁵ but simply that there is a big impact of non-grammatical factors on word order so that it is not possible to predict the word order in a given sentence by grammatical factors alone (which in English or French would be possible as a rule). So in OHG or other historical stages, we would expect that the word order in general and the object order in particular were mostly governed by factors such as the Givenness Condition and the Animacy Condition, and less so by the Object Condition.

A closer look at the OHG data suggests that this is not true (Speyer 2011). While the nature of the OHG data is such that it does not allow direct statements about this question,⁶ we can at least gather indirect evidence: In the *Evangelienbuch* by Otfrid (mid 9th century AD), all clauses containing a full NP accusative and dative object show the order Dat>Acc (2).

- (2) *bráht er therera worolti diuri árunti*
 brought he [the world]_{DAT} [precious message]_{ACC}
 ‘He brought a precious message to the world’
 (Otfrid Ev. 1,5,4)

This is the more surprising because one should expect more license in poetic texts. The fact that Otfrid does not make use of this license suggests that for him the production of a word order Acc>Dat is highly marked, at least too marked to be used just for making verses rhyme or the like, and perhaps even not possible.

The evidence from the translation texts points in the same direction. Of course we do find quite often cases in which the translator simply copied the Latin constituent order. But every now and then the translator deviates from the original. So we find cases in which the Latin original has Acc>Dat, but the translator renders it as Dat>Acc in German (3).

⁵ Cf. the discussion in Webelhuth (1992: 40ff.)

⁶ There are no sources of the nature necessary for such investigations, i.e., large original prose texts. All there is in terms of large texts, is an original poetic text (Otfrid von Weissenburg’s *Evangelienbuch*, a Gospel harmony in metrical form), and some translations from Latin, the *Tatian* (a Gospel harmony), a fragmentary translation of Isidor of Seville’s *Contra Iudaeos* (all 1st half of the 9th century) and the translations of several texts by Notker Labeo (around 1000 AD), among them a commentary to the psalms and Boethius’ *Consolatio Philosophiae*.

- (3) *Der allen mēnniscon ēzen gibit*
 who [all humans]._{DAT} food._{ACC} gives
 ‘who gives food to all people’
 (Notker Ps. 134 (505,17))

Latin original:

qui dat escam omni carni
 who gives food._{ACC} [all flesh]._{DAT}

Interestingly, there are very few examples in which a Latin order Dat>Acc is translated as Acc>Dat in German. We should expect this to occur frequently, however, if Acc>Dat was an acceptable option in German. Under this view, the deviation from the Latin Acc>Dat order to German Dat>Acc actually gives a hint that the translator here ‘corrected’ according to his ‘*Sprachgefühl*’.⁷ So this evidence suggests strongly that in OHG the ‘normal’ word order was Dat>Acc, whereas Acc>Dat was either no option at all or very highly marked.

This impression is confirmed by looking at MHG and ENHG evidence (see Speyer 2011, 2013). In a selected part of Berthold von Regensburg’s *Sermons*,⁸ 94 of 96 clauses containing a full NP dative and accusative object show the order Dat>Acc (~ 2%). We get similar numbers for the early periods of ENHG. In fact, only after c.1500 the order Acc>Dat occurs with some frequency, and there it is due to the Givenness Condition which did not play a role for word order before.

So it looks as if the object order in OHG, MHG and early ENHG is governed mainly, if not exclusively, by the Object Condition.

⁷ We know that neither the translator(s) of Tatian nor Notker are consistent in correcting the text into native-like German. Sometimes they simply are not able to do it; in Tatian, for instance, the German line has to render the verbal material of the Latin line, and since the lines are relatively short, a deviation from the Latin text with respect to word order of full NPs was impossible in most cases. Sometimes they simply do not care about doing it, which has to do with the character of the translation which was more of a ‘crutch’ than a readable text on its own. This is true with other phenomena as well, e.g. the use of subject pronouns, which were almost obligatory in OHG but almost always dropped in Latin. Nevertheless, the translator of the Tatian drops it quite often, whereas Otfrid (remember, an original text) drops it seldom.

⁸ Sermons 1-15 in the edition by Pfeiffer; the sample contains roughly 80,000 words.

For MHG and ENHG, where we have direct evidence, the interaction between the Object Condition and the Givenness Condition is given in Table 1, the interaction between the Object Condition and the Animacy Condition in Table 2.⁹

	IO > DO				DO > IO			
	g>n	n>g	g>g	n>n	g>n	n>g	g>g	n>n
Berthold	29	13	30	16	2	–	–	–
Lancelot	9	2	16	4	1	2	3	1
ENHG sermons	1	–	4	2	1	–	2	2
ENHG narrative	16	–	9	4	1	3	3	1
total	55	15	59	26	5	5	8	4

Table 1: Given (g) and New (n) information in MHG and ENHG prose texts

	IO > DO				DO > IO			
	a>i	i>a	a>a	i>i	a>i	i>a	a>a	i>i
Berthold	69	–	17	8	–	2	–	–
Lancelot	27	–	7	–	–	3	4	–
ENHG sermons	4	–	2	1	–	3	1	1
ENHG narrative	24	–	6	–	–	7	1	–
total	124	–	32	9	–	15	6	1

Table 2: Animated (a) and inanimate (i) referents in MHG and ENHG prose texts

Table 1 illustrates that there is no interaction between the Object Condition and the Givenness Condition: given>new and new>given is attested with both orders, Acc>Dat and Dat>Acc. The picture changes dramatically if we look at Table 2. Here we note striking gaps: there are no examples of Dat>Acc that violate the Animacy Condition. At the same time, there are no examples of

⁹ The underlying texts are: Berthold: *sermons* 1-15; Lancelot: *Prosa-Lancelot*, part I, pp. 1-231; ENHG sermons: *Altdeutsche Predigten*; Johannes Tauler: *Predigt de Nativitate*; ENHG narrative: *Buch der Altväter*; Rulman Merswin: *Buch von den zwei Mannen*; Hans Mair: *Troja*; Helene Kottanerin: *Denkwürdigkeiten*. All ENHG texts are taken from the Bonner Frühneuhochdeutschkorpus (<http://korpora.org/Fnhd/>). The MHG texts have been searched through manually, mostly as a test whether the method to search for sample verbs offers satisfactory results. It does: The output of the exhaustive search in the MHG texts was almost completely dependent on verbs that stand on the sample verb list used for OHG and ENHG.

