Translating from English to German: Structural and Stylistic Preferences

Inauguraldissertation
zur Erlangung des Grades eines Doktors der
Philosophie im Fachbereich Neuere Philologien
der Johann Wolfgang Goethe-Universität
zu Frankfurt am Main

vorgelegt von

Pia Gerhard

aus München

Acknowledgements

A deep thanks goes out to my supervisor Gert Webelhuth, who continuously encouraged and supported me throughout the whole process of preparing and writing this thesis. I very much enjoyed the discussions we had and largely treasured the possibility to test various approaches and ideas by always knowing him to be there in case of questions and deadlocks. Further, I specifically want to thank Janina Radó and Manfred Sailer, both from the University of Frankfurt, and Sabine Bartsch from the TU Darmstadt, for being extremely helpful by discussing my ideas and questions and providing me with new perspectives. Also, thanks to Corinna Trabandt for inspiring discussions and wonderful proof reading and to all my colleagues at the University of Frankfurt, especially to Ede Zimmermann, for the supportive, fun and enjoyable environment.

Finally, thanks to my parents for the continous support, understanding and encouragement - you are the best! And last but not least – thank you, Ernie, for being you, for believing in my goals, and for always supporting whatever idea I developed. You and Lotta are my everything!

1. Gutachter: Prof. Dr. Gert Webelhuth
2. Gutachter: Prof. Dr. Manfred Sailer

Tag der Promotion: 8. Februar 2016

Table of figures

Introduction

Languages in general have various possibilities to express one and the same propositional content. One of these possibilities is grammatical variation. This thesis is interested in the variation of the linear word order in a clause and the effects triggered by word order alternation. Although sharing the same propositional content, different word order variants can carry different functions; word order variation can be used to achieve certain stylistic effects. First, the dissertation will look at functional and stylistic preferences of English regarding variation from the canonical word order (1).

(1) [Ernie]$_S$ [sits]$_V$ [on the table]$_O$. (SVO)

The variation under consideration is locative inversion, exemplified in (2).

(2) On the table sits Ernie.

As any variation from the canonical word order is said to strongly depend on the grammatical system of the language a sentence is realized in, I will in a second step expand the perspective to the syntactic equivalent in German (3). The goal is to highlight possible differences/similarities English and German have concerning one specific word order variant in a declarative main clause. Example (3) shows PP-preposing in German, which is regarded to be syntactically equivalent to (2).

(3) Auf dem Tisch liegt ein Brief.
On the table lies a letter
'On the table lies a letter'.

As the variation from the canonical word order is not expected to be coincidental in both languages, the features that favor the pattern under consideration will be examined. Supporting my interest in a cross-linguistic anaylsis comes from Siewierska (1993:826), who states that there is a "[…] relative cross-linguistic homogeneity of word order". However, English and German show significant typological differences. To be able to make an empirically profound statement, I will therefore statistically analyze data from two comparable corpora, namely the BNC for English and the TÜPP D/Z for German. Arguments for that choice will be

laid out in detail. The central question for the thesis therefore is: What are the functions of LOCI in English and PP-preposing in German, what features favor the use and how are they realized formally, on the level of syntax?

The point of departure, the focus of interest, for the present work lies in possible reasons for word alternation and the resulting linguistic and stylistic effects. Every language has a special set of sentential constructions that deviate from the canonical ('standard' or 'normal') default word order (see (1) for the canonical word order of English), but nevertheless express the same propositional content the canonical constructions (CCs) stand for (Vallduví 1992, Biber et al. 1999). As variations from the canonical word order are less frequent and more constrained than canonical sentences, it is supposed that the use of these non-canonical constructions (NCCs, or marked word order, see Biber et al. 1999:899) implies some specific function or meaning and that certain discourse features ask for the use of NCCs[1]. The reasons for the preference of a NCC may originate from the need to facilitate the production or perception of language (Hawkins 1992, Biber et al. 1999, Arnold et al. 2000) or be due to the ideal organization of information within a sentence (e.g. Birner 1996), which again helps to achieve easier production or processing. As Birner (1994:233) states: "A speaker may also, [however], exploit the interaction between discourse context and syntactic form for the purpose of structuring the information represented in the utterance". The syntax of a sentence therefore greatly contributes to the meaning provided (e.g. by focusing on one constituent, to name one example; see Bresnan et al. 2007; also see Biber et al. 1999:896). These stylistic possibilities non-canonical structures display are so to say a special tool in the toolbox of human language.[2] As there are numerous alternations possible, but only a limited set is actually in use across languages, Siewierska (1993:826) states:

---

[1] In order to avoid confusion from the beginning, let me say that I will only consider syntactic variation in written language. Aspects unique to spoken language will not be taken into account. The major reason is the data the analysis rests on; the English data is taken from the BNC (about 87% written language), the German data is comprised out of the newspaper corpus TÜPP D/Z. The reasons for the choice of corpora will be elaborated on in detail in section 3.

[2] It is important to note that the term 'structure' is to be understood as the superficial pattern of the data (not to be confused with the term 'surface structure' from generative grammar

> [T]he vast discrepancy between the mathematically possible and actually observable word orders is attributable to the crosslinguistic commonality of the factors affecting linearization and, most importantly, to the interrelationships among these factors. It is due to the nature of the interplay of the determinants of order that different combinations of factors may produce the same or similar cumulative effects.

Idea

The importance of a crosslinguistic perspective is the origin of the idea for this thesis. Support comes from Vallduví & Engdahl (1996:459, who say that "[…] there is an increasing awareness of the large degree of cross-linguistic diversity involved in the structural realization of information packaging[3] (or information structure)". The nature and function of NCCs in one single language are interesting enough, considering the puzzle as to what factors drive the use of them. However, as soon as there is a transfer of information from one language to another, the importance of identifying the factors that favor the use of NCCs and the resulting pragmatic functions become eminent.

Picture the process of translation. Ideally, all levels of a text are translated. By only considering the words (formal meaning), the lexical content might be passed on, however, the fine (functional) meaning gets lost and the propositional content might not be transferred fully to the target language As I suspect NCCs to have a specialized function, this function cannot be transferred when disregarding the word order in the source language. At this point the problem becomes visible. A word-by-word translation merely copies the surface structure, the pure syntax of the sentence. It could thereby disregard possible syntractic requirements different languages have. It might be that a pattern of the source language (4a, NP-preposing) is not available in the target language (4b); linear translation therefore results in infelicity.

(4) a. Pizza I like.
b. *Pizza ich mag. (correct: Pizza mag ich.)

[3] Information packaging describes the organization of information units within a sentence, to be evaluated in detail later on.

Setting aside this worst-case example, even if syntactic rules are obeyed, all the less obvious linguistic effects are possibly not being accounted for. As I suspect NCCs to carry a special meaning/function, the question therefore is where this 'hidden' message, the functional meaning, is stored in the sentence. This question is difficult to answer for one language, crosslinguistically it is more than complex. Even if one understands the driving force behind word order alternation in one language, it is not clear how this is supposed to be mapped onto another language. It is necessary to understand how a certain meaning is encoded in the target language (what function word order alternations have) in order to properly translate it according to the syntactic requirements.

In what follows throughout the chapters 1 and 2, English will be in the center of interest, as it is the point of departure of my analysis. In the case of English, any variation of the **S**(ubject) – **V**(erb) – **O**(bject) word order, displayed in (1), falls under the label of 'NCC'. It is widely acknowledged that information or deeper meaning is not only carried by words, it is also expressed by the ordering of words and constituents, i.e. the syntactic structure of a sentence. The idea of specific functions of word order variation in general and of LOCI specifically has been intensely discussed in the literature (e.g., Green 1980, Dorgeloh 1997, Birner 1996, Chen 2003, a.o.). Some researchers claim that the informational content and status of the constituents are the key to understand the use of NCCs (e.g., Birner 1996). Others focus on the pure length of the constituents, the so-called syntactic weight, as being a factor to decide on whether to use a canonical or non-canonical order (Behaghel 1909/1910, Hawkins 1992). A third opinion sees a combination of all of these factors to be relevant (e.g., Arnold et al. 2000). However, the reasons and use conditions for and the benefits of the use of NCCs are not yet fully resolved and understood. Alternations of the canonical word order are suspected to have a limited but powerful range of functions, as NCCs are not as generally applicable as are their canonical counterparts. In what follows I will make clear what the object of analysis is.

The rearrangement of constituents in focus here, namely the variation of a clause pattern or structure without change of the informational content/proposition of the sentence, is exemplified in (5) and (6).

(5) Ernie sits on the table. (Canonical word order)

(6) On the table sits Ernie. (NCC, Locative inversion)

Whether one uses (5), a canonical sentence, or (6), an instance of locative inversion, does not change anything with regard to the nature of the message, namely that there is a person *Ernie* who sits in a certain location, namely *on the table*. Following from that, note that I am generally looking at word order variations that change the order of the constituents, however not their role. In (5) and (6), *Ernie* is in both sentences (i) the agent and (ii) the subject. Therefore, neither the thematic role not the grammatical function changes. The subsequent examples (7) – (9) will generally illustrate what I will not look into.

(7) a. The cat chases the mouse.
b. The mouse is chased by the cat.

(8) a. Alex sold the book to Pat.
b. Pat bought the book from Alex.

(9) a. The cat sat on the mat.
b. It was that cat that sat on the mat.

The sentences in (7) display the same propositional content (the cat is the one that chases the mouse), the constituents have the same thematic roles (*cat* is the agent, *mouse* the patient). However, the grammatical functions of the constituents differ (in (7a) *the cat* is the subject, in (7b), *the mouse* is the subject). In (8a) and (8b), one can see that the meaning is the same, however, the thematic roles (in (8a) *Alex* is the agent, in (8b) *Alex* is the patient) change, as well as the grammatical functions of the constituents (in (8a) *Pat* is a PP-object, in (8b) *Pat* is the subject of the sentence). And last, examples (9a) and (9b) contrast two sentences that do display the same propositional content, the constituents have the same thematic roles and grammatical functions, the overall construction, however, is different. (9a) shows a canonical declarative sentence, (9b) is a cleft-sentence, which even involves more words than (9a). To sum it up, in what follows 'NCC' will relate to word order

alternations that do not change either the propositional content, nor the thematic roles or the grammatical function of constituents.

To provide possible answers to the task presented here, I will first identify features that trigger locative inversion in English. By doing so I want to find out under what circumstances inversion is preferred over the canonical order and infer possible functions carried by this specific NCC. In a second step I will add a parallel analysis of the superficially identical pattern in German, namely PP-preposing. Possible similarities and differences will lead to a claim about stylistic and structural preferences of the two languages regarding one specific syntactic pattern[4].

Data

English

Before giving a detailed outline for this thesis I want to explain the reasons why I chose LOCI from the wide range of NCCs. The reason for my choice is (i) that numerous researchers (Green 1980, Prince 1981, Birner 1996, Chen 2003, etc.) have already made claims about the use and function of this construction (without clear consent so far); these claims range from purely functional approaches to information-structural views right up to discussions on the role of syntactic weight. LOCI has therefore quite frequently been compared to other NCCs (esp. in English, see Roland et al. 2007). In what follows I will take most of these approaches into account and measure them against the results of my own analysis. Furthermore, (ii) LOCI can easily be identified in corpora (meaning, it can clearly be distinguished from other constructions). This is necessary, as my claims rest on a statistical analysis. It is necessary to be able to clearly describe and define the patterns under discussion to form a comparable database. (iii) LOCI seems to be quite frequent as it has a strong locative reference. It may therefore be involved in all kinds of

[4] I am fully aware that this does not solve the general problem translation is confronted with; it should, however, provide a first step towards a clearer image. In case English and German show obvious similarities in features favoring the pattern in focus, one could infer that at least with these two languages the structure of PP-V-NP has a similar pragmatic function.

location denoting, deictic (directional) or existential expressions, as it can also carry abstract meaning despite its predominantly locative meaning. This will become important when introducing the features involved in the annotation of my data. And finally, (iv) LOCI is interesting from a diachronic perspective. The word order it displays in English is an archaic feature from the Old English period (ca. 450-1100 AD). It resembles the V2-word order Old English was constrained by and Modern German still is.

LOCI is structurally described in (10a) and (10b) and illustrated with examples in (11). (10a) shows the most simple pattern that represents LOCI (11a), (10b) gives a more detailed description by indicating the frequent use of a locative PP, including a possible auxiliary and indicating that the NP in postverbal position is the logical subject (11b). Example (12) shows a structure that, at first sight, looks strikingly similar, but is not within the range of my understanding of LOCI (as the PP is merely a complement of the subject NP).

(10) a. PP V NP or
b. [PP_{LOC} AUX* V LOG-SUBJ] (Webelhuth 2011:82)

(11) a. [Into the room]$_{PP}$ [comes]$_{V}$ [Simone]$_{NP}$.
b. [In the chair]$_{PP}$ [has been sitting]$_{VP}$ [Mary]$_{NP}$.

(12) [This picture on the wall]$_{NP}$ [is]$_{V}$ [a Picasso]$_{NP}$.

There is one construction in English that is very similar to LOCI and sometimes even said to fulfill similar functions, the so-called '*there*-insertion with PP-preposing' (THERE). For my aim it is important to clearly demarcate inversion from *there*-insertion (13), an example for THERE is given in (14), (15) shows an example of LOCI for means of comparison.

(13) PP *there* V NP or [PP_{LOC} *there* AUX* V LOG-SUBJ]

(14) George, can you do me a favor? Up in my room, on the nightstand, **there** is a pinkish-reddish envelope that has to go out immediately. (THERE)

(15) George, can you do me a favor? Up in my room, on the nightstand, __ is a pinkish-reddish envelope that has to go out immediately. (LOCI)

THERE involves an existential *there,* not to be confused with locative *there* (see Lyons 1975, Breivik 1981). *There* here is interpreted according to Breivik (1981:15), it is said to carry no semantic information, only some kind of pragmatic information. *There* signals the hearer/reader that some new item or information is coming up. Some scholars treat *there*-insertion (esp. with an additional PP preposed) as a type of inversion (e.g., Hartvigson & Jakobsen 1974; Penhallurick 1984). I will treat the two constructions separately, following Birner & Ward (1993, 1998) and thus provide a sub-analysis to substantiate my decision to exclude *there*-insertion with PP-preposing from my understanding of PP-inversion.

German

As introduced above, it is particularly interesting to compare the use conditions of an (allegedly) frequently used construction, as for example LOCI in English, to LOCI-like constructions (alike in the surface structure) in German.

(16a) shows a regular (canonical) German declarative sentence; the surface equivalent to LOCI in German is given in (16b).

(16) a. $[\text{Ernie}]_{NP}$ $[\text{liegt}]_{V}$ $[\text{auf dem Boden}]_{PP}$.
Ernie lies on the floor
'Ernie lies on the floor.'

b. $[\text{Auf dem Boden}]_{PP}$ $[\text{liegt}]_{V}$ $[\text{Ernie}]_{NP}$.
On the floor lies Ernie
'On the floor lies Ernie.'

In my analysis I will show that these superficially equivalent structures (LOCI and PP-preposing in German) carry similar functions and are somehow in for the same stylistic use. I suppose that German has no structure that corresponds to THERE in English and subsequently conclude that the comparison of LOCI and German PP-preposing is valid, as they are structurally identical. What is important is to

acknowledge the typological differences between English and German, to be explained in what follows.

English vs. German

First of all, the basic word orders in both languages (for declarative main sentences) underlie similar but different restrictions. English follows a SVO word order; in German the verb always has to be in second position. This so-called V2-constraint is illustrated in examples (17), (18) gives an example for a violation of the V2 constraint.

(17) Simone kommt in den Raum. (NP V PP)
Simone comes into the room
'Simone comes into the room.'

(18) *In den Raum Simone kommt. (PP NP V)
Into the room Simone comes
'Into the room Simone comes.'

As examples (19) and (20) show, this restriction is not valid for English. English is able to prepose basically all types of constituents (Ward 1988), here the prepositional phrase (under strict constraints, to be evaluated below).

(19) Simone comes into the room. (NP V PP)

(20) **Into the room** Simone comes. (PP NP V)

This leads to a second difference, namely the variation of possibilities in the languages. English allows for the preposing of one constituent to the beginning of the sentence without 'moving' a canonically preverbal element to a postverbal position. This can result in VP-preposing, PP-preposing (20), NP-preposing (21), etc. I follow Ward's (1988), Birner's (1996) and Birner & Ward's (1998) definition of English preposing insofar as preposing only involves one surface movement (movement being the relocation of a constituent to a position other than its canonical position). In (21) this means that *Chelsea* is what is moved from its canonically post-verbal position to the beginning of the clause.

(21) Q: Do you like Bayern München?
A: Yeah, Chelsea I like ___ a lot better.

For German the situation looks as follows: In case a verb (for example) is moved in front of the subject, German requires one constituent to move in the prefield, the preverbal position, as the verb is to be in second position due to the V2 constraint. Therefore, any canonically postverbal element can be moved to sentence-initial position. Example (22) shows VP-preposing.

(22) [Ein Auto kaufen]$_{\mathbf{VP}}$ wollen wir allerdings nicht.
A car buy want we however not
'Buying a car is, however, not what we want'

Example (23) shows a case without movement of the finite verb, although another constituent is relocated to the prefield. The result is an ungrammatical sentence.

(23) *[Ein Auto kaufen]$_{\mathbf{VP}}$ wir wollen allerdings nicht.
A car buy we want however not
'Buying a car is, however, not what we want'

This two-folded movement, which is required when preposing a canonically postverbal element in German, is also possible in English, additionally to the single movement as illustrated for English preposing above. This is referred to as 'inversion', which means that two constituents switch places (two movements, as in LOCI), defined above and repeated here as (24), showing the canonical word order, and (25) exemplifying an inverted sentence:

(24) Mary comes into the room.

(25) Into the room comes Mary.

Summing up, as mentioned above and illustrated in (17) and (18), German does not have the separate possibility to prepose an element to the beginning of a sentence by leaving the logical subject in its original position, as English preposing has.

From all this one assumption might follow. In German there is one very general 'preposing' construction whereas English has two separate[5], more specific ones (preposing and inversion). German PP-preposing[6] might cover the functions that LOCI and preposing together do in English. German is less bound to the subject with reference to first constituent. However, there is, compared to English, the complication of V2. Does that actually result in a greater flexibility (in German) and with it to a more frequent use of NCCs (meaning a PP in the prefield)? Support comes from König & Gast (2012:198), who state that inversion in English is severely restricted, whereas verb-second and verb-first structures in German often are obligatory and therefore very frequent. As Goldberg (2006:129) remarks:

> The choice of a particular construction often determines the information structure of a sentence, including its topic and potential focus domain. Differences in the packaging of information are perhaps the most important reasons why languages have alternative ways to say the "same" thing.

I will not be able to fully answer these questions with my analysis. However, I can hopefully solve the basic questions of whether LOCI and its German surface equivalent are in for similar use and if they are chosen under similar conditions.[7] To do so, I will conduct a corpus analysis that is majorly based on the pragmatic[8] approach by Birner (1996)[9], who claims that the function of, e.g., LOCI, lies in the distribution of information. According to her (and many others, e.g., Chafe 1976) information packaging is what inversion is about. It provides the possibility to order

---

[5] Only considering the word order alternation in focus here. There are more possibilities, as for example an unembedded *wh*-clause, as in (i), or a negative inversion sentence, as in (ii):

(i) What did Julia say?

(ii) Never would Julia do that.

[6] Please note that I will only consider PP-preposing in German, as this pattern resembles most the structure of locative inversion (PP-inversion) in English.

[7] I will consider the question of whether the use conditions of a NCC (as understood here) depend on the grammatical system of the language it is realized in; the question of whether one grammatical structure just offers more options (meaning whether PP-preposing in German offers a broader functional range) is to be left for future research.

[8] Pragmatics is "[…] the study of those relations between language and context that are grammaticalized, or encoded in the structure of language" (Levinson 1983:9).

[9] Birner did not conduct a statistical analysis up to the standard it is commonly expected nowadays. Her database was hand-collected (which deserves the most respect) and therefore does not give a representative sample of random examples of naturally occurring NCCs.

familiar information before unfamiliar information. The information (established by discourse[10]) is distributed among the constituents according to the mental states of the interlocutors. This distribution establishes the information structure of the sentence.

Outline

The dissertation will be structured as follows: As the study will be mainly concerned with formal and information-structural features that influence the choice of inversion constructions, I first lay out the basic terminology and introduce the state of the art concerning information structure and word order alternation in chapter 1. Please note that this chapter and chapter 2 concentrate on English as departing point of my analysis. The importance of information structure (Lambrecht 1994, Ward & Birner 2001, among others) as governing force in sentence structure and word ordering is acknowledged by many and will be illustrated by presenting the major ideas in the field. As the notion of synchronic analysis is central, this will be introduced in 1.1. It will be completed by an outlook on former approaches as well as on the concepts of 'construction' and 'givenness'. The relevant terminology will be presented in 1.2. From there (1.3.), the nature of the message and information status will be elaborated on, followed by some of the major accounts on word order variation. All this will be based on Clark & Haviland (1974), Chafe (1976), Vallduví (1992), Birner (1996), Vallduvì & Engdahl (1996), Halliday (1967, 2004), Hawkins (1992), Arnold et al. (2000), Bresnan et al. (2007), among others.

As I want to proceed from the general topic of information structure towards the more specific aspects of the NCCs in focus, chapter 2 will concentrate on the nature and functions of selected NCCs. The common opinions on the functions of preposing, postposing, and inversion in general and LOCI in particular will be laid

[10] It is important to note that there is a difference between the discourse grammar, which I observe in my analysis and the field of discourse analysis. Discourse analysis is concerned with, for example, inter-speaker-relationship or the role of turn taking in a conversation. These kinds of features will not by included here. I am interested in discourse only insofar as to how the discourse status of a referent plays a role in the choice of word order, therefore is reflected in the grammatical system.

out (Green 1980, Prince 1981, Ward 1988, Bresnan 1994, Birner 1996, Dorgeloh 1997, Chen 2003 & 2011, Kreyer 2006, Prado-Alonso 2011, among others).

Chapter 3 will first concentrate on the technicalities of the corpus study. The important features of English and German with reference to word order will be briefly introduced, as English and German are both languages where word order plays an important role. The remainder of chapter 3 will concentrate on the nature of the data, the analysis itself, and the results and their interpretation.

For sure, there are various possibilities to approach the problem this analysis is confronted with. As I do not make overall quantitative statements on which construction is used more often in English or German (I want to highlight use preferences), the method I chose is a matter of 'exclusion'. As we do not know for sure what the function of LOCI in English is (I suppose a strong pragmatic function), one cannot infer how this function is externalized in German when translated, as we do not know what to look for. Therefore I follow a two-folded approach. First, the analysis identifies the formal and functional features that trigger preference for LOCI (and THERE) in English (in opposition to the canonical word order), in a separate step the same is then done for German PP-preposing.

The examples (target sentence + ca. 1,000 characters of context, n=1.500 in total[11]) were extracted from two corpora, namely the British National Corpus for English and the TÜPP D/Z for German. The data was then annotated for various formal and stylistic features established by former approaches introduced in chapter 1 and 2 (information status, syntactic weight, referential value, preposition and verb type, etc.). I am aware of the fact that the corpora I chose are quite different. I will react to possible worries about my data in chapter 3.2.2. In order to decide on which examples to include in my text set, I have followed the verb classification by Levin (1993) to decide on the correct examples (this will be explained in detail below), which form a strictly random set (with help of random.org). The data was extracted (3.2.3.) by using a new tool called CSniper (see Eckart de Castilho et al. 2012), I will briefly comment on its function. The annotation is subject of section 3.2.4., the

[11] 300 sentences for each word order alternation (LOCI, CC_english, THERE, PP-preposing in German, CC_german)

ensuing statistical analysis is explained 3.3. My analysis is comprised by the ctree and cforest analyses (classification trees and classification forests) in 'R' (R Core Team 2013, Hothorn et al. 2006). To conclude chapter 3 I will present the results in 3.4.

Chapter 4 will be devoted to the interpretation of the results, and the evaluation of my data against opinions proposed in the literature and presented in chapters 1 and 2. Anticipating some results, my analysis shows that LOCI and PP-preposing in German are indeed driven by similar forces. However, there also are differences that can be accounted for. By using my data to check approaches proposed in the literature, I hope to show that most of the approaches are not contradictory (although they often see each other as excluding one another's opinion). However, most of the studies only focus on one possible function or use condition and not on a network of conditions and functions. The idea that drives the present study is one of interacting features encouraging the use of NCCs. This is where the analysis is supposed to add knowledge, hopefully both on a monolingual level as well as across language borders.

Chapter 5 will conclude the dissertation and sum up its findings. All in all, this dissertation will target the following questions:

I. What is the function of locative inversion (LOCI) in English and which (discourse) features favor its use?
II. What is the difference between THERE and LOCI in English?
III. What does the surface structure OVS in German (PP-preposing) do?
IV. Is the structure 'PP V NP' in English and German congruent in terms of discourse function?
V. How do the results fit in with the state of the art in the field?

1. Information structure

> The essence of language is human activity – activity on the part of one individual to make himself understood, and activity on the part of that other to understand what was in the mind of the first. These two individuals, the producer and the recipient of language, or as we may more conveniently call them, the speaker and the hearer, should never be lost sight of if we want to understand the nature of language. (Otto Jespersen, in: Clark & Clark 1977:3)

The quote establishes the position of the present thesis thematically. The goal is to understand the use conditions for NCCs; it implies the unbreakable connection of language use and (social) context (Ward 1988). Language is used to transmit information from one person to the next (in the most simple setting) or to distribute information to a group. One central aspect of natural language is linearization, as it is said to be

> […] a universal property of language. Speakers/writers can only produce one word at a time, one sentence after the other, etc. – and thus [language] also obeys natural principles, namely that a starting point always influences the interpretation of everything that follows" (Dorgeloh 1997:7)

Various sentence types can express the same propositional content, i.e. they are truth-conditionally equivalent although their constituents are linearized differently, as the following examples (Vallduví 1992:2) show.

(26) He hates broccoli.

(27) Broccoli he hates.

Most scholars more or less agree that information status and the organization of information are the dominant forces behind word order variation. To avoid confusion, word variants are described as different constructions, in the understanding of Goldberg (1995). The term will be further defined below.

However, as mentioned in the introduction, some scholars assign the key role in word order to syntactic weight (this is the principle of end-weight, as formulated by Behaghel 1909/1910, also see Biber et al. 1999:898). This line of thinking will be

evaluated later on in section 1.4. As the information-structural approach is central to this work, the rest of this chapter will be devoted to establish the ground for this thesis by introducing the idea of information structure, various concepts on information categories and meaning, the definition of 'constructions', and the corresponding terminology.

As explained, my dissertation rests on the concept of use conditions, meaning the identification of circumstances under which certain word order alternations are employed. This is of course strongly objected by people who feel that the analysis of grammar itself is to be separated from actual usage, as expressed by Newmeyer 2003, who saiys that "Grammar is grammar and usage is usage". However, my goal is to find an underlying pattern of features that trigger preferences for certain word orders (and with it the grammatical structures). This means I want to look at the function of language in use, the function of certain constructions in particular. The goal, again, is to find out why NCCs, like LOCI in English and German PP-preposing, are used and what exact functional and stylistic preferences drive the choice over the use of the canonical variant.

1.1. Information, meaning, and syntactic form

When talking about the abstract notion of information structure, one has to start by clarifying what information actually is and how it is that information is constituted in the text. As the term 'information' is always closely connected with the notion of 'meaning', the ensuing question is "what is meaning?". According to Lambrecht (1994:43), "[…] information influences the hearer's mental representation". This means by receiving information the hearer adds something to her knowledge and sees new information from a new perspective. Information is therefore the value of an utterance. This value absolutely depends on the mental state of the interlocutors. Meaning on the other hand is the output, the function of an utterance. A major difference is that an expression with a certain meaning can be have varying informative content, as this depends on what the hearer already knows or does not know. As Lambrecht (1994) summarizes, it depends on the knowledge state of the interlocutors whether the fixed meaning of an utterance actually becomes new information or not. He distinguishes two kinds of meaning, lexical meaning and

relational meaning. The first (also referred to as experiential meaning) can be said to exist within the expression itself, it is expressed in lexical items as words. The relational meaning, on the other hand, depends on the relation between words. The following examples are adapted from Downing & Locke (2006:223)

(28) We'll reach Toledo, but not Seville, before noon.

(29) Before noon we'll reach Toledo but not Seville.

(30) Toledo, but not Seville, we'll reach before noon.

As for the lexical meaning, all three sentences express the same proposition, have the same content. What differs is the word order and with it the information structure, as the initial position usually is reserved for salient information. The element in initial position therefore largely depends on the context, the discourse of an utterance. Givón (1983:7) supports this by saying that "[…] a clause is the basic information processing unit in human discourse. A word has only meaning, the clause carries information". Chains of clauses are combined to larger thematic units, to so-called thematic paragraphs. Kerz (2012:144) sums it up nicely by saying that information structure is a

> […] notion subsuming the construction-internal properties mirroring the relation of a construction to the preceding discourse context with respect to the discourse status of its content, the actual and assumed mental states of the discourse participants and their prior and changing knowledge.

As I will proceed to talk about the linear order of constituents and the 'surface structure' of a sentence, I want to devote a short section to the synchronic perspective on language.

1.1.1. Synchronic perspective

Structuralism introduced the idea of a synchronic language analysis, meaning the analysis of language at a certain point in time. De Saussure's ideas on this topic are the best known, however there were similar ideas at the same time (e.g. Franz Boas, Georg von der Gabelentz and Vilém Mathesius, see Sampson 1980). It is noteworthy that as early as in the 18th century it was realized that one has to regard language states to find out about the pattern of a language. Wilhelm von Humboldt (1767-1835) already used a method of analytic comparison of languages "[…] in order to attain a deeper insight into their specific features and to determine their characteristic differences (cf. the flexible word order in Czech and the fixed grammaticized word order in English)" (Mathesius 1929/1975:10). Contrary to that diachronic studies are interested in the origin and change of language over time (Where does language come from?). A synchronic approach seeks to clarify how language works structurally at a certain point in time; it wants to identify patterns (What is language?).

As Dorgeloh (1997:7) says, "[…] linearization is a universal property of language – speakers/writers can only say/understand one word at a time […]". With that little excursus I want to stress the shift from a purely diachronic perspective on language to a synchronic viewpoint, a viewpoint that is employed for my analysis. Arguments for that are given in the famous 'Cours de linguistique générale' (1916) by de Saussure, who defined language as a system of signs. These signs derive their value from their relation to other signs, "[…] in language there are only differences" (1916/1959:120). Jungen & Lohnstein (2006:78) state "[…] language is a synchronic system of separate parts that are governed by their syntagmatic [linear order] and paradigmatic values [choices] and stand in opposition to all other elements". In a broader field, namely Indo-European linguistics, this also came into focus for practical reasons, according to Mathesius (1929/1975:10):

> The fact that the study of non-Indo-European languages whose earlier stages are often unknown requires the use of other methods than had been traditionally applied in Indo-European linguistics was realized in the 1920's, when Antoine Meillet and Marcel Cohen published a comprehensive work dealing with all major languages of

> the world (1924). In this survey Indo-European languages are treated diachronically only with respect to their history, whereas the case of non-Indo-European languages their linguistic characterologies are presented synchronistically.

The concept of language as a system is crucial for the idea of analyzing a snapshot in time with the goal to find patterns and generalities that govern language use. Especially the syntagmatic order comes into focus here, as it constitutes one important difference between NCCs and CCs. All constituents, the system they are embedded in, and the interaction between the parts is observed.

By following a synchronic perspective, meaning the analysis of a language state and not of language change over time, it is possible to identify structures underlying the linear ordering of constituents (de Saussure 1916/1956). This linear ordering, the syntagmatic ordering (as opposed to the paradigmatic or associative (vertical) order, meaning the choices between signs), stands for the horizontal succession of constituents (also see Halliday 2004). Every sign (or constituent) is followed by a sign, which again is influenced by the sign before. This is shown in (31).

(31) Leo sits on a wall.

Leo is a noun phrase (NP) in 3rd person singular and requires the verb that follows to bear an *-s*. The prepositional phrase (PP) *on a table* is required as an object by the verb. The NP *a wall* in the PP is again structured by the presence of *a* as indicating singular of the noun *wall*. Therefore, "[…] in a language state everything is based on relations" (de Saussure 1916/1959:122). This linear order of words within one sentence is the basic object of my study; as I am interested in the function of constituent order, respectively the different use conditions arising from different syntagmatic orderings, de Saussure's ideas lay ground for this perspective of sentence grammar.

That the linear order of words has influence on the informational output of the sentence is also agreed on by Halliday (2004), who said that meaning is created by word order. Again, to make it clear, the word order alternations I am interested in do not change the overall propositional content of a sentence. The roles of the

constituents stay the same (Vallduví & Engdahl 1996). However, the linear order of constituents is varied, resulting in different functional patterns (as these new orderings have to carry a special meaning, as SVO would otherwise be sufficient). This meaning-creating order or system is what I am interested in. For counterexamples see (7) – (9) above.

The question is how a re-arrangement of constituent order can result in different discourse functions (the existence and nature of this function will be laid out in my analysis). The assumption that one key trigger for a change in the syntagmatic ordering of a sentence is the information structure of a sentence (the distribution of information with reference to the context), falls in the field of pragmatics, as defined by Levinson (1983) above. Following Lambrecht (1994:2), the analysis of discourse "[…] involves the use of sentences in communicative settings". And as grammar and discourse are analyzed together to find out about the influence of discourse on structural aspects of language, the field of interest here is often referred to as 'discourse pragmatics'. However, as most of the accounts on information structure talk about information distribution, information status and categories, word order variation, or reference status of entities and their reflection in the grammatical structure or 'construction' of a language, it is first necessary to clearly define the term construction, as I understand it here.

1.1.2. Constructions

As all accounts (considered here) rest on the notion of constructions, the term 'construction' has to be defined. This is directly connected to the understanding and interpretation of the results of the analysis, which will be presented from chapter 3 on. Matthews (2007:75) defines the term as "[A]ny pattern, at whatever level of generality, in which units are connected to syntax". Langacker (1987:409) states that "[A] grammatical construction consist in the bipolar integration of two or more component structures to form a composite expression". In her book on Construction Grammar Goldberg (1995) defends the view that all "[…] basic sentences of English are instances of constructions", so-called "form-meaning correspondences" (Goldberg 1995:1). She goes as far as saying that "[…] constructions themselves carry meaning, independently of the words in the sentence" (1995:1). Goldberg

assigns a function to the construction, the concept of word order itself (constructions are seen as "theoretical entities"; Goldberg 1995:2), and claims that the words contained in the construction carry meaning independently from the more abstract level of word order. The meaning of the entire construction is therefore not only derived from the words in the sentence but also from their arrangement, the linear ordering. The nature of the arrangement adds to the meaning of the sentence[12]. As shown in examples (28) – (30), repeated here as (32) – (34), this is exactly what is in the focus of the present work.

(32) We'll reach Toledo, but not Seville, before noon.

(33) Before noon we'll reach Toledo but not Seville.

(34) Toledo, but not Seville, we'll reach before noon.

The re-arrangement of sentence constituents without changing the overall propositional meaning of a sentence by adding some pragmatic or stylistic function is what the dissertation is interested in. Support for the claim that complement configuration results in different meanings is additionally provided by the following examples by Goldberg (1995:2):

(35) I brought Pat a glass of water.

(36) I brought a glass of water to Pat.

(37) I loaded the hay onto the truck.

(38) I loaded the truck with the hay.

According to Goldberg the difference between (35) and (36) lies in (35) being a ditransitive sentence, while (36) is a *to*-sentence. In the case of the ditransitive sentence the receiver has to be animate. As this bears problems with sentences like

(39) She gave the piano a new coat of paint. (Gert Webelhuth p.c.),

[12] Please note that I only consider declarative main sentences here.

there has to be another reason. One could also argue that the reason for the varying word order lies in information-structural aspects, (35) following the question *What did you bring Pat?* and (36) responding to *Who did you bring a glass of water to?*. The difference is the information known due the question (in (35) *Pat* and in (36) *glass of water*) and the new information the question is after (in (35) *glass of water*, in (36) *Pat*). The sentences therefore react to different discourse settings. (37) and (38) are said to differ with respect to a potential implication (no implication vs. an implication that the truck is filled with hay). Again, one could argue that the two sentences are answers to different kind of questions. (*What did you load the hay onto?* vs. *What did you load the truck with?*).

As mentioned before, my perspective follows Goldberg's in many ways. As for her, possible word order variations in the surface structure of a sentence are considered to be constructions. I am convinced that the rearrangement of a word order does result in different pragmatic (discourse) functions and therefore carries different functional meanings, although conveying the same propositional information. A different, but similar, explanation comes from Clark & Clark (1977:12), who make a difference between the 'surface structure' (how the sentence is to be spoken), which is the linear arrangement of clauses, phrases, words, and sounds and the 'underlying representation' (how the sentence is to be understood), which is the meaning of the sentence. For means of completion, the approach by Lakoff (1990) also supports my understanding of constructions, as he takes semantic and pragmatic constraints to be part of the definition of grammatical constructions.

1.1.3. Previous approaches

According to the major opinions in the field, the order of words may be chosen either due to (i) the pragmatic meaning it is supposed to represent and/or (ii) to order the sentence with respect to the ideal weight distribution. 'Weight' stands for the syntactic complexity, the length (counted in words) of a constituent. This opinion will be looked at in detail in section 1.4. when talking about central approaches. The present section is devoted to ideas formulated in the past, mostly referring to information status.

It has been acknowledged as early as 1844 that information status and the distribution of information play a crucial role in effective communication. Weil (1844, adapted from Kreyer 2006:58) states that

> [(…) in order to communicate successfully it is] necessary to lean on something present and known, in order to reach out to something less present, nearer, or unknown. There is then a point of departure, an initial notion which is equally present to him who speaks and to him who hears, which forms, as it were the ground upon two intelligences meet; and another part of discourse which forms the statement (l'énonciation), properly so called.

Following these ideas, Mathesius (1929/1975), a member of the Prague School (for more see Sampson 1980, Gómez-Gonzáles 2001), introduced the 'Principle of Functional Sentence Perspective', also known to refer to the thematic structure of a sentence. Before explaining this concept, I want to mention what the focus for researchers of the Prague School was, namely the communicative function of language (which was new at that time). As Sampson (1980:103) sums it up: "[In the understanding of the Prague School] a given language is analyzed with a view to showing the respective functions played by the various structural components in the use of the entire language". A sentence is uttered in order to give information; the informational content is organized in a way that it fits the current state of knowledge of the interlocutors. The parts of information are not chosen randomly, the utterance is tailored to what the hearer knows. This means that the speaker defines what s/he wants the hearer to learn, considers what the hearer already knows and takes the existing context into account. As Widdowson (1979:61) says, "[…] the performance is a projection of competence" (the competence being the linguistic knowledge, performance the realization of the knowledge in speech).

Going back to the structure of a sentence, this relates to the central problem when analyzing language in discourse, namely the question of 'what people know and what people do'. The knowledge of a speaker goes beyond the sentence level, a linguistic form or word order is used for a reason, the speaker relates to the knowledge s/he has about the listener's state of mind and to certain rules imposed on the utterance by the grammatical system of a language.

One of many approaches to explain and categorize the informational structuring on the sentence level is the binary segmentation of a sentence into 'theme' and 'rheme' (Mathesius 1929/1975, Sampson 1980, Hajičová 1984, Halliday 2004) in the sense of the functional sentence perspective. This division into two parts is accounted for by continuity, meaning a consistent flow of information. This means, the theme, often in sentence initial position (as the theme is said to normally precede the rheme), includes information that is already known, so to say evoked in the context. As Halliday (2004:64) states,

> The theme is the element, which serves as the point of departure of the message; it is that which locates and orients the clause within its context. The remainder of the message, the part in which the Theme is developed, is called in Prague School terminology the Rheme […].

One can also say that the theme defines the setting, it functions as point of departure in a message. (p. 223). It is also referred to as the anchoring or vehicular part. As the theme refers to some given information and the rheme to new content, the speaker has to decide on the order of constituents, with reference to whether s/he choses an unmarked or marked word order (canonical or non-canonical). All depends on whether the theme actually matches the syntactic function 'subject', which, in an unmarked sentence (in English), occurs in initial position or whether the thematic role of 'theme' matches with an object of the verb. In response to the question of *Who did John kiss?* one can answer:

(40) John -**THEME** kissed Eve -**RHEME**.

John is the subject as well as the given information, the theme. By preposing *Eve*, *Eve* is still the rheme of the sentence, now in sentence initial position. However, this construction underlies different constraints, as *Eve* would have to be salient within the discourse to be felicitously preposed. More details will be presented in chapter 2, (41) would therefore not be an appropriate answer to the question of whom John kissed. The question would have to be something like *Did John kiss Eve or Bonnie?* to render the use of the sentence appropriate.

(41) Eve **RHEME** John **THEME** kissed.

Another possibility for *Eve* to be the theme of the sentence is the question *What happened to Eve yesterday?*, the answer is then embedded in a passive construction as *Eve* is the one affected by the kissing event.

(42) Eve -**THEME** was kissed by John -**RHEME**.

Despite different constraints on the constructions, English offers various possibilities to express the same propositional meaning, as seen above. Contrary to that, uttering

(43) Eve kissed John.

Eve is the theme and in sentence-initial position by answering the question was *What did Eve do yesterday*. This however also changes the roles the constituents have and the propositional meaning of the whole sentence. In conclusion, if *Eve* is supposed to be the object of the sentence answering the question *What did John do yesterday*, English can only draw back on the passive construction and on preposing to move rhematic *Eve* to the beginning of the sentence. Inflecting languages, like Czech have other possibilities. Canonically, the theme has to precede the rheme. However, in example (44) we can see that this does not pose a problem (Sampson 1980:105).

(44) Evu -**RHEME** políbil Jan -**THEME**.
Eve-**ACC** kiss Jan-**NOM**
'Jan kissed Eve'

Czech can indicate case by accusative *–u* in *Ev**u*** and by the absence of a feminine ending of the verb that Eve is the one kissed and not the kisser. Furthermore, *Eve* does not have to be evoked, it is an appropriate answer to the question of *What did John do yesterday?*. This is only meant as a short excursus to show that the information distribution in a sentence may strongly vary from language to language.

As reminder, the present and the following chapter are limited to English data as "[…] the universe of discourse for a descriptive linguistic investigation is a single language or dialect" (Harris 1951, in Coseriu 1988:41). Please note that this

theme/rheme segmentation does not entirely reflect the interpretation of 'theme' by Halliday (2004 and others), as Halliday did object to the one-to-one mapping or theme/rheme to given/new. According to him, this only applies to unmarked [canonical] cases, where the initial position is usually reserved for old or given information. This will be further explained below in chapter 1.4.1. on the functional approach. As the concept of theme/rheme heavily relies on the concept of given vs. new information (embedded in the general topic of information structure), I devote the next subsection to a discussion of these terms, which will ultimately end with Prince (1981), where the terminology used in this thesis is introduced.

1.1.4. Givenness

To start with, I want to introduce a very general definition of information structure by Lambrecht (1994:5): "The information structure of a sentence is the formal expression of the pragmatic structuring of a proposition in a discourse". Very generally, one can divide and pragmatically structure a sentence into information that is already known and information that is new to the context (Biber et al. 1999). This seems to be an easy task, but a look at the literature shows that it is not. What I want to do here is to give an impression of the huge amount of work done on possible classifications of information to emphazise the necessity to clearly formulate a definition to follow.

Firbas (1971) proposes that new information is information that is not recoverable from context, it guarantees information flow, and carries communication forward. Old information is everything that is familiar from the preceding discourse or recoverable from context (see also Prince 1981, Kerz 2012). The concept of communicative dynamism (CD) fits in nicely here (Firbas 1964, 1971 and Daneš 1968), by stating that the given/new distinction has to be regarded as a referential combination between those two states, not so much as a binary distinction (supported by Chafe 1976). The concept of CD is explained by Firbas (1964:270) as follows: "By the degree of CD carried by a sentence element we understand the extent to which the sentence element contributes to the development of the communication, to which it 'pushes the communication forward,' as it were". Dahl (1974:3) regards an expression as 'given' if "[…] the lexical items have occurred

earlier in the text [, (…)] the referent(s) of the expression is known to the participants [, or (…)] the expression is associated with a statement the truth of which is presupposed".