Acc>Dat that obey the Animacy Condition. All examples of Acc>Dat either are neutral with respect to animacy, or they violate the Animacy Condition.

By consequence, there must be a strong connection between the Animacy Condition and the Object Condition. In other words, the unmarked Dat>Acc order could be the result of the Animacy Condition as well as the Object Condition, simply because both conditions lead to the same output.

There are no parsed corpora available for either Old High German or any other historical stage of German (with a few exceptions in ENHG), so another method for which the available resources sufficed was used. There are corpora for each period of older German that are equipped with a word search engine. For OHG, the most relevant texts are available in the TITUS database (Gippert/Martinez/Korn (eds.) 1987ff.), for ENHG, there are some texts in the 'Bonner Frühneuhochdeutschkorpus' (Besch et al. (eds.) 1972-1985). The method here was to search for verbs with dative and accusative object. For OHG, a list of verbs could be composed using Greule (1999), for ENHG, a list of verbs was compiled for Modern German and applied to ENHG. The hits of searches for these verbs were manually filtered such that at the end only hits remained in which both dative and accusative objects are realized as a full noun phrases and in which neither of them stood in the pre-field (i.e., before the finite part of the verb form) or unambiguously in the after-field (i.e., after the infinite part of the verb form). In the case of MHG, the search had to be done manually as at least most of the Berthold text is not included in the Middle High German database (Springeth/Schmidt/Pütz (eds.) 1992).

3. The profiling of the Thematic Hierarchy

As mentioned before, there is one detail in the historical data that suggests an interaction between two factors. In Table 2, there is a conspicuous distribution pattern visible: While quite a number of Dat>Acc cases have also an order 'animated before non-animated referent', and several Dat>Acc cases are independent of the animacy of the referents, there is not one example in which Dat>Acc conforms to an order 'non-animated before animated referent'. This suggests a strong interaction. But what kind of an interaction is it?

Primus (2004, 2011) suggests that in many languages, word order is influenced by the Thematic Hierarchy. Following Dowty (1991), thematic roles are not conceptualized as discrete entities, i.e., participants with a well-defined set of properties, but rather as points on a scale. Depending on what agent-like

of patient-like properties the participants have, they can be ordered on the scale, the high-point of which is the maximum of agent-like properties (*Proto-Agent*), and the low-point, the maximum of patient-like properties (*Proto-Patient*). Table 3 gives a list of typical agentive / patient-like properties, adapted from Primus (2002a, b). The variable *e* denotes an event or state denoted by the verb, *x* denotes the role-bearer, *y* denotes some other participant in the verbal event. In a normal three-place predicate such as *give* or *show*, the agent (subject) would be high on the scale, the recipient (indirect object) would be somewhere in the middle, as it comprises agent-like properties such as physical activity (A5) with patient-like properties such as that s/he is not the participant that initiates the verbal action, but is causally affected (P3), while the patient (in *give*) or stimulus (in *show*) is lowest on the scale.

	Agent-like properties		Patient-like properties
A1	<i>x</i> is volitionally involved in <i>e</i>	P1	<i>x</i> is controlled by <i>y</i>
A2	<i>x</i> shows sentence / perception of <i>e</i>	P2	<i>x</i> is the target of sentence by <i>y</i>
A3	<i>x</i> causes <i>e</i>	P3	<i>x</i> is causally affected by <i>y</i>
A4	<i>x</i> causes change of state in <i>y</i>	P4	<i>x</i> undergoes a change of state
A5	<i>x</i> shows physical activity	P5	<i>x</i> is physically manipulated by <i>y</i>
A6	<i>x</i> undergoes movement (relative to the position of <i>y</i>)	P6	<i>x</i> is moved by <i>y</i>
A7	<i>x</i> exists independently of <i>e</i>	P7	<i>x</i> is dependent on <i>y</i> or <i>e</i>
A8	<i>x</i> possesses <i>y</i>	P8	<i>x</i> is possessed by <i>y</i>

Table 3: Typical agent-like and patient-like properties

Linking works in Primus' (2011) system such that a Case Hierarchy Nom>Acc>Dat is evoked in accusative languages like German. The participant highest on the Thematic Hierarchy links with the highest case in the Case Hierarchy. The second highest case, the accusative, does not link with the next highest element on the Thematic Hierarchy, but with the lowest element in the Thematic Hierarchy, while participants in the middle link with the dative as the lowest case in the Case Hierarchy (Fig. 1).