Chafe (1974) claims that givenness is all about what is or is not in the consciousness of the speaker. Further concepts are 'old – new' in the sense of activation following Chafe (1976, 1992, 1994, 1996), who claims that

> "[…] although every human mind is devoted to modeling a larger reality within which it (or the organism it inhabits) occupies a central place, only one small piece of that model can be *active* at one time. At any given moment the mind can focus on no more than a small segment of everything it "knows". I will be using the word consciousness here to refer to this limited activation process" (Chafe 1994:28)

The concept of activation is again very closely related to the concept of direct reference or anaphoricity (Kuno 1972, 1978). Here the referent of an NP has to be uniquely identifiable (also see Gundel et al. 1993) due to previous mention in the discourse or shared linguistic knowledge in order to be anaphoric (Kreyer 2006). The strong connection between the discourse and the status of information is also supported by the definitions of Allerton (1978) and Sgall (1974). For Allerton, information is given if the item has a direct reference to the previous discourse (or situation/experience) and is assumed to be in the listener's consciousness. Sgall (1974:25) very similarly defines the dichotomy of given and new information as 'contextually bound' and 'contextually non-bound'.

> As contextually bound we call such elements that the speaker only reminds of [refers back to] as elements known to the hearer, either known from the context, from the situation or from general conditions of the given utterance. This broader understanding comprises also the elements called local and temporal setting.

Haviland & Clark (1974), Clark & Clark (1977), and Clark & Haviland (1977) define givenness as shared knowledge among the interlocutors. The speaker therefore builds her utterance according to what s/he thinks is in the mental world of the listener. They call this the given-new contract. Vallduví (1992) follows a similar distinction, however calls it differently, namely 'focus', which is new

information, and 'ground', which constitutes what has already been introduced. The ground is said to be "[…] an usher for the focus" (Vallduví & Engdahl 1996:469), which means that the ground provides the basis, the "[…] appropriate entry of information into the hearer's knowledge store, indicating to the hearer where and how the information must be entered" (Vallduví 1992:46f.). When regarding givenness from the perspective of recoverability, one has to go back to the theme/rheme distinction mentioned above and look at the perspective Halliday (2004) proposes on this topic. His systemic functional account starts with the idea that everything in language depends on options and choices. Among the options is the concept of 'theme' (theme here is one of the three main areas of syntactic choice), it is not necessarily old information. As the term partly refers to in the functional sentence perspective by Matthesius (1929/1975), the theme is what it is being talked about, namely it is

> […] concerned with the information structure of the clause; with the status of the elements not as participants in extralinguistic processes but as components of a message; with the relation of what is being said to what has gone before in the discourse, and its internal organization into the act of communication (…). (Halliday 1967:199)

This differs largely from the definition of 'theme' Firbas (1964, and others) give. Here the theme is the sentence constituent with the lowest degree of communicative dynamism in the sentence. This means that the theme is the least informative part of a sentence. The reader is advised to bear this in mind, I will come back to the theme/rheme distinction later in this chapter and the relative status of old and new information when talking about the concept of information packaging and the related relative constraint by Birner (1996) in chapter 2 on the function of inversion.

Further opinions state that given information has to be anaphorically linked to the context (also see Kuno 1972, 1978) and situationally recoverable. Situationally recoverable means that 'given', resp. 'new' stands for "[…] assigned, or not assigned by the speaker, the status of being derivable from the preceding discourse. Thus what is treated by the speaker as given may not in fact have been said"

(Halliday 1967). This will be closely connected to ‘assumed familiarity’, introduced by Prince (1981), as explained below. What connects all that to the topic of the present thesis, namely the question of what the functional difference between CCs and NCCs (regarding inversion) is, is the claim that given information normally precedes new information linearly in the sentence and that given information very often coincides with the role of the logical subject in a canonical clause. When looking at non-canonical word order the logical subject is moved from its canonical position to a postverbal one (in inversion), in case the subject and the theme (in terms of old information) would coincide, the theme would not precede the rheme. Ergo, the general rule does not apply for NCCs; one has to identify other patterns. The key to understanding the reasons for using NCCs could therefore lie in the distribution of information, as commonly suspected.

Before being able to analyze this question, it is necessary to lie out the basic terminology. As one can see, even the very simple segmentation into ‘old’ and ‘new’ information triggers a major load of different and often coinciding concepts. The discourse-related concepts of availability, indentifiablity or recoverability meet my understanding of a classification into old and new information. In what follows I will employ Prince’s (1981) terminology and concepts of givenness. Although her ides of *assumed familiarity* is congruent with the majority of theoretical approaches in the field, hers is a very fine-grained and helpful classification of the different levels of givenness (with regard to predictability, recoverability, saliency and shared knowledge) and the reference point of ‘new’ and ‘old’ information (discourse/ hearer). The binary distinction between old and new information is not sufficient, as example (45) shows.

(45) Yesterday I took the bus and **the driver** was drunk.

The NP *the driver* poses a problem. One could argue that it conveys new information, because it has not been introduced into the context before. A possible contrary argument is that is represents old information, as it is widely known that busses have drivers. This general problem will be looked at in detail in the next section.

1.2. Basic terminology

Siewierska (1993:826) gives an overview over what might determine the order of constituents in general. She names (i) grouping relations, as dependency or constituent relations, (ii) grammatical relations (subject, object, etc.), (iii) thematic relations (topic, focus, theme), (iv) semantic roles (agent, patient, etc.), (v) syntactic features (tense, aspect, mood, etc.), (vi) semantic features (animacy, definiteness, etc.), and (vii) pragmatic factors (salience, familiarity, etc.). In what follows I will take a closer look at most of those by considering various approaches to word order; I will start with clarifying the basic terminology used in my study.

1.2.1. Assumed familiarity (Prince 1981)

A sentence commonly includes information that is already known (old information) and information that adds something new to the context (new information). As Lambrecht (1994:51) states: "Information arises by relating something new to something that can be taken for granted". Dretske's view (1981:44) goes in the same direction as "[…] two sentences with the same propositional content may carry different information in different speaker-hearer interactions depending on how much of that propositional content is unknown by the hearer at the time of the utterance."

In general, one can say that a sentence is divided into information units, which are realized syntactically by their position in the sentence or prosodically by means of the intonation system. However, I will exclude phonological features from my analysis, as I want to look at the syntactic surface structure of corpus examples that are to a high degree in written form. As I am concerned with the syntactic order of constituents and hypothesize that this ordering in part correlates with the information status of these elements, we will now turn to Prince (1981:224), who states that "[T]he sender tailors his utterance to the receiver's assumptions, beliefs and strategies", meaning that the speaker should be aware of the information the hearer already has or still lacks (also see Sampson 1980).

As information is not only transmitted by pure words, there is an "informational asymmetry" (p. 224), namely that meaning is conveyed by more than only pure language. In (46) the greeting is a manner of ritual nature and politeness. A signals

to B that s/he recognized B and signals friendliness. All this is encoded in the greeting situation that consists of no more than just two words.

(46) (A and B passing each other on the street)
A: Hi.
B: Hi.

This will not be part of my study, it however nicely leads over to the three types of givenness Prince identifies, namely (i) givenness referring to predictable and recoverable entities ($Given_P$), meaning "[…] the speaker assumes that the hearer can predict or could have predicted that a particular linguistic item will or would occur in a particular position within a sentence" (Prince 1981:226). Then there is (ii) givenness with reference to saliency ($Given_S$), which Prince (p. 228) defines as "[…] the speaker assumes that the hearer has or could appropriately have some particular thing/entity/… in his/her consciousness at the time of hearing the utterance". And finally, (p. 230) (iii) givenness in the sense of shared knowledge ($Given_K$), "[…] the speaker assumes that the hearer knows, assumes or can infer a particular thing (but is not necessarily thinking about it)". The relatedness of the three types of givenness is displayed in example (47) - (49) (see Prince 1981:232) and shows that they are not mutually independent, as in case the referent of a linguistic entity can be predicted (i), the conversation partner thinks it to be somehow salient (ii) and therefore feels that it is appropriate, due to mutual knowledge (iii), to utter e.g., *I*.

(47) [Man to woman at a ball, with appropriate body language] Shall we? ($Given_p$)

(48) [A, to B as C walks by, in view and out of earshot] He's going to Austria. ($Given_s$)

(49) Hi, I'm home. ($Given_k$)

As the reader has seen above, the theoretical field encompasses numerous similar and less congruent understandings of what is given and what is new. The type of givenness with reference to shared knowledge [$Given_K$] is of special interest, as this

is based on the assumption of the speaker as to what the conversation partner knows; the technical term introduced by Prince (1981:233) is 'assumed familiarity'. This knowledge largely affects the referent one has in mind when hearing for example the NP *this dog* (terminological issues on reference and linguistic forms will be taken into account below in 1.2.2.).

Prince (1981) identifies three major information states, namely (i) New, (ii) Evoked and (iii) Inferrable. At first sight, new information and evoked (=old) information seem to be sufficient. However, in closer perspective, they are not, as illustrated in (45).

Starting out with new information, it can be totally new (brand-new), not connected to any context whatsoever, as *a hat* in example (50).

(50) Ernie bought **a hat**.

New information can also be unused, according to Prince. An unused entity is assumed to have referent known to the hearer, therefore abstractly present or stored as a concept in the hearer's model (hearer's model referring to the knowledge the hearer has). The entity itself however, has not been introduced in the present conversation yet. This abstract representation of the referent *bedroom* as general known room in the apartment can then be replaced with a specific bedroom in case it is uttered in an actual discourse. An example is shown in (51).

(51) I ran into **the bedroom**.

Evoked entities, also called 'old information', can also be further distinguished. This refers to the source of activation. Prince distinguishes textually evoked (52) and situationally evoked (53) entities.

(52) [*A blog talking about Iceland. One user writes*:] **Iceland** has more horses than inhabitants!

(53) **I** want to visit Iceland.

In (52), *Iceland* has been evoked in the prior discourse by actually being mentioned before. It now represents an activated entity one can easily refer to again. In (53),

the pronoun *I* does not necessarily have to be in any prior discourse. Due to the situation and the speaker it is absolutely clear who this refers to, namely the speaker herself.

And finally, Prince (1981:233) identifies a third type of information status, which playes a major role in the further discussion on information structure. The category of 'inferrables' includes one general and one specific type. The more general type, referred to as inferrable, refers to examples like *the driver* in (45), here repeated as (54):

(54) Yesterday I took the bus and **the driver** was drunk.

The NP *the driver* is inferrable because it is common knowledge that busses have drivers. Therefore, the "[…] speaker assumes that the hearer can infer the entity via logical reasoning from other entities already evoked or from other inferrables" (Prince 1981:236). Additionally, there is a category called 'containing inferrables'. This refers to an entity that can be inferred from something within the inferrable NP itself. Example (55) illustrates this:

(55) Hey, **one of these** eggs is broken!

Imagine a situation of someone entering a store and asking for ingredients to bake a cake. Naturally, this includes flour, sugar, eggs and butter. When she picks up the eggs, she utters (55). The eggs in general have been mentioned linguistically. However, the referent of *one of the eggs* is inferrable from the entity *eggs*, as a group of eggs is made up of independent eggs.

By now the terminology I will use to label the information status of entities has hopefully become clear. A summary is provided in figure 1 (after Prince 1981:237):

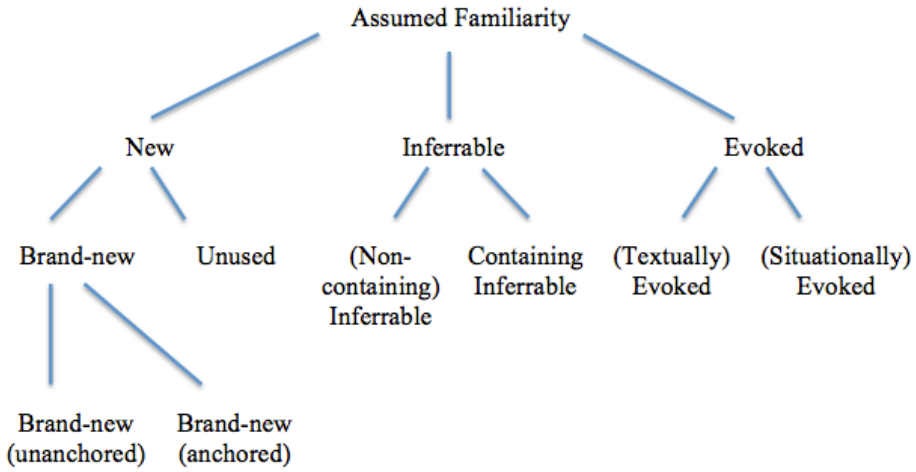

Fig. 1: Assumed familiarity

When talking about information in general, the discourse status of the elements with reference to the interlocutors is relevant and thanks to Prince now also labeled. This brings me to the question of the intended meaning (what is new, what is in focus?), which immediately relates to the question of what the hearer actually knows, what referential connections there are. One attempt to capture the correspondence between the information status and the form of a referring expression or constituent is the work by Gundel et al. (1993) (also see Prince 1992).

1.2.2. Referring expressions (Gundel et al. 1993)

The idea behind Gundel's et al. approach (also see Gundel et al. 2011) is that there are six degrees of givenness, ranging from 'in focus', which means a recent activation and total recognition of a referent, to 'type identifiable', which stands for a relation that allows the abstract recognition of a referent, not the referent of a specific entity. This is also known as the 'Givenness Hierarchy'. Figure 2 (after Gundel et al. 1993:275) gives the whole picture; in what follows I will explain the separate levels.

in focus >	activated >	familiar >	uniquely identifiable >	referential >	type identifiable
{*it*}	{*that*, *this*, *this* N}	{*that* N}	{*the* N}	{indefinite *this* N}	{*a* N}

Fig. 2: Referring expressions

'In focus' is the most activated state; in this state the referent of a NP is in the center of attention. The referring expression requiring the most known and activated status is a pronoun and is therefore typical for this level.

(56) **I** live in Frankfurt.

This level is succeeded by 'activated'. The referent of an activated NP is strongly accessible from context and refers to an entity recently introduced (in current short time memory). The demonstrative pronoun *that* and the definite demonstrative determiner *this* are examples. The referent has to have been introduced in the immediate context.

(57) [Talking about loosing a key]. **That** didn't even belong to me!

The following stage in the givenness hierarchy is labeled 'familiar', which includes all referential expressions that are clearly identifiable, but do not have to be part of the actual context. This means that the person addressed has already a picture of the referent belonging to the specific entity in his or her mind.

(58) I couldn't sleep last night. **That key** (which I lost) kept me awake.

Gundel et al. (1993) label the last level that refers to a specific entity as 'uniquely identifiable'. All referents of expressions that refer to something clearly identifiable on basis of the noun's referent fall into this category.

(59) I couldn't sleep last night. **The dog** (next door) kept me awake.

One can utter (59) even if the direct interlocutor does not personally know the specific dog. However, there is a clear reference, showing that *the dog* refers to one

specific dog, namely *the dog next door*. Therefore, the definite article *the* is typical for this level of reference. The next level in decreasing reference, namely 'referential' expressions, ranges in between the referents that are uniquely identifiable and expressions that have no connection at all to the context. In order for the referent of an expression to be referential it only has to refer to an entity at the moment of utterance. There has to be no contextual reference at all, as in (60).

(60) I couldn't sleep last night. **This fly-over noise** drives me crazy!

It does not refer to a specific noise, the speaker only informs the hearer that something kept her up, namely some fly-over noise. Logically, there is only one more level, the level of no reference, so-called 'type identifiable' expressions. All this level requires is that the addressee understands of what type the referent of the object in focus is.

(61) **A dog** is the last thing I want to have!

By stating (61) the addressee has to know what a dog is and has to be able to retrieve a representation of the mammal 'dog'. Otherwise the message does not contain a felicitous meaning. The type identifiable reference level is commonly connected to the use of an indefinite article or no article at all. Note that this is an implicational hierarchy, which means that every status contains all other statuses to its right (in focus >> type identifiable), the ordering goes from most restrictive to least restrictive.

The terminology just introduced is useful for talking about information in general. It makes possible a consistent, logical, and objective classification. Concluding from sections 1.2.1. and 1.2.2., one can now classify the information status of an expression by using the terminology of Prince (1981) and can also evaluate the status of the entities' referents employed (Gundel et al. 1993). Naturally, these two ways of looking at the contextual embedding of expressions often overlaps. However, as there are differences in the perspective on the referents of the entities, I think it is necessary to use both approaches, the importance of that will become clear in the section on the results of my analysis. Next to the distinction of given and new information, there are the concepts of 'topic' and 'focus', i.a.. As the term

'topic' and 'focus' are often seen as equivalents to 'given' and 'new' information, I will devote a small section to this.

1.2.3. Topic/focus and related concepts

Topic is one of those terms that carry a multiplicity of denotations (Vallduví 1992). The topic is said to be referential (Reinhart 1981) and likely to be in sentence initial position (Chomsky 1965, Allterton 1978, among others) and could therefore be understood in this respect as an equivalent to 'theme', in the sense of e.g. Mathesius (1929/1975). It commonly refers to what the sentence is about (Halliday 1967, Kuno 1972, Sgall et al. 1973, Gundel 1985, Gundel & Fretheim 2004, Kreyer 2006) and usually is "[…] information which is in some sense given or shared by speaker and addressee" (Gundel 1985:87, also Chafe 1976, Clark & Haviland 1977, Clark & Clark 1977). Reinhart (1981) objects to that (p. 73ff.) by referring to a broader understanding of 'topic' (Reinhart 1981:58ff.), which however will be set aside for my purpose. As I am interested in the information states, and as the term 'topic' is often intermingled with this, I will lean towards the classification of topic as given information. As mentioned before, the terminology in this field is far from being consistent; this is only meant to provide a rough idea of what connects the notion of topic with the focus of interest in this thesis by consciously disregarding the full range of possible attribution. Although I did not classifiy my example sentences by topichood, I feel that it helps to grasp the whole range of the diverse concept of information structure.

According to van Dijk (1977), topics can be divided into 'sentence topics' and 'discourse topics'. The discourse topic is not necessarily of a linguistic nature and can stretch over larger and more abstract units (for arguments and examples see Reinhart 1981:53ff.). Example (62) gives an example sentence.

(62) Mr. Morgan is a careful researcher and a knowledgeable Semiticist, but his originality leaves something to be desired.

Mr. Morgan is the sentence topic [the one relevant here, as it directly refers to one unique syntactic structure on the sentence level]; the discourse topic, meaning an aboutness-relation that can also be seen as established information, is Mr. Morgan's

scholarly ability. For linguistic research, as conducted here, the sentence topic is in the center of attention, as it is determined by the context of the utterance (the discourse) and by the linguistic structure (syntagmatic, surface structure, for further arguments see Vallduví 1992:30). Sentence topics are constrained by the grammatical systems of the respective languages. Gundel (1985:86ff.) provides a very similar subdivision into 'pragmatic topic' and 'syntactic topic'. Givón (1983, 1995) introduces the notion of 'topicality' (or continuity) that can be seen as somehow similar to that of communicative dynamism (Firbas 1968) as it also is a relative concept. It describes the anaphoric linkage of the referent of an NP (typically the subject in an unmarked order) to the prior context while also taking into account the thematic structure of the sentence, therefore acknowledging the relation between the constituents involved in a sentence. Kreyer (2006:85) also labels topic "[…] as the element with the lowest degree of communicative dynamism". "The degree of topicality […] of a referent determines the way it is encoded by referential expressions […] and word order" (Vallduví 1992:30). All in all topics are favored as starting points of messages (Kreyer 2006:85).

As to the rest of the sentence, everything that is not topic is often referred to as 'comment' (Levelt 1989, among others). As a subset of comment (or as subset of rheme, see Halliday 1967), 'focus' is another central concept and stands for the new information that is being 'focused' on, therefore the informative part. Chafe (1976) sees focus as not being in the immediate awareness of the hearer. The focus is canonically found at the end of the sentence, it is what is predicated about the topic (Gundel & Fretheim 2004). The terms of 'focus' and 'ground' can also be found in Vallduví and Engdahl (1996). They claim that ground is what is "[…] non-informative, known, or expected", whereas focus is described as "[…] informative, newsy, dominant or contra-to-expectation". Lambrecht (1994:207) also uses the term focus and defines it as:

> […] the focus of a sentence, or, more precisely, the focus of a proposition expressed by a sentence in a given utterance context, is seen as the element of information whereby the presupposition and the assertion DIFFER from each other. The focus is that portion of a proposition, which cannot be taken for granted at the time of speech.

> It is the UNPREDICTABLE or pragmatically NON-RECOVERABLE element in an utterance. The focus is what makes an utterance into an assertion.

For completion, one has to mention the distinction of 'presupposition' and 'focus', suggested by Jackendoff (1972): "Here we will use focus of a sentence to mean 'the information in the sentence that is assumed by the speaker not to be shared by him and the hearer'." (Jackendoff 1972:16, also see Chomsky 1971). Presupposition as such is therefore also information shared by speaker and listener.

According to Reinhart (1981:53) "[…] topics are a pragmatic phenomenon which is specifically linguistic". This means that topic and focus are limited to linguistic interaction; both concepts cannot be reduced to other cognitive/pragmatic abilities that are independent of language (Gundel & Fretheim 2004). Linguistic form (syntax, prosody, morphology, etc.) is said to encode topic and focus; this seems to play a role in all human languages (Gundel 1985). To sum it up a message can be structured by the characterization of the vocabulary and the connection between the constituents, the description of these conceptual structures as function/argument structures, and the definition of the thematic structure. The perspective has to be made clear (topic, focus, etc.).

The before mentioned matching of form-meaning pairs, e.g. words and phrases and their syntagmatic order (choice of construction, see chapter 1.1.), with the mental states of the interlocutors (the information status) leads to the question of how this mapping works. One way this can be investigated is by analyzing the information distribution within one sentence. I already mentioned the segmentation of a sentence into theme and rheme (functional sentence perspective). The topic/focus (often referred to as topic/ground, presupposition/focus) distinction also partly fits in here. The idea behind all this, as repeatedly said, is that every sentence is divided into information that is already known to the hearer and information that is new, which adds new information to the context (and ultimately gives the sentence a right to exist in natural language discourse, which means a discourse that is felicitous and aimed at the most efficient communication possible, excluding irony, jokes, etc.). Note that all those concepts cannot be defined strictly based on syntactic structure. These notions are strongly dependent on the context, as "[…]

different expressions of the same sentence can serve as topics in different contexts of utterance" (Reinhart 1981:56). Contrary to the concepts of topic and focus and also to theme and rheme, the syntactic concepts of subject and predicate are based solely on the structure of a sentence. Nevertheless they are linked to the information structure. The (grammatical) subject in a canonical sentence tends to be the first constituent and tends to carry old information (Chafe 1970). The purpose of all this so far is to show the variety of different concepts and the importance of these notions (which for sure is not complete here but suffices in the scope of this thesis)[13].

The next parts of chapter 1 will be devoted to a selection of approaches to information structure in general. The main aim is to introduce the variety of concepts and lay ground for the features I use for annotation in my analysis. The differences between these approaches are mainly to be found in their perspective on what drives word order variation.

1.3. Information structure - State of the art

After having clarified what a construction is in the context of the present thesis (section 1.1.2.) and how information can be defined and described (section 1.2.), I will now enter the theoretical discussions on information structure. To freshen the reader's memory, information structure is commonly understood as being concerned with the relationship between linguistic form and mental states of speakers and hearers. One could say, "[…] knowledge in some sense determines behavior [utterance]" (Widdowson 1979:61). A speaker therefore has a hypothesis about what the addressee might already know or what might be news for him/her (Sampson 1980). The speaker therefore "[…] tailors an utterance to meet the particular assumed needs of the intended receiver" (Prince 1981:224). Levelt (1989:99) stresses the issue of cooperation by saying that "[A] cooperative speaker usually marks the givenness of the referents in a message". One cannot deny that it is not only the goal to externalize the pure informational content that makes the

[13] I am aware of the fact that I did not include the formal approaches by Rooth (1992), among others. This is due to my decision to focus on functional theories, as just presented.

speaker utter something. The speaker is also concerned with the state of mind of the receiver. S/he normally has a communicative goal (von Stutterheim & Klein 2008), which is followed by providing the best possible situation for the hearer. We have already talked about various types of givenness the speaker can suppose. The structuring of a message according to the best understanding and perception for the hearer has already been exemplified by the classification into theme and rheme (a.o.) above. I will now go into the particulars about the notion of information structure and ideas on the nature of messages.

1.3.1. On how messages are linked to discourse

In order to fulfill his/her communicative goal the speaker has various possibilities to shape the sentence (word order, intonation, etc.). Possible reasons are (among others) the optimal distribution of information (old-before-new principle, see Gundel 1988:229), the order of constituent weight to facilitate the processing (the hearer's task) (Hawkins 1992) or the avoidance of ambiguity (Arnold et al. 2000:33). Lambrecht (1994:2) states, "[…] that certain formal properties of sentences cannot be fully understood without looking at the linguistic and exatralinguistic context in which the sentences having these properties are embedded". Prince (1981, 1992; on information status) and Gundel et al. (1993; on referring expressions) provided us with the terminology to talk about this linguistic and extralinguistic context. Now this terminology will be used to describe different statuses and categories information units can have. This will also touch upon contemporary concepts of what information structure is, what function language has, why there is more than one possibility to arrange word order and how the speaker decides on which order to chose (how the message is built).

An early comment on the complex nature of language was given in von der Gabelentz 1894:4)[14]:

[14] My translation of the quote by von der Gabelentz: Language is not a mere collection of words and forms; just as little as the body is a collection of limbs and organs. Both are in all stages in their lives (relatively) complete systems, which only depend on themselves; all parts are interdependent and every instance of life originates form this interaction. [...] Every language is a system, whose parts are organically connected and combined. Naturally, none of the parts may be missing or be different for the whole to remain unchanged.

> Denn die Sprache ist ebensowenig eine Sammlung von Wörtern und Formen, wie der organische Körper eine Sammlung von Gliedern und Organen ist. Beide sind in jeder Phase ihres Lebens (relativ) vollkommene Systeme, nur von sich selbst abhängig; alle ihre Teile stehen in Wechselwirkung und jede ihrer Lebensäußerungen entspringt aus dieser Wechselwirkung. […] Jede Sprache ist ein System, dessen sämmtliche Theile organisch zusammenhängen und zusammenwirken. Man ahnt, keiner dieser Theile dürfte fehlen oder anders sein, ohne dass das Ganze verändert würde.

This interconnection can be reflected onto the information distribution witin a sentence, the information structure, which Lambrecht (1994:5) defines as follows:

> Information structure [is] that component of sentence grammar in which propositions as conceptual representations of states of affairs are paired with lexicogrammatical structures in accordance with the mental states of interlocutors who use and interpret these structures as units of information in given discourse contexts.

He strongly emphasizes on the one hand the matching of abstract concepts with actual lexical units and on the other hand the idea that language does not exist independently; it is unbreakably connected to the speaker, listener and the discourse and with it the generation of meaning.

The knowledge the interlocutors have or do not have is reflected in the grammatical structure of a sentence. For Widdowson (1979) the concept of 'knowledge' is central as it triggers the linguistic behavior and therefore the choice of structures. I do not totally agree with the idea that one can explain language solely from the perspective of behaviorism in the narrow sense à la Skinner & Watson, however, the idea that the knowledge of a speaker about the situation the communication takes place in (knowledge of the interlocutors, setting, etc.) results in a specific linguistic behavior meets my string of thought. It indicates the connection to context; nothing is uttered in total isolation. Therefore, language structure functions as a connecting device in discourse[15].

[15] For a different view see Hawkins 1992, in detail in section 1.4.3.

More generally, Brown & Yule (1983) regard the function of language as being either (i) transactional or (ii) interactional. The transactional function (and most basic function) of language (see also Lyons 1977, Bennett 1976) is the transmission of factual or propositional information, "[…] the ability to transfer information through the use of language, which enables man to utilize the knowledge of his forebears, and the knowledge of other men in other cultures" (Brown & Yule 1983:2). The interactional function of language is said to be more in the focus of sociologists and sociolinguists (as opposed to the transactional function being more a topic for linguists, philosophers of language and psycholinguists). The interactional function encloses "[…] the use of language to establish and maintain social relationships" (Brown & Yule 1983:3). For my purpose here the transactional function will be in the center of attention. Regarding the levels that make this function possible, Lambrecht (1994) introduces the distinction of (i) the text-internal world and (ii) the text-external world. Every utterance depends on who says something and in what situation this takes place in.

The text-internal world includes the linguistic expressions, namely words, phrases and sentences, and their meanings. It is an abstract world of linguistic entities, which are created in the minds of the interlocutors in the process of communication. The text-internal world therefore covers the message itself, meaning 'what it is that I want to say'. In order to transmit information, these before-mentioned linguistic representations are manipulated and become linguistic expressions. In case one uses, for examples, anaphoric expressions (*she*, *it*, *there*, *this*, etc.) one has to make sure that the status of the referents of the expressions meet the informational requirement the discourse has (the knowledge state of the interlocutors). In order for the output (the chosen construction) to be understood correctly, one has to consider the external world, which stands for the speech participants, the setting the communication takes place in, and the overall social setting the interlocutors move in (in my case the hearer's state of knowledge). The setting includes information in place, time and circumstances. These elements often do not have to be established as they can be taken for granted due to their presence in the speech setting or the possibility to recover them from the setting (as opposed to elements of the text-internal world). Lambrecht (1994:38) refers to deictic

expressions as an example for expressions whose referents are based on the text-external world. The above-mentioned anaphoric expressions also rely on the knowledge about the overall setting. Summing up, "[…] the information-structure component (meaning-creating) of language necessarily involves both text worlds, since it matches form-meaning pairs with mental state of the interlocutors" (Lambrecht 1994:37). The actual output could then be referred to as the transactional function of language.

To come back to Widdowson (1979), the utterance of a speaker (performance) heavily relies on the knowledge/information the speaker has about the discourse as well as the hearer, which is used to form the best possible output according to the language system it is embedded in (competence, as the ability to apply the rules of the respective system according to knowledge). As von Stutterheim & Klein (2008) state, the speaker has a communicative task s/he has to solve. The solution is to call on elements of knowledge that are stored in memory, which have to be (i) selected (choice), (ii) linearized (informationally and structurally) and put into the individual perspective (discourse-wise). The authors distinguish between the (a) macro-structural and (b) the micro-structural organization of language. (a) is what refers to the discourse organization, the topic continuity (flow of information), (b) happens on the level of the utterance, on the level of word order. In order to solve the communicative task a text as a complex answer is produced. The term of 'quaestio' is central here, which means the implicit or explicit question that triggers a text (for more see von Stutterheim & Klein 2008:116ff.) and therefore triggers the flow of information.

This idea is based on an earlier account by Levelt (1989), who draws a distinction between the formation of a message in the head of the speaker and the actual utterance. He coined the term of a 'preverbal message'. This means roughly the concept the speaker has in mind (Conceptualization) before formulating the grammatical characteristics (Formulation) and actually uttering a sentence (Articulation). It is so to say the communicative aim that builds up the preverbal message. The goal is a well-formed message, which is said to be propositional (having a thematic structure and a perspective). Therefore, "[…] message generation makes reference to declarative knowledge about the world, which is

permanently available in long-term memory, and to situational knowledge (about the present context of interaction, the ongoing discourse, and so forth)" (Levelt 1989:72). For Levelt, the human mind organizes the world of experience into categories such as persons, objects, events, actions, states, times, places, directions and manners. It is stated that the propositional structures are composed of elements representing entities of these sorts, and so compile messages. Going back to the examples Goldberg (1995) provided in section 1.1.2., one can illustrate nicely what Levelt means by propositional structures, which are illustrated by so-called propositional network representations (for examples see Levelt 1989:75ff.).

(63) I brought Pat a glass of water.

(64) I bought a glass of water to Pat.

The categories employed here are PERSON (*I*, *Pat*), THING (*glass of water*) and ACTION (bringing-action). The entire sentence can by described as EVENT; all categories are bound by their thematic roles (agent, recipient, goal, source, etc.) and the perspective (topic, comment, etc.). One has to note that the thematic structure can be the same with differing perspectives (Levelt 1989:97) and therefore varying word order:

(65) Martin received the book from Tanya.

(66) Tanya gave the book to Martin.

The agent in both sentences is *Tanya*. The topic of a sentence is the foregrounded element ('who is commented upon') (in example (65) this is *Martin* and in (66) *Tanya*). The core ides behind these approaches is that messages are tailored accoding to the knowledge of the interlocutors. The word order is strongly dependent on the role and information status a constituent has.

In the course of the 20th century many concepts on this matter evolved, the ones I want to further stress for a general overview are the idea of 'information structure and theme' by Halliday (1967, 2004), the so-called 'given-new contract' by Clark & Haviland (1974), and the notion of 'information-packaging' that was introduced by Chafe (1976) and further developed by Birner (1996), Vallduví (1992), Vallduví

& Engdahl (1996) and Birner & Ward (1998). Hawkin's (1992) account of syntactic weight will also be presented, followed by an idea focusing on whether information structure or syntactic weight decides on the order of constituents (Arnold et al. 2000). Before doing so let me introduce one more concept central to most of the approaches in the field.

1.3.2. Hearer vs. discourse status

One last addition is of need before talking about the above-mentioned approaches: The reader might ask what the concepts of 'new' and 'old' refer to. In the section on givenness above I referred to the assumptions the speaker has about the knowledge state of the hearer. New information was therefore information new to the hearer, old information referred to information that the speaker assumed the hearer to know, even if it had not occurred in the prior context. However, givenness can also be regarded from another perspective than the hearer/speaker status. The degree of givenness a referent of a certain expression has can also be anchored in the discourse context of the communication. Naturally, what is given information in the discourse, is also given information for the hearer (in case s/he listened), however this distinction can make a difference, as will be explained below. One therefore has to distinguish between givenness according to the hearer's knowledge state and givenness according to the prior discourse.

For Halliday (1967:211), given information is recoverable, either anaphorically or situationally, both referring to the discourse. Prince's (1981) distinction between 'situationally and textually evoked' can clearly be connected to discourse, too. New information, on the other hand, can be seen as being "[…] focal, not in the sense that it cannot have been previously mentioned, although it is often the case that it has not been, but in the sense that the speaker presents it as not being recoverable from the preceding discourse" (in Brown & Yule 1983:179). Here, the authors refer to a short attention span that is relevant for the status of information. The important role of the attention span of the interlocutors in defining the discourse status of an entity is also supported by Chafe (1970, 1974, 1976), who says that (again, this was adapted by Prince 1981) given information is information that the speaker assumes the hearer to know, is therefore able to recover from memory. Therefore, new

information is unknown to the hearer, which assigns the hearer the relevant role to discriminate between old and new information. Chafe assigns a strong saliency (referring to the moment of utterance) to given information, as already mentioned above. What I want to lay focus on in this section is the difference between various hearer-statuses and discourse-statuses a referent of an expression can have.[16] Sentence (67) exemplifies that (Brown & Yule 1983:180):

(67) I saw **your father** yesterday.

In this sentence, *your father* can be regarded as being new information in case the speaker thinks that the father is not in the consciousness of the listener at that moment. Most will agree that *your father* does not feel entirely new here. From the perspective of saliency it definitely is (in the context of e.g., talking to people you sometimes meet by chance on the street). However, the interlocutors both know that the hearer has a father, therefore it is not completely new to either of them. One might therefore ask what the abstract concept of 'consciousness' stands for. This triggers the next question of how the speaker can possibly assume what the hearer has in his/her consciousness. Following Chafe (1974:111), consciousness is "[…] a narrow spot-light […]", "[…] its capacity is very limited. As new ideas come into it, old ones leave" (Chafe 1976:32). This spotlight only highlights a small number of items at any time and wanders off fast, as things that are in our consciousness usually do.

Remember that Lambrecht (1994) sees the information structure of a sentence as a mapping of form-meaning pairs with the mental states of the communication partners. The question that arises now is what actually influences the mental states, or better, how these mental states can be analyzed. Clark & Clark (1977:92) say that

> […] given information should be identifiable and new information unknown […] listeners should be confident that the given information conveys information they

[16] As Ward & Birner (2001:121) put it (referring to hearer status): "What is relevant here is the presence of information within the hearer's knowledge store, not the hearer's beliefs regarding its truth (in the case of a proposition), existence (in the case of an entity), attributes, etc. That is, what matters for hearer-status is the hearer's knowledge OF, rather than ABOUT, the information.

> can identify uniquely. They understand that it is information the speaker believes they both agree on and that the speaker is asserting his beliefs about.

Like all the other approaches this one too does not fully explain (67). The referent of *your father* would then be given, as the referent of the NP is identifiable. However, in the context provided it is also new information (that someone saw someone, namely your father, coincidentally on the street). All these 'hard-to-define'-concepts of new or old information, of what the hearer/speaker considers to be given or new, demand a more fine-grained description of what is 'old' and 'new'; it is necessary to define what the reference point of 'givenness' is – either the hearer or the discourse. The hearer status refers to the "[…] speaker's beliefs about the hearer's belief [knowledge]" (Prince 1992:301). The speaker therefore infers what is old or new to the listener. Suppose a colleague asks me where I am heading. A possible answer is given in (68):

(68) I am on my way to **the office**.

The office surely is no news to the listener, as s/he knows where the referent of *I* works. Therefore, the referent of the NP *the office* can be considered hearer-old. An example for a hearer-new entity is shown in example (69) as a hesitant answer to the question where I will be this afternoon. The referent of *someone* is not in the hearer's consciousness:

(69) I have to meet **someone**.

Additionally, information can be classified by the accessibility from the current context. This status of referents is called 'discourse status'. It does not pay any attention to the possible knowledge of the hearer. All that counts for this status is whether the entity has been referred to in the prior context or not. Of course, if it has been mentioned, the hearer is aware of it, too. Going back to (68) *the office* is hearer-old, as mentioned above. At the same time, however, it is considered discourse-new, in case the office has not been part of the communication that contains (68). Another example is given in (70) when talking about Europe and the capitals of the European states (naming London, Warsaw, Paris, Madrid and Berlin). One can say:

(70) **Paris** has always been my favorite city!

Paris therefore clearly is discourse-old, as it has been evoked (see Prince 1981) in the prior context. It is not necessarily so that the listener knows Paris personally from a visit. Even if s/he has never heard of this city before this conversation preceding (70), it still is discourse-old as it has been mentioned in the prior context. Discourse-new is displayed in (71) and does not require further explanation:

(71) Yesterday I bought **a car**.

It is important to note that there are only three common combinations concerning the relationship of hearer and discourse statuses. An entity can be hearer-old and discourse-old (example (70), as *Paris* has been introduced to the context and is now accessible from discourse and is in the mind of the hearer. Another possibility is hearer-old but discourse-new (72), talking to my best friend about how to get home:

(72) **My mom** is going to pick me up.

My best friend knows that I have a mom and who she is; hence it is hearer-old. However, the discourse has not evoked the referent of the NP *my mom*. This also covers example (67) above and reflects Prince's category of 'unused'. A third combination is hearer-new/discourse-new, denoting completely new referents that are neither known to the hearer nor have they been introduced in the discourse. Last but not least there is theoretically a fourth possible combination of hearer-new and discourse-old. However, this is not supposed to occur in natural language discourse, as it supposes that the hearer did not listen to what was said in the discourse or forgot that the referent was mentioned. Of course there are situations (influence of alcohol, dementia) where the speaker assumes the hearer to know something, due to the fact that it had occurred in the discourse, but the entity is not in the hearer's discourse-model. As I talk about regular (ideal) instances of communication, combination number 4 is excluded as not possible. Figure 3 displays the theoretical framework.

	Discourse-old	**Discourse-new**
Hearer-old	Previously evoked in the current discourse. Speaker assumes that the information is known to the hearer.	Has not been evoked in the current discourse, but speaker nonetheless believes that the information is known to hearer.
Hearer-new	Typically does not occur in natural language discourse.	Has not been evoked in the prior discourse, speaker does not assume that the information is known to the hearer.

Fig. 3: Information status, drawn from Prince (1992:309)

1.4. Central approaches

Having introduced the necessary terminology and the theoretical concepts on which my analysis is based, I will now briefly introduce the major approaches to discourse organization and word order to lay the ground for the linguistic features that will be part of the analysis in chapter 3 and 4.

1.4.1. Functional perspective

The purpose of presenting the functional-systemic approach here is to further delineate the terms of 'given' and 'new', in contrast to various other interpretations. The founder of the so-called functional-systemic grammar, Halliday, states that one has to make the very general distinction between new and old information, a distinction I have extensively commented on above. Following the theme/rheme distinction of Mathesius (1929/1975), who defines theme as 'what is being talked about', Halliday applies the term to the surface structure of a sentence by saying that "[…] the theme is what comes first in the clause; [(…) it] is assigned initial position in the clause and all that follows is the rheme" (Halliday 1967:212). This is

congruent with the view on the Functional Sentence Perspective presented above in example (40) and (42), based on Sampson (1980), repeated here:

(73) [Q: Who did John kiss?] – John kissed Eve.

(74) [Q: What happened to Eve yesterday?] – Eve was kissed by John.

In (73) *John* is theme as well as old information; *Eve* is rheme and new information. In (74) *Eve* is the evoked referent and therefore the theme, *John* is the rheme, namely new information. But what if the answer to (Q-74) were *John kissed her.*? In this case (according to Halliday), *John* is the theme but NOT given information.

It is important to note that for Halliday (1974:43ff.) 'functional' in the sense of the Functional Sentence Perspective is seen as relating to the "[…] analysis of the sentence into parts having a function in the total communication process". Additionally, the term 'functional' can refer to the function of language, as in 'functional theory'. For my purpose, it is important to mention that Halliday objects to the one-to-one mapping of theme/rheme to given/new. According to him, this only applies to unmarked (canonical) cases, where the initial position is usually reserved for old or given information. For clarification, the theme/rheme distinction explained before (Mathesius) did map theme to old information and rheme to new information. Naturally, old/theme and new/rheme mostly overlap. The structural aspect Halliday defends is not taken into account in the Functional Sentence Perspective. This becomes important again when talking about the information-packaging concept of Birner (1996), as she distinguishes between preverbal and post-verbal elements.

For Halliday, thematic structure (theme), already talked about above (Levelt 1989) is to be distinguished from 'information'. They are described as "[…] two related systems" (Halliday 2004:88). Theme/rheme form the message [structurally], information includes the information unit. This is said to be on the same level as the clause (on which level the theme/rheme segmentation takes place). However, the information unit may be extended over more than one sentence (in unmarked (canonical) sentences they overlap). Therefore, given/new and theme/rheme cannot

be regarded as synonyms. They are both "[…] speaker-selected. It is the speaker who assigns both structures, mapping one onto the other to give a composite texture to the discourse and thereby relate it to its environment (p. 93).

As language is said to be a resource of choices among alternatives, language is an evolving system that carries certain functions. "A text is the product of ongoing selection in a very large network of systems – a system network" (Halliday 2004:23). Grammar is therefore a huge network of systems and not a ready-made inventory of possible structures. The segmentation of 'structure' being the syntagmatic order (word order - what goes together with what) and 'system' being the paradigmatic order (choice) is very reminiscent of the ideas offered by de Saussure at the beginning of the last century. Also the notions of 'language as a system of oppositions' and 'language as a system of choices' look similar. As functional grammar puts it, the 'power-house' of language is the grammar; it is here where meaning is created. Halliday (2004:29) proposes the following as the basic functions of language, namely "[…] making sense of our experience, and acting out our social relationships". In order to connect this to what was said before, one can connect the notion of 'make sense of our experience' to the idea of Prince (1981) who says that we use the knowledge we have to tailor a most efficient utterance according to the knowledge states of the interlocutors.

Going back to what language is for (what levels of (sentence) meaning there are), Halliday assigns so-called metafunctions to language, which are manifested in the grammatical structure of a language (Halliday 1974:49). These functions he labels (i) ideational function, (ii) interpersonal function, and (iii) textual function, which I want to briefly introduce for means of completion. Language is said to name things, puts things into categories (see Levelt 1989), one can regard "[T]he clause as representation, exchange and message" (Dorgeloh 1997:11). Categories are construed into taxonomies, often using more than one description for the same category (*house*, *garage*, *cottage*, *shed*). Following Halliday (2004:29), "[…] these elements are configured into complex grammatical patterns like *marched out of the house*". The patterns can then build contexts by connecting them to time, setting, etc. Therefore language mirrors human experience. This is what is called the 'ideational' function of language ('language as reflection'). The level also includes

the notion of the 'logical subject', the actor in Halliday's terms. As it is all about relations between "things" (Halliday 2004:53), this level is said not to be influenced by the distribution of grammatical roles or by word order. It reflects the (i) process of communication itself, (ii) participants in the process and (iii) the circumstances associated with the process (Halliday 2004, also Dorgeloh 1997:12).