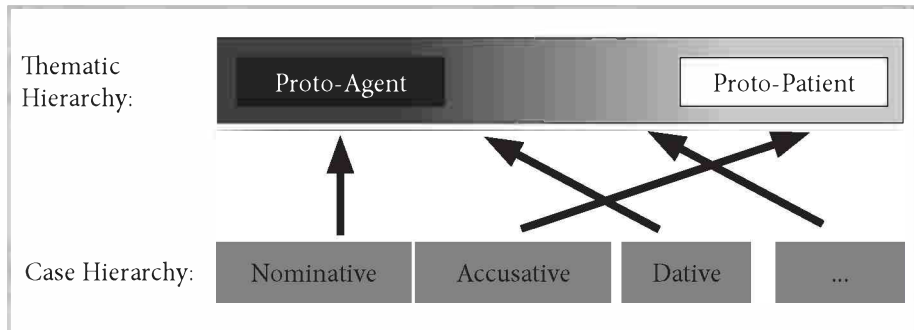


Figure 1: Linking in Primus' (2011) system

If in a language the word order is governed by the Thematic Hierarchy, and if the case linking works in the way Primus (2011) envisages, the order Nom>Dat>Acc in trivalent verbs comes for free as it is a direct result of the linking mechanism.

Similarly, the Animacy Condition falls out for free. Animacy is not a sufficient condition of agenthood. It is, strictly speaking, not even a necessary condition, but it is a typical property of agenthood nevertheless as it is a necessary condition of agent-like properties such as control of situation or physical activity. This is not to say that patients are typically inanimate, but animacy is no precondition for any prototypical patient-like property. So, if the participants in a verbal event are ordered according to the Thematic Hierarchy, chances are high that in the end animated participants are positioned before inanimate participants in the sentence.

If both the Object Condition and the Animacy Condition fall out from an ordering following the Thematic Hierarchy, we may conclude that the object order in OHG, MHG and early ENHG in reality did not follow either the Object Condition or the Animacy Condition, but instead was governed by the Thematic Hierarchy, which in turn was closely connected to the Case Hierarchy and followed the linking mechanism described by Primus (2011).

What happens is in later ENHG and up to ModG? Is the Thematic Hierarchy still a crucial factor governing word order? And is the linking to the Case Hierarchy still as strict? Relevant in this respect is the fact that from the 16th century onward, trivalent verbs like *aussetzen*, with an animate accusative and an inanimate dative object are attested (Speyer 2011). But note again that animacy or, rather, the lack thereof, is not a crucial condition of patienthood.

The referent of the accusative object shows rather typical patient-like properties (following the list of Primus 2002a and 2002b, see Table 3): it is controlled by another participant (P1), it is subjected to a situation that came about by another participant (P3), P4 and P5 can also apply. The referent of the dative object, i.e., the entity the referent of the accusative object is subjected to, on the other hand, shows neither agent-like nor patient-like properties. Thus, it is actually higher on the Thematic Hierarchy than the accusative. So the linking is as we would expect it from the Thematic Hierarchy: the dative is attached to the less patient-like object, the accusative to the more patient-like object. The word order, on the other hand, does not follow the Thematic Hierarchy in such cases, but rather the Animacy Condition which was originally a mere derivative side-effect of the ordering following the Thematic Hierarchy. So it looks as if German underwent a notable change: originally, that is, at some time before the OHG attestation sets in, the Thematic Hierarchy was the main if not the only factor governing object order.¹⁰ Descriptive generalizations following from the Thematic Hierarchy (which we can make but which language learners can make, too) are the Object Condition and the Animacy Condition. As all three conditioning factors lead roughly to the same output, how should a language learner decide which one is the decisive factor? The fact that verbs like *aussetzen* came about at some time suggests that at least from this time on, the Animacy Condition is independent from the Thematic Hierarchy and that language users view the Animacy Condition as the crucial factor, while they may view the Thematic Hierarchy as a subordinate factor or no factor at all. We may assume that something similar happened to the Object Condition at some stage. So the modern stage of affairs came about in which there is a multitude of factors that interact somehow.

¹⁰ I can speak confidently only of High German. It is possible that the changes described here in fact concern only High German. Preliminary searches on Old Saxon texts show that here the order of dative and accusative is actually less rigid than in OHG, which may suggest several things: 1) the Thematic Hierarchy and/or the Animacy Condition did not play such a crucial role for word order here, freeing the serialization for other, e.g. information-structural factors (cf. Petrova / Zeldes, this volume, on Middle Low German and Old Frisian constituent order); 2) the lexico-semantic structure of the verbs might have been somewhat different from OHG. Note that in Modern English, for instance, a verb such as *to give* can be represented in two ways (cf. Rappaport/Levin 1988): A: $[[give]] = \lambda z\lambda y\lambda x. [x \text{ cause } [y \text{ to come into state } [y \text{ has } z]]]$ (yielding sentences like: *Mary gave John a book*), B: $[[give]] = \lambda y\lambda z\lambda x. [x \text{ cause } [z \text{ to come into state } [z \text{ is at } y]]]$ (yielding sentences like *Mary gave a book to John*). This possibility is not (any more) possible with several trivalent verbs in German (among which is *geben* 'to give'). So there might be a connection. We are currently working on this problem.

4. On the structure of trivalent verbs in German

It is not immediately clear what the status of the word order Dat>Acc is in structural terms. The first question is whether both orders are base-generated, or whether one order is derived from the other. In the following I want to argue that the base order is Acc>Dat (the marked option), from which the Dat>Acc order is derived.

One may ask why the unmarked order Dat>Acc is not granted the status of a base-generated order. The reason is the well-known binding effect which clearly suggests that the accusative object c-commands (and thus binds) the dative object (cf., e.g., Müller 1999). This effect could not be derived if one assumed base-generation of the dative higher than the accusative. In the following I briefly illustrate the argument, mostly paraphrasing Müller (1999).

Crucial are sentence pairs like (4). Here, the accusative and the dative object refer to the same entity, that is to say, distributively to identical members of the same set. We know that in such cases the reference to one of the instances is done by an anaphor (reflexive or reciprocal pronoun in non-generative terminology). This is what sentence pair (4) shows. Principle A of Binding Theory (Chomsky 1981) requires that the anaphor has to be bound by the coreferent antecedent. The antecedent binds the anaphor by c-commanding it.

- (4a) *Ich sehe, dass Jörg [die Gäste]_i einander_i vorstellt.*
 I see that Jörg_{NOM} [the guests]_{ACC} each-other introduces
 'I see that Jörg introduces the guests to each other'
- (4b) **Ich sehe, dass Jörg [den Gästen]_i einander_i vorstellt.*
 I see that Jörg_{NOM} [the guests]_{DAT} each-other introduces
 'I see that Jörg introduces the guests to each other'

The crucial difference between (4a) and (4b) is that in (4a) the accusative object is realized by an R-expression, while the dative object is realized by an anaphor, whereas in (4b) it is the other way round. This has nothing to do with surface word order, as the sentence pair (5a, b), in which the anaphor precedes the R-expression, shows the same grammaticality contrast as (4a, b).

- (5a) *Ich sehe, dass Jörg einander_i [die Gäste]_i vorstellt.*
 I see that Jörg_{NOM} each-other [the guests]_{ACC} introduces
 'I see that Jörg introduces the guests to each other'

- (5b) * *Ich sehe, dass Jörg einander_i [den Gästen]_i vorstellt.*
 I see that Jörg_{NOM} each-other [the guests]_{DAT} introduces
 'I see that Jörg introduces the guests to each other'

As (4a) is grammatical, we may assume that Binding Theory is obeyed in this case, which requires a configuration in which the accusative object c-commands the dative object. This means that the accusative object has to be generated higher in the tree, resulting in a structure like (6a), which would result in a constituent order {NP-nom, NP-acc, NP-dat, V} if flattened out without further movement.

- (6a) [_{VP} NP-nom [_{V'} [_{VP} NP-acc [_{V'} NP-dat t₁]] V₁]]

- (6b) * [_{VP} NP-nom [_{V'} [_{VP} NP-dat [_{V'} NP-acc t₁]] V₁]]

As (4b) shows, the R-expression cannot be realized by a dative if the anaphor is realized by an accusative. This indicates that in German no grammatical configuration exists in which the dative object c-commands the accusative object (6b). The only way to deal with this grammaticality contrast is to assume that (6b) cannot be base-generated by the syntactic system of German (as opposed to other Germanic languages such as English). As the flattened out version of (6b) would be {NP-nom, NP-dat, NP-acc, V}, it is clear that this word order must be derived somehow and cannot reflect the base-generated word order. This comes surprising at first glance, since this serialization corresponds to the unmarked order with most verbs, but it is not unusual to have unmarked word orders that are structurally complex in that they obligatorily involve movement. The well-known clustering of pronouns to the left edge of the middle-field (Wackernagel-position) is clearly a case in which the pronominal dative and/or accusative object are moved over the non-pronominal subject (7a, b). This is most evident in cases like (7c) where the accusative reflexive is bound by the subject.

- (7a) ... *weil ihr Markus das Buch geliehen hat.*
 because her_{DAT} Markus_{NOM} [the book]_{ACC} lent has
 'because Markus lent her the book'

- (7b) ... *weil ihn ihr Markus vorgestellt hat.*
 because him_{ACC} her_{DAT} Markus_{NOM} introduced has
 'because Markus introduced him to her'

- (7c) ... weil sich_i ihr Markus_i vorgestellt hat.
 because himself_{.ACC} her_{.DAT} Markus_{.NOM} introduced has
 'because Markus introduced himself to her'

Another piece of evidence that Acc>Dat is the base order is that it is the unmarked order in the pronominal complex, as multiple movement should be structure-preserving. So nothing hinders us to assume that the base-generated order is Acc>Dat, as is suggested by the historical data.

This argument hinges crucially on the reliability of Binding Theory in such contexts. Rothmayr (2006) tried to show that this is not a case in which Binding Theory can apply. Her main arguments are the following:

- α) Dative plurals are no real plurals.
- β) Reciprocal are semantically complex and thus need not be subject to Binding Theory.
- γ) Picture nouns offer direct counterevidence against the binding argument.

Ad α): This argument rests partly on problematic premises, on which I will not elaborate. One piece of evidence is that dative objects fail to agree with the predicate in passivization, contrary to accusative objects (8; c, e adapted from Rothmayr 2006: 207).

- (8a) *Laura unterstützt die Kinder.*
 Laura supports [the children]_{.ACC}
 'Laura supports the children.'
- (8b) *Die Kinder werden unterstützt.*
 [the children]_{.NOM} become_{.PL} supported
 'The children are supported.'
- (8c) *Irmi hilft den Kindern.*
 Irmi helps[the children]_{.DAT}
 'Irmi helps the children.'
- (8d) * *Den Kindern werden geholfen.*
 [the children]_{.DAT} become_{.PL} helped
 'The children are helped.'

- (8e) *Den Kindern* *wird* *geholfen*.
 [the children]._{DAT} become._{SG} helped
 ‘The children are helped.’

Note, however, that we would not expect agreement in the first place as the dative object fails to be promoted to subject position and to receive nominative case, contrary to the accusative object in (8a, b). Nominative case seems to be a prerequisite for agreement. If we believe in an independent IP-architecture also in German, this would follow easily from movement of the subject to SpecIP (or the highest I-projection such as TP – the internal structure of IP does not play a role for the argument) where it both agrees with the verb by c-commanding it and receives nominative case. Datives never agree with the verb – but crucially accusatives do not either (9b). So this argument is not relevant, as we have no asymmetry between dative and accusative.