When using language, one major aim is to interact with others. Language is "[…] enacting our personal and social relationships [...]" ('language as action'). This is what is called the 'interpersonal' function, which involves a proposition, as it is used to exchange information. Halliday's understanding of 'proposition' includes the segmentation of a sentence into 'subject', 'finite' and 'residue'. The subject is "[…] something by reference to which the proposition can be affirmed or denied" (Halliday 2004:117). This means that the role the subject has stays the same, even in case of change in the word order. What changes is the proposition, as Dorgeloh (1997) indicates. This again relates to the subject of my thesis, as with non-canonical constructions (as defined here), the logical subject always stays the logical subject, no matter of its position in the sentence. It is therefore somehow, but not directly in the center of my interest, as neither was the ideational function. However, both are complements of the third function I will introduce next.

The third function relates to the construction of a text. The ideational and the interpersonal function of language rely on the 'textual' function as they rely on the ability to construe a context, a discourse or text. It is here where the thematic structure of a text comes in, the partition into theme (starting point of the message, initial position) and rheme (the division into given information and information newly added to the context). It also encompasses the information flow and the cohesion and continuity in the discourse.

There is a lot more to say about this grammatical framework. However, I only wanted to stress the perspective on the information (distribution) (theme/rheme) and the functions ascribed to language. As Halliday (2004:58) comments, "[…] the typical unmarked form, in an English declarative clause is the one in which theme, subject and actor are conflated into a single element". With non-canonical constructions, as LOCI, this does not hold, as this construction is marked. In close

connection to the idea of 'theme-subject-actor', being mostly given information precedes new information, is also supported by the next concepts presented here, namely the given-new contract and the idea of information packaging.

1.4.2. Given-new contract and information packaging

Clark & Haviland (1977:4) make the general statement "[t]he speaker tries, to the best of his ability, to make the structure of his utterance congruent with his knowledge of the listener's mental world". This quotation very nicely illustrates the cooperative nature and the contract-like concept behind the order of information by implying that given information is introduced before new information to facilitate the understanding by the hearer (also see Clark & Clark 1977, Prince 1981, 1986). This (social) contract is regarded to be bilateral, "[T]he given-new contract is concerned with a syntactic distinction the speaker is obliged to make between given information and new information" (Clark & Haviland 1977:3). It is not solely the hearer that is in focus; the speaker also builds the message according to her own needs. Consider the following model: There is (i) something the speaker wants to talk about and there is (ii) something specific that s/he wants to say about it. The general part (i) is conveyed by the subject, the specification (ii) by the predicate. This can be illustrated by using examples from Clark & Clark (1977:33):

(75) The police investigated the robbery.

(76) The robbery was investigated by the police.

In (75) *the police* is the subject, the entity the sentences is about. In (76) it is *the robbery*. In most cases the subject/predicate segmentation corresponds with given/new information. In (75) it is very likely that the prior context provided some scenario connected to the police. The hearer therefore knows that *the police* is what is spoken about, but not the specificities about the subject (=> predicate). Very closely connected to the given-new contract is the notion of 'information packaging'. It reflects the speaker's beliefs about the hearer's state of mind, how the information provided fits in with what the hearer knows. Chafe (1976:28) introduced the term as follows:

> I have been using the term packaging to refer to the kind of phenomena [see Chafe 1976:27] at issue here, with the idea that they have to do primarily with how the message is sent and only secondarily with the message itself, just as the packaging of toothpaste can affect sales in partial independence of the quality of the toothpaste inside.

Many linguists later adopted the concept, among which is also Birner, on whose work this thesis builds. The notion of information packaging stands for the idea of a "non-syntactic non-logico-semantic structuring of sentences" (Vallduví 1992:10), which means to structure a sentence according to the information statuses of the meanings of its constituents. The different statuses of the information are mapped onto the structure of a sentence. It is therefore "[…] a structuring of sentences by syntactic, prosodic, or morphological means that arise from the need to meet the communicative demands of a particular context or discourse" (Vallduví & Engdahl 1996:460). The syntactic means are of interest here, as the sentence can only be structured within the grammatical framework a language provides. The overall goal is the most efficient transmission of information; therefore "[…] the speaker tries, to the best of his/her ability, to make the structure of his/her utterances congruent with the knowledge of the listener's mental world" (Clark & Haviland 1977:5). As one can see, this concept is very closely related to what was presented before, again laid out by Prince (1986:208):

> Information in a discourse does not correspond to an unstructured set of propositions; rather, speakers seem to form their utterances so as to structure the information they are attempting to convey, usually or perhaps always in accordance with their beliefs about the hearer. What s/he is thought to know, what s/he is expected to be thinking about.

Please note that all this refers to the information statuses with reference to the hearer. As I have explained before, Birner (1996) adapted the terminology of hearer-status vs. discourse-status[17]. For an illustration of what 'packaging' actually

[17] The discourse-status is what is crucial for my analysis. As my analysis rests on written data from corpora, an objective opinion on hearer status is not possible.

means in the context of the present work, Vallduví & Engdahl (1996:461) provide the following examples.

(77) Mary hates chocolates.

(78) Chocolates Mary hates.

(79) Chocolate Mary loves

(77) and (78) have the same propositional content, are truth-conditionally equivalent. However, (77) is the canonical order, (78) displays a specific variation that (in this case) emphasizes what it is that Mary hates. This variant can only be used under certain conditions, (79) says the opposite of the two examples before, however, it is 'packaged' the same way (78) is, they "[…] differ in what they say about the world, but not in how they say it" (p. 461). CCs like (77) and NCCs like (78) cannot be used interchangeably, even if the core meaning is the same. The context is what constrains the use of NCCs. For the question *What does Mary hate?* (77) is an appropriate answer, (78) not as much. To answer the question of *Does Mary hate chocolate or chips?* both (77) and (78) are felicitous, (78) carries a stronger pragmatic effect, emphasizing the chocolate as being the food Mary hates. Chapter 2 will come back to the topic of information packaging when illustrating Birner's analysis.

Above we have extensively discussed the notions of topic-focus, ground-focus, given-new, theme-rheme, etc. These notions carry a central role in information packaging as they denote the information status of the referents of NPs. The evoked, known part is said to anchor the sentence in the discourse. Please note that, whatever terminological concept is chosen, the concepts of 'new' and 'evoked' have to be regarded as being relational, 'evoked' always refers to some prior context, 'new' adds new information to an already existing discourse.

1.4.3. Syntactic weight vs. Information

Apart from the given-new contract and related concepts, word order is also supposed to be strongly influenced by the syntactic weight of the involved constituents (Behaghel 1909/1910). Weight is to be understood as 'size' or 'complexity' of an element. As mentioned before, there is a common principle called 'end-weight-principle' (also see Quirk et al. 1972) that claims that the preferred ordering in a sentence is to move 'heavy' or complex constituents towards the end of the sentence. It is said to facilitate the comprehension by the hearer, "[…] who does not then have the burden of retaining complex information from earlier in a clause in short-term memory while processing the remainder" (Biber et al. 1999:898). Additionally, it is claimed that complex constituents often carry new information. As stated above, new information tends to favor sentence-final position. As Biber adds, the information principle (old information precedes new information) and the principle of end-weight (short constituents precede longer constituents) often reinforce each other, are very much interconnected (further support from Arnold et al. 2000, explained below). This is analogically true for the notion that the subject of a sentence favors the sentence initial position and that its referent is likely to be evoked. The object, typically in post-verbal position, often carries the new content.

One very prominent representative of the concept that syntactic weight is what decides over the order of constituents in a sentence is Hawkins (1992). He contrasts effects of information structure (especially the pragmatic principle of Givón (1988), to which he only assigns a "subsidiary role", p. 196) with those of syntactic weight. This approach will now briefly be sketched. Hawkins' (1992) approach is a theory of word order processing with reference to processing efficiency (also see Hawkins 1990). He calls this 'Early Immediate Constituents' (EIC). The basis for EIC is the idea that the speaker orders a sentence in a way that the hearer can recognize syntactic groupings and their 'immediate constituents' (ICs) as fast or efficient as possible. All that counts is the IC recognition; the faster ICs are recognized the

better it is. Examples (80) and (81) as well as figure 4 illustrate this (Hawkins 1992:197).[18]

(80) I introduced some friends that John had brought to the party to Mary.

(81) I introduced to Mary some friends that John had brought to the party.

Example (80) with the PP *to Mary* at the end of the sentence is said to be harder to process than the sentence with the pattern 'NP V PP NP' in (81). The reason is that in the first sentence one has to go through four constituents (NP, V, NP, PP) to recognize all the constituents of the sentence; it takes eleven words to recognize all the constituents involved in the sentence. In (81), due to Heavy NP-shift (the heaviest constituent *some friends that John brought to the party* is moved to the end of the sentence) one only needs four words to get to the last constituent, namely the heaviest one. This is illustrated in figure 4, drawn after Hawkins (1992:198), who claims that, "[T]he human parser prefers to maximize the left-to-right IC-to-word ratios of the phrasal nodes that is constructs".

I $_{VP}$[introduced $_{NP}$[some friends that John had brought to the party] $_{PP}$[to Mary]]

1 2 3 4 5 6 7 8 9 10 11

I $_{VP}$[introduced $_{PP}$[to Mary] $_{NP}$[some friends that John had brought to the party]]

1 2 3 4

Fig. 4: IC-recognition

For more on the predictive power of this model, the reader is referred to Hawkins (1990, 1992). He concludes that compared to pragmatic accounts (as for example information packaging) EIC has more predictive power; the speaker is always

[18] This is meant to generally introduce the idea. The construction here is called Heavy-NP Shift. Hawkins (1992) does not make any specific claims about locative inversion.

focused on the most efficient processing. However, he admits that pragmatic accounts sometimes add up to considerations about syntactic weight and only rarely predict a different order. As he puts it,

> […] it should always be more important for the speaker to provide as much of the syntactic structure for the hearer as rapidly as possible, before taking into consideration any ordering preferences based on a semantic and/or pragmatic content that is unrecognizable without the prior presentation of linguistic form.[…] Word order variation is not primarily pragmatic in nature (p. 216).

As it gives strong support to the results of the present work (presented in chapter 3 and 4) I want to move on to an excellent comparison of the effects of syntactic weight (here 'heaviness') and information status (discourse status, here 'newness') on word order, provided by Arnold et al. (2000). The authors ask two questions: (i) What factor(s) can influence the choice of one ordering over the other and (ii) what functions can constituent ordering variation serve? (p. 28) This is exactly what I am after in this thesis, namely to identify features that result in a preference for a certain word order and the actual functions these word orders have. Arnold et al. look at a possible interaction of forces between syntactic weight and information structure in the process of choosing the appropriate word order. By conducting a corpus analysis and an experiment on Dative-Alternation and Heavy-NP-Shift, which will not be further discussed here (for details see Arnold et al 2000:35ff) they try to figure out which direction of analysis (weight- or information-based) is the correct one and try to determine possible interacting effects from both ends. It is important to note that the authors see 'weight' as relative weight[19], meaning the "[…] difference in length between two constituents" (p. 29). The same is true for information, the relative information status is considered. The result of Arnold et al.'s analysis is that heaviness and newness are "significantly correlated" (p. 36). However, heaviness accounts for more cases of variation, newness is the deciding force in case heaviness is not making a strong prediction (e.g. small or no difference in length). The reasons the authors give follow Levelt (1989, see section

[19] Similar to what I do in my analysis.

1.3.1.) who states that there are three stages involved in language production. (i) Conceptualizing of a message, (ii) formulating the grammatical characteristics and (iii) articulating it. As all of these stages involve rapid decisions (also see Clark & Wasow 1998, for details Arnold et al. 2000), Arnold et al. (2000:46) conclude that

> […] constraints on planning and production lead to patterns of given-before-new and light-before-heavy. […] postponing heavy elements reduces memory load in parsing, thus making the hearer's task easier. Given information is also generally considered more accessible than new information.

This should suffice as an overview over various theoretical approaches on how constituent ordering in a sentence works (or might work). Bearing all these different perspectives in mind, the next chapter will deal with the major deviations from the canonical word order in English. The approaches just presented will be measured against my data in chapter 4.

2. Non-canonical constructions (NCCs)

The term 'non-canonical' naturally is the opposite of 'canonical'. The Oxford Concise Dictionary of Linguistics (Matthews 2007:47) defines 'canonical' as "[…] typical or characteristic; hence also basic, most straightforward. […]". 'Canonical' therefore stands for 'standard', 'normal', or 'regular'. There is a distinct definition of canonical clauses in the field, which equates 'canonical' with declarative and active clauses (not referring it to the syntactic pattern), as opposed to 'non-canonical' being interrogatives or passives (Huddleston 2002:235ff.). This understanding is not congruent with the understanding of non-canonical constructions in the present thesis. Here, all the data is based on declarative clauses, the terms 'canonical' or 'non-canonical' refer to the word order. The canonical order is an order following the default pattern English (as it is the starting point here) prefers. As mentioned before, the canonical word order in English is 'Subject-Verb-Object', as in (1), repeated here as (82).

(82) Ernie sits on the table.

Next to the standard word order, the grammatical system allows for various alternations that all express the same truth-conditional content, however in different syntactic forms. As already mentioned in the introduction, Birner (1994:233) states "[A] speaker may also, however, exploit the interaction between discourse context and syntactic form for the purpose of structuring the information represented in the utterance." The syntactic form can therefore help to organize information within a text by presenting familiar information before unfamiliar information.[20] Birner adds that this organizing can be done either internally (within the utterance) or with respect to other information believed to be (or desired to be/soon to be) in the hearer's discourse model (also see Gregory & Michaelis 2001). The relationship between word order and the mental states of the interlocutors is what is of interest. The speaker therefore may choose from a variety of constructions that express the same propositional content, but serve different purposes; some of those non-canonical constructions will now be presented and explained in detail, namely (i)

[20] In what follows 'movement' exclusively applies to a change in the superficial/linear ordering of a sentence.

Preposing/Topicalization (and left-dislocation), (ii) Postposing/*there*-Insertion (and right-dislocation), (iii) Inversion, and (iv) *by*-phrase passive). It is necessary to add that the terminology employed in my analysis is mostly based on Prince (1981, 1992), Ward (1988), Birner (1994, 1996), Birner & Ward (1993, 1998), and Ward & Birner (2001) (among other similar approaches).

As information can be expressed in various sentence patterns, these different word order alternations have to carry special functions. I will introduce the structures and functions and highlight the constraints that they underlie as well as the features that favor the use of the respective NCC.

2.1. Preposing/ Topicalization

As mentioned above in the introduction, one of the most basic word order alternations the English language allows for is 'preposing' or 'fronting'. According to Biber et al. (1999:900) Preposing (or fronting) involves the initial placement of core elements, which are normally found in post-verbal position. As Ward (1988) puts it, it involves the positioning (mostly at the beginning of the sentence) of a lexically governed phrasal constituent to the left of its canonical position. It is said to be almost exclusively found in declarative clauses and is relatively rare in English. Preposing is often referred to as topicalization; it basically means the same and is treated as such for this purpose. For completion, Birner & Ward (1998) introduce the distinction between 'topicalization' and 'focus preposing', where topicalization is a subtype of preposing in general. This is will briefly touch upon later on in this section. Example (83) shows that preposing only involves one superficial movement to the left (movement being the relocation of a constituent to a position other than its canonical position). The preposed constituent is usually moved to sentence-initial position (Ward & Hirschberg 1988) and can be of any phrasal category. This means that *baseball* is what is moved from its canonical post-verbal position to the beginning of the clause.

(83) A: Do you watch football?
B: Yeah, <u>baseball</u> I like ___ a lot better. (Birner & Ward 1998:37)

For Biber et al. (1999) the central functions are (i) organizing information flow to achieve cohesion, (ii) expressing contrast and (iii) enabling particular elements to gain emphasis. These functions can be accounted for by the Information Principle, and additionally take into account that this construction is, next to optimally organizing information, used to stress certain aspects in a sentence by emphasis and contrast (for more see Biber et al. 1999:900).

It is important to note that only those examples are taken into account as proper preposing here (and by Birner), which involve preposed constituents that "[…] are lexically governed by the matrix verb" (Birner & Ward 1998:31, also see Ward 1988 and Coopmans 1989:735).[21] Birner & Ward (1998) further formulate an absolute (pragmatic) constraint on preposing saying that felicitous preposing requires the referent (or denotation) of the preposed constituent to be anaphorically linked to the preceding discourse (also see Birner & Ward 1998:32, Reinhart 1981, Vallduví 1992 and Biber et al. 1999 above). The way the preposed constituent can be 'anaphorically linked' to the discourse is by partially ordered set relations of the attributes (i) type/subtype, (ii) entity/attribute, (iii) part/whole and (iv) identity. Those partially ordered sets (posets) can be defined (among many more definitions) as follows (Ward & Prince 1991:171ff, Reinhart 1981, Ward & Birner 2001):

> Partially ordered sets, or posets, are defined by a partial ordering R on some set of referents, b, such that, for all b-1, b-2, and b-3 that are elements of b, R is either reflexive, transitive, and antisymmetric […] or, alternatively, irreflexive, transitive, and asymmetric[…]. […] A relation satisfying the second definition is IS-TALLER-THAN, and one satisfying the first is IS-AS-TALL-OR-TALLER-THAN. Note that we can always start with a relation satisfying the second definition and produce one satisfying the first by adding an equality disjunct to the relation. Other relations satisfying this definition include: IS-A-PART-OF, IS-A-SUBTYPE-OF, and IS-A-MEMBER-OF. (Ward & Prince 1991:171)

[21] Adjuncts are excluded.

These relations are established by combinations or attributes just mentioned above in (i) – (iv)[22]. This includes co-referential links, displayed in (84), adapted from Birner & Ward (1998:33).

(84) A: Can I get a bagel?
B: No. sorry. We're out of bagels. A bran muffin I can give you.

In this case both the trigger *bagel* and the link *bran muffin* equally belong to one class of {baked goods}. Additionally, the link can be provided by means of identity (similar to the cohesion function of Biber et al. 1999), as shown in (85), again from the same source (p. 34).

(85) Facts about the world thus come in twice on the road from meaning to truth: once to determine the interpretation, given the meaning, and then again to determine the truth-value, given the interpretation. This insight we owe to David Kaplan's important work on indexicals and demonstratives, and we believe it is absolutely crucial to semantics.

There are more types of links (next to a link as in (85), by means of identity), e.g. proposition affirmation or open propositions. I will briefly introduce both, as they generally occur in the discussion on NCCs. Proposition affirmation is a repetition of the trigger. According to Ward (1990:742ff.), it affirms (or emphasizes) the speaker's belief in a proposition. The following example (86) is taken from Birner & Ward (1998:34).

(86) The other half of the double bill is "Sister Mary Ignatius". Whereas Lohrmann has to overcome a poor script to be bright, Durang has handed Ginny Brown Graham, via Sister Mary Ignatius, a fantastic script, and all she has to do is shine. And shine she does.

An open proposition (OP) is a sentence proposition that lacks some information and involves one or more variables. It is the result of the fact that utterances are

[22] In what follows underlinings are inserted for clarification.

intended to be informative. They should therefore add something to the discourse (Ward & Birner 2001). Prince (1986:210) introduced this term to mark the importance of shared knowledge in the discourse by defining an OP as "[…] presupposed propositions containing a variable" (also see Wilson & Sperber 1979). The variable is, when instantiated, the focus of the utterance, which introduces the new information that is linked to the preceding context by poset relations and is therefore considered not to be entirely new. At this point the above-mentioned distinction between focus preposing and topicalization comes in (in the terms of Ward 1988 and Birner & Ward 1998, a.o.). In focus preposing the preposed constituent contains the focus of the utterance (focus in the sense of Lambrecht 1994, see chapter 1.2.3.) and is also said to bear the nuclear accent[23]. An example is given in (87).

(87) [two students in a conversation]
A. Where can I get the reading packet?
B: In Steinberg. Six dollars it costs.

Here the open proposition is that the reading packet costs some amount of money X (the variable), which again is a member of the poset {prices}, as *cost* implies that. The focus is therefore on the solution, namely *six dollars*, which is new information.

The difference in topicalization (in contrast to focus preposing) is the location of the focus. In topicalization it is not the preposed constituent that is focused, but a relation (phonologically it bears multiple accents). An example of that is (83), repeated here as (88).

(88) A: Do you watch football?
B: Yeah. Baseball I like a lot better.

Here, the focus is said to be on *better*, the link *baseball* is triggered by an infered poset {sports}. The open proposition is the degree X to which the speaker likes certain sports. This relation of the preposed constituent via a salient partially

[23] Again, please note that this thesis does not deal with phonological features.

ordered set relation to one or more entities that have already been evoked in the discourse, is what felicitous preposing of this type requires (Ward 1988). What the two types have in common is the absolute constraint saying that the preposed constituent has to be old or inferrable information (directly recoverable from context or via posets) and therefore constitutes a link to the prior context. An even stronger linkage is required by Ward & Birner (2001:124), who say, "[…] felicitous preposing in English requires the referent or denotation of the preposed constituent to be anaphorically linked to the preceding context".

As my account largely follows Birner's (1996) ideas, I briefly want to comment on the distinction of an absolute and a relative constraint, as this distinction is very central for this approach. An absolute constraint, as just mentioned, only affects one constituent, in the case of the constraint on preposing the preposed constituent. The only thing required is that it be evoked, discourse-old. A relative constraint makes statements on the relation of two constituents; this will be shown in the upcoming section on inversion. In general, an absolute constraint (assuming all further constraints to be satisfied as well) says, 'if A fulfills the requirement X, the sentence is felicitous'. A relative constraint (again, assuming all further constraints to be satisfied as well) formulates it 'if the relation between A and B fulfills requirement X, the sentence is felicitous'. The relative constraint therefore does not make claims on the absolute value of A and B, but on the relational value of A and B.

Another construction that preposes a constituent is left dislocation, included here for completion. Whereas regular preposing constructions require the preposed constituent to provide a link to the prior discourse, left-dislocation typically places an entity with a new referent in the initial position (although it can also prepose given subjects (*nervous breakdown*), as in sentence 2 in example (89)).

(89) I bet she had a nervous breakdown. That's not a good thing. [Gallstones, you have them out and they're out]$_1$. [But a nervous breakdown, it's very bad]$_2$.

The direct object pronoun *them* in sentence 1 is directly relating back anaphorically to the referent of the constituent in first position, *gallstones*. There are therefore two

main differences between regular preposing and left dislocation. First, preposing involves one change of location of a constituent from its canonical position to sentence-initial position, the canonical position is left empty. This does not apply to left dislocation. An NP is preposed to sentence-initial position, the canonical position, however, is filled by a co-referential pronoun. Second, the referent of the leftward moved NP may be discourse-new in left dislocation, which excludes a possible link to the context, which preposing requires. In summary, preposing and left dislocation look somewhat alike, but are syntactically and functionally distinct (for further arguments see Ward 1988 and Birner & Ward 1998, for a detailed analysis of left dislocation see Gregory & Michaelis 2001).

As preposing is only a side issue in the present thesis I will conclude the discussion now and introduce postposing, the rightward movement of a constituent. Preposing and postposing prepare for inversion, a binary movement and central topic of my analysis.

2.2. Postposing/ *there*-insertion

Birner (1996) and Birner & Ward (1998) call the construction this section deals with *postposing*, as one constituent, namely the logical subject, moves from its original position in preverbal position to a post-verbal position (to the right of its canonical position). The canonical position is filled by an existential *there*[24] (Breivik, 1981, Ward & Birner 1995). As Bolinger (1977:90) states, "[…] *there* is added to the structure which is semantically complete without it. [Many people regard] *there* as a kind of subject pronoun. The real subject becomes a complement". Example (90) is adapted from König & Gast 2012:204), (91) displays the canonical word order.

(90) There appeared a ship on the horizon. (*there*-insertion)

(91) A ship appeared on the horizon. (canonical order)

[24] Note that this section looks at regular *there*-insertion. The construction THERE in my analysis is a specialized type with a preposed PP.

According to Biber et al (1999:943), "[E]xistential *there* is a formal device used, together with an intransitive verb, to predicate the existence or occurrence of something […]". It normally occurs with a form of *be*, other verbs are allowed as well, as seen above in (90). A prototypical example for the existential construction (as it is often referred to) is given in (92), from Biber et al. (1999:943).

(92) There are around 6,000 accidents in the kitchens of Northern Ireland homes every year.

As just stated, most *there*-insertion sentences involve a form of *be*; this lead Birner & Ward (1998) to distinguish (i) existential *there*-insertion (92) from (ii) presentational *there*-insertion (90) (also see Drubig 1988:84ff.). This distinction is not crucial for my analysis and sometimes even a source of misunderstanding, as the term 'existential *there*-sentences' (or existential construction) often describes the construction in general with reference to the nature of *there* and delineates it from locative *there*-sentences, as in (93).

(93) Look. There's a polar bear. Over there! (Breivik 1981:1)

Locative *there*-sentences in this sense will not be taken into account; some also refer to it as "deictic inversion" (see Webelhuth 2011:89ff.). Bolinger (1977:91) claims that existential *there* is probably an extension of locative *there* (opposed by Birner 1992:38). It is further stated that the existential *there* seems to have acquired a new role by loosing its direct locative meaning. It is more a presentative device in discourse; the notions 'bringing something into cognitive awareness' or 'onto the scene of discourse' are crucial to the discourse function of *there*-structures. Within the cognitive framework, the difference between e.g., (92) and (93) is also taken into account by Lakoff (1990:462ff.). He differentiates between existential *there*-sentences and deictic *there*-sentences. In contrast to *there* in (93), *there* in (92) does not pick out a location, it may not take an accompanying pointing gesture (Lakoff 1990:468). Additionally, he adds that *there* in existential sentences is the grammatical subject.

In order to make clear, which type is relevant for the present thesis, I will use an example by Downing & Locke (2006:257), which is additionally congruent with my views of THERE, there-insertion with PP preposing:

(94) From an asylum for the insane near Providence, Rhode Island, there recently disappeared an exceedingly singular person.

Coming back to the two subtypes, namely (i) existential and (ii) presentational *there*-insertion (according to Breivik 1981 and Birner & Ward 1998), they differ in the verb they include. However, they both involve the existential *there* and therefore represent the *there*-sentences of interest here. (i) Existential *there*-insertion has to employ the verb *be* (95), (ii) presentational *there*-insertion may include all others (non-*be* and intransitive), exemplified in (96), mainly verbs of emergence and appearance (König & Gast 2012), also referred to as verbs of existence and occurrence (Biber et al 1999).

(95) There is a warm relationship, a great respect and trust between […].

(96) Daniel told me that shortly after Grumman arrived at Wideview Chalet there arrived also a man named Sleeman.

As has been acknowledged by Breivik (1981), both construction types introduce new information ('new' in the sense of non-thematic) and shift heavy NPs to the end of the sentence. Most scholars (Erdmann 1976, Penhallurick 1984, Prince 1992, among others) agree that the status of the referent of the post-verbal NP (PVNP) is what decides on the felicity of *there*-insertion. One could therefore ask whether this distinction into existential and presentational sentences is necessary. Most other approaches do not make this difference or do not consider existential *there* (as opposed to locative *there*) at all (Biber et al. 1999); some even use the term 'presentational' to account for *there*-insertion and inversion in general and not for referring to a subtype of *there*-insertion, as Breivik 1981 and Birner & Ward 1998 do (see König & Gast 2012:204ff. below). Birner & Ward (1998), however, argue that existential and presentational *there*-insertion in their understanding (as in examples 98-99) have to be distinguished, as they are sensitive to different types of

information status (see section 1.3.2.). This difference makes them pragmatically and functionally distinct (for arguments see Birner & Ward 1998:109ff). Existential *there*-insertion (with the verb *be*) introduces a referent that is hearer-new (and therefore also discourse-new); the PVNP in this type of *there*-insertion often is an indefinite noun (Biber et al. 1999, Ward & Birner 1995). Example (97) displays a felicitous existential *there*-sentence, according to Birner & Ward (1998:109), (98) shows a counterexample (with hearer-old information), which is infelicitous:

(97) After they had traveled on for weeks and weeks past more bays and headlands and rivers and villages than Shasta could remember, there was a moonlit night when they started their journey at evening, having slept during the day.

(98) President Clinton appeared at the podium accompanied by three senators and Margret Thatcher. *Behind him there was the Vice President.

This is brought forward to show that, although *the Vice President* is discourse-new, the sentence is infelicitous, as the referent of the NP is hearer-old (for more see Birner & Ward 1998:102ff).

In contrast, presentational *there*-insertion (non-*be* verb) is said to be sensitive to discourse status. The PVNP has to introduce a discourse-new referent, (99) shows a felicitous, (100) an infelicitous example (for more see Birner & Ward 1988:106ff).

(99) Why would Honda locate in Alliston? Why did Toyota pick Cambridge? […] The answer is, first, that the Canadian labor force is well eductated and capable of operating the sophisticated equipment of modern industry. Second, in the Province of Ontario and the communities of Alliston, […], there exists a tremendous work ethic.

(100) Clinton appeared at the podium accompanied by three senators and Margret Thatcher. *Behind him there stood Thatcher.

Postposing is therefore assigned an absolute constraint, equally to preposing constructions. For existential *there*-insertion the referent of the PVNP has to be hearer-new, in presentational sentences it requires discourse-new information (for arguments and further information see Birner 1996 and Birner & Ward 1998:97ff.). The function this construction fulfills is summed up as being a measure to "[…] present or introduce new elements into the discourse" (Biber et al. 1999:951). This is also supported by Kreyer (2006) by saying that existential *there*-insertion (*there*-insertion with existential *there*) is specialized in introducing unfamiliar objects. As Rando & Napoli (1978) state, the PVNP has to be non-anaphoric (anaphoric in the sense of familiar following Kuno 1972, see section 1.1.4. on givenness above). This has been acknowledged for some time; the result is a thorough discussion on the nature of referent of the postposed NP. The PVNP is therefore not allowed to be definite (for more on definiteness see Hawkins 1978, Abbott 1992, 1993, Ward & Birner 1995, König & Gast 2012), as most definite NPs have a known referent (see Prince 1992 for more on this discussion).

(101) ? There appeared the ship on the horizon.

Others (e.g., Abbott 1992, 1993) assign *there*-sentences the function to make the addressee aware of the existence and/or location of the entity denoted by the PVNP. The referent of the PVNP therefore does not necessarily have to be entirely new; it must only be outside the current attention span. Before focusing on the target construction of the present thesis, namely inversion, we have to consider a type of postposing that is the counterpart to left dislocation, namely *right dislocation*, as in (102).

(102) Below the waterfall […], a whole mass of enormous glass pipes were dangling down into the river from somewhere high up in the ceiling! <u>They really were enormous, those pipes!</u>

The syntactic issue here is that a sentence-initial NP is moved to postverbal position, in the example above to the end of the sentence. This referent of the dislocated NP *those pipes* is given and does therefore not qualify for felicitous postposing. Additionally, the initial position is not filled by *there*, as in regular

postposing; it is filled by a referring expression, the pronoun *they*. The pronoun refers back to something in the prior context and is anaphoric with the postposed NP. The function of this construction is seen, among others, as a "[…] repair mechanism for self-initiated correction of a potentially unclear reference" (Birner & Ward 1998:147).[25]

As this again is not the core subject of my thesis, I will leave this topic at this point and move on to the central word order alternation for this thesis, namely inversion. The non-canonical variant THERE, which is part of my analysis, will be considered in more detail after having introduced the basic facts on inversion in general.

2.3. Inversion

In contrast to German, English has two options when preposing a constituent. One is to merely prepose one constituent (move it to the left of its canonical position) and leave everything else in canonical position, as I have illustrated in 2.1. The other possibility is to invert, which involves both a leftward and a rightward movement; "[…] the subject follows all or part of the VP" (Green 1980:583). As inversion is a marked structure, it has to carry a certain meaning/function (Dorgeloh 1997:63, also Prado-Alonso 2011:71). Before looking at possible functions, one has to clearly define the construction. In general, the major attempts to explain the phenomenon of inversion have remained vague. This section is devoted to the clarification of my understanding of inversion and to the presentation of various perspectives (the ons relevant to my approach) on this word order alternation. I will consciously exclude a number of ideas. This is due to the fact that my analysis is majorly based on the ideas of Birner, as mentioned before. I will therefore mainly touch upon approaches that Birner reacts to or that react/relate to claims Birner has made.

In an inverted sentence a canonically post-verbal constituent moves to sentence initial position (recall that 'movement' exclusively applies to a change in superficial/linear ordering of a sentence). It serves to "[…] link relatively unfamiliar information to the prior context via the clause-initial placement of

[25] This is also the position taken in Givón 1976.

information that is relatively familiar to the context" (Birner & Ward 1993:27). Most approaches agree on the assumption that in English all types of constituents can be inverted. The following examples are meant to show that (Prado-Alonso 2011:25ff.).

(103) Every now and then whined a fly and was sucked into the past with dizzy speed. (**AdvP** inversion)

(104) Prominent among inversions is full inversion. (**AdjP** inversion).

(105) Among them was the seriously injured driver […]. (**PP** inversion)

(106) A well-known case is clean air. (**NP**-inversion)

(107) Standing in for the bureau chief of Worldwide Television News was his first foreign assistant. (**VP** inversion)

Note that NP inversion poses a problem of identification. The pattern NP V NP can be canonical as well as non-canonical. As Birner (1996:42) notes, this category has to be included into the definition range of possible inversion types, as there is no logical reason for the non-occurrence of NP inversion. The difference between canonicity and non-canonicity of the pattern NP V NP is sometimes said to be recognizable in the distribution of definite NPs/indefinite NPs. In case an indefinite NP precedes a definite NP, the sentence is likely to represent an NP-inversion. The example in (108) could also be accounted for by arguments on the principle of end-weight (see section 1.4.3.).

(108) An example is the Malaysian government's enormous land development program.

So far, inversion has been looked at from two main angles. (i) The focus is either on linguistic production and usage conditions (on basis of real data), or (ii) the reason for the use of the variations is ascribed to internal linguistic competence of human beings (which is concerned with the mental design of grammars, see Prado-Alonso 2011:47). I will concentrate on examples from (i).

In general, inversion is regarded to be a means to structure and organize a sentence. This can be regarded from the perspective of weight, as seen above in the section on Hawkins' (1992) account. Hartvigson & Jakobsen (1974:11ff.) regard inversion as a means to effectively order the constituents following weight (complexity) considerations. As they distinguish between formal (syntactic complexity) and notional (according to information value) weight, one can refer back to the idea of communicative dynamism (Firbas 1964), mentioned in the general chapter on information structure. Hartvigson & Jakobsen ascribe a two-folded function to inversion. First, some element with small or no CD (notional weight) is preposed; in a second step the subject and the verb change places, also taking the (formal) weight into account. Put more simply, Penhallurick (1984) sees the aim of inversion as that of postposing a subject with a high degree of CD. This would agree with Hawkins' (1992) view, as inversion is used to ensure the most efficient processing possible, to facilitate the hearer's task. As most inversion sentences do order short before long constituents, this accounts for a majority of cases. The major difference between these accounts and accounts focusing on the information status of the constituents and the information structure of the sentence is the perspective on the target sentence. In an information structural perspective, the preceding and following context is taken into account in order to be able to make a statement about the information status the referent of an element has. In a weight-based approach the sentence is looked at in total isolation, one does not regard any context.

The notion of information packaging sees inversion as a special tool to accomplish the task of ordering a sentence following information-structural principles (Chafe 1976, Clark & Haviland 1977 & Prince 1981, Birner 1996, among others). The central definition of inversion, the one I will follow, is the one by Birner (1994:235): "[…] the logical subject appears in post-verbal position while some other, canonically post-verbal constituent appears in clause-initial position". Note that Birner (1994:255) strongly disputes the correlation between discourse-familiarity (given information) and subjecthood. The logical subject in an inversion mostly contains new information, as it is postposed from its original position. There rather is a strong correlation between sentence position and familiarity (Ward

1988); the position within a sentence is a better indicator on the possible information status of a referent (given or new) than is the role within a sentence.

As PP-inversion (locative inversion) is claimed to appear quite regular (in comparison to other types, a statement I accept and about which I will not make any claims throughout the analysis), the following sentence shows a prototypical example:

(109) There are huge cartons and tins of nuts, vanilla, honey, peanut butter [in the kitchen]. Varieties of herb tea are visible. On the counter are loaves – whole wheat, cinnamon raisin, oatmeal, rye, soy sunflower, corn meal.

The canonically post-verbal PP *on the counter* is moved to sentence-initial position, the logical subject *loaves* goes in post-verbal position. According to Birner, this structure is motivated by information packaging, namely by the speaker's desire to introduce familiar (kitchen setting – counter) information before unfamiliar information.

It is also frequently said that inversion fulfills a task deictic expressions and gestures perform in spoken language (Kreyer 2006:32, Webelhuth 2011). This can also be seen in (109) above, *on the counter* can be seen to point to where something is located. Furthermore, the concept 'inversion' is often connected with the notions of 'emphasis' (Emonds 1976) and counter-expectation'. Rochemont (1986) puts forward a different perspective; the approach regards inversion as a focusing device (also see Rochemont & Culicover 1990, Bresnan 1994). The PVNP is considered to carry a presentational focus; 'focus' here is understood as not c-construable (Rochemont 1986:174), which means it is not in the current context. These assumptions have been contested by examples in Birner (1994:236). All in all, one can say that there are functional/pragmatic approaches (Green 1980, Birner 1996, Dorgeloh 1997) to inversion and cognitive ones (e.g., Chen 2003). I will (only briefly) introduce the most prominent ones in chronological order (similar to Kreyer 2006).

Before entering the presentation of the approaches, let me add some comments on what is not regarded to be a proper inversion within my definition frame here. Biber et al. (1999:911) draw a distinction between subject-object inversion (or subject-verb inversion (Drubig 1988), full inversion) and subject-operator inversion (or partial inversion, subject-auxiliary inversion). As the terminology regarding inversion is not congruent (Green 1982:120), one has to make clear what counts as an instance of inversion and what does not (within the scope of my analysis). The ones excluded are (i) subject-auxiliary inversion (SAI) in (110), which is functionally distinct and requires another discourse context than full inversion does (Webelhuth 2011:83ff). I will further elaborate on the specific peculiarities below. Another type of inversion, (ii) quotation inversion in (111) is set aside entirely. For reasons see Birner & Ward (1998:157ff.).

(110) Rarely did I hear such overtones of gratitude as went into the utterance of this compound noun. (Green 1980:597)

(111) "May we play with her?" cheeped the yellow chicks. (Green 1980:583)

Biber defines full inversion as a construction "[…] where the subject is preceded by the entire verb phrase". Here, I will only regard inversion in main declarative clauses (also see Biber et al. 1999:926). Over time numerous constraints have been stated for inversion. To name some: It is claimed that inversion cannot occur in negated sentences, as one does not focus on something that is not there (Chen 2003:119ff.). At the same time transitive verbs should not be able to occur in an inverted sentence (for more see Birner's approach below). Finally, there is the auxiliary constraint, saying that felicitous inversion sentences only include full verbs (Birner 1996:54). In what follows I will present the most prominent opinions on inversion in order to make clear what the understanding in the present work is.

2.3.1. Functional account I

Green (1980) gives a very general definition of inversion. In her account she looks at all types of inversion and claims that inversion in general "[…] may be exploited for many purposes, ranging from facilitating fluent speech to creating a variety of rhetorical effects" (p. 583). She defines inversion as sentences where "[…] the subject follows all or part of the VP" (p. 583)[26]. She attributes four general communicative functions to inversion. The functions she identifies are for one the practical function, which is said to facilitate production (and comprehension) and is used for creating rhetorical effects. Green (1980:584) says that it is "[…] the most striking demonstration of this pragmatic exploitation of syntax". As an example she names live sports broadcasting, where inversions are very frequent in spoken language[27].

(112) Underneath the basket is Smith.

(113) Stealing it and then loosing it was Dave Bonko.

In both cases the logical subject (*Smith*/*Dave Bonko*) is in post-verbal position, while some canonically post-verbal element (*underneath the basket*/*stealing it and then loosing it*) is moved to sentence-initial position. The preposition *underneath* is the 'relator', which sets the scene locally. This is followed by the ground, the *basket*, which represents known information, as the hearer watches a basketball game. The 'related' then is *Smith*, the new information entered into the discourse.

Second, there is the connective function (Green 1980:30). This function serves as a connecting device in context and comes very close to the understanding Birner (1996) has of inversion with reference to information packaging. It is said to be frequently used in newspaper articles due to its conciseness.

[26] Note again that the examples where the subject only follows part of the VP are excluded from my definition. Green further includes quotation inversion as in (111), which is also out of my field of analysis. For details see Green (1980:583ff.).

[27] Note that my analysis does not distinguish between spoken and written language and does not attempt to make any qualified claims about which mode employes more inversted sentences.

(114) Dead were the pilot, Robert Conduff Jr., 38, Fort Hood, Tex., Theresa`s stepfather; her mother; […]

In the prior context of (114) an accident is reported. The next sentence is then inverted in order to connect the evoked information about casualties to the elaboration of who is affected. One could argue that theses instances of inversion clearly follow the principle of end-weight (Hartvigson & Jakobsen 1974, Hawkins 1992). According to Green, the core function of this word order alternation is not the shift of heavy NPs to the end of the sentence, but to provide a connection to the prior context with a preverbal predicate, here *dead*. With this the sentence is linked to already evoked information, following the principle of information packaging (for more see Green 1980: 587ff.), the ground (old information) prepares for the presentation of the new information (also see the Given-before-New Principle, Gundel 1988).

The third function is the introductory function, which often is referred to as the scene-setting function of inversion (e.g., Green 1980:589).

(115) In a little white house lived two rabbits.

Using the arguments of the connective function, this sentence is not supposed to be felicitous, as it is the beginning of a story, ergo there is no old information. Green argues that it is an absolute denotation of location; it states existence of this house and then relates it to its inhabitants. These kinds of sentences are especially present in narratives.

Finally, Green assigns an emphatic function to inversion. Examples are given in (116) and (117).

(116) Outside stood a little angel.

(117) Through the revolving doors swept Tom Pulsifer.

'Emphatic' stands for "[…] relating to expectation – and to its intensive suspense […]" (p. 595). It is described as a function of the discourse, as it introduces something unexpected by moving it to post-verbal position, as the *angel* in (116).

By doing so the writer puts emphasis on a constituent. Green also refers to it as a repairing device, as "[…] the resolution of some apparent disorder in the narrative structure" (p. 595). Of course, these functions all interact. See (116) with the context in (118).

(118) One night there was a tap on the window. Mrs. Rabbit peeped through the window. Outside stood a little angel. 'Your wish is granted', it said. 'A baby rabbit is on her way to you'.

The practical function of inversion can be seen in the fact that *through the window* provides the relator, *outside* is then the ground and *a little angel* is what it relates to. The connective function, too, is valid. *Outside* has been evoked in the prior context. It can be inferred from *peeped through the window*, as windows normally mark the outside of a building. The introductory function could be seen in the introduction of the new topic *an angel*. To conclude, inversion in Green's terms is a stylistic measure "[…] which allows the writer (or speaker) to make the subject NP longer, and thereby pack more material into the sentence" (p. 599). Although this approach is recognized as being a big step forward in the understanding of inversions, it has been criticized for not providing a generalization for the function of this construction (Birner 1996).

2.3.2. Functional account II

Inversion is often claimed to be a focusing device. Focus here is seen as the element carrying the newest, most important or salient information in the discourse (see also section 1.2.3.). This view is strongly held by Rochemont (1986). Bresnan (1994) holds it by saying that inversion has the function of presentational focus.

This idea of focusing on an entity by using an inverted word order is also pursued by Dorgeloh (1995, 1997), who provides another major functional approach I want to include in the picture. She claims that "[…] full verb inversion denotes all those constructions in which the subject follows all of its verb phrase, i.e. a full (lexical) verb or copular *be*" (Dorgeloh 1997:23). Note that Dorgeloh's account also includes SAI. However, she defines it separately (Dorgeloh 1997:23ff. and 190ff.). The account itself focuses on the claim that "[…] both types of inversion arise out

of reordering choices and are thus concerned with linearization, not to forget that they are historically related" (Dorgeloh 1997:2). She therefore generally adopts the definition of Green (180:583) namely "[…] the subject follows all or part of the VP", as already introduced above.