- (9a) *Mir/ Uns (ist/*bin/*sind) kalt*.
 Me._{DAT} Us._{DAT} is am are cold
 ‘I/we am/are cold’
- (9b) *Mich/ Uns (friert/ *friert/ *frieren)*.
 Me._{ACC} Us._{ACC} freeze._{3.SG} freeze._{1.SG} freeze._{1.PL}
 ‘I/we am/are freezing’

The question is rather, why datives cannot be promoted to subject position. If we assume, contra Meinunger (2007), that dative is an inherent case in two-place predicates such as *helfen* ‘help’, whereas accusative is a structural case, the dative object, already being equipped with case, could not be moved to a position where it receives case, such as the subject position.¹¹

Ad β): This argument rests on the premise that the binding effect is to be seen only with reciprocals. The reason why the usual examples (such as (4)) exhibit reciprocals is simply that it is much easier to come up with examples in which a pluralic referent is used for direct and indirect object. That does not mean that it is impossible to find examples in which the common referent of the direct and indirect object is a singularic entity which is referred to by an ordinary reflexive. If we take a psychotherapy-context, for instance, and assume a case in which a patient is traumatized, part of the therapy is to make the patient go through the traumatic experience again mentally. In such a case it is

¹¹ Following a model that allows for IP in German, such as Suchsland (1988) or Sabel (2000).

possible to say that the patient is subjected to himself. The German version of this sentence is (10a), which sounds normal (if you accept the scenario) and in which the accusative binds the dative, whereas (10b) with the dative binding the accusative is deviant.¹² Note that it is not a matter of the unmarked word order acc>dat with verbs like *aussetzen* ‘subject s.o. to s.th.’. To demonstrate this, let us stay in the same context: The psychotherapist succeeds with his treatment, the patient is healed, and a friend of the patient congratulates the psychotherapist in saying that she gave the patient back to himself. The German wording (10c) involves again an accusative binding a dative, whereas the opposite case (10d) sounds ungrammatical. The unmarked word order with words like (*wieder*)*geben* ‘give (back)’ is not acc>dat.

- (10a) *Die Psychotherapeutin hat den Patienten_i sich_i ausgesetzt.*
 the psycho-therapist has [the patient]_{ACC} himself subjected
 ‘The psycho-therapist subjected the patient to himself’

- (10b) * *Die Psychotherapeutin hat dem Patienten_i sich_i ausgesetzt.*
 the psycho-therapist has [the patient]_{DAT} himself subjected
 ‘The psycho-therapist subjected the patient to himself’

- (10c) *Die Psychotherapeutin hat den Patienten_i sich_i wiedergegeben.*
 the psycho-therapist has [the patient]_{ACC} himself given-back
 ‘The psycho-therapist gave the patient back to himself’

- (10d) * *Die Psychotherapeutin hat dem Patienten_i sich_i wiedergegeben.*
 the psycho-therapist has [the patient]_{DAT} himself given-back
 ‘The psycho-therapist gave the patient back to himself’

So we receive the same contrast as in (4) with respect to binding in cases that do not involve reciprocals but ordinary reflexives. Consequently, the binding facts are real and cannot be dismissed with reference to the weirdness of reciprocals or problems specific to pluralic entities.

¹² The more natural way of expressing this would be with ‘*sich selbst*’, but without *selbst* it is marginally possible as well. The grammaticality contrast is the same with *selbst*.

Ad γ): This is Rothmayr's strongest argument. However, it is well-known that binding in picture nouns is a general problem of binding theory rather than a special problem of binding between direct and indirect object (see, e.g., Pollard/Sag 1992).¹³

That the problem is on more general lines can be demonstrated easily. In Rothmayr's example (31 on page 210), here slightly adapted in order to avoid the reciprocal (11), it seems indeed as if the dative object binds a reflexive pronoun inside the accusative object.

- (11) *weil Irmi [dem Kind]_i [ein Foto von sich_i] zeigte.*
 because Irmi [the child]_{DAT} [a photograph of h.-self]_{ACC} showed
 'because Irmi showed the child_i a picture of h.-self_i'

The problem is that we get similar effects also in configurations like (12), where an accusative object binds a reflexive inside the subject. Here it is obvious that the subject is generated higher than the object, yet we obtain the same binding effect.

- (12) *Es ist klar, dass [ein Bild von sich_i in der Zeitung]*
 It is obvious that [a picture of himself in the paper]_{NOM}
auch den Jörg_i beeindruckt.
 even [the Jörg]_{ACC} impresses
 'It is obvious that a picture of himself in the newspaper impresses even Jörg.'

Thus it is evident that the binding peculiarities of picture nouns do not offer evidence for structural dominance.

In sum, Rothmayr's arguments against the validity of the binding argument are in itself questionable so that, in my opinion, nothing speaks against assuming Acc>Dat as the base structure. This fits nicely with the historical data where it can be argued on independent grounds that Acc>Dat behaves as if it was the base-generated order, whereas Dat>Acc can be derived by other factors.

¹³ There have been several attempts to reconcile picture noun reflexives with Binding Theory (e.g. Pollard/Sag 1992, Reinhart/Reuland 1993) as well as psycholinguistic research on the matter (e.g. Runner/Sussman/Tanenhause 2005), but a discussion would lead too far apart from the purposes of this paper.

So the order Dat>Acc must involve some sort of movement operation. It is clear that, if it is a sort of scrambling, it must be VP-internal scrambling. This can be demonstrated easily with examples that involve an adverbial that marks the boundary of VP, such as *gerne* ‘willingly’ (cf. Jackendoff 1972: 59ff.; Frey/Pittner 1998). If we assume that the subject is moved to SpecIP also in German (e.g. Sabel 2000), it is outside the VP; consequently the normal position of adverbs like *gerne* must be after the subject. This is shown to be correct in (13), where (13a) gives the version with Acc>Dat-order, while (13b) gives the (more natural sounding) Dat>Acc-version. The positioning of the adverb in front of the subject is definitely less acceptable, and it is not a felicitous answer to a question involving wide focus (13c), whereas (13b) would be a felicitous answer to the question in (13c).

- (13a) ^(?) *dass* [_{IP} Jörg₂ [_{VP} *gerne* [_{VP} *t*₂ *sein neues Auto*
that Jörg_{NOM} willingly [his new car]_{ACC}
*seiner Freundin t*₁]] *zeigt*_I]
[his girl-friend]_{DAT} shows
‘that Jörg likes to show his new car to his girl-friend’

- (13b) *dass* [_{IP} Jörg₂ [_{VP} *gerne* [_{VP} *t*₂ *seiner Freundin*₃
that Jörg_{NOM} willingly [his girl-friend]_{DAT}
*sein neues Auto t*₃ *t*₁]] *zeigt*_I]
[his new car]_{ACC} shows
‘that Jörg likes to show his new car to his girl-friend’

- (13c) (Was siehst du?)
What see you
#/* *Ich sehe, dass gerne Jörg seiner Freundin*
I see that willingly Jörg_{NOM} his girl-friend_{DAT}
sein neues Auto zeigt.
*his new car.*_{ACC} shows
‘What do you see? – I see that Jörg likes to show his new car to his girl-friend.’

We may assume that the adverb is adjoined outside of VP. This is demonstrated in (14). If the VP is moved to the prefield, adverbials like *gerne* must be stranded (14b), indicating that they are not part of the maximal projection of the moved verb *zeigen* ‘show’.

- (14a) ^(?) *Sein neues Auto der Laura zeigen wird Jörg gerne.*
 [his new car]_{ACC} [the Laura]_{DAT} show will Jörg willingly
 'Jörg will like to show Laura his new car.'
- (14b) *Der Laura sein neues Auto zeigen wird Jörg gerne.*
 [the Laura]_{DAT} [his new car]_{ACC} show will Jörg willingly
 'Jörg will like to show Laura his new car.'
- (14c) * *Gerne der Laura sein neues Auto zeigen wird Jörg.*
 willingly [the Laura]_{DAT} [his new car]_{ACC} show will Jörg
 'Jörg will like to show Laura his new car.'

Note that even under fronting of the VP the markedness (in Höhle's sense) of the Acc>Dat-option remains, in the sense that Acc>Dat requires contrastive focus (14a, b). This indicates that the generation of the Dat>Acc-order does not involve adjunction outside VP, as then remnant movement of the VP should only be possible in the base-generated Acc>Dat-option. If an outside-adjoined adverbial like *gerne* must be stranded under VP-fronting, an outside-adjoined element like the dative object should have to be stranded as well if the order Dat>Acc were the result of adjunction of the dative outside the VP.¹⁴

It is not possible to find conclusive evidence that the dative object really has moved in cases of stylistically unmarked word order. A classical argument would derive from the Freezing Principle (Wexler/Culicover 1980, Müller 1998) which basically says that a moved constituent becomes an island, i.e., it is not possible to move material out of an already moved constituent. This test is not applicable to gather evidence for movement of the dative indirect object, as dative NPs functioning as indirect objects are islands anyway, no matter where they stand (15).¹⁵

¹⁴ Note that we are not talking here about scrambling to a position between subject and VP-boundary adverbials of the type *dass Hans das Buch gerne gelesen hat*. Chocano (2007: 14) suggests that the analysis of such scrambling with scrambling to a position higher than the subject is essentially the same, which seems to be correct. This does not entail that VP-internal scrambling in the sense used here can be subsumed under this account, too.

¹⁵ The effect is visible also in cases in which the dative is the only object: Whereas (i) is marginally acceptable, (ii) is definitely not. The sentence (iii), with the same meaning as (ii) but an accusative instead of the dative object, is acceptable.

(i) ? [Von wem]_i hat Peter [der Frau t_i] geholfen?
 of whom has Peter [the wife]_{DAT} helped
 'The wife of whom did Peter help?'

- (15a) * [Über wen]₂ *verdankte* Max [einer Studie t₂]₁
 on whom owes Max._{NOM} [a study]._{DAT}
sein hohes Ansehen t₁?
 [his high reputation]._{ACC}
 'A study on whom helped Max gain his good reputation?'
- (15b) * [Über wen]₁ *verdankte* Max *sein hohes Ansehen*
 on whom owes Max._{NOM} [his high reputation]._{ACC}
 [einer Studie t₁]?
 [a study]._{DAT}
 'A study on whom helped Max gain his good reputation?'

It can, however, be used as further evidence that the order Acc>Dat cannot be the result of a movement operation. As direct objects are not islands *per se*, we should get a Freezing effect in Acc>Dat orders if they were derived from Dat>Acc orders by movement of the accusative object. However, as (16) shows, there is no noticeable grammaticality difference between the Dat>Acc and the Acc>Dat version (apart from the general markedness of Acc>Dat orders).¹⁶

- (16a) [Über wen]₁ *hat* der Max *der* Laura [ein Buch t₁]
 on whom has [the Max]._{NOM} [the Laura]._{DAT} [a book]._{ACC}
geschenkt?
 given
 'On whom did Max give a book to Laura as a present?'
- (16b) [Über wen]₁ *hat* der Max [ein Buch t₁] *der* Laura
 on whom has [the Max]._{NOM} [a book]._{ACC} [the Laura]._{DAT}
geschenkt?
 given
 'On whom did Max give a book to Laura as a present?'

-
- (ii) * [Gegen was]₁ *hat* Peter [einer Petition t₁] *geholffen?*
 against what has Peter [a petition]._{DAT} helped
 'Against what did Peter support a petition?'
- (iii) [Gegen was]₁ *hat* Peter *eine* Petition t₁] *unterstützt?*
 against what has Peter [a petition]._{ACC} supported
 'Against what did Peter support a petition?'