The overall function of inversion is "[…] a two-fold discourse function of establishing a viewpoint and supporting the organization of a discourse" (Dorgeloh 1995:224). The author assigns pragmatic functions to the construction, namely (i) topic change, (ii) structure building, (iii) introduction of a new topic, among others. Those will be illustrated below in the discussion of inversion types, which are defined purely from a functional perspective, not according to the fronted constituent. It is important to note that Dorgeloh includes *there*-insertion in general in the picture. However, she does not equate inversion and *there*-insertion, she merely regards them as being a related phenomenon. She gives examples that are clearly in my category THERE (see introduction); sentences like (119) and (120) will therefore not be regarded (as inversion) in what follows (for more see Dorgeloh 1997:20ff.).

(119) In the garden there was a man.

(120) After the bus there came many cars.

Dorgeloh provides us with an interesting classification that departs from the normal classification of inversion (NP-inversion, PP-inversion, etc.) and does not classify the function of the syntactic pattern according to the information status of the referents the preposed and postposed constituents stand for, but uses their discourse function for classification. The classes she identifies are (i) deictic presentative, (ii) lexical presentative, (iii) lexical predicative and (iv) anaphoric-cataphoric inversion (or prototypes). Additionally, she includes diachronic considerations, namely that English developed from a strict V2 language[28] (as German is), to a state where inversion is a matter of textual choice. In order to provide a consistent overview I will briefly explain the classes of inversion.

[28] In V2 (verb-second) languages inversion is considered an obligatory consequence of front shifting (Dorgeloh 1997:19).

Deictic presentative inversion is said to be the most restricted (also see Kreyer 2006). As (121) shows (from Dorgeloh 1997:68f), the initial sentence position is mostly filled with adverbs of local or temporal meaning that have a deictic function. The function ascribed to this type of inversion is to shift the focus of the addressee.

(121) Now is the time to consider the future of how Britain should be governed.

The ground (in the sense of initial position and natural salience, see Givón 1985), here *now*, is said to lack an actual reference point and can therefore only introduce subtopics, not entirely new entities (for more examples see Dorgeloh 1997:31ff.). The second prototype, lexical presentative inversion, is said to create a new ground that is only anchored to the general discourse. The main function of this type is therefore the introduction of new entities or entities that are not in focus. One use of this type is the procedural use, which can result in a "camera movement" (p. 110), or, as Drubig (1988:87) puts it, in a feeling that one is "[…] on an imaginary guided tour". One could also relate to the effect as "observer effect" (Kreyer 2006:203). These effects are achieved by locative inversion sentences like (122), from Dorgeloh (1997:110):

(122) You walk into a long, narrow foyer, leading into a smaller, squarer foyer, eating place, dinette-area. And to the right is my kitchen, and to the left […].

One could also refer to this as topic shift; it might be a rhetoric strategy to shift the attention from an inferrable entity towards a new topic. Some researchers, among which Dorgeloh can be positioned, assign a vividness-function to inversion (Bolinger, 1977, Drubig 1988 in Prado-Alonso 2011:55). Inversion is said to depend on the compatibility with a speaker-orientation (Dorgeloh 1997:102). This speaker orientation establishes a viewpoint and defines the perspective.

Topic change is another major function of the lexical presentative type of inversion. The example Dorgeloh introduces, here in (123), is said to (i) shift the topic from people leaving the country to other people *who have fled the draft*. In addition to

that, this inversion type is regarded as "structure-building" (Dorgeloh 1997:112) by "[…] expressing more or less complex relations among topics and managing the reader's attention accordingly" (also see Kreyer 2006:31ff.). It is also often said to serve discourse-focus management, as it changes the addressee's current focus of interest or attention.

(123) Several hundred thousand people have left the country to stay with friends or relations working abroad. On top of this are thousands who have fled the draft […].

Going into a similar direction is the third type, namely lexical predicative inversion. The difference lies in the more complex nature of the preposed constituent. It does not only introduce a topic but establishes a topic contrast (124) (see Dorgeloh 1997:34).

(124) These are shocking figures, but even more shocking is the fact that at least half of the people behind these crimes will go undetected.

It reflects the viewpoint of the speaker. The last prototype identified in this approach is the anaphoric/cataphoric type, exemplified in (125), from Dorgeloh (1997:35):

(125) Czech and Polish musicology have fairly long traditions and very high standards, as indeed has Soviet musicology, […].

Anaphoric and cataphoric adverbs as *as* can be seen to resemble deictic adverbs as *here* (see above for deictic presentative inversion). The resemblance stems from their property of being a link to the point of discourse they occur in. They can therefore not establish a totally new ground (Kreyer 2006). Concluding, Dorgeloh (1997:189) states that "[I]nversion attaches a particular perspective or prominence to a predication, or to an individual item within it, and is thereby apt to structure the discourse into units of one viewpoint in time".

Dorgeloh therefore adds a new perspective by taking into account the bigger picture of discourse topic as she regards the speaker to be the experiencer, architect (of discourse structure), and commentator.

2.3.3. Pragmatic account

The views of Birner are central to my analysis. I will therefore introduce her notion of the information packaging function of inversion, namely the preference to introduce old information before new information (also see Chafe 1976 and section 1.4.2.). The function of information packaging assigned to inversion makes a general claim for all inversion types and is independent of its single functions and can therefore be applied to any text, disregarding the genre. This complies with the present thesis, as it is not interested in the text type that prefers inversion most, but in the features that trigger the use of PP-inversion and the function these sentences have in discourse in general.

As mentioned above, Birner's definition of inversion is that the logical subject appears in post-verbal position while some other, canonically post-verbal constituent appears in clause-initial position (see Birner 1996:12). About former approaches Birner (1994) states that these attempts mostly ascribed functions to inversion based on intuitive and unclear notions. The goal, however, should be to find a general function of inversion, a generalization on when and under what circumstances inversion is employed.

Due to the pattern in her data, Birner (1996) assigns an information-packaging function to inversion, which helps the speaker to avoid presenting unfamiliar information before familiar information. The benefit of that is a linking function that connects unknown information to the context. In order to give a general rule, Birner (1994, 1995, 1996) and Birner & Ward (1992, 1993, 1998) introduce a relative discourse constraint on inversion that states that the referent of the preverbal element must not be newer in the discourse than the one of the postposed constituent (also known as the 'pragmatic constraint', Birner 1994:245). This can result in a sentence like (126) from Birner & Ward (1998:158), where the referent of the preverbal element is evoked information (represented by the pronoun *it*) and the post-verbal constituent represents information that is totally new (*Archie Campbell […]*). This would meet the requirement Penhallurick (1984) and Givón (1993) express, namely that (logical) subjects in inverted sentences have to be new.

This additionally harmonizes with opinions on inversion as a focusing device (e.g., Rochemont 1986, Chen 2003, etc.).

(126) To the left of the altar one of the big wall panels with rounded tops opens, it is a secret door like in a horror movie, and out of it steps Archie Campbell in a black cassock and white surplice and stole.

However, as we are dealing with a relative constraint, the preverbal element is allowed to represent new information in case the post-verbal element also does, for example at the beginning of stories. Green (1980) accounted for these examples by assigning the type of inversion a separate function, the introductory function, repeated here in (127).

(127) In a little white house lived two rabbits.

The combination of old information in preverbal position and old information in post-verbal position is also allowed. However, one might wonder where the communicative content might be in those kinds of sentences. One such example appears below (Birner & Ward 1998:165):

(128) Yes, this is no ordinary election day. 'Evans is a democrat. Daley is a democrat. Different Democrats have different points of view about the city of Chicago and its politics,' Jackson noted. 'The war between forces within the party continued, and within our coalition.' Standing in the middle of it all is Jesse Jackson.

In (128) *it all* (the war) and *Jesse Jackson* are both evoked, therefore old information. However, as the authors claim, *it* is even more evoked, even more salient than *Jesse Jackson* and therefore permits inverted word order. One could see cases like that as summation function of inversion. According to Birner (1996) and Birner & Ward (1998), the only combination that necessarily results in an infelicitous inversion is if the referent of the preverbal element has not been introduced before, although the post-verbal NP represents evoked information. This is illustrated in example (129), adapted from Birner & Ward (1998:167).

(129) They have all these pots in the kitchen, and *in a great big tank are sitting all of the pots.

In order to connect this excursus to what has been talked about in previous chapters, this relative constraint can be practically specified by using the taxonomy of assumed familiarity by Prince (1981), laid out in section 1.2.1. In order for an inverted sentence to be felicitous, the preverbal constituent may never range lower than the post-verbal element, measured on the hierarchy Prince (1981:245) postulates:

Evoked > Unused > Inferrable > Cont. inferrable > Brand-New Anchored > Brand-New

As Webelhuth (2011:83) adds, the logical subject must not be an anaphoric pronoun, which can be seen as a direct result of the relative constraint. The constraint just mentioned would only allow for a pronoun in subject position in a case where the preverbal position is also filled by an at least equally evoked or contextually activated pronoun. A sentence exemplifying this does not come to mind.

As Kreyer (2006:28) points out, there are also examples that raise doubt about Birner's theory. In an example (Birner 1996:86), here (130), *most immediately affected* is said to be inferrable, whereas *Nusseibeh* is textually evoked.

(130) Nusseibeh's unusual predicament causes concern all around. His friends fear that Arab hard-liners will turn on Nusseibeh thinking he is an Israeli ally. The Israelis, who certainly want to squelch the 17-month-old uprising in the West Bank and Gaza Strip, are under intense pressure from the United States not to jail moderates who mayfigure in their election proposal for the territories occupied since the 1967 war. Most immediately affected is Nusseibeh himself.

According to the claim that the preverbal element is never to be of higher rank[29] than the post-verbal constituent, this example clashes with Birner's constraint. Birner (1996:95) explains this away by pointing out the binary nature of inferrables (see 1.2.1.). Prince (1992:309) mentions that "[…] they are technically Hearer-new and Discourse-new but depend upon beliefs assumed to be Hearer-old [… and upon] some trigger entity which is itself Discourse-old". Additionally, as Kreyer (2006) also highlights, inferrables and evoked entities "[…] behave as members of the same class" (Birner 1996:95). Therefore, *most immediately affected* may be classified as inferrable in the sense of discourse-old, it then levels with the discourse-old entity *Nusseibeh* and the sentence is hence felicitous. Birner (1992) and Birner & Ward (1993) also state that inferrables are to be regarded as old information in inversion. This was only meant to make the reader aware of conflicting cases and the controversial status of inferrables, as the classifictaion is said to be very subjective. Varying interpretations may lead to different results. I will come back to this in the section on the outcomes of the analysis.

As one can see so far, the approaches by Birner (1994, 1996) and Birner & Ward (1998) are the ones that generalize most. Green (1980), Dorgeloh (1997) and all others have tried to define specific functions the inversion construction serves. However, there is another perspective from which the construction can be regarded, namely from the cognitive point of view.

2.3.4. Cognitive account

So far, I have presented mostly pragmatic ideas. One very interesting more recent approach is the cognitive one by Chen (2003). He gives the following definition: "Full-verb inversion is herein defined as having two characteristics: i) a constituent of the predicate, which can be of any grammatical category, is placed preverbally; ii) the subject nominal is placed post-verbally" (p. 3). Inversion is therefore seen as a means of conceptualizing and representing reality (Chen 2003:113). His approach includes a model of prototypes; the most central prototype is locative inversion. The concept can be located within the psychological field of 'Gestalt psychology',

[29] As referring to the hierarchy 'Evoked > Unused > Inferrable > Cont. inferrable > Brand-New Anchored > Brand-New'. Brand-new is understood as being of higher rank than inferrable, for example.

following the ground-before-figure (Gbf) idea (also see Givón 1983:12ff.). Constituents are ordered to ensure cognitive efficiency; the preverbal element of an inversion is said to function as navigational directions for the hearer (see Chen 2011:52). This means that a 'common ground' leads to a 'figure' via a 'landmark', which anchors the ground; what results from that is a focus shift. One of his famous examples is the direction of the hearer's attention to a specific cloud in the sky (in my words).

(131) Look outside the window. Over there, above the chapel on the hill is a cloud shaped like a unicorn.

In a situation where it is impossible to point out the intended cloud by just referring to *that cloud over there* due to the mass of clouds in the sky, one needs to direct the hearer from a ground *above the chapel on the hill* via a clearly identifiable landmark, *the chapel on the hill*, to the figure *a cloud shaped like a unicorn*. The ground is recoverable from context or otherwise known. The figure represents the new information and, at the same time, the entity the speaker wants to refer to. The landmark anchors the ground; therefore it has to be established. As Chen (2011:52) remarks, the figure typically is the topic of the following sentence (topic in the sense of 'what the sentence is about'). Following the given-before-new-concept (Gundel 1985), he also states that the ground always has to precede the figure (from the perspective of moving from general to specific). Inversion is "[…] a linguistic instantiation of the Gbf model", […] inversion offers speakers a unique means of representing events [...]" (Chen 2003:38).

Interestingly, the various types of inversion are not equally valued parallel phenomena, they are ordered in a system of prototypes, where the locative be-inversion (LOCBE) (see Birner & Ward 1998 for the important role of *be* in inversion sentences in section 2.3.5. below) is said to be the central prototype. This categorization into locative or directional, etc. is reminiscent of Drubig (1988), who establishes three classes of full inversion, namely (i) inverted locative construction (132), (ii) inverted directional construction (133), and (iii) inversion of participles and adjective phrases around *be* (which will be neglected here due to a missing PP). Examples are borrowed from Drubig (1988:83).

(132) On the left was the Mediterranean.

(133) From the foundry came the horrible, slow clang, clang of iron, a great noise, with an interval just long enough to make it unendurable.

All other types of inversion are gradually extended from the prototype LOCBE. As inversion is a means to represent reality, the locative description, the most direct way to refer to reality, constitutes the most basic type. I will illustrate this briefly in what follows.[30] An example given in Chen (2003:56) is (134); a systematic illustration that includes all types of inversion is given in figure 5.

(134) On my left was Tom Lopez.

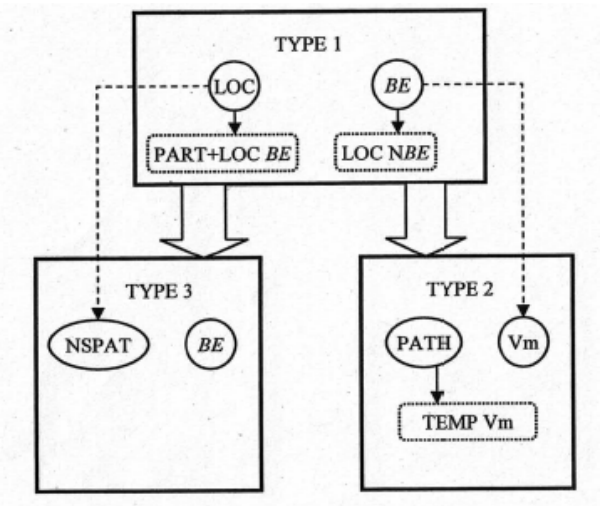

Fig. 5: Inversion Types, Chen (2003:100)

In figure 5, the left-side extensions are the ones that affect the preverbal constituents; they influence the ground, affect the preverbal position (see Chen 2003:100). The explanantion will start with the right side, which indicates changes in the verb. The smallest change is the one from LOCBE to a locative inversion involving a verb other than *be* (135). Another possibility is to switch the static relation of *be* to a dynamic process by using a verb of motion. This type is then

[30] This view gives further legitimacy to my choice of LOCI as the central construction for the present thesis.

referred to as PATH Vm (136), including a verb of motion. A variation from that is TEMP Vm, where the spatial domain is turned into a temporal one (137).

(135) On my left sat Tom Lopez.

(136) Into the ally rushed Lopez.

(137) First came the embarrassment: Now comes the challenge.

The last type identified is NSPAT BE, standing for a non-spatial (non-locative) PP inversion with *be*.[31]

(138) Among the reasons for its selection was the existence of this particular facility.

To sum up, Chen (2003, 2011) sees the function of inversion in marking a focus (which is considered to be presentational or contrastive). It further signals counter-expectation (this was shown in Dorgeloh's (1997) account, too); he also acknowledges the functions Green (1980) identified, namely the introductory, practical, emphatic and connective function of inversion. Although inversion is a tool to mark focus, it is also seen as a tool to defocus an entity by moving it to the ground (which is first in the center of attention, but is then quickly removed from attention by the introduction of the figure). Chen also follows Hartvigson & Jakobsen (1974) and Hawkins (1992) in their adaption of the end-weight principle. The postverbal NP is said to always be the heaviest constituent. At the same time it is also the one introducing new information (see Birner 1996, among others). Inversion in general is regarded as a tool for cognitive efficiency; the preverbal element of an inversion provides navigational directions for the hearer (Chen 2011:52).

However, he also criticizes prior accounts, especially the one by Birner (1996). Information packaging is a means to structure the information flow in discourse.

[31] Please note that I will check all these types with my data. Of course, this is only possible for examples involving a PP.

The difference between the accounts is illustrated by the following examples; example (139) is taken from Birner (1996:84).

(139) Turn left on Bainbridge. Then right on your left will be a church. Just buzz.

In Birner's account the preverbal constituent *on your left* is inferrable due to the use of *your*, referring to a person introduced into the context. *A church* is treated as discourse-new. Chen, on the other hand, says that this sentence is presented in inverted order since the speaker wants to present the ground *on your left*, which is anchored in the discourse physically (in relation to the hearer), before the figure *a church*. To facilitate this one can use a landmark, as the hearer does not know the destination (as the directions are given). "[…] it presents ground anchored with a landmark first, helping the hearer to start his search for the destination from this landmark" (Chen 2003:114). This is said to mirror the actual cognitive process one undergoes when trying to locate an unknown entity. With this perspective Chen claims to be able to account more elegantly for inversions that are regarded to be infelicitous in Birner's account. (140), however, is infelicitous for both approaches, the argumentation on why this so, however, differs (from Ward et al. 2002:1368).

(140) They have a whole bunch of pots in the kitchen. *And in a great big tank are sitting all these pots.

Birner (1996) and Ward et al. (2002) regard the underlined sentence to be infelicitous as the preverbal constituent displays new information, whereas the PVNP is evoked. In the Gbf-account this also is infelicitous, but not due to the relative information distribution, but due to the fact that the ground of the sentence, *in a great big tank*, is not properly anchored. For other cases that cannot be explained by information packaging, Chen claims to have a solution. In the following example (Chen 2003:115), the referent of the preverbal constituent is not as recently evoked as the information represented by the PVNP is, it would therefore have to be infelicitous, according to Birner (1996), Birner & Ward (1998 and Ward et al. (2002).

(141) The pot bubbled and bubbled. After a while, the little old lady said: "This soup is cooking fast." "It is cooking fast now," said the hungry young man. "But it would cook faster with some onions". So the little old lady went to thegarden to get some yellow onions. Into the pot went the yellow onions, with the round gray stone.

For Chen the preverbal constituent *into the pot* anchors the ground (the path of the figure *yellow onions*) with *the pot*, which has been evoked. The reader can therefore "[…] search the ground, where she finds the figure, yellow onions, going into the pot" (p. 115). This sentence therefore displays Chen's type 2, the extension of a static locative inversion with a non-*be* word to a dynamic path-denoting non-*be* locative inversion. The Gbf-model is said to be more flexible than the information packaging account, as it is based on cognitive processes, not so much on the actual constituents on the text level. For Chen, constituent ordering is an absolute rule according to cognitive prerequisites. Birner's account is said to be one of preferences, of general tendencies. According to Chen, the speaker is said not to be led by these rules entirely, it is a possibility that results in a better way to order familiar and unfamiliar information; his account therefore often overlaps with Birner's account.

To conclude the section on Chen (2003), information packaging is not assumed as an underlying principle for inversion, it is seen as an effect or consequence of the Gbf-model. Chen acknowledges that most inversion examples actually follow information-packaging principles (referents of preverbal entities may not be newer than the ones of the PVNP), as the ground should be anchored and the figure should not be known to exist in the ground (see p. 115).

After having presented various approaches to inversion, I do not want to leave out Kreyer's (2006:84) opinion. In his comprehensive account he claims that inversion "[…] guides the reader through the text". Kreyer shares the view form Drubig (1988) and Dorgeloh (1997) that the addressee is part of the narrative, triggering an "eye-witness effect perspective" (p. 203). In general, the inverted sentence is said to be prominent, it can be used for certain effects. In his view both syntactic complexity and information status have their role; syntactic complexity is

concerned with a clause or sentence in isolation. The information status of a constituent relates to the preceding discourse. A third level he identifies is the text structure, which is concerned with the function of inversion as a connective item. It involves both the preceding and the following discourse (Kreyer 2006:84). He sees this as being part of the rhetorical structure of the text (p. 93). Inversion is used as a structuring device on the text level. Rhetorical Structure Theory, as proposed by Mann & Thompson (1988), assumes a speaker-intention based approach. The idea comes from computational linguistics to provide characterization of text relations. "RST's initial goal was the development of a theory that could aid in automatic generation of texts. It was also meant to be a general theory of how text works, and how coherence in text is achieved" (Taboada & Mann 2006:429). It claims that coherence is what gives the text its function, it is not so much based on production and comprehension; the relation between constituents is seen as being central. Every constituent is said to have a special and clearly identifiable function, the order of constituents is majorly based on the intention the speaker has, the effect s/he wants to provoke. One could argue that the approaches by Dorgeloh (1997) and Chen (2003) (although claiming that inversion provides a navigational help for the hearer) also highlight the speaker intention when choosing a certain construction type, as the intention is always driven by optimal understanding.

As all of the presented approaches have their advantages, but also bear problems, I want to test all those claims empirically and filter out the ones with the highest predictive power.

2.3.5. Verbs in inversion

As my analysis also takes the verbs involved in inversion into account (following Levin 1993), I want to make some remarks on that. Emonds (1976) claims that (especially in PP inversion) "simple verbs", meaning verbs in simple present and simple past (in Coopmans 1989:729), are involved in inversion. According to Birner (1995), inversion only allows for intransitive and copular verbs (also Biber et al. 1999:911ff, Chen 2003:134ff.). More specifically, Bresnan (1994, among others) emphasizes the syntactically intransitive and locative/directional nature of the verbs (other than *be*) in locative inversion (also see Coopmans 1989:731ff. for a

detailed characterization of this class."). If this is not the case, the inverted sentence is said to be infelicitous, as illustrated in the following example with the transitive verb *push* (Chen 2003:134).

(142) *Through the revolving door pushed Tom Lopez Mary Davis.

As Webelhuth (2011:85) shows, verbs can be syntactically de-transitivized by selecting the passive voice. Then, inversion (here: LOCI) becomes possible. However, this type of sentence is disregarded in my analysis, I only consider active, declarative main clauses.

(143) Through the revolving door was pushed Mary Davis.

Coming back to the constraint on the locative/directional nature of the verb, Birner & Ward (1998:187) give a counterexample. In example (144) the verb is not necessarily locative or directional; the PP inversion still is felicitous. This will be evaluated in my data later on.

(144) Against the greatest odds will surface the greatest story of survival.

The only possibility for a transitive verb to appear in an inversion is in subject auxiliary inversion, which is excluded from my definition of full verb inversion (this will be argued below in section 2.4.). For Penhallurick (1984) verbs of appearance and existence are allowed. Verbs of emergence or existence are also said to be regularly found in full inversion (Biber et al. 1999).

Birner (1996) and Birner & Ward (1998:183ff.) suggest a division into '*be* inversion' (example (145), involving the verb *to be*) and 'non-*be* inversion' (example (146), involving a verb other than *to be*) due to syntactic and semantic differences. Non-*be* inversion is said to be more constrained and limited to a finer function range. These claims will be examined in what follows.

(145) The most visually enticing selection is the chocolate "delice": a hatbox-shaped dessert made of dark chocolate and filled with berries and white chocolate mousse. Surrounding the creation is a mosaic of four fruit sauces.

(146) From the lips of the cab driver came an enlightened expression that I thought should be shared.

They state that in all examples (in Birner's corpus of about 1.800 sentences) about 97% of non-*be* inversions involve a locative preposition, this applies to only 29% in *be*-inversion. Non-*be* inversion very rarely applys to non-PP inversion (mostly locative), whereas *be*-inversion also accepts fronted constituents other than PP and is therefore open to a wider variety of contexts.

Birner & Ward doubt that syntactic or semantic classification is the key to understand which verbs are allowed in an inversion and which are not. Birner (1995) and Birner & Ward (1998) claim that the verb is sensitive to a similar pragmatic constraint the preverbal and postverbal constituents in an inversion are sensitive to. This means, the verb is not allowed to introduce new information into the discourse. Inversion is therefore not restricted to verbs of appearance and existence. It is more important that the lexical content is evoked or inferrable. All in all, *be*- and non-*be* inversion are supposedly different semantically and syntactically, yet they both underlie the pragmatic limitation that the verb is not allowed to carry new information. For *be*-inversion it is also claimed that *be* is an informationally light verb (Hartvigson & Jakobsen 1974), that it does not contribute any meaning to a sentence, "[…] provides no more information than would, say, a colon in the same context" (Birner & Ward 1998:190). An example is given in (147, NP-inversion):

(147) An excellent appetizer is the squab ravioli with garlic sauce.

Although this is a very narrow definition, Birner & Ward (1998:191) agree that verbs that appear in an inversion have to be evoked or inferrable, either from prior context (including the preverbal NP) or even from the postverbal NP in cases where the verb and the PVNP are very closely connected. An example for the first is (148), *lay* can be inferred from *coiled on the floor*, as this implies something lying on the floor. Sentence (149) shows the latter, the verb (*sprout*) does not contribute new information to the context due to the PVNP, *whiskers* (also see Levin & Rappaport Hovav 1995).

(148) He opened the door and took a folded canvas bucket from behind the seat. Coiled on the floor lay a one-hundred-and-fifty-foot length of braided nylon, […].

(149) The giant leader roared and shouted and cheered on the guests. Beneath the chin lap of the helmet sprouted black whiskers.

Additionally, the inverted sentences must not be negated (as mentioned above, also see Webelhuth 2011, Chen 2003); one cannot make a statement on something that does not exist. Bresnan (1994:88) explains it in more detail. In her terms, the sentence may not be negated (150), a phrase, however, may be (151).

(150) *On the wall never hung a picture of U.S. Grant.

(151) On the wall hangs not a picture of U.S. Grant but one of Jefferson Davis.

One last constraint in this context is (as brought forward by Bresnan 1994) that the verb has to be unaccusative. Opinions differ on that; some argue that the verb may be unergative (e.g., Levin & Rappaport Hovav 1995). Example (152) is felicitous, as it involves an intransitive and unaccusative verb. (153) shows the opposite.

(152) Among the guests was sitting my friend Rose.

(153) *Among the guests was knitting my friend Rose.

Unergative verbs, as in (154) are possible, according to Levin & Rappaport 1995:224):

(154) On the third floor worked two young women called Maryanne Thomson and Ava Brent, who ran the audio library and the print room.

Holler & Hartmann (2012:242) state that such sentences are acceptable in case the logical subject is significantly longer/heavier.

2.3.6. *There*-insertion with PP-preposing vs. locative inversion

There is disagreement in the literature on whether *there*-insertion with PP-preposing and locative inversion are only two instances of the same construction. If they were congruent, they should be in free variation or stand in complementary distribution. My aim in what follows is to make clear that there is a difference between locative inversion and *there*-insertion with PP preposing, a difference that has been highly debated over the years. As both look very much alike structurally, this has been subject to intense discussion. Green (1982), for example, has a very broad understanding of inversion. In her terms existential *there*-insertion is not a separate construction, it is a subtype of inversion. Biber et al. (1999:854) give an example that includes an existential *there*-sentence (which I mark with **{}**) and a locative inversion (which I mark with **[]**).

(155) **{**Behind the sundial there were a few trees, some of them in flower**}**: a small path led into their deceptive shallow depths, and **[**there, in a hollow a few yards from a high brick wall that bordered the garden, stood a sculpture**]**.

Hartvigson & Jakobsen (1974) and Erdmann (1976) state that two constructions seem to be functionally equivalent, as they both make sure that thematic information precedes rhematic information. Prado-Alonso (2011:35) defines *there*-insertion as "[…] those cases in which expletive *there* occurs immediately in front of the verb phrase". It is claimed that both [inversion and *there*-insertion] differ only in the presence or absence of *there* (Penhallurick 1984). Coming back to the already introduced notion of communicative dynamism (CD), *there*-insertion and inversion are both said to secure the optimal distribution of CD, meaning the constituents with low CD are moved to the beginning of the sentence and the ones with a high degree of CD to the end (see Hartivgson & Jakobsen 1974, Breivik 1981).

Contrary to these theories, I think that Birner & Ward show convincingly that [locative] inversion and *there*-insertion [with PP-preposing] are not merely two forms of the same general pattern. Birner & Ward (1998) identify cases were the

two constructions both work, examples (156) and (157) (Birner & Ward 1993:27), and others were they are not alternatives for each other, as in (158) and (159), as well as in (160) and (161), also from Birner & Ward (1993:34)[32].

(156) In the garden there was a parrot.

(157) In the garden was a parrot.

(158) Georgia's protective surplus stands at $9 million, the lowest level in 15 years. "That would run the state government for about six hours," says Clark Stevens, director of the Governor's office of planning and budget. In even worse shape is Mississippi, which is looking at a $120 million deficit in fiscal 1984, despite $250 million in pared spending.

(159) […] *In even worse shape there is Mississippi […]

(160) Now way out front with the ball is Brenner.

(161) *Now way out front with the ball there is Brenner.

The major distinctive feature, according to Birner & Ward (1993, 1998), is that postposing/*there*-insertion is subject to an absolute constraint on the PVNP, whereas inversion is constrained by a relative constraint that relates to the preverbal element as well as to the PVNP. In (156) and (157) this does not pose a problem, as both fulfill the respective constraints. Example (156) demands that the PVNP be hearer-new (existential *there*-insertion), which it is. Example (157) only requires the PVNP not to be older than the preverbal element. As both can be considered discourse-new (in case there is no prior discourse), the sentence is felicitous. For (158) only the inversion is felicitous, as *in even worse shape* is discourse- (and hearer-) old information followed by discourse-new information, *Mississippi*. As the existential there-insertion requires a hearer-new element as PVNP, (159) and

[32] Unfortunately, the authors do not give an example with *there* that is infelicitous without *there*.

(161) do not turn out felicitous. All in all, *there*-insertion and inversion differ formally and functionally. They require distinct context for felicity.[33]

As a conclusion Birner (1996:29) states:

> Since locative inversion and there-insertion with a preposed locative are neither in free variation nor in complementary distribution, it seems likely that they are distinct constructions governed by distinct sets of rules, resulting in a partial overlap of context of application.

In general, verbs of existence and appearance (Breivik 1981), as in (162), verbs of spatial configuration, as in (163), or verbs of inherently directed motion are said to be compatible with *there*-insertion (congruent with Birner & Ward 1998). In the case of motion verbs, the direction and manner have to be specified; otherwise the result is infelicity, as in (164). (I will not further elaborate on this, examples given are from König & Gast 2012:204):

(162) There appeared a ship on the horizon.

(163) There stood an angel.

(164) *There ran a little boy in the yard.

Chen (2003, 2011) contributes an interesting perspective to the functional range of that construction. According to Chen (2011:50), the existential reading of *there* exists only when it is placed to the left of the verb. It provides a ground and therefore helps to present the figure, the new information. It is regarded as the default representation of Gbf. Remember that in Chen's model something is presented by leading the hearer from a ground (mostly old information) anchored by an established landmark to the new entity/entity in focus, the figure. However, in cases where there is no established landmark, *there*-insertion provides a possibility to express the proposition (from Chen 2011:56):

[33] My analysis will provide additional empirical support for the position that the the two constructions fulfill different functions, they are not exchangeable; the features that decide whether to use LOCI or THERE, although similar, clearly show differences.

(165) What a party! There was a unicorn in the room.

Here, the hearer knows about the party, but not about the room. The landmark is therefore not there to anchor the ground. A sentence like (166) would result in infelicity.

(166) What a party. *In the room (there) was a unicorn.

By using (165) one is released "[…] of the obligation to anchor the ground with anything in the discourse context, as *there* draws your attention to the mind, the site of conceptualization in which anything can be anchored" (Chen 2011:57). This is one reason for Chen why inversions do not function too well as discourse starters. Another major advantage *there*-insertion is said to have is that it is allowed to occur with negated verbs, which inversion is not (see section 2.3.5. above).

Chen (2011) therefore also sees *there*-insertion and inversion as two distinct constructions. Note that in his opinion *there*-insertion is the default word order, namely an order that can express everything. Inversion is more specialized As Birner noted too, there are sentences that can be expressed by inversion as well as by *there*-insertion (above with PP-preposing). In these cases Chen assigns stylistic differences.[34]

2.3.7. Some final remarks on locative inversion

Inversion has often been reduced to locative inversion (which, again, makes this specific type of inversion very interesting for analysis). For explanation, Bresnan (1994:75) states "[that] the term 'locative' [is] used to subsume a broad range of spatial locations, paths, or directions, and their extensions to some temporal and abstract locative domains, as warranted by corpus-based studies of locative inversion". Additionally, one should be aware of the large range of names that PP-inversion has been given. To name two of them, there is 'focus inversion' (Levine 1989) and 'stylistic inversion' (Culicover & Levine 2001).

[34] Inversion is regarded as a dual-focus construction, whereas there-insertion is a single-focus construction.

I have already mentioned that locative inversion is seen as a central or even a prototypical type of inversion; that provides further arguments for the choice of the construction in focus for the present dissertation. For Green (1980), LOCI is prototypical for the functions she describes. The practical function in sports live-broadcasting, for example, is always concerned with location. For Birner (1996), LOCI is almost always required when using a non-*be* verb (in 97% of her examples). Chen (2003) even assigns the prototype role to LOCI; all other types are derived from LOCI with the verb *be*. LOCI is also said to be used to replace deictic gestures in written language (Webelhuth 2011), the function of presentational focus is highlighted repeatedly (for example Bresnan 1994, Holler & Hartmann 2012).

Concluding, I want to stress the so-called "immediate observer effect" (or "Displaced-Speech effect") by Drubig (1988) again, which has already been touched upon above in the Functional Approach II. This is also often referred to as the "camera-movement effect". Generally, LOCI is quite frequently found in situations like eyewitness reports, sports broadcasting, apartment descriptions, route directions, sightseeing guides, and scenic narrative situations (Webelhuth 2011:99).

The next section will summarize the syntactic patterns that are excluded from my analysis. This is necessary, as many accounts do not apply the narrow definition I follow in this dissertation.

2.4. Excluded from the analysis of inversion

There are some constructions that at first sight seem to belong to the class of LOCI or inversion in general. However, they are excluded here. This thesis is mainly following the understanding by Birner (1996) (and similar publications). First of all, I only consider full verb inversion in active, declarative main clauses. Questions and imperative sentences therefore will not be considered with regard to this thesis. This distinction is not sufficient yet, as there are constructions that fulfill the prerequisites of including a full verb and being a declarative main clause. In what follows, I will explain why certain constructions are excluded from my analysis and elaborate on the reasons for exclusion. As elaborated on in section 2.3.6., *there*-insertion is also excluded. As I have laid out the reasons in detail before, I will not comment on this construction in what follows.

2.4.1. By-phrase passive

The definition stated for inversion (repeated here) is: The logical (= canonical) subject appears in post-verbal position while some canonically post-verbal argument of the verb appears in preverbal position. In (167) this is fulfilled, however if feels different.

(167) The mayor's present term of office expires Jan 1. He will be succeeded by Ivan Allen Jr.

The reason for that is that (167) does not display an inversion, the sentence is what is called a 'by-phrase passive' (note the restriction to clear passives containing a syntactic subject, auxiliary *be*, a passive verb form, and a *by*-phrase, and for which there exists a grammatical active variant). This construction is also constrained pragmatically, namely "[…] the syntactic subject must not represent newer information within the discourse than does the NP in the by-phrase" (Birner & Ward 1998:194). It therefore fulfills the same information packaging function assigned to inversion, and, as Givón (1993) states, the entity represented by the *by*-phrase NP in a passive clause is the agent and is less topical (in the sense of evoked information) than the entity represented by the syntactic subject (also see Biber 1999:935ff). The crucial distinction lies in the fact that inversion and the *by*-phrase passive are said to be in complementary distribution, meaning that in case one can employ inversion, the use of the *by*-phrase passive is impossible/infelicitous and the other way around. There is therefore no canonical sentence for which inversion and the *by*-phrase passive represent equally valid alternatives. The verb carries another distinctive feature. Whereas inversion only works with intransitive verbs (see above), the *by*-phrase passive may only involve transitive verbs, as in (168).

(168) America was discovered by Columbus.

2.4.2. Verb-auxiliary inversion

Verb-auxiliary-inversion is the third construction type not considered to be in the realm of my definition of locative inversion.

As already mentioned in section 2.3., the inversion examples I count to be part of my definition are examples of full inversion. This means, that the postposed subject has to follow the main verb. In subject-auxiliary inversion (SAI) this is not the case. I gave example (110), here repeated as (169).

(169) Rarely did I hear such overtones of gratitude as went into the utterance of this compound noun.

In (169) only the auxiliary comes before the subject. The main verb follows the subject. For clarification, (170) shows an example that perfectly fits my definition, as the auxiliary verb and the main verb precede the subject.

(170) Performer offers to cause the card to penetrate the deck and thehandkerchief and come out on the table. But when he lifts the bundle, nothing has happened. He tries again and this time, on top of the folded hanky is seen the imprint of the selected card!

As there are numerous accounts on the function and the nature of SAI in general, I refer the reader to Dorgeloh (1997), Biber et al. (1999) and König & Gast (2012) for more information.

2.5. Constraints in summary

As, again, my thesis is largely based on the assumptions offered by Birner (1996), this chapter will conclude with an overview of the constraints formulated for all possible word order alternations just presented (also see Birner & Ward 1998 and Ward & Birner 2001). In the preceding sections I provided an overview over the most influential accounts of inversion (at least for my purpose) and clarified my understanding of inversion and *there*-insertion. In what follows, in the data section of this dissertation I will include German in the picture. As English and German are typologically distinct (but also bear numerous similarities), those differences and

commonalities will generally be considered. After that, my analysis will be presented.

	Information statusof the preposed NP
Inversion	Relatively familiar in the discourse
***By*-phrase passive**	Relatively familiar in the discourse
Preposing	Discourse-old
Left-dislocation	Hearer- or discourse-new

Fig. 6: Constraints on the preverbal NP

	Information status of the postposed NP
Inversion	Relatively unfamiliar in the discourse
***By*-phrase passive**	Relatively unfamiliar in the discourse
Existential *there*-insertion	Hearer-new
Presentational *there*-insertion	Discourse-new
Right-dislocation	Discourse-old

Fig. 7: Constraints on the postverbal NP

3. Corpus Study

3.1. Conception

The present empirical study is based on corpus data and pursues the goal to identify structural and stylistic preferences that English and German have, measured against possible deviations from the canonical (or default) word order. The analysis tries to determine the conditions under which the non-canonical constructions in focus are used by employing statistical methods of evaluation. By analyzing a representative dataset I try to identify general patterns of preference that underlie the structural equipment of a language. This cannot be undertaken for languages in general, examples from individual languages have to be examined; these results can then be directly compared. Non-canonical constructions are a very good indicator of the structural characteristics or preferences languages have. Looking at the conditions under which the speaker uses a NCC and comparing it with the prerequisites for the use of their canonical counterparts makes it possible to infer general use preferences. To understand what the use of NCCs is triggered by gives a hint about what features (or factors) a language is sensitive to regarding its word order. Through the parallel analysis of two languages one can compare the factors that favor the use of NCCs and infer similarities and differences, between the constructional inventories. The field of translation is a good example of the predicament of not having a clear picture of the functions and use conditions of patterns that deviate from the basic word order. This lack of knowledge results in the inability to convert a NCC in L1 (and with it, its specified functions) into the respective construction in the target language L2 (which may be structurally totally different on the surface). It is not sufficient to identify the use conditions of a certain construction in the source language (L1). One has to find out how the functions of a construction in L1 are to be mapped onto the target language (L2). It is far from being clear whether it is only the surface structure that includes the pragmatic function in general (and can therefore be 'copied') or whether the function is carried by different patterns throughout different languages. For one, not all languages have an equivalent repertoire of possible constructions. What might be possible in L1 can be impossible in L2 (see NP-preposing in English vs. the V2-restriction in German, to be examined in detail below). However, the languages in

focus here (English and German) have a common history. It should therefore be possible to identify similar patterns. The next chapters will provide answers by laying out the data and analyzing instances of LOCI and PP-preposing in German.

3.2. Methodology

As stated before, language cannot be regarded from an abstract point of view, one has to look at actual examples and try to generalize from them to the abstract structure. The remainder of this section will deal with the nature of my data, the way I collected it and the annotation measures applied to it. It will conclude with a listing of the results, the interpretation will be the subject of section 4. As English has been in focus so far, German will now be considered in more detail.

3.2.1. Languages in focus

The use conditions for the English locative inversion construction are to be compared to the reasons for the use of the identical surface structure in German, namely PP-V-NP. As illustrated before, there are structural similarities and differences between these two languages. In both languages the canonical order can express more or less any propositional information. The non-canonical variations therefore have to carry some specific function; a deviation from the canonical word order could be motivated by 'external factors', namely (as I suppose) syntactic complexity and discourse features. As any type of constituent may be preposed (for example), the trigger of, or the reason for the deviation from the canonical clause is what is central here.

Although bearing many similarities, English and German also display crucial differences. German is characterized by the so-called V2 restriction, a restriction that does not hold for Modern English (as briefly mentioned in the introduction). Besides V2, the word order of German is relatively free. In what follows I will briefly introduce some similarities and differences in the grammatical inventory.

As already touched upon in the introduction, the question may be raised whether the German PP-preposing construction is used for a different purpose than the superficial pattern is in English. This means, there is the possibility that structurally identical patterns are employed for distinct purposes. König & Gast (2012:198)

state that inversion in English is severely restricted, whereas verb-second structures in German often are obligatory and therefore very frequent. At the same time there also is a chance that the structurally identical pattern (as the pattern is part of the constructional inventory of both languages) is used for the same reasons, that it displays the same function in English and German. This may be partly due to the close relationship between the languages. Both English and German belong to the West Germanic languages (Crystal 2010). They therefore have a very close common history. Whereas Old English, being of Anglo-Saxon heritage and also carrying Celtic features, had similar grammatical and lexical features as High German did, the close relation weakened over the centuries. Modern English now shows far less congruencies with Modern High German. In what follows I will give a brief historical overview.

English

The term *English* derives from *englisc*, which was introduced by the Jutes and Angles around 700 AD. They spoke a Germanic language, which was inflected and had three genders (male, female, neuter). From the resulting major dialects (Northumbrian, Mercian, Kentish, West-Saxon), West-Saxon became the standard dialect and is referred to as Old English from here on (Mitchell & Robinson 2001). Old English followed a strict V2 constraint, equal to what can be observed in Modern German. Additionally, in Old English, nouns showed one of four cases, nominative, genitive, accusative and dative. The following example illustrates the inflectional pattern with the masculine noun *stone* (Mitchell & Robinson 2001:22):

(171)	stān	(nominative)
	stān	(accusative)
	stān**es**	(genitive)
	stān**e**	(dative)

The fact that Old English used to have a case marking system is very important, as subject and object were (partly) distinguishable in form; this is not the case in Modern English. Word order was therefore not absolutely necessary to determine the grammatical function of a sentence. The year 1066 constitutes a very important date for the English language, as it marks the invasion of the Normans. The French

speaking Normans dominated the country for about 300 years, triggering major language change due to the fact that French - being the language of power and prestige - altered the language spoken by the English people. One of the most important consequences of this language change (for my purpose) is the gradual loss of the case system (see König & Gast 2012:131ff.). Word order became indispensable for determining the meaning of a sentence. English therefore became more and more different from other Germanic languages.