¹⁶ Cf. Chocano (2007: 86ff.) on the general problems, with evidence from Freezing.

Still, one could say that the effect shown above (4, 5) that the dative noun phrase cannot bind an accusative anaphor – which was taken here as evidence that the accusative is necessarily structurally higher than the dative – might hinge on the particular verb *vorstellen* ‘to introduce’. But if other verbs are substituted for it, and the reciprocal changed to a simple reflexive, it is not as easy any more to come up with a naturally sounding scenario. However, if one succeeds, one sees that the same grammaticality judgments prevail (17, 18).

- (17a) *Der Vater hat [die Eheleute]_i {sich/ einander}_i versprochen.*
 the father has [the spouses]_{ACC} themselves/each other promised
- (17b) * *Der Vater hat [den Eheleuten]_i {sich/ einander}_i versprochen.*
 the father has [the spouses]_{DAT} themselves/each other promised
 ‘The father has promised the spouses to each other’
- (18a) *Jörg_j hat [den Mann]_i sich_{i,j} im Spiegel gezeigt.*
 Jörg has [the man]_{ACC} himself in-the mirror shown
- (18b) *Jörg_j hat [dem Mann]_i sich_{i,j} im Spiegel gezeigt.*
 Jörg has [the man]_{DAT} himself in-the mirror shown
 ‘Jörg showed the man to himself in the mirror.’

5. Concluding remarks

The older stages of German (that is, High German until about 1500) show a relatively rigid object order with the dative before the accusative object. This effect could be traced back to the Thematic Hierarchy: German surface word order originally followed closely the Thematic Hierarchy, and as the case linking is directly dependent on the Thematic Hierarchy, we get the impression of a fixed argument order ‘nominative > dative > accusative’. We also get the impression of a serialization according to animacy, simply because animacy is a typical property of Proto-Agents; consequently, the arguments move to the ‘left’ (the agentive pole of the scale) are typically animated whereas the ones on the ‘right side’ (the patient-like pole of the scale) are not necessarily animated. This situation can easily lead to a re-interpretation of the factor governing serialization, in that the Thematic Hierarchy is not recognized any more as the crucial factor by language learners and instead, derivative factors such as case and animacy are interpreted as the decisive factors. This obvi-

ously happened at some stage in the history of German, at latest at the point at which accusative-dative verbs such as *aussetzen* ‘subject s.o. to s.th.’ begin to be used. Grimm’s dictionary gives no dates of first attestation of the accusative-dative verbs before around 1500 (see Speyer 2011). Note that this is the same time in which information structural factors begin to play a role for serialization, so we can be fairly certain to point the change away from the Thematic Hierarchy as the decisive factor for serialization around 1500. The change concerned only the surface word order. The underlying word order, at least in Modern German, is accusative before dative (this is suggested by Binding facts, the lack of Freezing effects) and probably was so throughout the history of the language (this is suggested by the distribution patterns of the data). One might ask why the underlying order never changed, even in the period in which the surface order was strictly ‘dative before accusative’, at least for lexical noun phrases, and thus the evidence for the language learner apparently overwhelming against Acc>Dat as the underlying order. The answer is probably that with pronoun NPs, the order typically is Acc>Dat, and since pronominal reference is much more common, especially in spoken language (which is the relevant register here), the evidence for Dat>Acc was in fact not that overwhelming but represented a minority pattern. Note that the ordering according to the Thematic Hierarchy concerns only lexical NPs, not pronouns. So the language learner, confronted with paradoxical evidence (pronouns Acc>Dat, lexical NPs Dat>Acc), can identify a non-grammatical factor for Dat>Acc, but not so for Acc>Dat; (s)he will settle for Acc>Dat as the underlying order from which Dat>Acc is derived if lexical NPs are involved.

References

Sources and aids¹⁷

- Berthold von Regensburg. Vollständige Ausgabe seiner Predigten mit Anmerkungen von Franz Pfeiffer. Mit einem Vorwort von Kurt Ruh. Bd. 1. Berlin: de Gruyter 1965 [Reprint; original: Wien: Braumüller 1862].
- Besch, Werner/Lenders, Winfried/Moser, Hugo/Stopp, Hugo (eds.) (1972-1985): Das Bonner Frühneuhochdeutschkorpus. URL: <http://korpora.org/Fnhd/>.
- Gippert, Jost/Martniesz, Javier/Korn, Agnes (eds.) (1987ff.): Thesaurus indogermanischer Text- und Sprachmaterialien (TITUS). URL: <http://titus.uni-frankfurt.de/indexe.htm>.

¹⁷ All URLs have been checked and found valid as of late January 2015.

- Greule, Albrecht (1999): Syntaktisches Verbwörterbuch zu den althochdeutschen Texten des 9. Jahrhunderts. Frankfurt a.M.: Peter Lang.
- Lancelot. Nach der Heidelberger Pergamenthandschrift Pal. germ. 147 hg. v. Reinhold Kluge. Bd. I. Berlin: Akademie Verlag 1948.
- Springeth, Margarete/Schmidt, Klaus M./Pütz, Horst P. (eds.) (1992): Mittelhochdeutsche Begriffsdatenbank. URL: www.mhdbdb.sbg.ac.at:8000/.

Research literature

- Chocano, Gema (2007): Narrow syntax and phonological form. Amsterdam/Philadelphia: John Benjamins.
- Chomsky, Noam (1981): Lectures on government and binding. Dordrecht: Foris.
- Dowty, David R. (1991): Thematic proto-roles and argument selection. In: *Language* 67: 547-619.
- Fortmann, Christian/ Frey, Werner (1997): Konzeptuelle Struktur und Grundabfolge der Argumente. In: d'Avis, Franz-Josef/Lutz, Uli (eds.): *Zur Satzstruktur im Deutschen*. (= Arbeitspapiere des SFB340 90). Stuttgart/Tübingen: Univ. Stuttgart/Univ. Tübingen, 143-170.
- Frey, Werner/Pittner, Karin (1998): Zur Positionierung der Adverbiale im deutschen Mittelfeld. In: *Linguistische Berichte* 176: 489-534.
- Hoberg, Ursula (1997): Die Linearstruktur des Satzes. In: Zifonun, Gisela/Hoffmann, Ludger/Strecker, Bruno: *Grammatik der deutschen Sprache*. Band 2. (= Schriften des Instituts für Deutsche Sprache 7.2) Berlin: de Gruyter, 1496-1680.
- Höhle, Tilman (1982): Explikationen für 'normale Betonung' und 'normale Wortstellung'. In: Abraham, Werner (ed.): *Satzglieder im Deutschen*. Tübingen: Narr, 75-153.
- Jackendoff, Ray S. (1972): *Semantic interpretation in generative grammar*. Cambridge, MA: MIT Press.
- Lenerz, Jürgen (1977): *Zur Abfolge nominaler Satzglieder im Deutschen*. Tübingen: Narr.
- Lenerz, Jürgen (2002): Scrambling and reference in German. In: Abraham, Werner/Zwart, C. Jan-Wouter (eds.): *Issues in formal German(ic) typology*. Amsterdam/Philadelphia: John Benjamins, 179-192.
- Lötscher, Andreas (1981): Abfolgeregeln für Ergänzungen im Mittelfeld. In: *Deutsche Sprache* 9: 44-60.
- Meinunger, André (2007): Der Dativ im Deutschen – eine Verständnishilfe für das Phänomen der gespaltenen Ergativität. In: *Linguistische Berichte* 209: 3-31.

- Müller, Gereon (1998): Incomplete category fronting. A derivational approach to remnant movement in German. Dordrecht: Kluwer.
- Müller, Gereon (1999): Optimality, markedness, and word order in German. In: *Linguistics* 37: 777-818.
- Musan, Renate (2002): Informationsstrukturelle Dimensionen im Deutschen. Zur Variation der Wortstellung im Mittelfeld. In: *Zeitschrift für germanistische Linguistik* 30: 198-221.
- Pollard, Carl/Sag, Ivan A. (1992): Anaphors in English and the scope of binding theory. In: *Linguistic Inquiry* 23: 261-303.
- Primus, Beatrice (2002a): Protorollen und Verbtyp: Kasusvariation bei psychischen Verben. In: Hummel, Martin/Kailuweit, Rolf (eds.): *Semantische Rollen*. Tübingen: Narr, 377-401.
- Primus, Beatrice (2002b): Proto-roles and case selection in optimality theory. In: *Theorie des Lexikons. Arbeiten des SFB 282*, 122: 1-39.
- Primus, Beatrice (2004): Division of labour: The role-semantic function of basic order and case. In: Willems, Dominique et al. (eds.): *Contrastive analysis in language: Identifying linguistic units of comparison*. Palgrave: Macmillan, 89-136.
- Primus, Beatrice (2011): Animacy, generalized semantic roles, and different object marking. In: Lamers, Monique/de Swart, Peter (eds.): *Case, word order, and prominence. Interacting cues in language production and comprehension*. Dordrecht: Springer, 65-90.
- Rappaport, Malka/Levin, Beth (1988): What to do with theta-roles. In: Wilkins, Wendy (ed.): *Thematic relations. (= Syntax and Semantics 21)*. New York: Academic Press, 7-36.
- Reinhart, Tanya/Reuland, Eric (1993): Reflexivity. In: *Linguistic Inquiry* 24: 657-720.
- Reis, Marga (1987): Die Stellung der Verbargumente im Deutschen – Stilübungen zum Grammatik:Pragmatik-Verhältnis. In: *Lunder germanistische Forschungen* 55: 139-177.
- Rothmayr, Antonia (2006): The binding paradox in German double object constructions. In: *Linguistische Berichte* 206: 195-215.
- Runner, Jeffrey T./Sussman, Rachel S./Tanenhaus, Michael K. (2005): Reflexives and pronouns in picture noun phrases: using eye movements as a source of linguistic evidence. In: Kepser, Stephan/Reis, Marga (eds.): *Linguistic evidence. Empirical, theoretical and computational perspectives*. Berlin/New York: Mouton de Gruyter, 393-411.
- Sabel, Joachim (2000): Das Verbstellungsproblem im Deutschen: Synchronie und Diachronie. In: *Deutsche Sprache* 28: 74-99.

- Speyer, Augustin (2011): Die Freiheit der Mittelfeldabfolge im Deutschen – ein modernes Phänomen. In: Beiträge zur Geschichte der deutschen Sprache und Literatur 133: 14-31.
- Speyer, Augustin (2013): Performative Mündlichkeitsnähe als Faktor für die Objektstellung im Mittel- und Frühneuhochdeutschen. In: Beiträge zur Geschichte der deutschen Sprache und Literatur 135(3): 1-36.
- Suchsland, Peter (1988): Zur Interaktion von Morphologie und Syntax. In: Deutsch als Fremdsprache 25: 321-327.
- Webelhuth, Gert (1992): Principles and parameters of syntactic saturation. Oxford/New York: Oxford University Press.
- Wexler, Kenneth/Culicover, Peter W. (1980): Formal principles of language acquisition. Cambridge, MA: MIT Press.
- Zubin, David A./Köpcke, Klaus-M. (1985): Cognitive constraints on the order of subject and object in German. In: Studies in Language 9: 77-107.