In order to connect this historical excursus to the present thesis, the loss of V2 Old English additionally underwent, is relevant. From a phonological perspective, Speyer (2010) claims that the loss of V2 word order resulted in a decline of possible environments in which fronting is prosodically well-formed, this again led to a decline in the use of fronting in general. What this means is that in Old English fronting was less restricted, and it was obligatory (due to V2) in case the logical subject "moved away" from its canonical position. With the loss of V2, the fronted position became more restricted. Therefore, the variability of the sentence-initial position became more constrained, too. For syntax, König & Gast (2012: 198ff.) support that by saying that inversion in English is severely restricted, whereas V2 (and V1 structures in German) often are obligatory (as already mentioned above). Dorgeloh (1997:19) additionally adds that English developed from being a strict V2 language (as German is), where inversion is considered an "obligatory consequence of front shifting", to a "rigid word order language", where inversion is a matter of textual choice. As the function and form of preposing has already been explained in detail in chapter 2, I will now add some basic typological information on German.

German

There are major differences between older stages of German and the contemporary language. With regard to my aim here, however, these changes can be set aside. As there is no major change in the word order restrictions, I will focus on the structural peculiarities of Modern German in what follows and try to connect it to the corresponding features in English.

German has a case marking system to encode grammatical relations, as opposed to English, where the task is fulfilled by linear order. With this, German does not have

to rely entirely on word order to make it clear what role a constituent has. König & Gast (2012: 188ff.) state that German word order is more conservative in the sense that it is more similar to older stages of Germanic. In English, one needs word order to show which case applies. The German sentence in (172) displays the canonical order, implying that the bear likes the werewolve. Example (173) employs the accusative of *werewolf* with the werewolf being the one the bear likes. Both examples therefore have the same propositional meaning.

(172) Der Bär mag den Werwolf.
the bear-NOM *likes the*-ACC *werewolve*-ACC
'The bear likes the werewolve'

(173) Den Werwolf mag der Bär
the-ACC *werewolve*-ACC *likes the*-NOM *bear*-NOM
'The werewolve the bear likes'

The German sentence in (174) is ungrammatical due to the V2 constraint. *Den Werwolf* is preposed, the second NP *der Bär* therefore would have to appear in postverbal position to satisfy the requirement that the finite verb has to be in second position.

(174) *Den Werwolf der Bär mag.
the-ACC *werewolve*-ACC *the*-NOM *bear*-NOM *likes*
'The werewolve the bear likes'

In English, (175) and (176) have the same propositional meaning as the German examples (172) and (173). However, when *the werewolve* is in sentence-initial position and followed by the verb, *werewolve* cannot be marked as being the one that the bear likes (177). This illustrates the point made above, namely that English heavily relies on the linear order, whereas German can use the case and is thereby able to invert two NPs without changing the intended propositional content.

(175) The bear likes the werewolve.

(176) The werewolve the bear likes.

(177) The werewolve likes the bear. (*The bear likes the werewolve)

Additionally, one major use of case marking is in the expression of the distinction between location and direction. Consider the following examples from König & Gast (2012:135):

(178) Karl rannte **in dem/im** Park.
Karl ran in the-$_{\textbf{DAT}}$ *park*
'Karl ran in the park'

(179) Karl rannte **in den** Park.
Karl ran in the-$_{ACC}$ *park*
'Karl ran into the park'

(178) is a dative that denotes location. Karl is running rounds in the park. (179) says that Karl entered the park. An English equivalent can be seen in the prepositions *in* and *into* (and of course *on* and *onto*).

(180) Sue is running **in** the park.

(181) Sue is running **into** the park.

It is often claimed that this possibility shown in (180) and (181) makes up for the loss of the case marking system. However, only *on* and *in* allow for the suffix *-to*. All other prepositions (over, across, behind, etc.) do not have this possibility. German, however, can mark case and therefore location and direction for all PPs due to case marking on the article.

(182) Karl lief hinter **dem** Haus.
Karl ran behind the-$_{\textbf{DAT}}$ *house*
'Karl ran (locally) behind the house'

(183) Karl lief hinter **das** Haus.
Karl ran behind the-$_{\textbf{ACC}}$ *house*
'Karl ran (directionally) behind the house

In general, German is a flexible language with regard to word order, however always constrained by V2. In German there is no syntactic difference between preposing and inversion (as explained in chapter 2) due to the fact that the language allows for only one constituent in the so-called Vorfeld (prefield), the preverbal position. In case the finite verb is moved in front of the subject, some other constituent has to move into the prefield in order to form a grammatically correct declarative main clause. As Speyer (2007:83) puts it, "[…] the Vorfeld (prefield) of German declarative V2 main clauses is syntactically undetermined: It is only required that one phrase stands there […]". Interestingly, he contrasts that with English, where the subject preferably occupies the preverbal position. According to Speyer (2007), this is not necessarily the case in German. As there are no purely syntactic specifications for the prefield, he sees information-structural features at play. This is also the view of Bader & Häussler (2010), who mention discourse-related notions (focus-background, topic-comment) to be among the reasons for changing the word order to OVS instead of the canonical order. The authors claim that the preferred order is topic (old information) in clause initial position and focus (new information) directly after verb. Second, Bader & Häussler (2010) also assign an important role to constituent weight and refer to Behaghel (1909/1910), Hawkins (2004) and Wasow (2002), providing identical arguments as brought forward for English. Following Weskott et al. (2011), non-canonical word order in German is marked and optional, given certain (mostly discourse-related) circumstances. Furthermore, the non-canonical variant is said to be dispreferred, as its characteristics, compared to the canonical counterpart, are "[…] (a) degraded acceptability […], (b) processing difficulties […], (c) lower frequency in corpora, and (d) later age of acquisition" (Weskott et al. 2011:4). In particluar, (a) – (c) are equivaltents to the claims made for English[35]. Weskott et al. (2011) consult Krifka (2008), who sees the reason for chosing a non-canonical word order in the way the sentence is anchored to the common ground. The reason for chosing either SVO or a variant is therefore also strongly based on discourse features, as already taken into account in section 1.3. on information structure in general. A very interesting

[35] As I concentrate on features encouraging the use of LOCI, THERE and PP-preposing, I cannot comment on (a) – (d) based on my data.

account is given by Speyer (2007), who suggests that topics commonly are preferred in preverbal position in German (as they are in English). However, he assigns a very strong role to poset relations. In his opinion elements with a poset relation to the preceding context that are not canonically in preverbal position may be "moved" there even though the canonically preverbal element is the canonical topic of the sentence.

Initially, at the start of this dissertation project the plan was to conduct a direct comparison between English and German with respect to the surface structure PP-V-NP within one single analysis. However, I am now convinced that this is not unproblematic. As we saw in the brief section on the languages above, there are different motives for deviating from the canonical word order. The reasons seem to be quiet alike (discourse features, length of the constituents). However, the typological nature (e.g., V2) provides different frameworks. Therefore, I will analyze the superficial pattern of inversion separately for each language, as explained in the introduction. The goal is to find out what the PP-V-NP structure is triggered by in English and German. The questions to be answered are: Does the German inversion construction[36] (if there even is one, see König & Gast 2012:12) actually carry the same functions as the English inversion construction? And if so, are the features triggering the preference of this pattern and the constraints on the constructions congruent in both languages?

In the next section I will lay out the sources of my data and the procedure of extraction and annotation I chose.

[36] I refer to it structurally, i.e. declarative main clauses with the subject in postverbal position and a PP in the prefield.

3.2.2. Data sources

This analysis first focuses on English, to be specific, on LOCI. The structure of LOCI can be represented as in (10), here repeated as (184).

(184) [PP_{LOC} AUX* V LOG-SUBJ]

This also applies to the German (structural) equivalent, which is called PP-preposing here. Again, only those examples were taken into account where the preposed constituent was lexically governed by the verb (see Birner & Ward 1998: 31ff.), meaning that the PP has to be an argument of the verb. Adjuncts were excluded.

In order to gain a representative data set, suitable corpora had to be identified (also see Gries 2009:7ff.). For English it was unproblematic as there is the British National Corpus[37] (for details see BNC Consortium 2007). With a size of about 100 million words, it includes written as well as spoken language; written language constitutes the major portion. It includes newspaper articles, novels, essays, poetry, etc. For German the source corpus was harder to identify, although there are many corpora available to extract target sentences from. The problem is that in almost all cases it was not possible to get the permission to also extract a certain amount of context due to copyright issues. This context, however, is essential to be able to make judgments about the information structure of a sentence.

I therefore decided to base my analysis on data from the BNC for English (including written as well as spoken language) and the TÜPP D/Z for German. The TÜPP D/Z contains around 200 million tokens from the newspaper 'die tageszeitung' (taz). It only includes written language. This decision brought some problems with it as the BNC has a much broader range of text types. One could therefore object that genre effects may influence my results. In my opinion this problem is dismissible, as Prado-Alonso (2011:75) and others claim that inversion is most commonly found in belles-letters, biographies, essays, press editorial, press review, press reportage and science (my data confirms this). The text types that

[37] Data cited herein have been extracted from the British National Corpus, distributed by Oxford University Computing Services on behalf of the BNC Consortium.

include inversion in the BNC are therefore (which was double checked) similar in nature to the newspaper text type in the German corpus. Kerz (2012:143) claims that a study (see Biber and Gray 2010) found out that there is a "[…] dramatic increase of compressed structures[38] in English academic writing" (meaning NCCs like LOCI are more likely to be found in written data). This supports Drubig's (1988:86) earlier claim that

> […] it [subject-verb inversion] is restricted to certain types of written text and that it is almost totally absent from ordinary face-to-face communication with the exception of the deictic sentence type 'Here comes the bus' [which are not included in the present analysis as it lacks a preposed PP].

About 90% (BNC Consortium 2007) of the BNC is written data. The rare examples of colloquial speech (which might be common in transcriptions from spoken language), direct quotes, poetry and the like were not included in my analysis.

With that argumentation I feel confident to be able to avoid the problem of having distinct text types and use the BNC and the TÜPP D/Z as comparable sources concerning the nature of the data. Referring to the second (less problematic) need for clarification, namely the disparate sizes of the two corpora, I want to stress again that I am not trying to make any quantitative claims. Neither do I want to answer the question of whether LOCI is more frequent in English than PP-preposing in German is. Nor do I make any statements on the numeric distribution of NCCs within one language. I am not interested (in this analysis at least) in the question of whether the use of LOCI exceeds the use of e.g. THERE in English or not. I want to concentrate on the factors that trigger/favor or prevent a deviation from the canonical word order. The goal is to highlight the preferences the languages have (on a monolingual level) concerning word order in certain discourse environments, resp. the preferences for the distribution of syntactic weight and complex constituents. From these findings I try to infer whether English and German have equal or totally different motivations for employing the syntactic pattern under discussion.

[38] Structurally compressed, as opposed to an elaborated discourse style (typical for spoken registers), see Kerz 2012. This refers to English academic writing (Biber & Gray 2010).

To be able to do so, sets of n=300 sentences for LOCI, THERE, CC_english, PP-preposing in German, and CC_German (1.500 sentences in total) were extracted from the corpora with the help of the tool CSniper (3.2.3.), annotated for various features (see section 3.2.4.) and analyzed with 'R' (see section 3.3.). All this was mainly done on a monolingual level. The comparative analysis is mostly carried out on the basis of the results of the monolingual level (one joint analysis is included). As I believe that the word order configuration carries a meaning itself apart from the meanings the constituents have (see Goldberg 1995), I feel that this procedure is valid. I am aware of the typological differences between English and German, as mentioned above. However, this method gives me comparable data for one word order variation both languages can display, which therefore is within the constructional inventory of both languages. The question of whether inversion (or PP-preposing in German) is preferred over other possible configurations (apart from English LOCI /THERE) in certain environments is left for further research.

Another task that had to be solved before being able to properly start the analysis was the decision on what type of verb to include in order to secure a consistent and comparable database. For this the verb classification by Levin (1993) was consulted, which provides a very thorough overview over various verb classes and alternations in English. Only those structurally appropriate sentences were considered to be suitable examples that involved a verb belonging to the class of 'alternations involving postverbal subjects', namely *there*-insertion and inversion. For English this was more or less congruent with what was actually found in the corpus. The pattern of relevance to a vast majority included verbs that belong to this classification. Examples are (see Levin 1993:89ff):

i) (to) be
ii) Verbs of existence (e.g., live, remain, spread)
iii) Verbs of spatial configuration (e.g., crouch, lie)
iv) Meander verbs (e.g., climb, run)
v) Verbs of appearance (e.g., arise, burst, open)
vi) Verbs of manner of motion (e.g., climb, dart)

For German, the verbs (and their synonyms) that appear in *there*-insertion and inversion in English were taken as possible verbs for PP-preposing. Every sentence that was randomly selected for German according to the structural prerequisites was checked manually against the list of verb types defined by Levin's (1993) system. In this way, it was ensured that the data sets include roughly the same verb classes and have the same surface structure. I am aware of the fact that for German there might be other verb classes involved. However, as the observation of differences/similarities between two structurally identical patterns is in focus here, this strategy was deemed acceptable. With this inventory it became possible to check whether the English inversion construction LOCI and PP-preposing in German are structural and functional equivalents (within a certain range of verb types) or not. As a reminder, THERE was only contrasted with LOCI to support the separate analysis of the structurally similar patterns, as suggested in chapter 2.

Section 2.3.5. elaborated on verbs that are felicitous in English inversion. This can now be mapped onto the verb classes I allow for in my analysis. All verbs are intransitive and do not introduce new information into the context, are informationally light (meaning they contribute no more information than would a copula, see Birner 1995:248). An example sentence with a verb satisfying the constraints was already given in (148), here repeated as (185):

(185) He opened the door and took a folded canvas bucket from behind the seat. **Coiled** on the floor lay a one-hundred-and-fifty-foot length of braided nylon, […].

Lay can be inferred from *coiled*, is therefore not new information and informationally light. Additionally, it is intransitive. As a reminder, especially verbs of appearing and emerging are said to naturally fit the presentation of new information. Verbs of existence and appearance do not have to be taken literally; it verbs of cognitive awareness or appearance in the context are also included. The verb therefore prepares the appearance of something new or unexpected. The type of verbs in inversion can also be inferred from the preposition type. In my case they fall into the classes of locative, directional, and existential (more on the annotation features in section 3.2.4.). With all this in mind I will now move on to a description

of the extraction of the data from the corpora, whoch finally leads to the actual annotation of the data.

3.2.3. Corpus extraction with CSniper

The identification of the relevant sentences and their extraction were done with the help of a new tool called CSniper (Corpus Sniper, for details see Eckart de Castilho et al. 2012). This tool, which makes possible the identification and annotation of syntactic patterns in large corpora, constitutes the result of the LOEWE project TP 2.2 'Text as instance of the language system', which was conducted by members from the Goethe University in Frankfurt and the Technical University in Darmstadt[39], including researchers from the fields of linguistics and computer science. The strength of this tool lies in the multi-user scenario in which it is embedded. As I was partly involved in the development of the tool and as it was central for the extraction of the data, I want to briefly introduce its functions.

CSniper[40] provides a web-based multiuser scenario for identifying and annotating (non-canonical) grammatical constructions in large corpora based on linguistic queries and inter-annotator agreement. The major advantage of this tool is that various annotators have access to each other's results and can evaluate those in addition to their own. This means that all the results annotator A gathers by using one or more queries are stored under the label the pattern has been assigned to (e.g. PP-inversion). This annotator can then judge all the results the tool returns as correct, wrong or check (in case the sentence requires further consideration and should be discussed with other annotators). An annotator B (or more annotators) can then, in addition to the results s/he identified by his or her own query, access the results annotator A found by using the 'complete'-function (which returns all sentences identified as correct by someone else for one specific syntactic pattern) and insert his or her own evaluation of whether the sentences are correct examples or not. The agreement among annotator A and B (and possibly more) is then later evaluated and generates clear and concise results following the annotation

[39] For more information see https://www.ukp.tu-darmstadt.de/research/past-projects/digital-humanities/text-as-an-instance/?no_cache=1

[40] It offers far more functions than I actually used. For details see Eckart de Castilho et al. 2012.

guidelines established before by a group of experts. One additional feature is that the query history is saved in the respective user account. One can therefore evaluate the queries later on against the results and look for possible problematic aspects, and accomodate the queries if needed. Again, all annotations (correct/wrong) are saved under the label they are assigned to, regardless of the query. Figure 8 shows the front page for queries in CSniper, Figure 9 displays the annotation guidelines for PP-inversion.

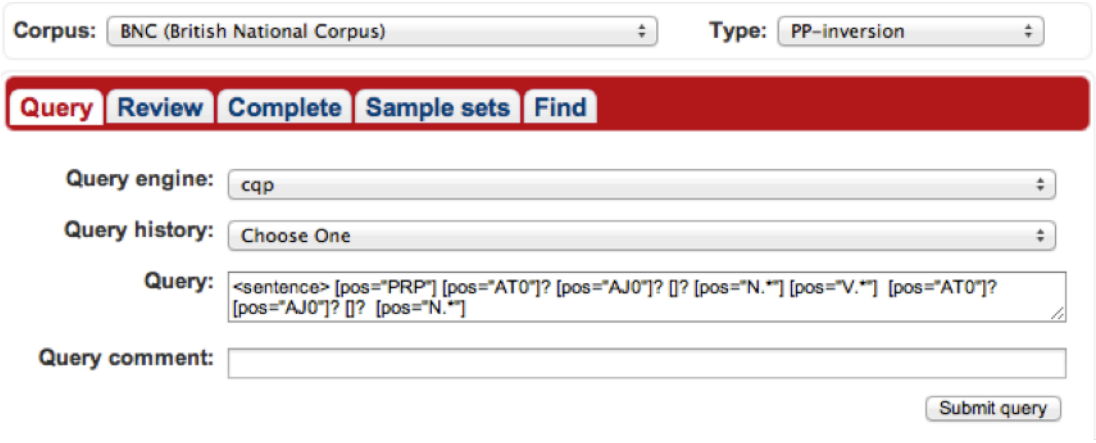

Fig. 8: Starting mask CSniper (user: weber)

The subject appears in postverbal position and some canonically postverbal object (PP) is moved into preverbal position. The PP has to be at the beginning of the sentence.
Examples:

- On the left is the kitchen.
- Into the room came Tom Lopez.
- At one extreme is Ian Pollard.

Counterexample:
This picture on the wall is a Picasso.

Imperatives and questions do not count as PP-inversion.

Fig. 9: Annotation guidelines for PP-inversion

To sum up, CSniper enables the researcher to chose a specific corpus and search for a syntactic pattern with a query (CQP or tgrep) following the given annotation guidelines (see Fig. 9). The results can then be annotated und secured by multi-annotator opinions.

As explained at the beginning of section 3.2.2., this analysis uses data from the BNC and the TÜPP D/Z, which both have been implemented in CSniper. The CQP-queries in (186) – (188) below are based on the part-of-speech (POS) tagging both corpora offer. For the BNC this is the UCREL CLAWS7 Tagset[41]. The corpus has also been parsed by first re-tagging the data with the TreeTagger (Penn Treebank POS tags)[42] and then using the Stanford Parser[43]. This procedure was necessary, as the model of the parser is built on the Penn Treebank POS tags and not on CLAWS5 POS Tags. For the TÜPP D/Z, the POS tags are labeled according to the STTS Tagset (1995/1999, also see Schiller et al. 1999)[44], the corpora was additionally parsed with the partial parser KaRoPars (Kaskadierter Robuster Parser, i.e. Cascaded Robust Parser, see Müller 2004). Although parse trees were available, I chose CQP-queries based on parts-of-speech, as for the syntactic patterns in focus here this was perfectly applicable. The reason is that both languages have a clear default word order, as mentioned above. Any change in this results in an expectable outcome. In the case of English, a preposed PP may result in either PP-preposing (see section 2.1.) or in inversion. Sentences, for with there is the condition that the PP has to be directly followed by a verb, necessarily results in a postverbal NP and therefore in PP-inversion (see section 2.3.). In German, a preposed PP automatically "moves" the NP into postverbal position due to the V2 constraint. The CQP-query therefore fulfills the requirements for identifying felicitous examples. For other syntactic patterns parse trees often are inevitable and available in the tool.

In order not to exclude possible outcomes, the queries are worded in very general terms, which made the manual selection more complex, but guaranteed a representative data set. Example (186) gives the basic queries for LOCI, (187) for THERE, and (188) for PP-preposing in German. The queries for the canonical counterparts are more or less the reverse versions[45].

---

[41] http://ucrel.lancs.ac.uk/claws5tags.html (last accessed Apr 7, 2015)
[42] https://www.ling.upenn.edu/courses/Fall_2003/ling001/penn_treebank_pos.html (last accessed Apr 7, 2015)
[43] http://nlp.stanford.edu/software/lex-parser.shtml (last accessed Apr 7, 2015)
[44] http://www.ims.uni-stuttgart.de/forschung/ressourcen/lexika/TagSets/stts-table.html (last accessed Apr 1, 2015)
[45] The queries displayed in 186-188 only show a general pattern, which was generated in order to make sure that nothing is excluded from the beginning. The overlap of results with more detailed queries was observable

(186) <sentence>[pos=”PRP”][pos=”AT0”]?[pos=”AJ0”]?[]?[pos=”N.*”] []*[pos=”V.*”][pos=”AT0”]?[pos=”AJ0”]?[]?[pos=”N.*”]

(187) <sentence>[pos=”PRP”][pos=”AT0”]?[pos=”AJ0”]?[]?[pos=”N.*”] [lemma=”there”][]*[pos=”V.*”][pos=”AT0”]?[pos=”AJ0”]?[]? [pos=”N.*”]

(188) <sentence>[pos=”APPR*”][]?[pos=”ADJA”]*[pos=”N*”][]* [pos=”VVFIN|VA*”][pos=”N*”]

The output was checked and cleaned manually, which was necessary as the queries were supposed to be as general as possible in order to avoid the prior exclusion of relevant sentences and therefore returned numerous infelicitous examples (a fine line, as it was at the time attempted to minimize the erronous results as much as possible). From all examples identified as correct a random set was extracted up to n=300. Especially for the canonical sets, one can impossibly extract all examples fulfilling the requirement that an NP is followed by a V, which is again followed by a PP, as it displays the default word order of both languages and would return a number of examples outside of the processing range of CSniper. Therefore, the approach was to randomize the order of result pages (ten sentences per page) CSniper returned for the search. Correct examples were identified up to n=300 per set (CC, THERE_NCC, PP-Preposing_CC, PP-Preposing_NCC).

The data set for LOCI has a special role, as it was subject to the first round of annotations in the LOEWE project (in the sense of correct/wrong)[46], as it is clearly identifiable and frequent enough for a pilot study. To get an impression of the numbers for LOCI, see Fig. 10 and Fig. 11.

---

due to the possibility in CSniper to save all sentences and their annotation, regardless of the query with which it was found.

[46] The explanation for the exceeding number of correct examples (n=733), compared to the result numbers of other NCCs, is that for LOCI all correct examples were extracted and a random set of n=300 was taken from this; for all other patterns correct examples were randomly selected up to n=300 without previously extracting all felicitous examples possible.

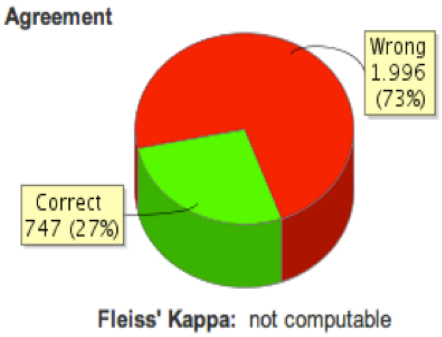

Fig. 10: Results for English PP-inversion- LOCI (single annotator)

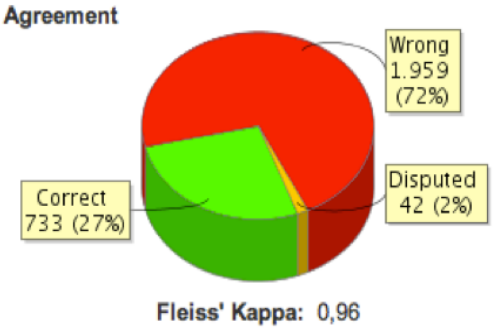

Fig. 11: Results for English PP-inversion - LOCI (multiple annotators)

Fig. 10 shows the result for LOCI for one annotator, fig. 11 shows the inter-annotator results. It displays the agreement on 733 correct examples, 1.959 were jointly identified as wrong. Fig. 10 shows that the single annotator even identified more correct and wrong examples; some were however disputed in the multi-annotator scenario. The difference in the overall sum (2.743 vs. 2.734; n=9) is explained by the lack of complete evaluation of all annotators. These single-evaluated examples are not included in the analysis; only those examples were extracted on which all annotators agreed.

3.2.4. Annotation

After the collection of the dataset and the extraction of the data, the data underwent further linguistic annotation. This constitutes the last step before the statistical analysis. To remind the reader, the goal is to find out what factors influence the choice of the inversion construction, what function this pattern carries in English and whether the structural equivalent in German does the same/has the same use preferences as it does/has in English. To derive a conclusion, certain features have to be evaluated. These features refer to the linguistic form of the constituents and to their status within the discourse, which are accessible due to a context of roughly ten sentences (five sentences before and after the target unit). In what follows I will introduce these features and explain their relevance for my study.

The first feature is very basic, only signifying whether the sentence belongs to the group of NCCs or CCs. It is followed by the **language** (English/German), which becomes important for the cross-linguistic perspective. After that the linguistic features come in. The first is the **preposition**, the second the **verb**. These two features display the actual content, not a class. **Negation** is the next category that requires a yes or no. This feature was chosen due to the claim by Chen (2003) and others that negation is prohibited in inversion. Sentences like 'Into the room comes not Mary' are supposed to be infelicitous. Negation is then followed by weight considerations (words per constituent); the **length** of the PP (including the preposition) and the **length** of the logical subject NP are first listed separately and then compared. The relatively heavier constituent (**relative weight**) is then listed in the next column. This is illustrated in example (189):

(189) [Among the successful fundings]$_{\mathbf{PP}}$ are [£150,000 for a child day care centre in the south east and £75,000 for a northern organic waste treatment business]$_{\mathbf{NP}}$. (BNC, CBW 283011-283160)

Here the PP *among the successful fundings* is constituted by 4 words, the subject NP is significantly longer, namely 21 words. The features considering the length (often referred to as complexity) of the constituents are adapted from the syntactic weight analyses by Hawkins (1992) and Wasow (2002); for further discussion on this topic also see Bresnan (2007:7ff). After that the **preposition-type** is specified. Here one can chose between 'locative', 'existential' and 'directional'.

(190) [**In** the middle]$_{\mathbf{PP}}$ stood [a dark deserted tower]$_{\mathbf{NP}}$.
(BNC, BMX 127682-127724)

(191) [**Auf** den Marmorfensterbänken]$_{\mathbf{PP}}$ liegen [Anoracks und
on the-$_{\mathbf{DAT}}$ *marble windowsill lie anoraks-*$_{\mathbf{NOM}}$ *and*
Lederjacken]$_{\mathbf{NP}}$ übereinander.
leather jackets on top of each other
'On the marble windowsills lie anoraks and leather jackets on top of each other.' (TUEPPDZ T981112.325, 3282-3356)

[**Locative**]

(192) [**Among** customers]$_{\mathbf{PP}}$ are [singer Elton John and the world's richest man, the Sultan of Brunei]$_{\mathbf{NP}}$. (BNC, CEN 102888-102976)

(193) [**Auf** dem Programm]$_{\mathbf{PP}}$ stehen [Diskussionen, Workshops, künstlerische Darbietungen, Lesungen und Vorträge, bei dem sich Menschen aus unterschiedlichen Kulturen und Religionen vorstellen]$_{\mathbf{NP}}$.

on the-$_{\mathbf{DAT}}$ *agenda stand discussions, workshops artistic performances, reading and talks-*$_{\mathbf{NOM}}$, *at which themselves people from different cultures and religions present*

'On the agenda are discussions, workshops, artistic performances, readings, and talks, where people from different cultures and religions present themselves' (TUEPPDZ, T971111.196, 225-409)

[**Existential**]

(194) [**From** the fissure]$_{\mathbf{PP}}$ poured [lava, blood-red lava glowing like the fires of hell in the night]$_{\mathbf{NP}}$. (BNC, A6T 80967-81056)

(195) [**Aus** seinem Mund]$_{\mathbf{PP}}$ läuft [Blut]$_{\mathbf{NP}}$.

from his-$_{\mathbf{DAT}}$ *mouth runs blood*

'From his mouth runs blood'

(TUEPPDZ T950422.300, 3071-3099)

[**Directional**]

This classification is necessary, as PP-inversion in English is often reduced to its locative meaning, which surely seems to be the dominating type. However, there are other meanings besides the locative content (191), illustrated in the directional and existential examples. The next feature under consideration is the **verb type** with reference to whether it is a form of *(to) be* or not. Here possible classifications are *be* or *non-be*. This rests on the analysis Birner (1996), (also see Birner & Ward 1998) proposes, as she recognizes inversion around a non-*be* verb to be almost always of locative type (see section 2.3.5.). *Be*-inversion, on the other hand, is more broadly distributed among the various inversion types. What I did was to check whether it is true that for PP-preposing in general non-*be* verbs are more frequently

employed than *be*. Further (however contradictory) support for the relevance of this feature comes from Chen (2003), who regards locative inversion with *be* as the prototype of all inversions. As there also has been some discussion on the role of **definiteness** in word order, the subject NP (hereafter subject_NP) and the NP in the PP (hereafter NP_PP) are classified as being definite or indefinite. The feature has three possible characteristics, namely 'definite NP', 'indefinite NP', or 'proper name'. The **form** of the NP is also annotated, following the classification of Gundel et al. (1993, see section 1.2.2). It overlaps with the feature 'definiteness'. However, it allows further specification concerning the status of reference the entity represented by a constituent has. An illustrative example here is (195), repeated as (196).

(196) Aus seinem Mund läuft Blut.
from his mouth runs blood
'From his mouth runs blood'
(TUEPPDZ T950422.300, 3071-3099)

The preposed noun *Mund* in the PP is completed by a possessive pronoun, namely *seinem*. It therefore refers to a person already evoked, whereas the indefinite NP *Blut* in postverbal position does not refer to an already introduced referent. Although this sentence orders the heavier constituent before the shorter one, the information packaging function for locative inversion proposed by Chafe (1976) and Birner (1996), a.o, is clearly verifiable. This leads over to the next group of annotation features.

Up to this point the form of the constituents was evaluated in isolation. In what follows features with reference to the context are taken into account. The first is **anaphoricity** (yes/no), again for the subject_NP as well as for the NP_PP. Anaphoricity is defined following Gregory & Michaelis (2001:13ff), who regard the retrospective discourse status of the preverbal NP, the discourse status that looks back to what has happened before, from two perspectives. In the terms of the authors, one is 'givenness' and the other is 'anaphoricity'. Givenness refers to the assumption of the speaker as to what is present in the hearer's consciousness (also following Chafe 1976). This is not what is meant here. For anaphoricity the entity

in question has to be part of an "anaphoric chain", which needs the question of whether an entity has been explicitly mentioned before or not to be answered with 'yes'. Kuno (1972:270) defines a constituent as anaphoric "[… if] its referent has been previously mentioned or is part of the permanent registry". An example is given in what follows.

(197) […] Then came the snow and she had to stay in and watch from the window how it piled up against the water butt, how it lay like a blanket along the sills, how it changed the distance from bluey brown to white as far as you could see. […] Through **the snow** strode a visitor. (BNC, AC5 141496-141530)

Here the prior context talks about snow falling, the NP_PP is therefore directly anaphoric, picking up *the snow* already mentioned in the context. This is also supported by Chiarcos (2011). An example for anaphoricity of the postverbal NP is given in (198).

(198) […] I turned to look at Sam but to my surprise he was not there. I stood up and gazed at a small pile of my toys, which had been thrown to one side of my cupboard. As I looked I was sure that I saw Boris, my bear, wink at me. I started to walk across to the pile and as I did, all my toys came to life and stood in a line facing me. In the middle was **Boris** my bear. (BNC, KA1 28100-28132)

The next feature annotated is the **discourse status** of the NPs. This is done by making use of Prince's (1981) classification (E = evoked, I = inferrable, U= unused, BN = brand-new, see section 1.2.1.) and based on the claim by Chafe (1976) and Birner (1996) that inversion fulfills an information-packaging function, meaning that more familiar information precedes less familiar information linearly. The following examples show an evoked NP (199, 200) in preverbal position, an inferrable NP (201, 202) in preverbal position, and a new NP (203, 204) in postverbal position.

(199) The door creaked open and Berger stepped in, Eggar at his back. The guitarist stopped playing, and all conversation died as Berger stood just inside the door, death come to visit them. **Berger** moved past the men who were playing cards. (BNC, HTW 70581-70630)

(200) Wir müssen kritisch gucken, wo die Gesamtschule etwas für die
we must critical look where the integrated school something for the
Schüler tut und an welcher Stelle Haupt- und Realschule dies in
students does and at which place main and middle school this in
wirtschaftlich günstigerer Form erbringen können. […]
economically cheaper form perform can. […]
In **die Gesamtschulen** gehen Schüler, die zufrieden sind.
In the integrated schools go students who happy are.
'We have to critically evaluate in what respect the integrated school does something for the students and when main and middle school can accomplish the task more cheaply in economic ways. More satisfied students attend the integrated schools.' (TUEPPDZ T950213.281, 7962-8019)

(201) This historic hotel is situated in the heart of the city near Central Station and the famous Dam Square. Behind **the stately Victorian facade** are luxurious public rooms including the popular Tasman bar with live piano music, the Fresh Seasons Restaurant with Scandinavian decor and beautiful pot plants, marbled corridors and souvenir shop. (BNC, EBN 55343-55577)

(202) […] Dörfer und kleine Städte leiden darunter, daß viele Firmen das
Villages and small cities suffer from that many companies the
Rhein- Main-Gebiet attraktiver finden. Es regnet, die Landschaft
Rhine- Main area more attractive find. It is raining, the landscape
ist trist. **Pfützen** stehen auf den Feldern.
is dull. Puddles stand on the fields
'Villages and small cities suffer from the fact that many companies

favor the Rhine-Main area. It is raining, the landscape is dull. There are puddles on the fields.' (TUEPPDZ T870303.42)

(203) No company, irrespective of its size, can afford to ignore these changes. […]. Early in 1985 FTA began discussions with representatives from Customs & Excise on the range of issues that have come to be known as Customs 88. The impending changes arise from **a worldwide desire to streamline and standardize international trading procedures**. (BNC, CDP 1999205-1999320)

(204) Als der Film des georgischen Regisseurs Tengiz Abuladze am
When the movie of the Georgian director Tengiz Abuladze on
Mittwoch Abend gezeigt wurde, erklärte der Filmkritiker Viktor
Wednesday evening showed was, explained the film critic Viktor
Demin, der einem Komitee angehört, das bisher zensierte
Demin who a committee belonged to which up to now censored
Filme der Öffentlichkeit zugänglich machen soll, daß nun endlich
movies the public accessible make shall that now finally
die Möglichkeit da sei, die schlimmste Periode unserer Geschichte
the possibility here is the worst period of our history
aufzuarbeiten. Nach der Vorstellung wurde der Regisseur
to review. After the screening was the director
enthusiastisch gefeiert. Der Film handelt von **einem Diktator** [...].
enthusiastically celebrated. The movie deals of a dictator […]
'When the movie by the Georgian director Tengiz Abuladze was shown on Wednesday evening, the film critic Viktor Demin, who belongs to a committee that is supposed to make accessible censored movies to the public, claimed that the possibility has finally arrived to review our history's worst period. After the screening the director was enthusiastically celebrated. The movie is about a dictator […].' (TUEPPDZ T861105.31)

It is important to note that anaphoricity and givenness [discourse status] focus on related but distinct types of contextual linkage, according to Gregory & Michaelis (2001). Following this line of thought, the existence of possible **poset relations**

(*yes*/*no*) is taken into account (for the definition of posets see section 2.1.). A poset relation holds between the denotatum of the preverbal or postverbal NP and an entity previously evoked in the discourse (Ward & Prince 1991:173, Gregory & Michaelis 2001:13).

The NP of the logical subject as well as the NP in the PP are checked for any contextual linkage to the preceding context. A good example for a poset relation to the preceding context of the preverbal NP is displayed in (201) here repeated as (205), where 'the stately Victorian facade' is somehow new information, however it can be related to 'the hotel' as a part-whole relation.

(205) This historic hotel is situated in the heart of the city near Centra Station and the famous Dam Square. Behind **the stately Victorian facade** are luxurious public rooms including the popular Tasman bar with live piano music, the Fresh Seasons Restaurant with Scandinavian decor and beautiful pot plants, marbled corridors and souvenir shop. (BNC, EBN 55343-55577)

The next example gives a sentence in which the postverbal NP *banks of flowers […]* relates to the preceding discourse via poset relation 'type/subtype {things in a garden} triggered by *sunken garden*.

(206) […] His hand beneath her elbow, Michele directed her down a short flight of steps to a central sunken garden where Neptune, brandishing a trident, guarded a splashing fountain. On all sides were banks of flowers […]. (BNC, JY2 88651-88768)

Clear anaphoric relations are not counted in this category, 'poset' does therefore constitute a linkage to the preceding context.

I also take **the following context** into account, as it is proposed that inversion serves to introduce a new topic to the discourse following the target sentence. All those instances (separately for subject_NP and NP_PP) where the NP introduces a new entity that is then continued (either anaphorically or somehow thematically) in the following context. And lastly, it is checked whether instances of inversion are

regularly followed or preceded by **other NCCs.** Again, this is a binary classification into yes and no. The analysis therefore comprises various features that take into account a broad range of possible reasons for word order alternations proposed in the literature.

With this data it is possible to evaluate which factors actually have an impact on the choice of a construction, in this case inversion (and *there*-insertion with PP-preposing in English), and which do not. As I want to compare multiple variables, I decided to use the statistical computing program R. The implementation of my data and the analysis itself will be explained in the next section[47].

3.3. Analysis in R

R is an open source tool (R Development Core Team 2013) that serves various purposes. It is an environment for statistical computing and can generate statistical graphics and also is a programming language. A user can on the one hand add new functions; on the other hand packages are provided that extend R. In this analysis the package 'party' was employed, specifically two functions, namely 'ctree' and 'cforest'. These functions make it possible to predict and classify variable importance of various factors. This becomes especially interesting in cases where the number of predictor variables exceeds the number of subjects (see Strobl et al. 2009:323ff.). The authors give an example from genetics where thousands of genes can be predictors for one specific disease. Applying this to language, one could argue that there are numerous factors that decide on the binary decision on whether to use the canonical word order or choose a specialized form, a non-canonical word order. Viewed differently, various factors decide on whether a sentence stays in the default word order or is rearranged to an order that has a narrower functional range, displaying a more specified function. This multivariate analysis introduces the idea of random forests (see Breiman 2001), which are constituted by a set of classification trees. The concept of classification trees is what the function *ctree* is about. In what follows I will very briefly introduce the general ideas of ctrees and

[47] Please note that the data extraction with CSniper and the analysis in R are not connected to each other. CSniper serves to identify the correct patterns in the coprora and secure them by inter-annotator agreement; R was then used to analyze the consequent random data sheets.

cforests. In order to provide a clear terminological basis, this will be preceded by some comments on regression analysis and recursive partitioning, as these terms have to be clear for what follows.

3.3.1. Terminology

Regression analysis is concerned with the relationship among variables, especially between one dependent variable and one or more independent variables. It concentrates on the change in the dependent variable in case one of the independent variables changes. It tries to predict the value of the dependent variable with reference to the independent variables. In my case, the dependent variable is the word order, which is binary (non-canonical, canonical). The independent variables are for example the constituent length, the discourse status or the proposition type. In my case, regression analysis is interested in the relationship between those and the choice of word order.

Recursive partitioning is a statistical method that can be used to analyze a contextually multivariate situation. The graphical output is a decision tree, the visualization I use in my analysis, and which will now be explained in detail.

3.3.2. Ctree (Classification Tree; Conditional Inference Tree)

The analysis uses binary recursive partitioning, which means that it estimates a regression relationship in a conditional inference framework (Hothorn et al. 2015). Conditional Inference Trees (or classification trees) are "[...] a statistical approach [to recursive partitioning] which takes into account the distributional properties of the measures" (White & Liu 1994). As Baayen (2008:149ff.) states, classification trees visualize the decisions that have to be made to realize the choice between (in this case) a canonical or non-canonical structure. This binary response variable is to be predicted from various factors, in this case constituent length, discourse status, anaphoric linkage, etc. The output then only displays those variables that are actually involved, that play a role in the prediction of the response variable (for details see Strobl et al. 2009).

Again, the idea behind so-called decision or classification trees is that various data (predictors) can be inserted and are then displayed in their order of impact value

they have concerning a binary response variable, "[…] the algorithm for growing a tree inspects all predictors and selects the one that is most useful" (Baayen 2008:149). The most decisive feature can be seen as root from which the first two branches (or daughter nodes) emerge. Figure 12 shows a tree for LOCI (vs. CC). This is only inserted for means of general illustration; a detailed explanation will follow in the sections on the results and the interpretation of those.

One can see that '1' on top signifies the most important feature; here whether the NP or the PP is the heavier constituent, in the decision on whether to chose a NCC or CC. In case the logical subject is the longer constituent (or the PP and the logical subject are equally heavy), one derives another decision point, this time involving the discourse status of the subject_NP, etc. On the last level (leaf node, see Baayen 2008) there are bins, colored black and/or white. Black (in this case) signifies the preference for NCCs after going through all the intersections, white stands for CC. The bins give the number of examples (e.g., n=194 in the second bin) and the (visual) percentage share, the relative preference between CC and NCC. It is important to note that those features that are statistically non-significant do not appear in the tree, as they have no predictive value. In the example below, there is for instance no intersection involving 'anaphoricity'. This does not mean that this feature has no impact at all, for the calculation in ctree however, it does not, as other features are stronger.

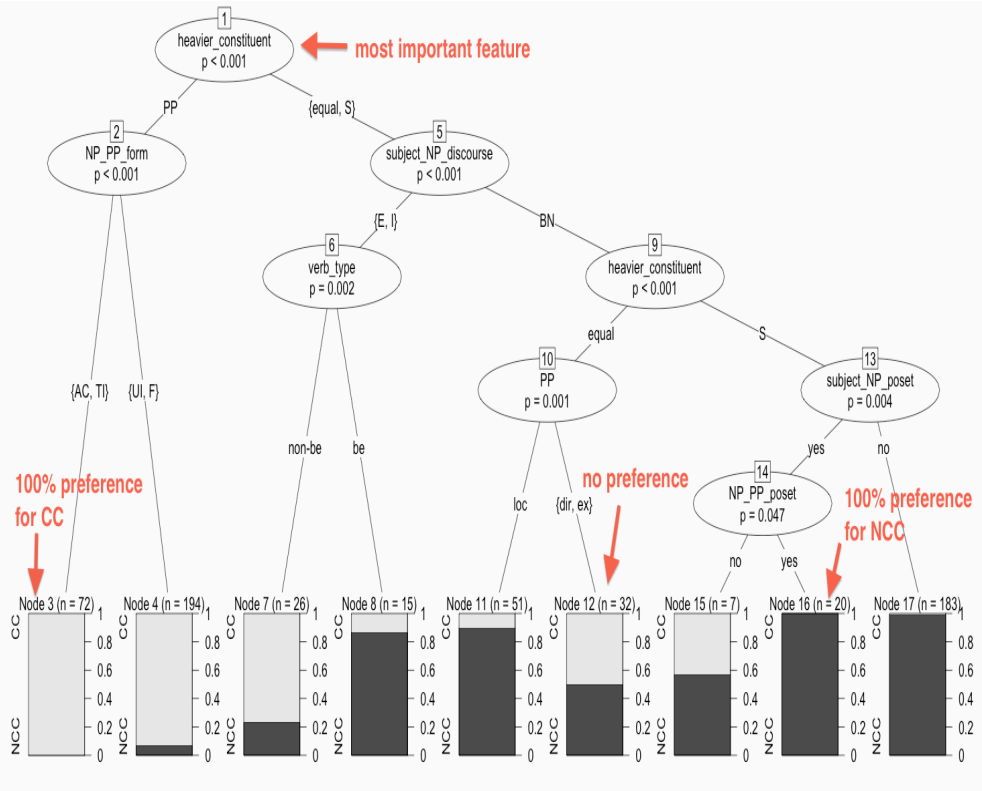

Fig. 12: Example of a ctree graph for LOCI vs. CC

This should suffice to demonstrate the nature of ctrees for my purpose. It is important that due to the clear visual representation it facilitates interpretation and gives a well-founded impression of factors encouraging the use of NCCs in English (in this example). There are critical voices that mention possible misguidance and instability due to variable deletion or variation, as mentioned above with the example of 'anaphoricity'. It may be that a variable causes a further split in one branch due to the nature of the mother node, but does not trigger a split in another branch. In one case it is a main effect (meaning it generates a split), not so in the other. However, it is noted, "[…] that classification trees cannot (or, rather, are extremely unlikely to) represent additive functions that consist only of main effects, although they are perfectly well suited for representing complex interactions" (Strobl et al. 2009:330). For technical details the reader is advised to consult Hothorn et al. (2015:8ff.) and Strobl et al. (2009). In order to secure the results, I

will also use the function 'cforest' (an ensemble of classification trees), as explained in what follows.

3.3.3. Cforest

Cforest and ctree are close in nature, cforest, however, includes the whole range of features in the analysis. This means that features that do not have an impact on the decision of whether to use the canonical or the non-canonical version are also displayed and given the value '0'.

Cforest illustrates the conditional importance or permutation importance, as defined by Strobl. et al. (2009). It therefore shows the impact a feature has on the linear order of a sentence, not saying which alternation is triggered, but which feature is of importance to choose either the canonical or the non-canonical variant. A major advantage is the fact that a large number of variables can be included without running the risk of variable deletion.

Figure 13 gives an example of the function cforest, again by evaluating the use preferences with reference to LOCI vs. CC. As one can see here, the y-axis displays all the features included in the analysis of this data set. The x-axis shows the value of impact the features have on the choice between LOCI and the canonical word order. As already seen in the ctree above, the relative weight between the PP and the logical subject is the most influential choice (again, the interpretation will follow). The features are ordered top-down, 'language'[48] is, together with e.g., negation, a feature that does not trigger a word order alternation.

[48] Naturally, 'language' does not play a role, as this is a monolingual analysis. However, it shows that all features are included, despite their influence on the results.

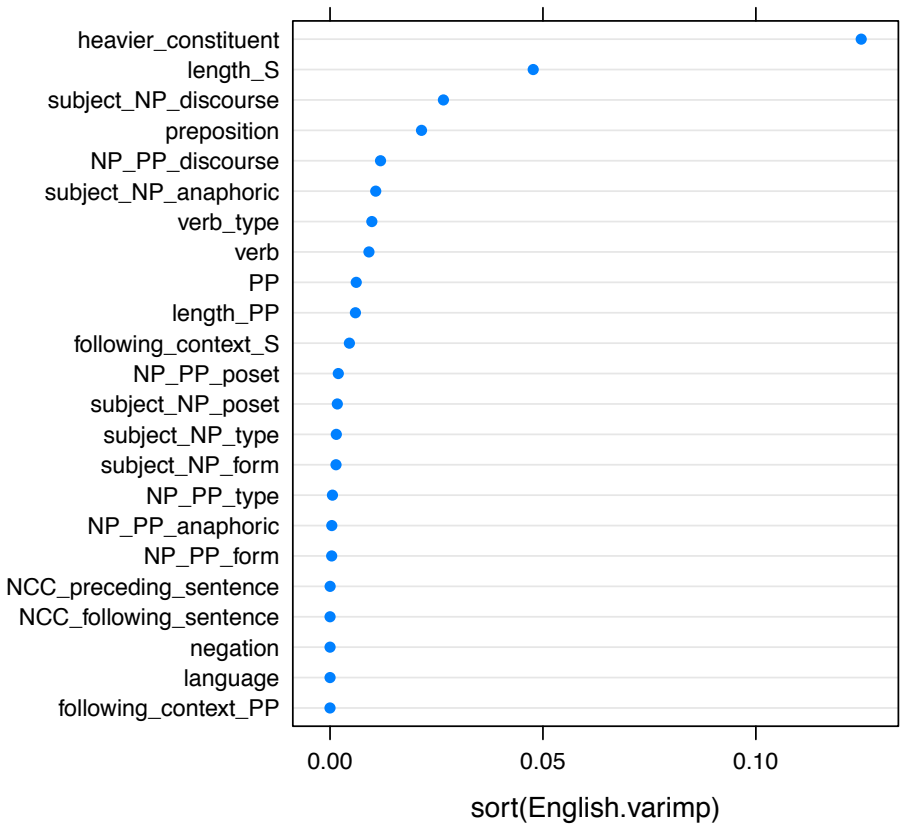

Fig. 13: Example of a cforest graph for LOCI vs. CC

3.4. Results

After having introduced the nature of my data, the procedure chosen to extract it from corpora and the analytical framework, I will now present the results. They are separately listed for (i) English_LOCI vs. English CC, (ii), English_THERE vs. English_CC[49], and (iii) German_NCC vs German_CC. The analyses for (iv) English_NCC vs. English_THERE vs. English_CC, and (v) English_NCC vs. English_CC vs. German_NCC vs. German_CC[50] will be added in the chapter on the interpretation, as the results will be clearer after the basic data-pairs have been

[49] Please note that this is only done on the monolingual English level, as its purpose is the distinction of LOCI and there-insertion with PP-preposing, which are often conflated in the literature.

[50] Please note that this can be subject to objections concerning the comparability. However, as I show the results for the monolingual datasets, I consider the direct comparison an interesting addition that can be evaluated against the monolingual results in the section on the interpretation of the results.

analyzed. The results[51] for (i) – (iii) will be shown graphically and explained in detail. The actual interpretation and the comparison with the claims made in the literature follow in section 4.

3.4.1. English

3.4.1.1. LOCI vs. CC

I will start out with the comparison of locative inversion and its canonical counterpart in English.

As one can see in Figure 14 the relative weight is the most important feature in the choice of word order (in case of the binary set of possibilities). In case the logical subject (in a canonical sentence the preverbal NP, in a non-canonical example the postverbal NP) is heavier or equally heavy as the PP, the discourse status of the NP of the logical subject (subject_NP_discourse) further decides. In case it refers to a familiar entity (being evoked or inferrable), the verb type is a clear indicator for word order preference. With verb forms of *(to) be*, almost 80% (of n=15[52]) of all examples in node 8 prefer the non-canonical order. An example for the non-canonical word order in this node is given in (207), for canonical in (208).

(207) […] GLITTERING gems fashioned into beautiful jewellery are on display at an Essex gallery this month. On display are earrings, necklaces and bracelets made from lapis, carnelian turquoise, jade, amber and amethyst…[…] (BNC, CFC 19613-19725)

(208) […] Gardeners know the value of a really sharp knife for pruning as well as propagating. These sharp tools are from Sandvik's range of gardening knives. […] (BNC, A0G 14387-14450)

In case the verb displays a form of a *non-be* verb (node 7), English prefers to stay with the canonical (default) word order (209). Although the preference for CC is

[51] Please note that the datasets differ slightly featurewise for ctree and cforest. The graphs for the cforest analysis include all annotated features. The ctree datasets exclude the categories of preposition (lexically) and verb (lexically) due to reasons of visualization. In the tree the lexical values would make the graph unreadable due to the diversity of these categories.

[52] The number of example sentences per bin constitute together the overall sum of examples of n=600.

very strong, some cases of NCCs can be found in this bin (ca. n=5, see example 210).

(209) […] If only she and Michael had more time together, time for her feelings to rise close enough to the surface for her to be sure of what they were. Michael burst into the sleeping-space. […] (BNC, A0R 95134-95172)

(210) […] Candice Riberon who was in a thriller called Le Métro is his favourite so far, but there is a long way to go. I have seen Métro. It opens with a very long sex scene in a small apartment. On the bed lies Candice Riberon. […] (BNC, FAJ 131380-131412)

When the subject_NP refers to a new entity, the relative complexity of the PP and the subject_NP comes in again. On the top level the restriction was that the subject be heavier or equally heavy than the PP. In case the logical subject is clearly more complex, the poset relation of the subject_NP represents the next node. Without any poset relation of the subject_NP (to the preceding context), which also is the heavier constituent and represents brand-new information, English prefers the non-canonical word order (LOCI) in 100 percent of all cases (n=183, node 17), therefore prefers to postpose the logical subject (211).

(211) […] The platoon headquarters were in a deserted village surrounded by a native rock and rubble wall 8 to 10 feet (3m) high with only two narrow entrances that led into the village with its three large circular huts, each 30 feet (10m) in diameter with conical roofs about 20 feet (7m) high. Between the huts were stone platforms holding Lulic poles carrying sacrificial buffaloes' horns. […] (BNC, CCS 199078-199174)

When there is a poset relation to the preceding context, the poset linkage of the NP_PP further narrows down the preference for either word order. When there is a linkage of the NP_PP to the prior context, NCC is absolutely preferred (for n=20 in example 212, node 16).

(212) […] Ramsey bicycled over to Wordsworth Grove to see if there were any letters. On the mat was a letter from Winston Churchill. […] (BNC, A68 178609-178656)

In case the PP does not show any linkage, there is no clear preference; only a slight tendency towards NCC (for n=7) is visible. (213) gives an example for the canonical order, (214) for an NCC of this node (node 15). However, as one registers the distribution of examples, the preferences displayed in the bins vary a lot in their impact in the overall use preference.

(213) […] Looming over the Everqueen it reached out to caress her cheek with its claw. Lightning split the night and the daemon was knocked back. A frail-looking figure emerged from the forest. […] (BNC, CM1, 194156-194203)

(214) […] At the back of the shop we found an old mannequin with a bob hair-do and a 1920s low-waisted dress. Beside the mannequin was a wind-up gramophone in a dark cabinet. […] (BNC, FEM 14750-14814)

There is one more branch on level three for those sentences where the two constituents (subject_NP and NP_PP) are equally long. Here the nature of the preposition in the PP decides. For directional and existential PPs (node 12), there is no clear preference (n=32). (215) gives an example for a canonical sentence, (216) for a non-canonical one. With a locative PP (node 11) the non-canonical word order (217) is strongly favored (in about 90% for n=51). However, it also allows for instances of canonical order (218).

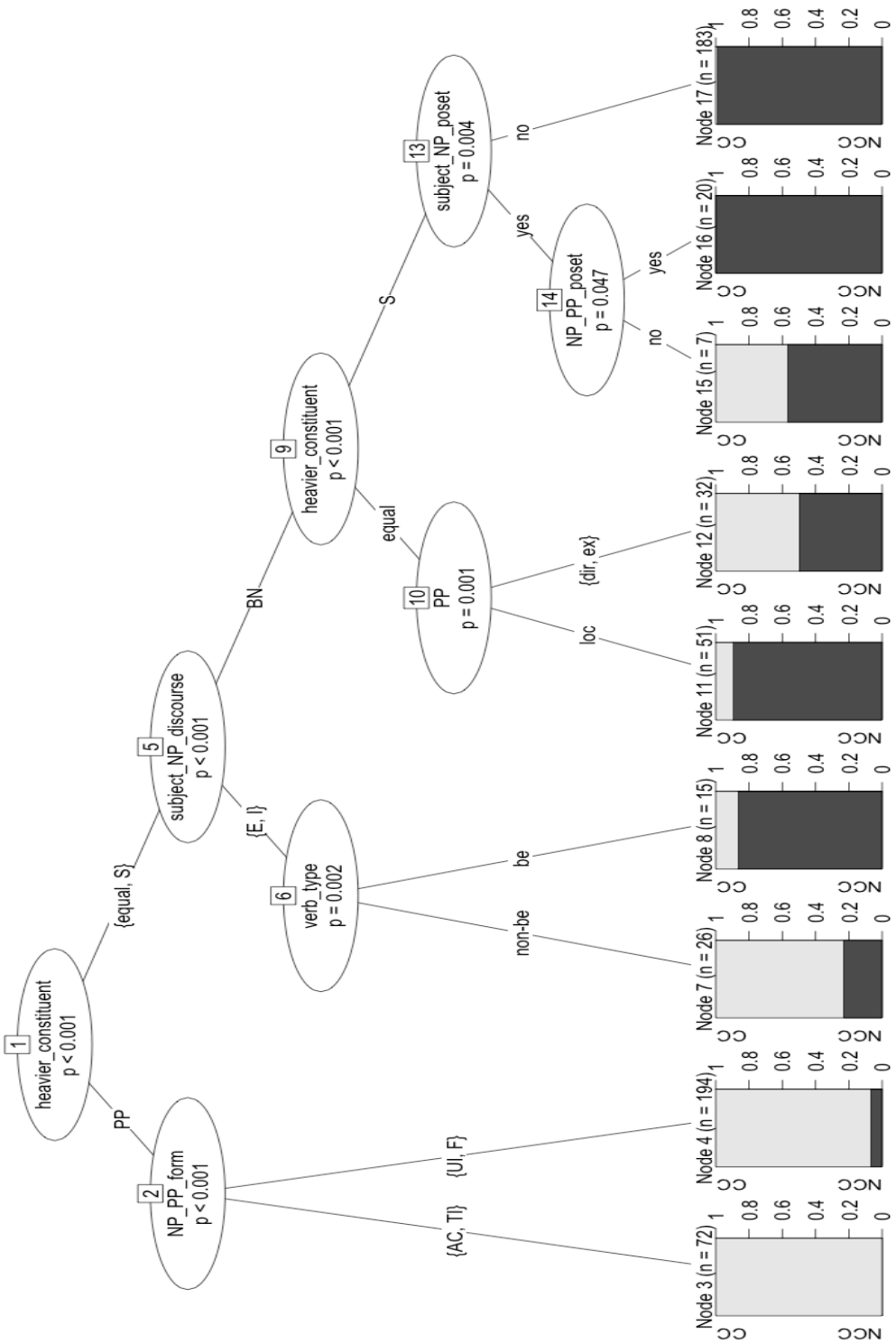

Fig. 14: Ctree LOCI vs. CC

(215) […] I no longer cared about seeing the film, though it was to be the last with my great hero Sean Connery. I just wanted to get to Leicester Square. The answer came from heaven. […] (BNC, A0U 137837-137865)

(216) […] Gwen yawned unconcernedly at the compliment. From the kitchen came a high whistle. […] (BNC, GUD 109201-109238)

(217) […] I now wear a blue sweater beneath a navy anorak, dark slacks, anonymous. On my left hand is a clean bandage. […] (BNC, J13 180830-180865)

(218) […] Trevor went on talking to Derek: 'The Luctians preserve Vascar limbs,' he said. A twisted sculpture appeared on the screen. […] (BNC, A0R 93007-93050)

On the left side of the ctree, in case the PP clearly is the heavier constituent, the form of the PP decides for the next (and ultimate) split. In case the PP represents either an activated or a type identifiable entity, the preference absolutely is on the canonical side for n=72 in node 3. (219) gives an examples for that.

(219) […] At its annual meeting in Belfast, the Presbyterian General Assembly received a report promoting the amendment as implementing a rightful civil liberty (Irish Times, 6 June 1986). Further criticism came from Roman Catholics in Britain. (BNC, A07 192635-192690)

For NP_PPs with the form of uniquely identifiable or familiar, the chance for the use of the non-canonical variant increases, however, only slightly. For n=194 about 10% display the pattern of locative inversion. In (220) the canonical version of this node 4 is illustrated, the non-canonical one in (221).

(220) […] And he dumped the wine on the table with a crash. A clean glass fell onto its side, rolled off the table onto the quarry tiles and

shattered. ‘What on earth's going on?’ Rodney appeared in the living room doorway. […] (BNC, A0R 124357-124400)

(221) […] He whistled as he chopped and, as he tipped the vegetables into the frying pan, he sang, to the tune of Candyman Blues, the following song. […] Underneath the frying pan was another note. […] (BNC, ASS 103996-104039)

As one can see, quite a few of the factors used for annotation are not present in the ctree, as they do not trigger a decision here. The following Figure 15 displays the cforest analysis for the dataset of CC vs. LOCI.[53] All features are included; the x-axis indicates the strength impact they have on the choice between LOCI and CC. Features as for example ‘negation’ have no influence at all. The relative weight of the constituents on the other hand is the most relevant factor for the preference of either CC or LOCI. These results mirror the results of the ctree, adding information on the features ‘preposition’ (lexically) and ‘verb’ (lexically) that are not part of the dataset for the ctree analysis. A thorough discussion on the effect of all of these features and possible reasons for their lack in the tree will be given in chapter 4 on the interpretation of the results.

[53] The numerical values of relevance for all features included in the cforest graph can be found in the appendix.

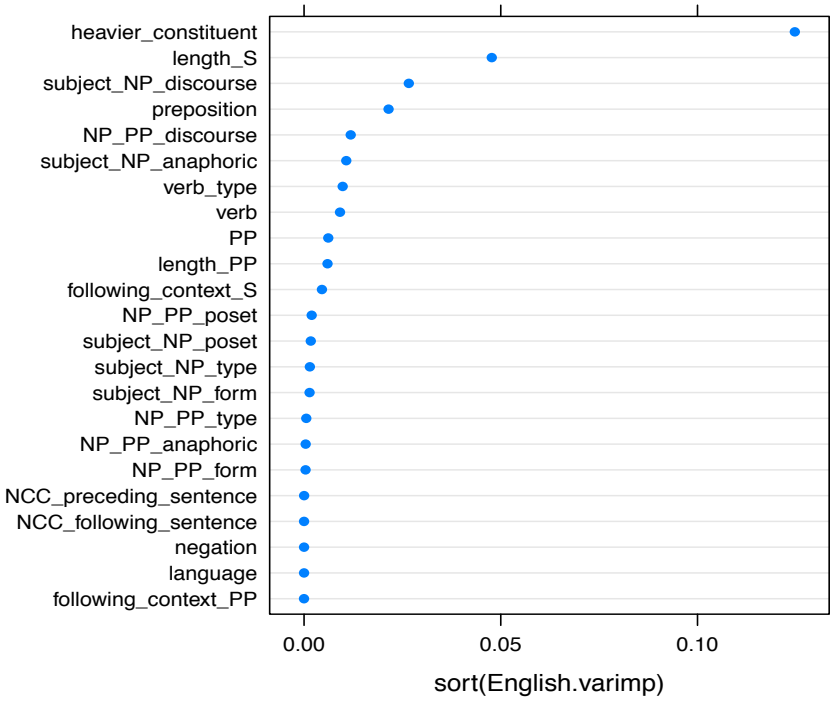

Fig. 15: Cforest LOCI vs. CC

3.4.1.2. THERE vs. CC

In direct comparison to what has been said in the previous section stands the analysis of the conditions under which the sentence favors either the canonical or the non-canonical word order in *there*-insertion with PP-preposing (THERE). The ctree for this dataset is given in Figure 16.

Starting on the left side of the tree, one can see that the majority of examples result in the preference for CC. The first node on top is (as with the comparison between locative inversion and CC) the relative weight. In case the PP is heavier or equally complex than the logical subject, the verb type is the feature to decide on the next level. For verbs other than *(to) be*, there is a clear preference for the canonical order for n=220 examples (node 3). An example for a canonical sentence is given in (222), (223) shows the unlikely non-canonical variant with this feature combination.

(222) […] Inventing farfetched excuses, she left me trapped in her flat and made no attempt to help me look for work. From the window I saw the flats opposite, their even lines making them look like children's drawings. Noisy voices floated through their windows. […] (BNC, A0U 89224-89267)

(223) […] Jack of Longleigh, Adam of Rochester, and Ydrys obediently fell silent, thinking that perhaps they had arrived in time to witness the last ebbing breaths of their one-time Lucifer. They queued, docile and long-faced, by the window, their caps in their hands, waiting to be allowed to peep inside. On the bed there indeed lay a man. […] (BNC, HTN 182496-182530)

In case the verb is a form of *(to) be*, it comes down to the form of the subject_NP on the next level. Subject_NPs referring to a specific entity (activated or uniquely identifiable), followed by an anaphoric NP_PP, result in a 60% preference for the canonical order (node 8, n=7, see example 224). (225) gives an example for possible non-canonical sentences. When there is no anaphoric relationship (see 226) between the referent of the NP_PP (node 9) and the preceding context (node 9), THERE is not used at all for n=53.

(224) […] is the ideal place to forget the worries of the 20th century and step back in time, and the apartments offered at the Castel Cortevecchio all provide a relaxed and comfortable holiday base in the heart of this unspoilt, unhurried countryside. A fairytale world from the 13th century. The swimming pool is near the castle. […] (BNC, ECF 401119-401155)

(225) […] "That is the river market you see before you in the water. On those boats you can buy anything from a loaf to a life. I have kept my half of the bargain, though I never guessed how costly it would be for me. Beyond the river market is the Rivergate. […] (BNC, GWF 192780-192821)

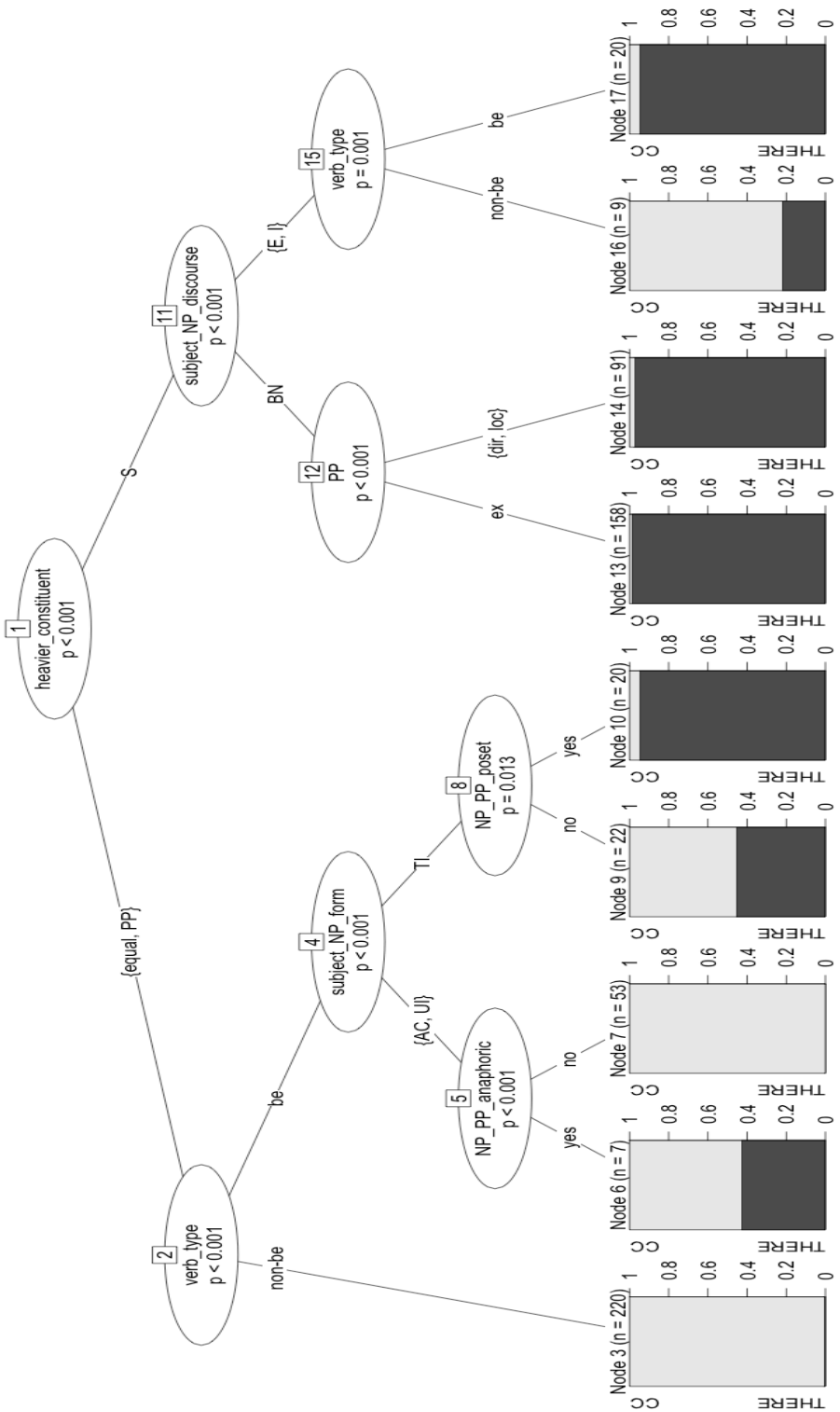

Fig. 16: Ctree THERE vs. CC

(226) […] ‘Abdulla,’ I said, pointing to the ground, ‘who brought these shells here?’ ‘Nobody,’ he said, not taking his eyes off Mick working on the wheel. ‘They are everywhere. This area was under the sea. […] (BNC, AT3 173398-173426)

Going up one level, in case the subject_NP is type identifiable, therefore not referring to a specific entity, the chances for THERE to be applied increase. The use of THERE is further encouraged when the referent of the NP_PP is in a poset relation (227) with an entity in the preceding context (95% for n=20, node 10). (228) gives the only example (in my dataset) for a canonical counterpart. In case the NP_PP does not stand in poset relation (229), the preference for THERE sinks to a likelihood of ca. 40% (n=22). (230) gives a canonical sentence (node 9).

(227) […] The meeting was in a Notting Hill flat. The room was full of young men talking politics and being affably rude to each other. […] In a corner of the room there was a mimeograph machine. […] (BNC, FRH 149990-150045)

(228) […] We watch the films of the 1970s almost non-stop on TV. And they're especially evocative, not just because they're detailed period pieces (just look at those sideburns) but because they so often recall the circumstances in which we first watched them. Think about it: why did we go to the cinema, in those days? It was still new, exciting, a treat. X-certificate films were within our grasp. […] (BNC, ASD 20259-20301)

(229) […] The task is by no means easy: not only are there the writings of Marx and Engels and then later Lenin, but also the revisionist writings of Berstein, Rosa Luxemburg and most recently the critique from within the Marxist camp from people such as Althusser and Kolakowski and other Euro-communists. Alongside theory is practice. […] (BNC, CDW 63470-63679)

(230) […] Our country reports and the annual report have changed. Now you get more of the political and social backdrop against which the atrocities are occurring'. Other changes were in the offing. […] (BNC, CJR 86581-86614)

On the right side of the decision tree, with the logical subject clearly being the more complex constituent, the discourse status of the subject_NP represents the next node. In case the referent of the subject_NP is evoked or inferrable, the verb type again makes a difference. Sentences with a form of *(to) be* strongly favor the non-canonical order (n=20), non-*be* verbs result in a lower probability for NCC, namely ca. 20% (of n=9). (231) gives an example for NCC in node 17, its canonical counterpart in (232), again the sole example in this set. (233) represents a canonical sentence from node 16, (234) the non-canonical counterpart.

(231) […] Decorative touches include a shelf displaying collections of spongeware and pottery by Susie Cooper and Clarice Cliff. On the floor there is attractive yet practical maple flooring. […] (BNC, G2V 224387- 224449)

(232) […] These are reasons or issues, which have increasingly come to dominate our discussions within Obair in the past year. The first issue is about quantity. […] (BNC, EFD 87591- 87625)

(233) […] 'Trevor Newsom,' said Derek Carlisle, 'is now on Luctia, having just arrived from Vasca where he earlier recorded the interview we have just seen. An exhausted-looking Trevor walked into the picture. […] (BNC, A0R 114370-114422)

(234) […] Into this groove oakum, made by picking old rope to pieces in the prisons and workhouses, was driven by means of a mallet and a caulking iron, which is a chisel-like tool with a groove along the edge. Outside the caulking there remained an open groove between the planks nearly half an inch wide. […] (BNC, CEG 157614-157709)

In case the logical subject is the more complex constituent and the subject_NP is new to the discourse, almost all sentences prefer the non-canonical order (nodes 13 and 14). For existential PPs there is an exceeding number of examples with clear preference for *there*-insertion with PP-preposing, shown in (235). (236) represents one of two examples that are in canonical order in this node (n=158).

(235) […] These are particularly important considerations while differences, rather than similarities, continue to be a characteristic of English education. From diversity there has come richness and innovation. […] (BNC, CLY 71394-71505)

(236) […] This is achieved if the relations are in first normal form and all non-key attributes are fully functionally dependent on all the key. The relation course-detail shown in Figure 3.24(b) is in first normal form. […] (BNC, HRK 121789-121864)

The preference for NCCs is also supported in sentences with locative and directional PPs that involve a heavy logical subject introducing new information into the context (node 14). For locative and directional PPs, there is a slight decrease in preference for NCC in percentage, namely also two examples (however for n=91), and therefore negligible. (237) gives an example for the major part of this node, namely sentences that favor *there*-insertion with PP-preposing, (238) displays the canonical counterpart.

(237) […] Her scream echoed out onto the water beyond the house. Inside the room there was a moment of utter stillness. […] (BNC, FRF 115837- 115891)

(238) […] Looming over the Everqueen it reached out to caress her cheek with its claw. Lightning split the night and the daemon was knocked back. A frail-looking figure emerged from the forest. […] (BNC, CM1 194156-194203)

Again, the interpretation of the results will be discussed in chapter 4. In what follows the cforest graph is given in Figure 17, the numerical results for the cforest

analysis are to be found in the appendix. As before, Figure 17 includes all features annotated for and shows the order of influence the factors have on the preference of either the canonical or non-canonical order.

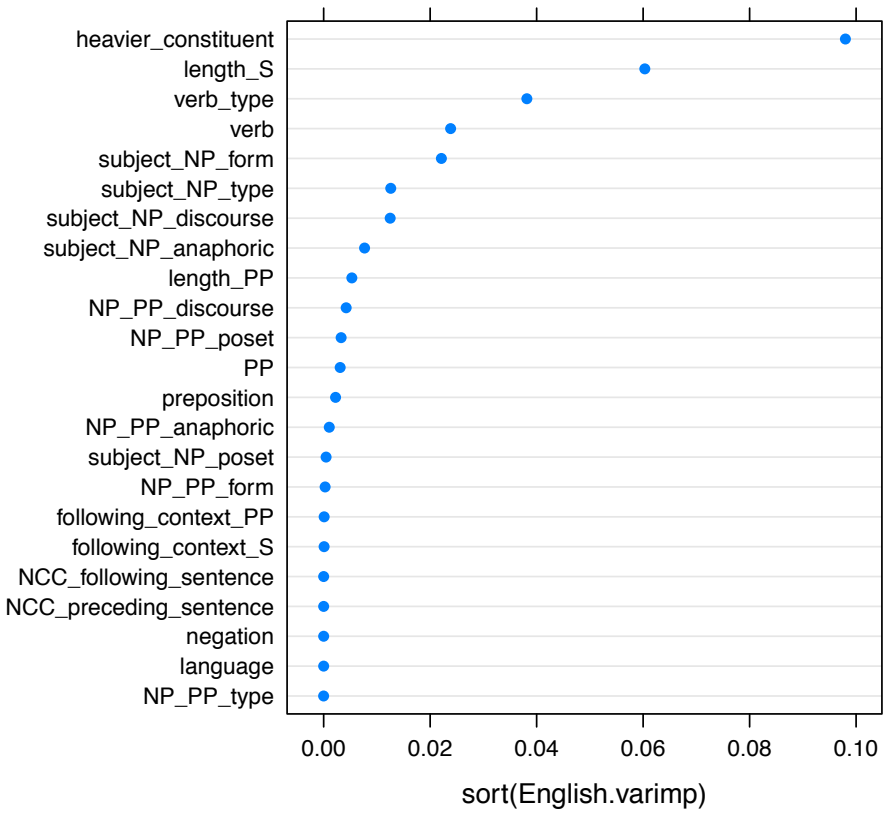

Fig. 17: Cforest THERE vs. CC

3.4.2. German

The pattern analyzed as NCC in German was the superficial equivalent of LOCI in English and called 'PP-preposing in German'. As a reminder, this was done to investigate potential similarities and differences the two languages show with regard to the use conditions of this specific non-canonical pattern. For German, the decision tree is displayed in figure 18 and will be explained in what follows.

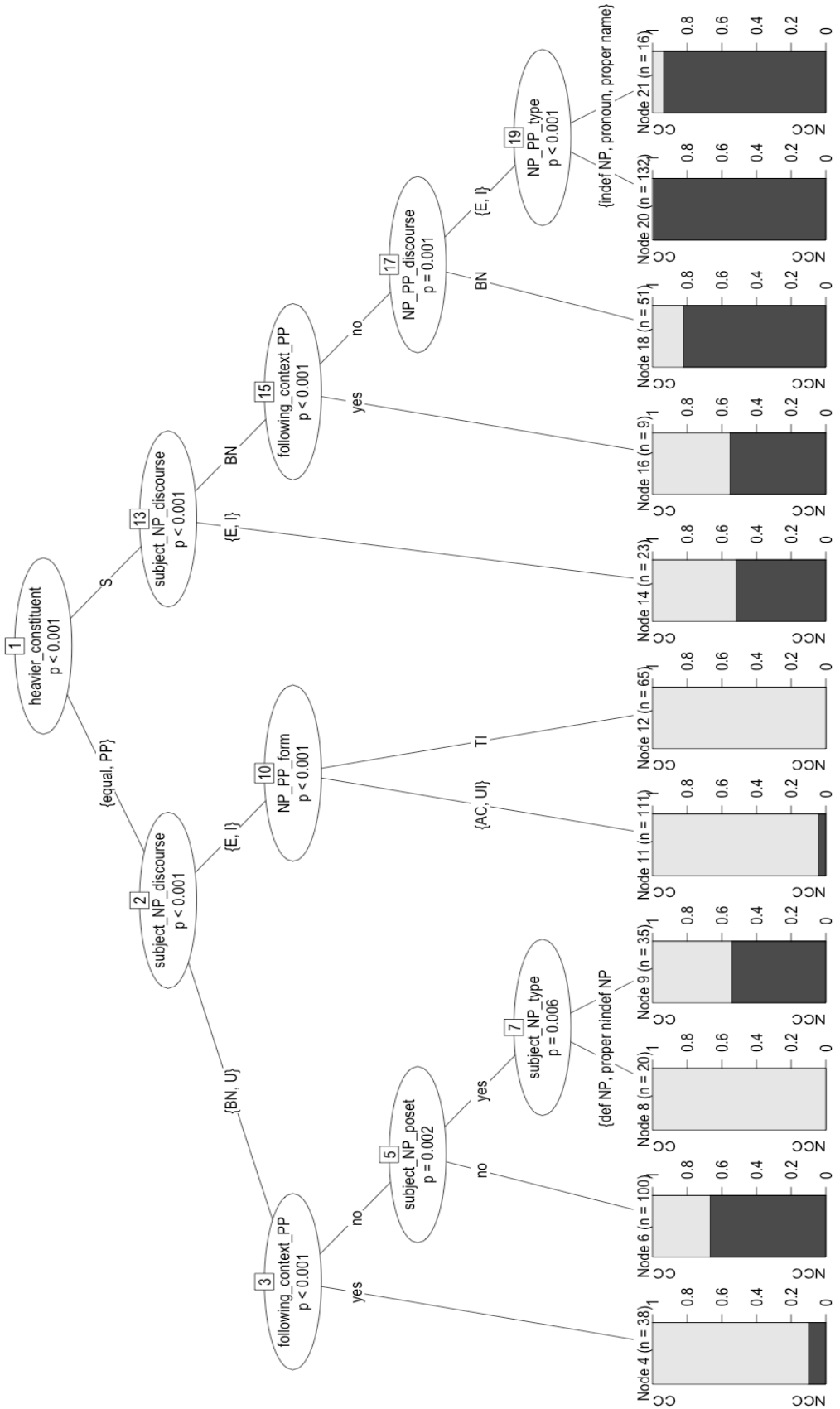

Fig. 18: Ctree CC vs. PP-preposing

The relative weight of the two constituents is here, too, the most important feature in deciding on whether to favor the canonical or the non-canonical word order. On the left side of the tree, with a PP more or equally complex than the logical subject, the discourse status of the subject_NP constitutes the next node. In case it represents a brand-new or unsused entity, the continuity of the referent of the brand-new NP in the following context follows. In case the PP is continued in the following context, the canonical word order is strongly preferred (239). (240) is the non-canonical counterpart.

(239) […] Über die Chancen , den Krieg zu beenden, den niemand
About the chances the war to end which no one
gewinnen kann, schreibt Heinz Wasmus aus Kabul. Eine rote Fahne
win can writes Heinz Wasmus from Kabul. A red flag
weht über dem Rohbau des Ministeriums für Kommunikation im
waves over the framing of the ministry for communication in the
Zentrum von Kabul. Das Gebäude, das schon jetzt alle anderen
center of Kabul. The building, which already now all others
in der afghanischen Hauptstadt in den Schatten stellt, gilt den
in the Afghan capital in the shadow puts, counts the
staatlichen Planern als Symbol für den Aufbruch des Landes in die
federal planners as symbol for the start of the country into the
Moderne. […]
modern age
'About the chances to end the war, which nobody can win, Heinz Wasmus writes from Kabul. A red flag blows above the carcass of the ministry for communication in the center of Kabul. The building, which already outclasses all other buildings in the Afghan capital, symbolizes for the planners the start of the country towards modern age.' (TUEPPDZ T861222.50)

(240) […] Es wäre ein großer Fehler, uns zu unterschätzen, denn ein
It would be a big mistake us to underestimate, because a
Streik verläuft nach anderen Gesetzen als Verhandlungsrunden.
strike follows after other laws than negotiation rounds.
In vielen Stahlbetrieben läuft Kurzarbeit. Arbeitgeber wären doch

In many steel companies runs short-time work. Employers would but
froh, sie ihre Leute nicht bezahlen müßten. […]
happy they their people not pay must
'It would be a big mistake to underestimate us, as a strike follows different rules than negotiations do. There is short-time work in many steel companies. Employers would be happy if they didn't have to pay their people.' (TUEPPDZ T920114.44)

For the sentences without a non-continuing entity represented by the NP_PP, the contextual (poset) linkage of the referent of the subject_NP comes into focus. In case there is none (n=100, node 6), non-canonical sentences are favored (241), however not exclusively (canonical variants exemplified in 242).

(241) […] Bei diesem Treffen Mitte Oktober jedenfalls sei den Reagan-
At this meeting middle October anyway is the Reagan-
Leuten der Durchbruch gelungen: "Die Geiseln werden erst nach den
people the breakthrough succeeded. The hostages will only after the
Wahlen am 4. November freigelassen, als Ausgleich erhält der Iran
elections on 4th November released, as compensation receives the Iran
die Waffen, die Carter nicht liefern wollte", so Brenneke. Mit am
the weapons that Carter not deliver wanted so Brennecke. With at the
Verhandlungstisch saß Houshang Lavi. " Ich war selbst
negotiating table sat Houshang Lavi. I was myself
beteiligt am Verkauf von Waffen aufgrund dieses Handelns. […]
involved in sale of weapons due to this act. […]
'Anyways, during this meeting in the middle of October the Reagan people had a breakthrough: "The hostages will only be released after the elections of November 4; as compensation Iran will get the weapons, which Carter did not want to deliver", according to Brennecke. Also sitting at the negotiating table was Houshang Lavi. "I myself was part of the weapons deal that resulted from this action".' (TUEPPDZ T890715.184)

(242) […] Sie stürmen auf den Schulhof, reißen am Gebäude alle
They storm onto the school yard, tear on the building all
Außenlampen ab und unterbrechen so die Stromversorgung.
exterior lamp off and cut so the electricity supply
Pflastersteine fliegen durch die Scheiben in Wohn- und
Rocks fly through the windowpanes in living and
Schlafräume von fünfzehn bengalesischen Flüchtlingen. Jemand
bedrooms of fifteen Bengal refugees. Someone
wird durch Splitter verletzt […]
is by splinters hurt
'They run into the school yard and rip off all exterior lamps and in this way cut the electricity supply. Rocks fly through the windowpanes into the living rooms and dormitories of fifteen Bengal refugees. Someone gets hurt by splinters.' (TUEPPDZ T861117.70)

For examples with a contextual linkage of the subject_NP to the preceding context the type of the subject_NP becomes relevant. For definite NPs and proper names (n=20), the canonical order is preferred (243). There is no non-canonical alternative.

(243) […] Außerdem kann das keiner in dieser Saukälte ohne ein
Furthermore can that no one in this brass monkey weather without a
bißchen Schnaps aushalten. Es ist gegen 10 Grad unter Null. Der
little schnaps bear. It is around 10 degrees below zero. The
Schneesturm bläst gegen die Plastikplane, die das
snow storm blows against the plastic sheet which the
"Haupthaus" nach außen schützt. Den Schuh, daß wir eine
main house to exterior protects. The shoe that we a
Truppe von Alkoholikern sind, ziehen wir uns nicht an" sagt Mike
troop of alcoholics are put we us not on says Mike
bestimmt. […]
certain
'Furthermore, no one ca bear this brass-monkey weather without a little bit of schnaps. It is around 10 degrees below zero. The snowstorm blows against the plastic sheet that protects the main

house from the outside. We will not take personally the claim that we are a group of alcoholics, Mike particularily claims.' (TUEPPDZ T870127.52)

For indefinite NPs there is no preference for n=35 (node 9). The canonical version is given in (244), the non-canonical counterpart in (245).

(244) […] Lange Papierschleifen schlängeln sich von Laternenmasten und
Long paper loops dangle itself from lamp posts and
Kirchturmspitzen, umzingeln die Schlagstöcke diensteifriger Cops.
Church spires, surrounding the bats obliging cops
Computerausdrucke fallen aus weitgeöffneten Fenstern der
compurer printouts fall out far opened windows of
WallstreetWolkenkratzer: eine "Ticker-Tape- Parade" wie nie zuvor.
Wall Street- skyscrapers: a "Ticker-Tape-parade" as never before
'Long loopings of paper dangle from lampposts and church spires, surrounding the bats of obliging cops. Computer printouts fall from wide-open windows of Wallstreet skyscrapers: a "Ticker-Tape-Parade" as never before'. (TUEPPDZ T861030.52)

(245) […] Es ist ein Ros entsprungen wirft bei manchem beinharten Punk
it is a rose emerged throws with some bare-knuckle punk
heutezutage Verständnisschwierigkeiten auf. An der Haustür
today understanding problems upon. At the front door
hängen Silbersterne und Strohherzen; in der Küche brennt die
hang silver stars and straw hearts in the kitchen burns the
adventlich korrekte Anzahl von Kerzen im Tannengrün. […]
advently correct number of candles in fir green
'Lo, How a Rose E'er Blooming nowadays prompts problems of understanding for bare-knuckle punks. At the front door hang silver stars and straw hearts; in the kitchen burn the advently correct number of fir green candles.' (TUEPPDZ T941215.243)

The last branch on the left side of the ctree refers to given or inferrable entities the subject_NP refers to. It further depends on the form of the NP_PP. Although both

resulting nodes (11, 12) show a clear preference for the canonical order, the sentences with a NP_PP of the form 'activated' or 'uniquely identifiable' (therefore referring to a specific entity), give a slight chance (11 examples out of n=111) for non-canonical sentences (246). An example for the majority of CCs is given in (247). In case the NP_PP is of the form 'type identifiable' and not referring to a specific referent, NCC is not possible (248) for n=65.

(246) […] Aus der geöffneten Tür des neongrün beleuchteten
From the open door of the neon green lighted
Haarschneidesalons wehen Geruchswolken des "apa de colonie",
hair dresser salon blow odor clouds of the "apa de colonie"
Kölnisch Wasser, vorbei an den beiden uniformierten , pickligen
eau de cologne, past on the two uniformed pimply
Wachposten des Reviers. Sie dürften gerade volljährig sein. An
guards of the station. They might just of age be. On
ihrem Koppel hängen Pistole und Handschellen. […]
their belt hang gun and hand cuffs
'From the open door of the hair dresser salon illuminated in neon green odor clouds of "apa de colonie", Cologne, wave past the two pimply station guards, who just seem to be of legal age. On their belt are a gun and handcuffs.' (TUEPPDZ T910226.96)

(247) […] In Tripolis sind jetzt mehr kleine Geschäfte eröffnet worden.
In Tripolis are now more small stores opened become.
Kann das als Zeichen für Änderungen in der Wirtschaftspolitik
Can that as sign for changes in the economic policy
gewertet werden? Der Handel liegt in den Händen des Volkes.
become will? The trade lies in the hands of the people
'In Tripolis more small stores have opened. Can this be counted as a sign for changes in commercial policy? The trade is in the hands of the people.' (TUEPPDZ T861028.73)

(248) […] Damit löste das Institut sein im Dezember gegebenes
With it tackled the institute its in December given
Versprechen ein, wegen der außerordentlichen Gewinne beim

promise on because of the extraordinary wins with the
Verkauf der Flick-Aktien "den Aktionären und uns eine Freude
sale of the Flick-shares "the shareholders and us a treat
zu machen", wie es Vorstandssprecher Wilhelm Christians
to make, as it the chief executive Willhelm Christians.
formuliert hatte. Die Deutsche Bank sitzt auf Eigenmitteln von gut
formulated had. The Deutsche Bank sits on equity capital of good
zehn Millionen Mark.
ten millions marks
'By doing so the institute delivers on the promise given in December to "give the shareholders and us a treat" due to the extraordinary wins acquired with the sale of the Flick shares, as chief executive Wilhelm Christians had put it. The Deutsche Bank has equity capital of roughly ten millions of Deutsche Mark.' (TUEPPDZ T870401.48)

Looking on the right side of the tree one can see that with sentences that have a logical subject that exceeds the PP in length, the discourse status of the subject_NP again is important for defining a preference between CC and NCC. For NPs with a given or inferrable referent there is no clear preference (node 14). For n=23 examples both word orders are available and are given in the following examples, (249) shows the canonical variant, (250) the non-canonical one (*cabinet-glasses*).

(249) […] Die UNO-Posten stehen gelangweilt vor dem Hauptquartier der
the UN guards stand bored in front of the headquarters the
Blauhelme in Kiseljak herum. Die UNO-Kasernen in dem rund 20
blue helmets in Kiseljak around. The UN barracks in the about 20
Kilometer von Sarajevo entfernten Ort liegen auf einem Hügel über
kilometers from Sarajevo away place lie on a hill above
der Stadt. […]
the city
'The UN soldiers are standing bored in front of the headquarters of the blue helmets in Kiseljak. The UN barracks in the location of about 20 kilometers form Sarajevo are located on a hill overlooking the city.' (TUEPPDZ T951016.68)

(250) […] Neben zerfledderten Büchern, alten Plattenspielern und anderen
Next to tattered books, old record players and other
gebrauchten Elektrogeräten finden sich antike Lampen und
used electronic devices find themselves antique lamps and
Tafelsilber. In einer Vitrine stehen Kristallgläser und Porzellanvasen,
silverware. In a cabinet stand crystal glasses and china vases,
von der Decke baumeln Fotoapparate aus Zeiten, in denen ein
from the ceiling dangle cameras from times in which a
gelungener Schnappschuß noch Glückssache war. […]
successful snapshot still a matter of luck was
'Next to tattered books, old record players and other used electronic devices there are antique lamps and silverware. In a cabinet there are crystal glasses and china vases, from the ceiling dangle old cameras from times when a well-made snapshot was still a matter of luck.' (TUEPPDZ T950902.229)

For NPs with a brand-new referent, the extension of the NP_PP to the following context comes into play. In case there is contextual connection, the non-canonical word order (251) is a possibility, compared to the examples lacking this connection of the PP to the following context. However, it only refers to a small number of examples (n=9). (252) shows the canonical variation.

(251) […] Ihre mangelnde Ausbildungsbeteiligung ist daher durchaus zu
Their poor apprenticeship involvement is therefore indeed to
einem erheblichen Teil den Betrieben anzulasten. Zur Selektion
a major part the companies accused. To the selection
"ausländischer" Jugendlicher führen u.a. offen rassistisch begründete
foreign youths lead a.o. open racistically motivated
Ablehnungen oder Stigmatisierungen, vermeintliche Mitarbeiter-
rejection or stigmatization, alledged employees
oder Kundenwünsche, negativ bewertete kulturelle Aspekte oder
or customer wishes, negatively rated cultural aspects or
angeblich "objective" Kriterien wie Eignungstests (kulturspezifische
allegedly objective criteria as aptitude checks (culture-specific
Anteile!) Nur so kann erklärt werden, daß Migrantenjugendliche

parts!). Only so can explained be that migrants youths
lediglich halb so oft wie ihre deutschen Altersgenossen eine
merely half as often as their German contemporaries an
Ausbildung durchlaufen (können). […]
apprenticeship pass (can)
'Their poor involvement in aprenticeships is therefore majorly attributable to the companies. To the selection of "foreign" youths lead a.o. racialistically motivated rejection or stigmatization, negative rating if cultural aspects ir allegedly "objective" criteria as qptitude checks (culture-specific parts!). This is the only possibility to explain the fact that young migrants can complete an apprenticeship merely half as often as their German contemporaries do'. (T951018.250)

(252) [..] Zwanzig Computer spendierte IBM. Mehr als eine Million Mark
Twenty computers donated IBM. More than one million marks
stecken in dem Projekt. […] Zwar sehen wie Anne Gregori die
stick in the project [...] Even though see like Anne Gregori the
meisten das Projekt als "einmalige Chance", doch Geld gibt es im
most the project as unique chance, but money give it in the
Moment nur vom Arbeitsamt.
moment only from the employment agency
'IBM donated 20 computers. More than one million marks make up this project. Most people, like Anne Gregori, regard the project as a unique chance; money, however, is only coming from the employment agency.' (T990430.72)

For a lack of contextual linkage of the NP_PP to the following context, the feature 'NP_PP_discourse' further splits the tree. For brand-new referents of the NP, the non-canonical order (253) is strongly preferred for n=51 (node 18). About 20% of the examples in this bin show the canonical order (254).

(253) […] Dort hängt ein Hochzeitsbild: Sie in Weiß, er in Uniform. Auf
there hangs a wedding picture: She in white, he in uniform. On
dem Bücherregal stehen Plastikpanzer, Kanonen, Militärmützen und

the book shelf stand plastic tanks, cannons, military hats and
Militärauszeichnungen. Vor seinem Unfall war Iwan Schidlowski,
military awards. Before his accident was Iwan Schidlowski,
dessen Vorfahren aus Rußland stammen, in der Nähe von Kuwait an
whose ancestors from Russia stem, in the proximity of Kuwait on
der Grenze Saudi-Arabiens bei der Infantrie im Einsatz. […]
the border Saudi-Arabia with the infantry in action
'There is a wedding portrait with her in white and him wearing a uniform. On the shelf are tanks out of plastic, cannons, military hats and military awards. Before his accident, Iwan Schidlowski, whose ancestors come from Russia, was stationed in the infantry near Kuwait at the border to Saudi-Arabia.' (TUEPPDZ T910228.248)

(254) […] Dringendstes Problem ist hier die Personalfrage. Die Zukunft
most urgent problem is here the personnel question. The future
von 4.600 Beschäftigten steht auf dem Spiel. Fachbereichsstrukturen
of 4.600 employees stands on the game. Department structures
und die Angleichung von Studien- und Prüfungsordnungen
and the adjustment of study- and examination regulations
gehören zu den drängenden internen Problemen. […]
belong to the urgent internal problems
'The most urgent issue is the situation of the employees. The future of 4.600 employees is at stake. Department structures and the adjustment of study and exam regulations are part of the most pressing internal problems.' (TUEPPDZ T920713.42)

NPs that have an evoked or inferrable referent are further sensitive to the type of the NP_PP. When the NP_PP is an indefinite NP, a pronoun, or a proper name, the non-canonical word order (255) is absolutely preferred for n=132 in node 20. In case the NP_PP represents a definite NP (node 21), there is one example in my dataset for the canonical order, given in (256). An example for the non-canonical majority of all cases is given in (257), involving a definite NP_PP.

(255) […] 10.000 Mark kostet das Schiff, das mit chemischen und
10.000 marks costs the ship, which with chemical and
mikrobiologischen Labors bestens ausgerüstet ist, pro Tag. An Deck
microbiological laboratories optimally equipped is, per day. On deck
liegen Geräte mit so abenteuerlichen Namen wie Planktonhai, ein
lie instruments with such adventureous names as Planktonhai, a
vertikales Planktonnetz, Kastengreifer für die Sedimentproben und
vertical plankton net, box gripper for the sediment samples and
Dredgeeisen in verschiedenen Größen um die am Boden
dredge irons in different sizes for the on the ground
lebenden Tiere vom Meeresboden abzukratzen. Dr. Karsten
living animals from the sea ground scrape off. Dr. Kasten
Schaumann, der wissenschaftliche Fahrtleiter, der die Arbeiten an
Schaumann, the scienfific head of excursion, who the works on
Bord koordiniert, ist Mikrobiologe am Alfred-Wegener- Institut.
board coordinates, is microbiologist at the Alfred-Wegener- institute
'The ship equipped with chemical and microbiological laboratories costs '10.000 Marks a day. On deck are instruments with funny names such as Planktonhai, a vertical plankton net, box grippers for the sediment samples, and Dregdeirons of various sizes, used for scraping off creatures living on the ground from the bottom of the sea. Dr. Karten Schauman, the scientific head of the excursion, who coordinates the work on board, is a microbiologist at the Alfred-Wegener Institute.' (TUEPPDZ T960520.260)

(256) […] Das MOKS-Theater setzt unter seinem neuen Leiter Stefan
the MOKS theater plans under its new director Stefan
Becker fünf Neuinszenierungen an. Die Themen Arbeitslosigkeit,
Becker five new productions on. The topics unemployment,
Kriegs- und Fluchterfahrungen stehen im Mittelpunkt. "Das sind
war and flight experience stand in the center "Those are
schwere Themen, aber wir werden nicht in Düsternis versinken",
difficult topics but we will not in darkness sink",

kündigt der aus Kassel nach Bremen wechselnde Becker schon vorab
announces the from Kassel to Bremen changing Becker already advance.
an.
on
'The MOKS Theatre presents five new productions under its new director Stefan Becker. The topics of unemployment and experiences of war and flight are in the center. "These are difficukt topics, but we will not sink into gloom," announces Becker, who moved from Kassel to Bremen, in advance.' (T990430.229)

(257) […] Der Schuppen hat erst vor ein paar Monaten aufgemacht und -
the joint has only before a few months opened and –
obwohl er ganz in der Nähe ist - fahren Haytham und seine
even though he entirely in the proximity is – drive Haytham and his
Freunde dem Auto hin. […] An den Wänden hängen Fernseher , die
friends with the car there […] on the walls hang TVs, which
Videoclips der US-Charts rauf und runter dudeln. Amerika pur. Der
video clips the US-charts up and down blare. America pure. The
erst Anfang der neunziger Jahre beendete Bürgerkrieg ist hier
only beginning of the nineties years ended civil war is here
kein Thema. […]
no topic
'The joint just opened a few months ago. Although it is located near them, Haytham and his friends drive there by car. On the walls are TVs displaying videos from the US-charts. This is pure America. The civil war that ended in the beginning of the 90s, is not addressed at all.' (TUEPPDZ T960130.108)

In order to conclude the chapter on the results of my analysis, Figure 19 gives the graph of the cforest analysis with an overview of the impact the selected features have on the decision on whether to prefer CC or NCC.

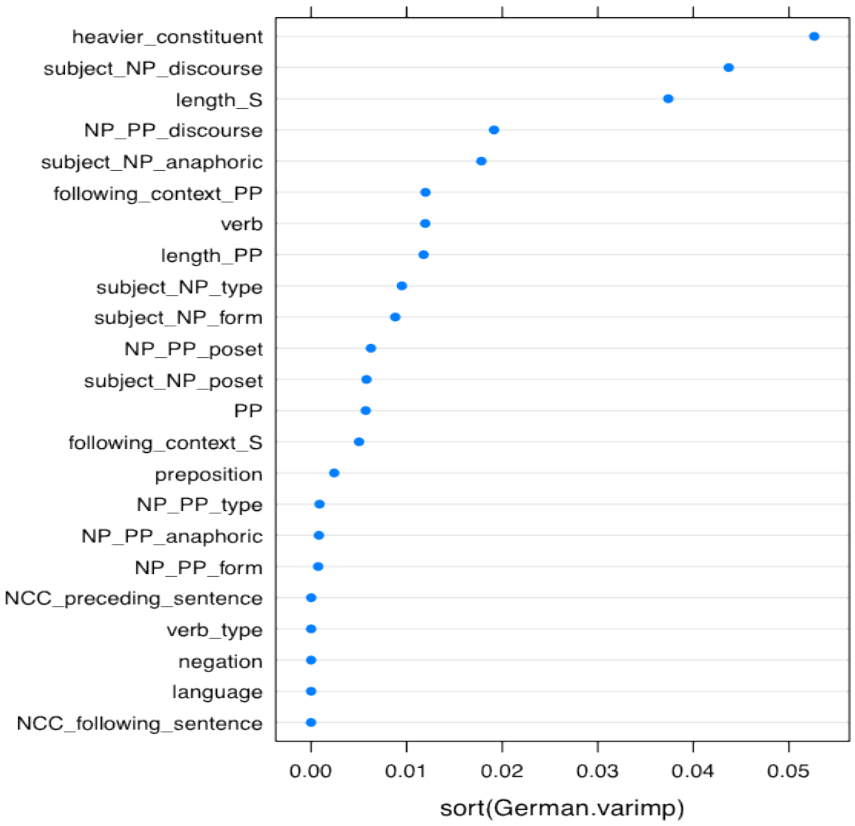

Fig. 19: Cforest CC vs. PP-preposing

4. Interpretation and Comparison

The outline of this chapter will be as follows: (i) I will give some information on the actual numbers of my data (with focus on the non-canonical patterns), (ii) I will compare all my findings (total numbers and statistical analysis) with the claims presented in chapter 1 and 2 (again, concentrating on the non-canonical constructions), and finally (iii) I will provide analyses of LOCI vs. THERE and LOCI vs. PP-preposing in German.

4.1. English

4.1.1. LOCI vs. CC

The first impression of the results support the claim Arnold et al. (2000) made for various word order variants[54], namely that discourse status as well as the relative complexity of the constituents both play a role in the choice of the word order alternation (here CC vs. LOCI). In what follows I will evaluate the role the separate features play in deciding what word order alternation to prefer.

For over a third of the examples within my dataset (n=266) the non-canonical order is a very unlikely option, in case the PP is clearly more complex. The form of the PP only constitutes a minor preference for the non-canonical order (13 sentences out of 266), in case the referent of the NP_PP is clearly identifiable (uniquely identifiable) or at least familiar, which relates to the fact that the referent has to be identifiable but does not necessarily have to be part of the current discourse. The discourse therefore has only minimal impact on the decision to stay with the canonical order. This leads to the conclusion that English in principle is not likely to deviate from its default word order in case the PP is more complex than the logical_subject. This can be supported by my data, as n=253/300 of all canonical examples include a PP that is relatively more complex than the logical subject.

For sentences where the length of the PP is equal to or shorter than the length of the logical subject, the preference for non-canonicity seems much more dependent on the discourse status of the NPs. With a brand-new subject_NP, 268 out of 600

[54] Arnold et al. (2000) looked at (i) Heavy-NP Shift, (ii) Dative Alternation, and (iii) Verb-Particle Movement.

examples prefer the non-canonical order. This preference is further strengthened by a lack of context linkage to the preceding context of the referent of the subject_NP. With this combination PP-inversion is absolutely favored. For cases where the referent of the subject_NP stands in a poset relation to the preceding context the preference for the default word order is eliminated by a possible linkage of the NP_PP to the preceding context. This means that the two poset relations basically override each other. But even if the referent of the subject_NP stands in a poset relation (eventhough it is brand-new) and the referent of the NP_PP does not, only 4 out of 600 examples prefer the PP being in the preverbal position. For cases of equal complexity of the PP and the logical subject, where the subject_NP clearly represents a brand-new entity, PP-inversion is clearly favored for sentences involving a locative preposition in the PP (n=44). Only 7 instances show the same characteristics for the preference of the default word order. For directional and existential PPs there is no clear preference. This strongly supports the claim that PP-inversion has a strong locative focus. What is interesting is that the anaphoric linkage of the referent of the subject_NP to the prior context seems to be dominated by the feature of the discourse status. In the cforest graph the two features show almost equal value. In the ctree graph, however, anaphoricity is not included, eventhough it is of importance. One possible explanation is that both features describe similar connections; discourse status is more general and maybe therefore more decisive.

For sentences with an evoked or inferrable referent of the subject_NP (and S being equally long or longer than the PP), the verb type plays an interesting role. 13 out of 15 sentences favor the PP-V-NP order when involving a form of *(to) be*, although the subject_NP represents given information. This preference cannot be witnessed with sentences containing non-*be* verbs; only 6 out of 26 show a preposed PP (interestingly mostly around a locative PP). Here, the discourse status seems to be the dominating force. Although the logical subject is possibly longer, the evoked/inferrable subject_NP is favored in preverbal position.

In chapter 2.3.5. I presented some constraints associated with the verb in a felicitous inverted sentence. Birner (1996:109) states that PP-inversion is more frequent with non-*be* verbs, as non-*be* verbs are more restricted to PP-inversion

than to other inversion types. As I only regard PP-inversion I cannot test that claim. What I can state is that 78 examples involve a non-*be* verb. Be-inversion therefore constitutes the majority. What I can confirm is the claim, that PP-inversion is dominated by the locative use. 185 examples involve a locative preposition. All instances of be-inversion that do not involve a locative preposition have an existential PP in preverbal position. There are no examples for directional PPs in sentences with *(to) be*. This is exclusive to non-*be* verbs (n=12). Non-*be* verbs in general can therefore appear with all types of PPs.

Furthermore, Birner (1994, a.o.) claims that the verb may not introduce new information. For all non-*be* verbs (as *be* naturally does not introduce new information), my data confirms this. I checked all instances of non-*be* verbs and their connection to the discourse. All verbs were anchored somehow in the prior context. The following examples illustrate this:

(258) Near our feet **lie** dead brambles. (BNC, J13 162382-162414).

(259) Beside the President **sat** Susan. (BNC, A0R 99877-99908)

(260) Behind each cause **lie** assumptions about the way in which society does and should operate. (BNC, APN 106385-106474)

Additionally, there is the claim (Bresnan 1994:83) that the verb needs to have locative or directional meaning in order to be used in a grammatically correct PP-inversion. Birner & Ward (1998:187) already refuted this; I can do so too by using my data, as in (261).

(261) […] Immediately after this he announced that he intended to marry her. With this body-blow came a plea for understanding. […] (BNC, CBN 152856-152906)

Finally, there are no instances of negation of the verb as in the example (150), here repeated as (262).

(262) *On the wall a picture of U. S. Grant. (Bresnan 1994:88)

Although not present in the ctree and labeled as 'not influential' in the cforest analysis, the types of the subject_NP and the NP_PP in the non-canonical order are worth noting. Interestingly, I did not find any instances with a pronoun in the preverbal position (in the PP). This would have been expected, as a pronoun is the most evoked entity possible and the common opinion is that language tends to order given information before new information. That there are no logical subjects represented by pronouns is less surprising, as this position is more likely to represent brand-new information, which would e.g., exclude anaphoric pronouns (Webelhuth 2011:83). Figure 20 gives an overview:

LOCI	Pronoun	Definite NP	Indefinite NP	Proper name
NP_PP	0	251	44	5
Subject_NP	0	50	182	68
Sum	**0**	301	226	73

Fig. 20: NP-types in LOCI

In what follows I will go through the prior approaches presented in the theoretical part of this thesis and check whether the claims on function and use conditions concerning PP-inversion are supported or contradicted by my data.

The Functional Sentence Perspective

The theme-rheme distinction (from the theory of the functional sentence perspective) can be supported by my data, however, not absolutely. 249/300 sentences in the LOCI-dataset have a PP referring to an evoked or inferrable entity and at the same a subject_NP with a new referent. However, there are also examples that do have a new entity in preverbal position (in the PP) and an equally new referent in the subject_NP. The idea of 'theme' being the old information that precedes 'rheme', being the new information is therefore not true for all examples. In this case, however, it does not pose a problem as the approach only applies to

cases that clearly show a theme and a rheme. With two equally new constituents, the Functional Sentence Perspective makes no predictions. With Halliday's understanding of theme/rheme being the preverbal/postverbal element there is of course no problem, as it merely describes the structural nature of a sentence.

The Functional account I

Green (1980) proposed four major functions for inversion. The practical function is to facilitate comprehension by presenting the scene to the hearer. Her example was (112), here repeated as (263):

(263) Underneath the basket is Smith.

As this is uttered during a basketball game, the NP_PP *the basket* is given information, the preposition relates the setting locally. I can find evidence for this function in my data, 44 examples (i) involve a locative preposition and (ii) order evoked information before new information.

The second function, namely the connective function, is more general. It does not explicitly relate to locative contexts and only requires contextually given (or inferrable[55]) information to be in the preverbal position. 249 examples fulfill this in my dataset. The function can therefore also be validated, even though not proven to be universally true of all inversion sentences.

The third function, the introductory function, is harder to find. It claims that inversion can be used to start a discourse. There must therefore not be any prior context. In my data I found three examples that could be regarded as fulfilling this function. All three of them start a new discourse, mostly following a headline (which was not regarded in the annotation). One example is given in (264):

(264) [High-tech pupils scoop the news.] Among the news teams scouring the show for stories was a group of 14 12- to 13-year old pupils from the Brewood-Wheaton Aston School, Staffs. (BNC, ACR 255336-255477)

[55] Green did not use the term 'inferrable'. I employ it due to the arguments presented in chapter 2 for treating evoked and inferrable information both as given.

However, this is very rare. All other instances of inversion in my data have either an evoked or inferrable entity referring to the NP_PP, are therefore dependent on prior context, or are brand-new, but appear within a context and therefore do not start a new discourse.

The fourth function, the emphatic function, which, according to Green, moves something unexpected in postverbal position, can be found in n=249 examples (if interpreted as evoked/inferrable NP_PP and brand-new subject_NP, see the connective function). However, examples like (265 - 267) do not display any emphatic effect, at least in my opinion. A lot of the examples rather describe the scene and add new information to it.

(265) […] I now wear a blue sweater beneath a navy anorak, dark slacks, anonymous. On my left hand is a clean bandage. (BNC, J13 180830-180865)

(266) […] They were fitted with special locks, and the roof, sides, ends, and floor were plated with steel. At one end was a compartment for the two armed guards who always travelled with a consignment of this kind. […] (BNC, B2S 31255-31559)

(267) […] So far about 35 of the exclusive cars have been delivered by Jaguar, though few are expected to be seen on the road. Among customers are singer Elton John and the world's richest man, the Sultan of Brunei. (BNC, CEN 102888-102976)

Concluding, the functions proposed by Green (1980) can be identified in my dataset. However, they do not explain the reasons for why theses examples favor the non-canonical order instead of the canonical one, they do not specify the reasons for this preference. All they do is provide possible explanations for the effect they display.

The Functional account II

Dorgeloh (1997), among others, claims that inversion is a focusing device. One point she makes is that inversion serves topic change, which can be described as a narrative function to introduce something new into the discourse. As I interpret my data, the subject_NP introduces new information and additionally is continued in the following context in 139 examples.

(268) […] As Pacey said of Dudek — he could never say it of Layton! — '(his strength) lies in his serious attempt to give as purely as possible the experience which is pure and isolated in his own mind,' a view which is offended by the notion of 'popular culture' and the torch-carrying it requires. Into that group came Leonard. He grew mentally and spiritually, and his art increased accordingly, in depth and dexterity. […] (BNC, A0P 144685-144714)

The claim is therefore valid. However, it does not relate to examples with evoked constituents. Sentences like (269) clearly do not display a topic changing function. *At the front* is inferrable from the setting; the same is true for *the funeral director*.

(269) […] Had a funeral, unusual kind. Two horses, both blacker than misery pulled a beautiful hearse, filled with flowers. The way those two trotted was magic. If I could, I'd have watched them for hours. At the front walked the funeral director. Tophatted and a cane in his hand. […] (BNC, KAS11840-11880)

As for the more detailed classification Dorgeloh provides, the lexical presentative function is interesting in this context, as it refers to locative inversion. It may trigger the so-called camera-movement effect by "painting" a mental picture of the surrounding. As it is said that this function creates a new ground (topic shift), one could therefore look at all instances with an inferrable NP_PP as in (270). 182 examples fall within this classification.

(270) […] The Princess presided at one end, while Thomas had been placed as guest of honour at the other. To his left was Sylvie. […] (BNC, FNT 104970-104993)

However, it also returns examples that do not have a locative notion and therefore do not invite the reader/listener on an "imaginary guided tour" (Drubig 1988:87). As the other categories do not apply to locative inversion, I conclude by stating that Dorgeloh's focusing idea can be proven for many examples in my dataset, however, again, not for all of them. And, as was criticized regarding Green's account, it does not give measurable reasons for the decision to use a non-canonical deviation from the default word order.

Information Packaging

As can be seen in the ctree as well as in the cforest analysis, the discourse status of the subject_NP is a one major indicator for whether the canonical or the non-canonical order is favored. Birner (1994, 1995, 1996) and Birner & Ward (1992, 1993, 1998) proposed a pragmatic constraint on inversion. This means, as a reminder, that the referent of the preverbal element must not be discourse-newer than the referent of the postverbal element. This pragmatic constraint partially covers many other approaches (e.g., Green 1980), as it is the most general one and does not depend on the setting and/or the assumptions the speaker has about the hearer's state of mind. These assumptions are taken into account only insofar, as they overlap with discourse-status.

For sentences introducing brand-new information into the discourse (with the referent of the subject_NP), a vast majority of these cases turn out to prefer the inverted order. It seems to be true that LOCI serves an information-packaging function, as postulated by Birner (1996). 249/300 sentences clearly have a preposition followed by an NP with an evoked or inferrable entity in the preverbal position and some new referent in the PVNP (subject_NP). What is even more interesting is that for new entities represented by the NP_PPs there are no examples with a postverbal subject_NP representing given information. The referent of the subject_NP is therefore never more familiar than the referent of the PP and with that clearly fulfills the pragmatic constraint by Birner. In conclusion, locative

inversion clearly does have an information-packaging function. This is illustrated in Figure 21.

LOCI	S evoked	S inferrable	S brand-new	Sum
NP_PP evoked	2	6	80	88
NP_PP inferrable	6	7	169	182
NP_PP brand-new	**0**	**0**	30	30
Sum	8	13	279	**300**

Fig. 21: Distribution of discourse status for LOCI

The following examples will illustrate the possible combinations of discourse statuses. (271) gives an NP_PP with an evoked referent, followed by a brand new entity in postverbal position. (272) has the combination of 'inferrable/brand-new'. In (273) an NP_PP introducing new information is followed by a subject_NP, also referring to something new. (274) gives the pair of 'evoked/evoked', (275) 'inferrable/inferrable'.

(271) […] That is the river market you see before you in the water. On those boats you can buy anything from a loaf to a life. […] Beyond the river market is the Rivergate. […] (BNC, GWF 192780-182821)

(272) […] Richard Mabey is a writer and broadcaster on country and environmental matters. Among his best-known books are Food for Free, The Common Ground, The Unofficial Countryside, The Flowering of Britain and Home Country. […] (BNC, EFF 123043-123179)

(273) […] And then on the morning of the second Thursday something happened that totally threw her. Through her letter-box popped a

postcard from New York, with on the front a picture of Lady Liberty, and on the back, in black ink, the simple message, 'Looking forward to seeing you soon. […] (BNC, H97 228374-228562)

(274) […] There are three basic reasons why the oceans are so clearly zoned: topography, light, and heat. The outer skin of the Earth — the crust — consists of several, slowly shifting plates of dense rock. Floating on these plates, and covering about 30 per cent of them, are masses of lighter rock, which form the continents. Between the continents are the oceans. (BNC, AMS 94821-94859)

(275) […] This historic hotel is situated in the heart of the city near Central Station and the famous Dam Square. Behind the stately Victorian facade are luxurious public rooms including the popular Tasman bar with live piano music, the Fresh Seasons Restaurant with Scandinavian decor and beautiful pot plants, marbled corridors and souvenir shop. […] (BNC, EBN 55343- 55577)

The Cognitive account

Next I will concentrate on the claims Chen (2003) makes on the felicitous use of inversion in general and locative inversion in particular. His statement that locative PP-inversion around *(to) be* (LOCBE) is the prototype of all inversions partly fits in with the focus of this thesis. As mentioned above, *be* is the verb dominating my examples, 139/300 sentences involve a form of *be*, all other verbs are less frequent (when regarded separately, not as common type non-*be*). Locative inversion with *be* is therefore far more frequent then all other types of inversion, as laid out below.

He further claims that inversion is a means to represent reality. His argument is that location is the most direct way to refer to reality, therefore locative inversion is the most natural type. The type most closely related to LOCBE in Chen's system is locative inversion with a verb other than *(to) be* (LOCNBE), demonstrated by 46 sentences in my dataset. The subtype PATH Vm, involves verbs of motion, and can be accounted for in 12 sentences as in (276).

(276) Through the snow **strode** a visitor. (BNC AC5 141496-141530)

The variation TEMP Vm, which involves a change of the spatial (locative) aspect to a temporal one, is not be attested in my data. The remaining subtype in Chen's model is NSPATBE. It refers to non-spatial, non-locative PP-inversion around *be* (277). 83 examples in my data fall into this group.

(277) Among better preserved examples is the almost complete broch on the island of Mousa, in Shetland. (BNC, EF2 7607-7704)

As I do not have examples contradicting Birner's pragmatic account, I cannot comment on Chen's claim to be able to explain instances Birner cannot explain, as in (141), here repeated as (278).

(278) The pot bubbled and bubbled. After a while, the little old lady said: "This soup is cooking fast"." "It is cooking fast now," said the hungry young man. "But it would cook faster with some onions". So the little old lady went to the garden to get some yellow onions. Into the pot went the yellow onions, with the round gray stone.

In summary, Chen's approach finds significant validation from my data. However, it does not give a fully satisfying explanation for all examples, it is not as general as Birner's account is. Furthermore, the Ground-before-figure approach does not make claims about use conditions in general.

Syntactic weight

Lastly, I will compare my data with the accounts on syntactic weight. In the majority of all cases of locative inversion in my dataset the logical subject clearly is the longer constituent (n=217/300). This supports the theories of Behaghel (1909/1910), Hawkins (1992), and Biber et al. (1999), among others, who claims that syntactic weight is what actually decides on the order of constituents. However, although the theory captures most of the sentences and the feature of 'relative heaviness' is the one with the biggest impact on the decision on whether to use NCC or CC (according to the statistical analysis), it does not explain all examples. This tendency has also been proven by Arnold et al. (2000) for Heavy-

NP-Shift. Example (279) shows a sentence from my data that should follow the canonical order (280), according to Hawkins.

(279) Underneath the frying pan was another note.

1 2 3 4 5 **6** 7

(BNC, ASS 03996-104039)

(280) Another note was underneath the frying pan.

1 2 3 **4** 5 6 7

As one can see here, in (279) six words are necessary in order to recognize all the constituents involved. In (280) only four words lead to the recognition of all involved parts. Following Hawkins (1992), (280) should be the sentence in use, however, it is not. Although making very good predictions, as in (281), the model does not cover the full range of examples.

(281) At a table sat a royal-blue Sister with a crimped white turret on her head. (BNC, FET 25535-25610)

Conclusion

For English locative inversion one can summarize my findings as follows: The pragmatic constraint by Birner is absolutely fulfilled. However, it is not only the relative discourse status that decides on whether to chose the canonical or the non-canonical order. When having a look at the ctree, the relative heaviness is the most decisive feature, as English does not change its default word order without pressure. As soon as the canonically postverbal element is also the more complex one, English prefers to stay with the normal order. However, when the canonically preverbal element exceeds the postverbal element in length (or shows no difference in length), things becomes more diverse. The following features now have an impact: the discourse status of the subject_NP (primarily), the verb type (only

slightly), the PP type, and the poset relations the referents of the subject_NP and the NP_PP have to the preceding discourse. Put differently, when the relative weight does not clearly favor the default word order (due to the logical subject being more/equally complex), discourse issues are to decide; the fact that locative inversion is said to relate to locations is also confirmed, as almost 2/3 of the sentences (n=185) involve a locative preposition. The common term 'locative inversion' is therefore not wrong, however, it disregards the influence of existential and directional meaning.

4.1.2. THERE vs. CC

In what follows I will present some numbers on the results of THERE and then compare my results with the approaches presented in chapter 2.

Figure 16 in the previous chapter showed that, again, the feature of relative heaviness is the most decisive one, statistically. For examples with a PP being the heaviest constituent or being equally complex as the logical subject, the canonical order is preferred (as one would expect, following e.g., Behaghel). When additionally involving a non-*be* verb, there is almost no choice but to stay with the default order of NP-V-PP. This results in 218 canonical, as for example (222), here repeated as (282), and 2 non-canonical examples; one is given in (223), here reapeated as (283).

(282) […] Inventing farfetched excuses, she left me trapped in her flat and made no attempt to help me look for work. From the window I saw the flats opposite, their even lines making them look like children's drawings. Noisy voices floated through their windows. […] (BNC, A0U 89224-89267)

(283) […] Jack of Longleigh, Adam of Rochester, and Ydrys obediently fell silent, thinking that perhaps they had arrived in time to witness the last ebbing breaths of their one-time Lucifer. They queued, docile and long-faced, by the window, their caps in their hands, waiting to be allowed to peep inside. On the bed there indeed lay a man. […] (BNC, HTN 182496-182530)

As mentioned above, there also is a combination of features that result in a preference for the non-canonical order for sentences with a PP more complex (or equally complex) than the logical subject; the total number is 34. The relative heaviness can therefore be overridden in sentences around *(to) be* in case the entity represented by the subject does not refer to anything specific, and, at the same time, the referent of the NP_PP is related to the prior context by a poset relation. The discourse features then seem to be stronger, as a relatively more complex PP is put in preverbal position and a less complex logical subject can be found after the verb. An example for that is given in (284), where *on the rough underside* is in a poset relation to *stone* in the preceding context, the subject_NP *blood* is not referring to anything specific, it can be labeled as being type-identifiable (see Gundel et al. 1993).

(284) […] In this heap the upper stone, though it was fitted carefully back into its bed, showed the sealing growths of moss disturbed and broken. Heavy, a double handful when I raised it. On the rough underside there was blood. […] (BNC, 212511-212550)

When the logical subject clearly is the more complex constituent, there is a clear preference for THERE. This applies to 266/278 sentences. The only chance for the canonical word order to be favored is either a brand-new entity represented by the subject_NP, which results in 4/278 sentences preferring THERE, or, in case the referent of the subject_NP is given (or inferrable), with a non-*be* verb, as in (n=7 in (285)). All other instances are too unlikely to be further regarded.

(285) […] The tuberous rootstock is rounded or oblong, fibrous, up to 1 inch (21½cms) in diameter. The bright green leaves come in two forms. […] (BNC, CBL 20674-20716)

Concentrating now on THERE, I will comment on the individual features: Again, there are no instances of negation; cases as in (286) are not attested for. Again, note that in my dataset I only included sentences with an existential *there* (see 2.2), locative uses of *there* were excluded from this analysis (for arguments see Lakoff 1990:426ff.):

(286) *From this direction there did not come a man.

Additionally, it is noteworthy that *(to) be* is clearly the dominating verb type with 273/300 examples. The small number of non-*be* verbs mostly also has an existential character, as in (287). Only five non-*be* examples show a clear locative use (288). Regarding all examples, about one third (n=109) have a locative preposition in the PP.

(287) […] The Strategic Defence Initative Organisation, which over the past decade has spent some $10 billion in answer to Ronald Reagan's call for a defence that would make nuclear weapons impotent and obsolete, is no more. In its place there stands a new Ballistic Missile Defence Organisation, which employs the same people to do the same things with the same money. […] (BNC, CRB 130837-131023)

(288) […] He trundled the Lada into Pushkin, down the Boulevard Vasenko, looking for a restaurant, preferably a McDonald's. At the end of the Boulevard there sits the enormous Catherine Palace, baroque and three times the size of the Alexander Palace. […] (BNC, CML 121215-121342)

One could therefore claim that *there*-insertion with PP-preposing has an existential character. This will be evaluated in the next section on the differences between LOCI and THERE. Before leading over to the discussion of the claims on *there*-insertion in the field in general, some more formal information on the constituents will be given. In contrast to LOCI, there are pronouns to be found in the preverbal position in THERE (n=8), however, not so in postverbal position.

THERE	Pronoun	Proper name	Definite NP	Indefinite NP
NP_PP	8	40	188	64
Subject_NP	**0**	9	23	268
Sum	8	49	211	332

Fig. 22: NP-types in THERE

As for the discourse status of the constituent, Figure 23 gives an overview.

THERE	S evoked	S inferrable	S brand-new	Sum
NP_PP evoked	**0**	9	104	113
NP_PP inferrable	**0**	12	116	128
NP_PP brand-new	**0**	6	53	59
Sum	**0**	27	273	**300**

Fig. 23: Distribution of discourse status for THERE

Interesting here is the fact that there are some examples that display the untypical pattern of newer information before older information, not to be found in locative inversion. There are 6 examples that have a NP_PP represented by a brand-new referent, followed by a logical subject that refers to an inferrable entity. An example for this combination is given in (289):

(289) […] They are all looking along the track to the north. Someone saw me running up that right-hand staircase, running for the train. He thinks I caught it. Eventually the guard strolls off to press the button. We glide south. Beyond Mudchute there is only one more station. […] (BNC, J13 176344-176391)

The Pragmatic account

In chapter 2.2. I introduced Birner and Ward's (1998) (among others) account of *there*-insertion in general (or in her terms 'postposing')[56]. As already noted by Biber et al (1999:943), most instances of *there*-insertion involve a form of *(to) be*, which I can confirm; in addition to that, verbs of appearance and emergence are involved. As seen in chapter 2, Birner & Ward (1998) proposed therefore a two-fold distinction in existential (i) *there*-insertion (involving a form of *(to) be*) and (ii) presentational *there*-insertion with a non-*be* verb (also see Drubig 1988:84ff.). For both types they formulated constraints to the effect that they introduce new information, however, in (i) from the perspective of the hearer and in (ii) from the discourse perspective (narrower view). The constraint for existential *there*-insertion says that the portverbal NP has to introduce hearer-new (hence discourse-new, as I did not annotate for hearer-status) information into the context to render it felicitous. For presentational *there*-insertion discourse-new information is required. As I did not find any evoked referents represented by the subject_NP, this seems to be correct. It has also been claimed that the PVNP is not allowed to be anaphoric (see Rando & Napoli 1978), which can clearly be confirmed by my data. Addionally, the majority of my examples (n=273, see Figure 23) support this by having new entites in postverbal position, mostly represented by an indefinite NP. However, there are 27 examples (*be* and non-*be*) that have NPs with an inferrable referent in postverbal position (*flooring* is inferrable from *floor*). These should not turn out to be grammatically correct, however, they are. An example is given in (290).

[56] Please note that my results only refer to *there*-insertion with PP-preposing.

(290) […] Decorative touches include a shelf displaying collections of spongeware and pottery by Susie Cooper and Clarice Cliff. On the floor there is attractive yet practical maple flooring. […] (BNC, G2V 224387-224449)

Given these exceptions, I believe that Birner & Ward's hypothesis is correct. There should never be a given entity represented by the PVNP. As figure 23 shows, this is true for my data.

The Cognitive account

For Chen (2003) existential *there*-insertion (which refers to all types of *there*-insertion with an existential *there*) also is a device to provide a ground in order to present the figure, the new information in a sentence. Furthermore, it is regarded to be the default order in the GbF approach. Inversion is a specialized form of that as it can do without the existential 'there'. *There*-insertion is said to also work in case there is no established landmark (which is necessary for inversion). However, this refers to *there*-insertion in general, and not to *there*-insertion with PP-inversion. With *there*-insertion being the more general pattern, Chen assigns to it (in general, not only to THERE) to operate with negated verbs. This is said to be impossible in inversion, as on cannot point to something that is not there. This, however, cannot be conformed by my data, as I did not have any negated examples in my randon set of *there*-insertion.

Conclusion

In conclusion, one can therefore say that *there*-insertion with PP-preposing has an existential character, eventhough it also allows for locative PPs (not for directional ones). One of the strongest features is the length of the logical subject, which is also involved in the dominating feature 'heavier constituent'. In case the logical subject clearly is the more complex constituent, English tends to favor the non-canonical word order, namely THERE. For sentences with a dominating PP or equal complexity of both constituents, the default word order is preferred. Additionally, THERE does not seem to be favored for sentences around non-*be* verbs, the non-*be* verbs attested for in the non-canonical dataset mostly were verbs of appearance and emergene. The preference for THERE slightly rises in case the logical subject

exceeds the PP in complexity, however only marginally. The combination of a long logical subject and a brand-new subject_NP further encourages the use of THERE, which is not surprising, as the same was seen for LOCI. Regarding Birner's pragmatic constraint, given the few exceptions of inferrables in postverbal position, the tendency of having new elements (mostly indefinite NPs) in the postverbal position can clearly be attested for. This also supports Chen's claim of *there*-insertion being a measure to introduce a new figure into an already established ground.

4.1.3. LOCI vs. THERE

As my approach to analyzing THERE rests on the fact that LOCI and THERE are superficially similar, I will now connect the two NCCs in one analysis to support my point of view of them being distinct constrcutions. This was necessary, as they often are regarded as identical in the literature. As I also want to contrast LOCI in English with its structural equivalent in German, I think it is necessary to first identify clear differences between LOCI and THERE (as done theoretically in the previous two chapters), which then, in a second step, enables me to exclude THERE from the cross-linguistic analysis of LOCI and PP-preposing in German.

The most salient difference between the two variants is that LOCI is clearly more present in locative contexts, whereas THERE prefers existential propositions. In LOCI the postverbal NP may be evoked, an information status I did not find in the postverbal position of THERE. In what follows, the two alternations will be compared directly by jointly analyzing them (i) against each other and (ii) against their common canonical construction (see conclusion). Figure 24 shows the graph for the ctree analysis of LOCI vs. THERE, Figure 25 shows the cforest graph.

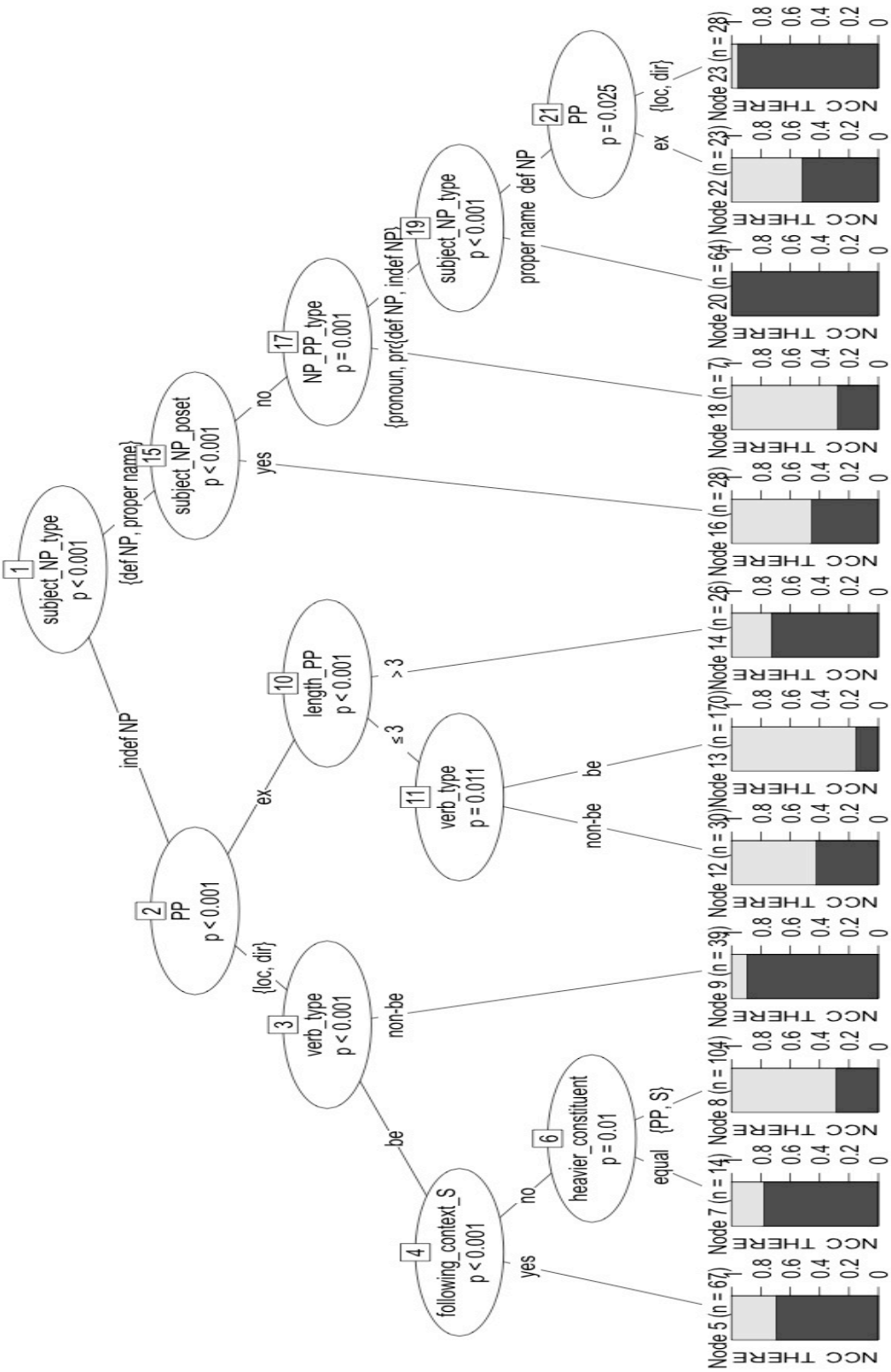

Fig. 24: Ctree NCC vs. THERE

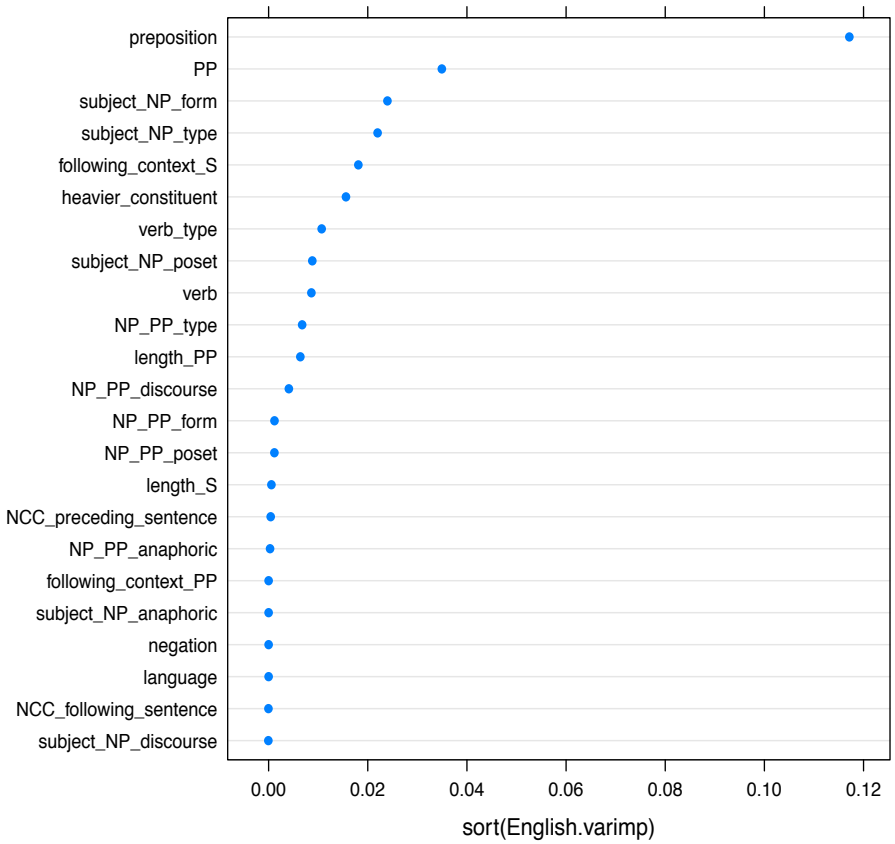

Fig. 25: Cforest NCC vs. THERE

An interesting fact is that in the ctree the type of the subject_NP constitutes the first node. For indefinite NPs the nature of the PP becomes important and displays what was said in the separate analyses. Existential PPs clearly trigger a preference for THERE. Only in case the PP is longer than three words, NCC becomes more probable (however only for n=26). For locative PPs (especially with a *non-be* verb) NCC is clearly favored, supporting the claim that THERE mostly involves a form of *(to) be* and prefers an existential meaning. Additionally, the connection of the postverbal logical subject to the following context further encourages the use of LOCI. This preference only ceases in cases when either the PP or the logical subject are significantly longer than the other. Additionally, it is noteworthy that the feature of subject_NP_discourse does not play a role at all (also visible in the cforest analysis in Figure 25). One reason could be that this feature is very strong in deciding for either word order variation when contrasted with the canonical word

order. It might therefore become redundant in a direct comparison of the two non-canonical variants. This will be further evaluated when including the canonical dataset.

Proper names in the subject_NP, when not referring to the prior discourse by a poset relation, and being combined with a definite or indefinite NP in the PP, as in (291), absolutely favor locative inversion. Also a strong preference can be stated for cases involving a definite NP in the subject_NP and a locative or directional PP (292).

(291) […] He was closing the bag up when there was another thump at the door. On the door-step stood Lee. […] (BNC, ABX 86742-86769)

(292) […] In the centre is a roundel with a representation of Hermes mounted on a hawk and bestowing a wreath. On the reverse is the Royal Cypher above the date 1918. […] (BNC, CLV 77844-77899)

Also supporting prior results is that when the subject_NP is represented by a definite NP or a proper name that is at the same time connected to the prior context by a poset reation, there is no preference for either LOCI or THERE. This arises from the fact that the combination of features would naturally favor the canonical order, which is not included here. As there are multiple nodes with clear preferences I feel safe to assume that LOCI and THERE are functionally distinct. Further arguments are given in the cforest graph. Here, the feature ‘preposition’ is the feature with the biggest impact. As this is the lexical value, it is not included in the ctree. Figure 26 gives an overview over the prepositions involved in the two variants. They both seem to involve very similar prepositions.

Preposition	LOCI	THERE	Preposition	LOCI	THERE
above	2	3	for	**0**	1
across	6	2	from	13	6
against	1	**0**	in/inside	48/3	102/11
along/alongside	5/1	7/0	into	1	**0**
among/amongst	51/7	10/0	near	4	2
around	2	3	on	51	49
at	25	47	opposite	5	**0**
behind	9	10	outside	2	9
below	2	3	over	2	**0**
beneath	4	1	round	1	**0**
beside/besides	5/1	1/**0**	through/throughout	5/0	2/4
between	3	1	to/towards	14/1	8/**0**
beyond	3	8	under/underneath	5/3	3/**0**
by	3	**0**	with/within	9/2	1/5
down	1	1	**sum**	**300**	**300**

Fig. 26: Prepositions in examples of LOCI and THERE

The PP itself is also assigned a major role, we have seen this in the distinction between existential and locative (+ directional) meaning. For a better visualization, Figures 27 and 28 contrast the hierarchy of values the features have for LOCI and THERE.

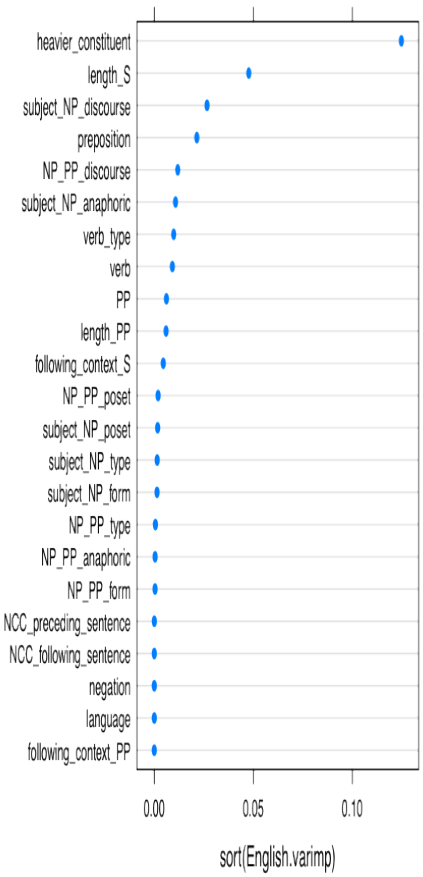

Fig. 27: Cforest LOCI vs. CC

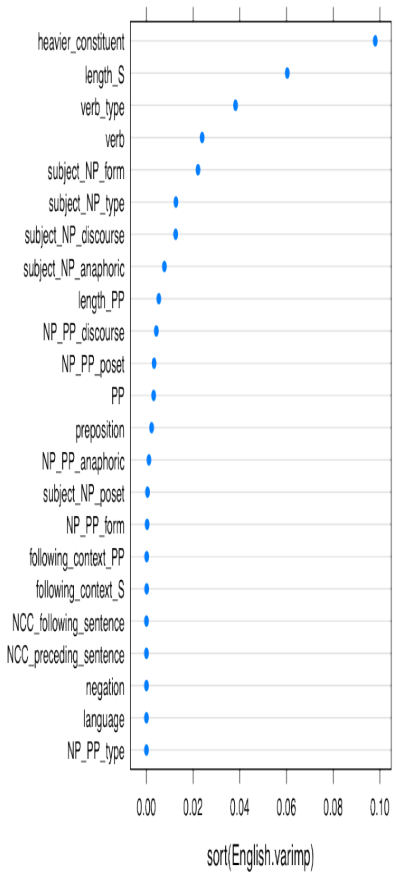

Fig. 28: Cforest THERE vs. CC

What can be read from this is that both non-canonical patterns strongly favor long logical subjects in the postverbal position. Whereas LOCI is also heavily dependent on the discourse status of the referent of the subject_NP, the use of THERE seems to be more triggered by the verb and its type. The verb and the verb-type also are relevant for LOCI, however this feature there is dominated by the discourse status of the referent of the PP and the anaphoric relation the entity represented by the subject_NP has to the preceding context. One can therefore summarize that a preference for LOCI, compared to THERE, is rather triggered by discourse effects than by formal features (verb type, form of the NPs, etc.), which play a bigger role for the preference of THERE. In what follows (Figure 29) the verbs involved are displayed.

Verbs	LOCI	THERE	Verbs	LOCI	THERE
appear	1	2	live	**0**	1
arise	**0**	1	occur	**0**	1
be	223	272	nestle	1	**0**
call	1	**0**	perch	1	**0**
churn	**0**	1	pop	1	**0**
come	28	3	pour	1	**0**
emerge	**0**	2	remain	**0**	1
exist	**0**	6	reverberate	**0**	1
flow	**0**	1	ring	1	**0**
hang	1	**0**	rise	1	**0**
lie	15	2	rumble	1	**0**
run	1	1	stretch	1	**0**
shine	1	**0**	stride	1	**0**
sit	6	1	trundle	1	**0**
stand	13	4	walk	1	**0**

Fig. 29: Verbs in examples of LOCI and THERE

This again supports the claim that LOCI has a major locative meaning, taking such verbs as *sit*, *stand* or *lie* into account. Additionally, many instances of *be* in LOCI have a locative use, see (293).

(293) […] It was square, with a flat roof and a colonnade of slender arches running round the south and east sides. Above the colonnade was a terrace. […] (BNC, G13 12994-13028)

For THERE, on the other hand, the existential character is also supported by the verbs involved. First of all, *be* clearly dominates (as mentioned before). Furthermore, *exist*, *remain*, etc. indicate existential meaning. In (294) an example with an existential form of *be* is given.

(294) […] Tables II and III show the absolute and percentage values respectively of each phospholipid class from the gastric mucosa of the three groups studied (controls, patients with duodenal ulcer, and patients with gastritis). In each group there was a prevalence of phosphatidylcholine and phosphatidylethanolamine. […] (BNC, HWS 322605-322694)

Conclusion

To conclude this section, figures 30 and 31[57] show the complete picture for English. Confrming the previous analysis, when the logical subject exceeds (or is at least not shorter than the PP) and the PP denotes a clear locative or existential meaning, one of the two non-canonical patterns is favored. The canonical order is preferred for long PPs, especially for sentences with a PP referring to an unspecific entity (type identifiable). Only in case the referent of the NP_PP refers to a specific entity, which at the same time is a feature the subject_NP referent lacks and combined with a form of *(to) be*, the non-canonical patterns become more probable. CC is not preferred at all for locative or existential sentences with a heavy logical subject that involves an NP that is indefinite and represents brand-new information. Directional PPs can lead to either CC (in the majority of all cases) or to LOCI, in case the PP does not exceed the logical subject in length.

What is interesting is that for sentences with a definite subject_NP at least as complex as the PP and a locative or existential propositional content, LOCI is

[57] Due to reasons of readability this ctree is limited to four levels.

clearly preferred over THERE for subject_NPs introducing new information. For subject_NPs that do not introduce new information, LOCI still is possible, THERE however not. Concluding, one can say that the preference for LOCI lies in the shfting of definite subjects to the end of the sentence when introducing new information in the subject_NP. THERE is favored when the subject_NP is indefinite. As we have seen in the discussion in LOCI vs. THERE, the preposition (lexically) and the verb type as well as the nature of the PP trigger a preference for either word order alternation. As the comparison of LOCI and THERE only is a side effect in this dissertion, I will leave the topic as it is, as there are clear differences in the use preferences between LOCI and THERE. I feel safe to dismiss THERE from further analysis and hope to have gainfully contributed to the discussion on the differences between THERE and LOCI.

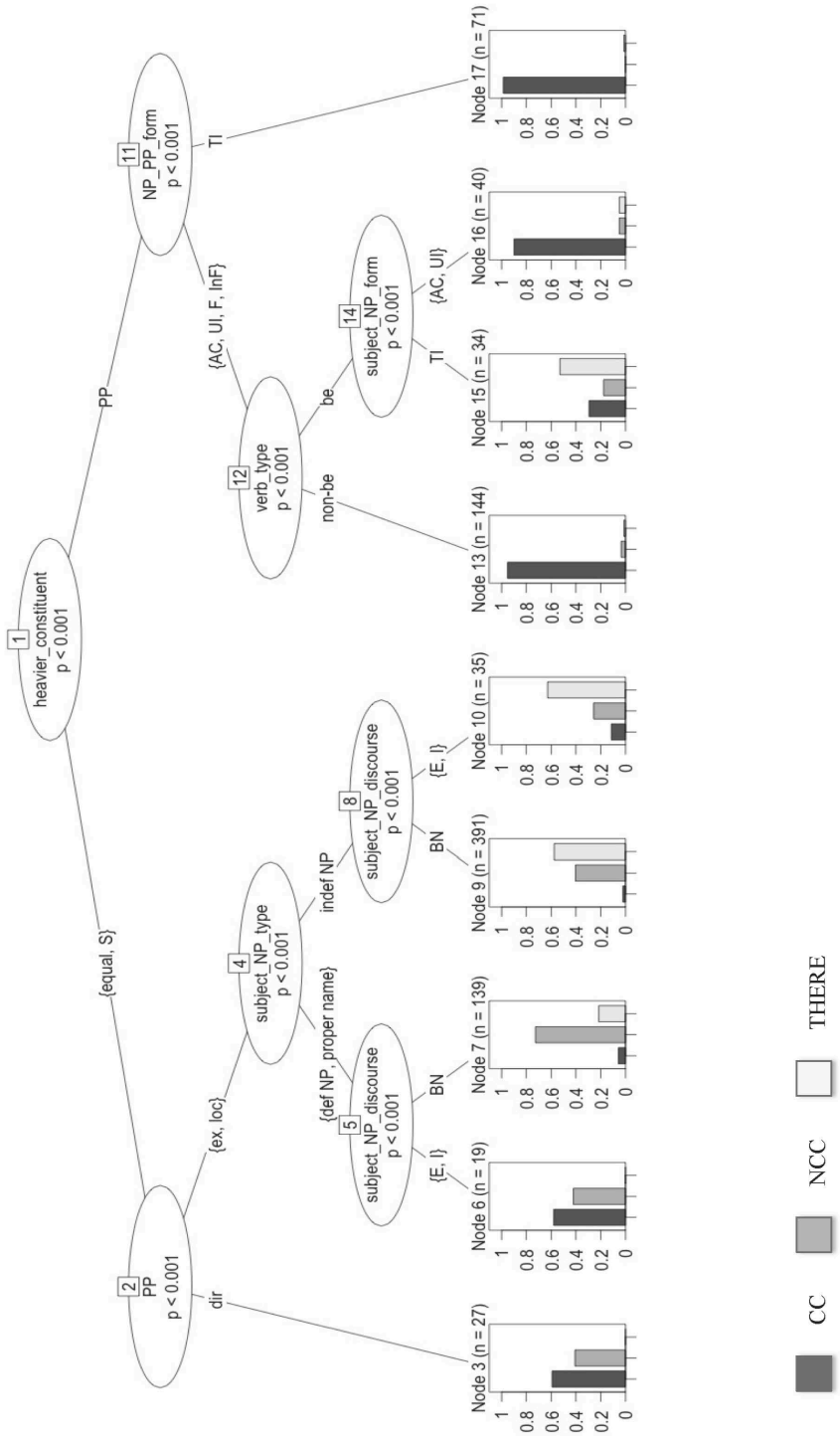

Fig. 30: Ctree CC vs. NCC vs. THERE

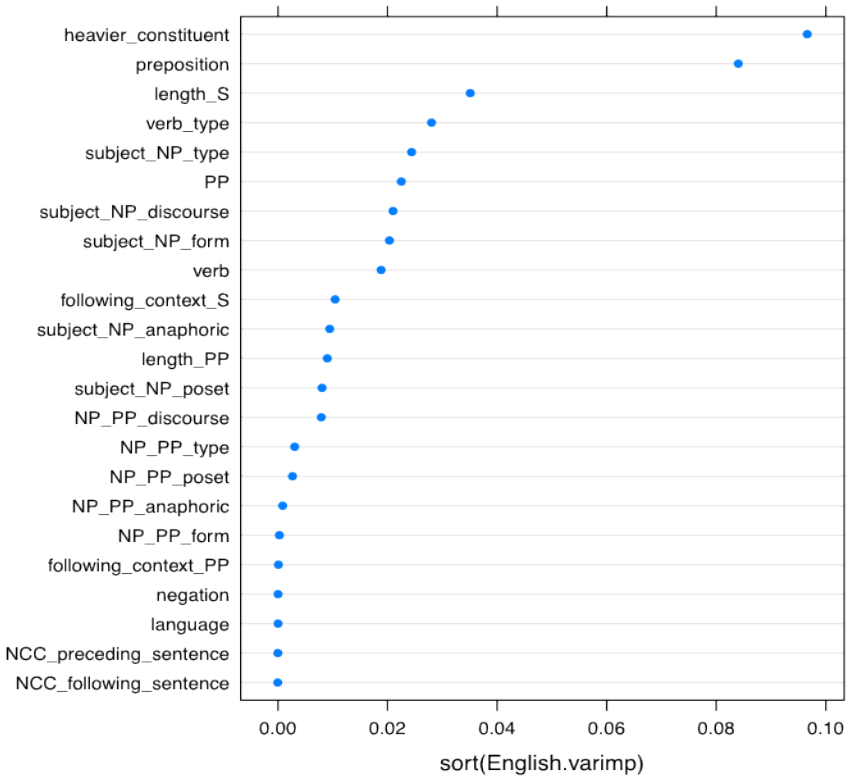

Fig. 31: Cforest CC vs. NCC vs. THERE

4.2. German

On first sight we find a very similar picture to what has been presented for English (especially LOCI). As there are similar reasons assigned to word order alternations in general in German I will briefly check my German data in parts against the major theories I evaluated the English sentences against.

Syntactic weight

The relative heaviness of the two contituents seems to be a very influential factor. For 205/300 non-canonical examples it is true that the subject clearly is the heavier constituent. 79/300 sentences with PP-preposing have a more complex PP. For these cases the choice between CC or NCC depends on the attachment of the referent of the logical subject to the prior context. For sentences with a heavy (or

equally heavy) PP combined with a brand-new or unused entity represented by the subject_NP, which additionally does not stand in a poset relation to anything in the preceding context, the non-canonical order is preferred for n=67.

(295) […] Er kann mindestens zwei Stunden im Monat Besuch
He can at least two hours in the month visit
empfangen. In seinem Haftraum hängen Gardinen. […]
receive. In his prison cell hang curtains
'He is allowed to have two hours of visits per month. In his cell are curtains. (TUEPPDZ T911111.41 11732-11768)

The influence of syntactic weight can therefore clearly be confirmed in my data.

The Functional Sentence Perspective

As the discourse status of the referent of the subject seems to have much predictive power, the distribution of information will be considered next. For LOCI in English, 249/300 sentences have an evoked referent in preverbal position and some new entity in postverbal position. In German only 64/300 sentences show this information distribution (296):

(296) […] Jeweils fünf sperrige alte Krankenhausbetten stehen in zwei
At a time five bulky old hospital beds stand in two
Reihen auf der Bühne. Neben den Betten stehen Bierdosen. […]
rows on the stage. Next the beds stand beer cans
'Five old and bulky hospital beds at a time stand in two rows on the stage. Next to the beds are beer cans.' (TUEPPDZ T910110.224 2597-2632)

However, it does not generally go against the idea that the theme (being old information) preferably precedes the rheme (new information). For German there seems to be a more diverse situation, as there is a fairly high numer of examples with inferrable (n=140) information in preverbal position. Figure 32 gives the overview.

PP-preposing	S evoked	S inferrable	S brand-new	S Unused	Sum
NP_PP evoked	1	5	64	**0**	70
NP_PP inferr-able	2	3	135	**0**	140
NP_PP brand-new	**0**	6	80	4	90
NP_PP unused	**0**	**0**	**0**	**0**	**0**
Sum	3	14	279	4	**300**

Fig. 32: Distribution of discourse status for PP-preposing

Information Packaging

As one can see in figure 32, German does also not allow for brand-new information being followed by evoked information. However, it allows for the order with an inferrable referent for the PP in preverbal position followed by an evoked entity represented by the subject_NP in postverbal position (n=2). This does not pose a problem to Birner's theory of information packaging, as inferrable information can be regarded as old information (s. chapter 2). An example is given in (297):

(297) […] In Nordrhein-Westfalen ist sie aktuell bei Soest aufgetreten.
in North Rhine-Westfalia is she currently at Soest appeared.
Zuvor gab es eine Reihe von Infektionen rund um Paderborn, wo die
Before was it a number of infections around Paderborn where the
Seuche wahrscheinlich von einem aus Bosnien zurückgekehrten
epidemic probably by a from Bosnia returned
britischen Soldaten eingeschleppt wurde. Auch aus Mecklenburg-
British soldier imported was. Also from Mecklenburg-
Vorpommern wurden in den vergangenen Wochen drei Ausbrüche
Vorpommern was in the last weeks three outbreaks
gemeldet. Von infizierten Wildschweinen ging die
noted. From infected boars emanate the
Krankheit im Mecklenburgischen aus. […]
sickness in Mecklenburg from
'In North Rhine-Westfalia it is currently present in the Soest area. Before, there were a number of infections around Paderborn, where British soldiers coming back from Bosnia probably introduced the epidemic. There were also three reported cases in Mecklenburg-Vorpommern last week. There, the epidemic originated from infected boars.' (TUEPPDZ T970212.32)

A brand-new entity referred to by the preverbal PP_NP can be followed by an inferrable subject_NP in n=6, as in (250), here reapeated as (298), where *Kristallgläser* are labelled inferrable from *Vitrine*.

(298) […] Neben zerfledderten Büchern, alten Plattenspielern und anderen
next to tattered books, old record players and other
gebrauchten Elektrogeräten finden sich antike Lampen und
used electronic devices find themselves antique lamps and
Tafelsilber. In einer Vitrine stehen Kristallgläser und Porzellanvasen,
silverware. In a cabinet stand crystal glasses and china vases,
von der Decke baumeln Fotoapparate aus Zeiten, in denen ein
from the ceiling dangle cameras from times in which a
gelungener Schnappschuß noch Glückssache war. […]
successful snapshot still a matter of luck was
'Next to tattered books, old record players and other used electronic devices there are antique lamps and silverware. In a cabinet there are crystal glasses and china vases, from the ceiling dangle old cameras from times when a well-made snapshot was still a matter of luck.' (TUEPPDZ T950902.229 561-728)

The most common combination (n=135) is an inferrable entity represented by the NP__PP with a subject_NP that introduces new information, as shown in (299).

(299) […] Das Ufer ist unregelmäßig ausgebuchtet, auf kleinen Inseln
the bank is irregularily dented, on small islands
wachsen Büsche und hinter dem hellen Sandstreifen stehen
grow bushes and behind the bright sand strip stand
zwischen den Weiden gewaltige Eichen aus der Zeit, als dort noch
between the Willows huge oaks from the time when there still
Auwälder wucherten.Das DDR-seitige Ufer wird aus Gründen der
alluvial forests sprawled. The GDR sided bank is for reasons the
Grenzkontrolle vollkommen kahl gehalten. In einer Flußschleife
boarder control entirely bare held. In a river loop
liegt Gorleben. […]
lies Gorleben
'The shore is irregularily buldged, bushes grow on small islands and behind the pale strip of sand huge oaks stand between the willows, stemming from a time when the alluvial forests sprawled. The bank

on the side of the GDR is bare due to border control. In a river loop lies Gorleben.' (TUEPPDZ T890626.102 1160-1198)

Following Birner's pragmatic constraint, which says that the entity represented by the NP in preverbal position may not be newer than the referent of the postverbal NP, this cannot be entirely confirmed for my German data. The tendency, however, can.

Cognitive considerations following Chen

As stated before, Chen regards locative inversion with a form of *(to) be* to be the prototype of this syntactic pattern. Interestingly, my German data does not give any instances of that pattern. There is no example involving a form of *sein* ('be'). 118 instances are of the form LOC NONBE, the vast majority of examples involve an existential PP (n=170). This should suffice to show that Chen's account of PP-V-NP being a pattern to introduce a new figure into a given ground is not applicable to German.

What also seems to have an impact on the choice of whether to form a canonical or a non-canonical sentence is the connection of the denotatum of the NP_PP to the following context. The more this referent is followed up in the context after the target sentence, the less likely the choice of a non-canonical construction becomes. As the type of an NP often gives hints on the givenness of its referent, the following figure displays the distribution of NP types for both constituents. As seen in the English data on LOCI, pronouns were not present in preverbal position.

PP-preposing	Pronoun	Definite NP	Indefinite NP	Proper name
NP_PP	2	255	39	4
Subject_NP	6	79	194	21
Sum	8	334	233	25

Fig. 33: NP-types in PP-preposing

In German this is possible, as exemplified in example (300).

(300) […] Mit den Schulsystemen in den nördlichen Breiten geschieht
With the school systems in the northern latitudes happens
dies nicht in ausreichendem Maße. Aus **ihm** kommen Frauen und
this not in sufficient measures. From it come women and
Männer, die die Welt nach "richtig" und "falsch" einteilen und
men who the world in right and wrong divide and
seit den letzten 20 Jahren das dazwischen schieben, "was beliebt"
for the last 20 years that between push what favores
[…]
'Within the school systems in the North this is not what happens sufficiently. From it come men and women who divide the world in "right" and "wrong" and for the last 20 years intersect "what is in favor".' (TUEPPDZ T920710.111)

Negation is only present in NCCs with a non-referential pronoun in the subject NP, as in (301).

(301) Zur genaueren Gesteins- oder Spurenbestimmung kommt **es** nicht.
to more exact rock or trace definition come it not
'It did not lead to a more exact evaluation of rock and traces'. (T951019.248)

As for the prepositions, Figure 34 gives an overview. 118/300 prepositions have a locative meaning, 170/300 have an existential one. A directional preposition is given in 12/300 examples[58].

an ‘at’	47	nach ‘after’	1
auf ‘on’	59	neben ‘next’	5
aus ‘from’	15	über ‘over’	5
durch ‘through’	2	um ‘around’	2
für ‘for’	5	unter ‘beneath’	3
gegen ‘against’	2	von ‘from’	5
gegenüber ‘across’	2	vor ‘in front’	4
hinter ‘behind’	11	zu ‘to’	55
in ‘in’	68	zwischen ‘between’	4
mit ‘with’	5	**Sum**	**300**

Fig. 34: Prepositions in examples of PP-preposing in German

Conclusion

To sum it up, one can say that PP-preposing in German has a tendency to order given/inferrable information before new information. The weight of the constituents also plays a role, as the majority of sentences follow Hawkin’s (1992) theory of syntactic weight. As with English, long subjects introducing new information are regularily shifted to the end of the sentence, the discourse status of the denotatum of the subject has major impact on the linear order of constituents.

For examples with a logical subject clearly exceeding the length of the PP, there is no clear tenedency for either CC or NCC in case the subject refers to a known referent. In case it does not, in combination with an NP_PP whose referent is

[58] *zu* (‘to’) in this case is not directional, but existential.

somehow continued in the follwing context, weight may also be overridden by discourse coherence by allowing for the canonical order in about 55% of all cases, however only referring to a very small number (n=9) of examples. For sentences with a heavy PP and a subject_NP, which does not refer to anything already introduced to the context (including poset), the non-canonical word order is what German prefers, especially when having an indefinite NP in (logical) subject position. Again, when there is a continuation of the referent of the NP_PP in the following context, PP-preposing becomes almost impossible. This shows the importance of the connection to the following context, unlike in English.

As this thesis is all about possible differences and similarities in the use conditions and preferences English and German have regarding the choice between the canonical NP-V-PP order and the non-canonical PP-V-NP order, the last section in this chapter will draw a direct comparison between LOCI and PP-preposing in German, based on the separate anlyses just presented. As mentioned before, one might object to a direct comparison within one analysis due to the typological differences the two languages show. However, I will do so for means of illustration.

4.3. English vs. German

To start with I want to introduce the ctree analysis for the direct complarison of English locative inversion and the structural equivalent in German, including the canonical datasets.

The aim of this direct comparison is to evaluate whether the forces driving the choice between CC and NCC are similar in German and English or whether they are fundamentally different. This can be measured by the impact of the feature ‘language’. For low impact one can infer similar reasons, for ‘language’ to appear. The feature being high in the tree, respectively having a high value in the cforest analysis would point towards a different combination of factors triggering the preference for either CC or NCC.

As has been the fact for the separate analyses (LOCI vs. CC and PP-preposing in German vs. CC), the relative heaviness and the discourse status of the referent of the subject_NP seem to be the most important features for both English and German to decide on whether to stay with the canonical order or to chose the

inverted version, LOCI or PP-preposing. For sentences with a PP that is clearly longer than the logical subject, a given entity represented by the subject_NP almost always leads to the default word order of both languages, namely NP-V-PP. There only is a very minor chance for the non-canonical alternative in case the NP_PP is activated or uniquely identifiable, meaning it refers to a specific entity. Examples for this case are given in (302) and (303), also see node 4 in Figure 35.

(302) […] Sylvie moved towards them at once. […] The Princess presided at one end, while Thomas had been placed as guest of honour at the other. To his left was Sylvie. […] (BNC, FNT 104970-104993)

(303) […] Um drei Uhr nachts wird Fechtguru Emil Beck im
At three o'clock at night is fencing guru Emil Beck in the
Fechtzentrum Tauberbischofsheim von einem 'Stern'-Reporter tot
fencing center Tauberbischofsheim by a 'Stern' reporter dead
aufgefunden. In seiner Brust steckt ein Degen. […]
found. In his chest sticks an epee
'Around three o'clock at night the fencing guru Emil Beck is found dead in the fencing center Tauberbischofsheim by a 'Stern' reporter. In his chest sticks an epee.' (TUEPPDZ T890102.84)

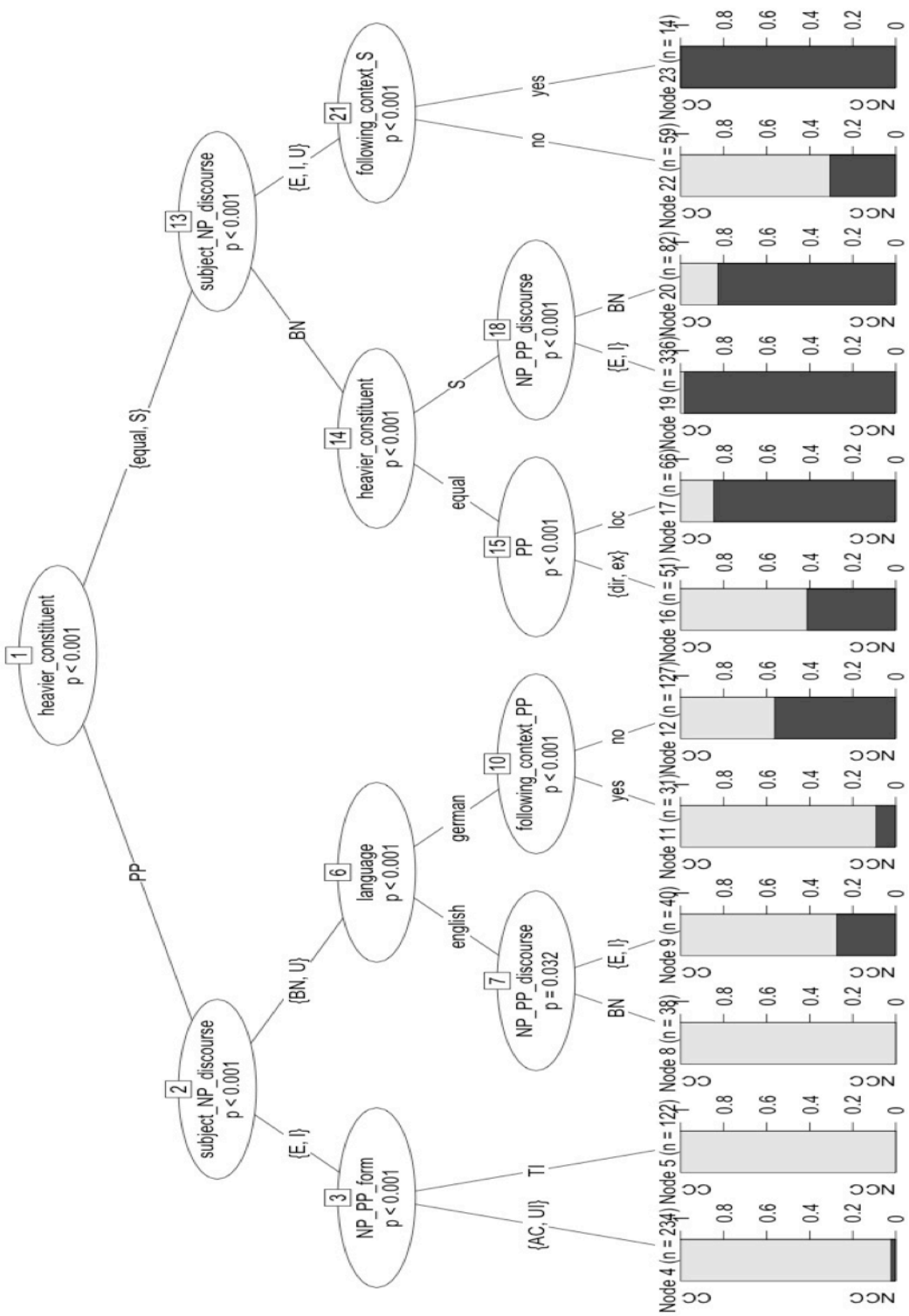

Fig. 35: Ctree LOCI vs. PP-Preposing in German

For newly introduced entites, the language feature comes in. In English one can say that for NP_PPs with a given denotatum the non-canonical order is possible, although the PP is heavier than the logical subject. In German the chances for NCC rise considerably when the NP_PP is not in any way continued in the following context. In this case the discourse status of the subject_NP dominates weight considerations.

For examples with a heavy logical subject or a logical subject that is equally long as the PP, there is an overall tendency towards the non-canonical word order in both languages. This tendency is especially strong for cases with a given entity represented by the subject_NP that is connected to the following context, as shown in examples (304) and (305). This therefore means that although the logical subject represents given information, the exceeding length as well as the link to the following context triggers the preference for NCC.

(304) […] Tim Reagan, who would not have dared to give his French wife as little time as Claudia Yeo got, murmured that this was of course important and good luck to them, indeed. […] Tim Reagan raised his hands in mock submission, surprised by his partner's vehemence, and followed him out of the door. In the hall sat Claudia Yeo herself. Tim stopped to say hello to her. […] (BNC, AB9 202713-202822)

(305) […] Der Schwerpunkt liegt in erster Linie beim Stummfilm und
the focus lies in first line with the silent movie and
frühen Tonfilm, der in Pommer einen weitsichtigen und
and earlier sound film which in Pommer a far-sighted and
innovationsbereiten Förderer hatte. […] Von dem internationalen
innovation willing promoter had. […] of the international
Erfolg des expressionistischen "Cabinett des Dr. Caligari" ("Mit
succes of the expressionistic "Cabinett des Dr. Caligari" ("with
diesem Film beginnt der Mythos des kreativen Produzenten
this film begins the myth of the creative producer
Pommer" - so der Autor) bis zum "Blauen Engel" und dem von der
Pommer" – so the author) to the "Blauen Engel" and the of the
Ufa geförderten Genre der "Tonfilm- Operette" während der Zeit

Ufa supported genre the "sound film operatta" during the time
der großen Arbeitslosigkeit. In dieser Spanne liegt die große Etappe
of the big unemployment. In this period lies the big time span
Pommers. […] Doch steht der Name Pommer auch für den Film
Pommer. […] But stands the name Pommer also for the movie
des Exils.
of the exile.

'The focus mainly is on silent movies and early sound movies, which was supported by a farsighted and innovation supporting Pommer. This encompasses the international success of the expressionist "Cabinett des Dr. Caligari" ("with this movie starts the myth of the creative producer Pommer", according to the author), the "Blauer Engel" and the genre of "sound film operettas", supported by the Ufa, during the time of general unemployment. Within this time Pommer's high time can be set. […] The name of Pommer also stands for the exile movie' (TUEPPDZ T890215.220)

For sentences with brand-new entites in (logical) subject position with a (weightwise) dominating logical subject and a NP_PP referring to a given referent the tendency towards NCC increases significantly. For this combination there are only few examples (English n=2, German n=3) that show a preference for CC, as exemplified in (306) and (307). This refers to node 19 in Figure 35. This has to be highlighted, as the node encompasses 336 examples, more than a quarter of all examples analyzed (n=1.200, 600 CC/NCC for English, 600 CC/NCC for German). It is not at all suprising, as this path shows the prototypical picture for NCC preference already identified in the separate analyses before. Weight considerations and a clear confirmation of the given-before-new ordering provide sound support. What is noteworthy is that this prototypical combination of features leading to prefer the NCC under consideration here is equally valid for both languages and therefore shows a cross-linguistic congruency.

(306) […] The leaves are yellowish-green or bright green, oblong with pointed ends, up to 6ins (15cms) and an inch (21½cms)[59] long. These are borne on long, wiry, numerously branched stems with nodes. Fine pinkish-white roots appear at the nodes. […] (BNC, CBL 9105-9150)

(307) […] Auf der A 7 winken die BeamtInnen an diesem Nachmittag
On the A7 wave the officers on this afternoon
sämtliche Fahrzeuge auf die Raststätte "Hüttener Berge" hinaus.
all vehicles to the motorway restaurant "Hüttener Berge" out.
Ein roter Fiat rollt auf sie zu.
A red Fiat rolls to them to
'This afternoon on the A7 the officers direct all vehicles to the motorway restaurant "Hüttener Berge". A red Fiat comes towards them.' (TUEPPDZ T990505.148)

However, one has to add that the strong tendency for NCC is also given for examples with a NP_PP referring to a brand-new entity instead of given information (in combination wth a subject_NP representing new information). Yet, this tendency is weaker and only applies to n=82 examples.

There are only two nodes that display a preference for CC on this side of the tree. For one, in case the link to the following context is not established for the logical subject, CC is preferred in 70% of all examples (node 22). Another indicator for a tendency towards CC is the preposition type (for PP and logical subject being equally long and involving a subject_NP that introduces a new referent). For locative PPs the non-canonical order is favored (supporting specifically the data for English). For directional and existential prepositions, CC stays in favor (node 16), indicating what has been said in the monolingual analyses, namely that the pattern PP-V-NP seems to especially represent locative propositions (for both languages, dominating in English). For further illustration, Figure 36 gives the cforest graph for the comparion of LOCI, PP-preposing and the canonical counterparts.

[59] Original adapted from the BNC.

What is noteworthy here is the low value the feature ‘language’ is assigned to. For the top three features the similarity to the separate analyses is more than obvious.

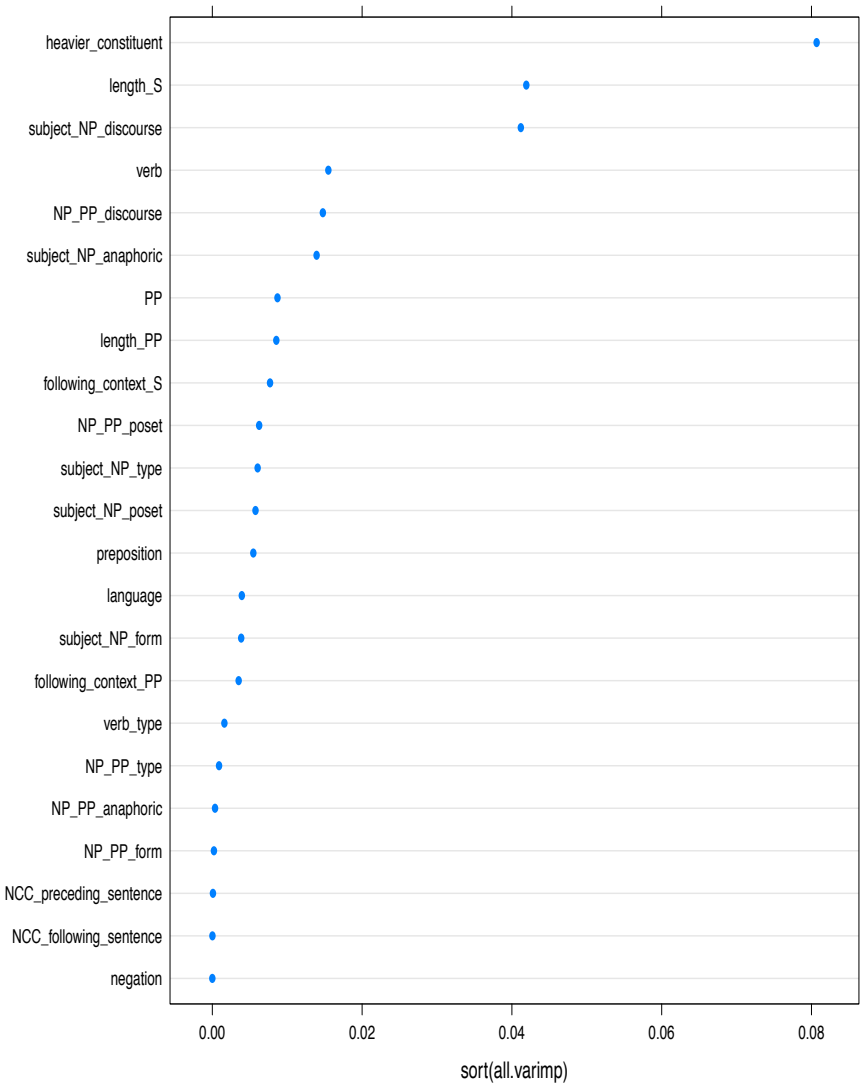

Fig. 36: Cforest CC vs. NCC (English vs. German)

Figures 37 and 38 gives present the cforest graphs for the monolingual analyses to round off the overall picture.

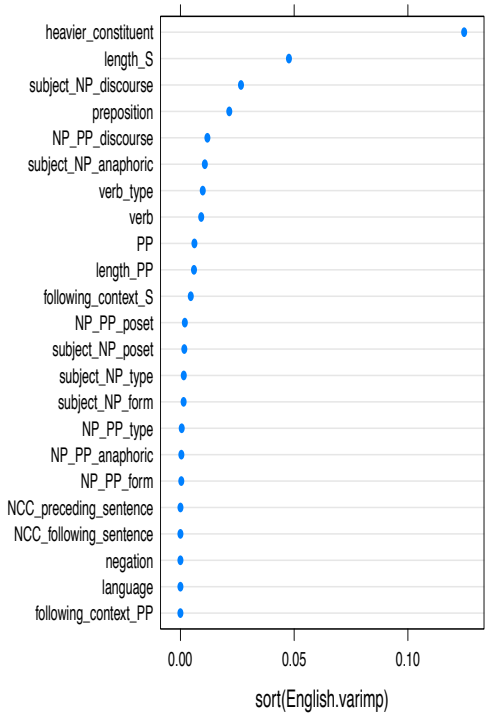

Fig. 37: Cforest English LOCI vs. CC

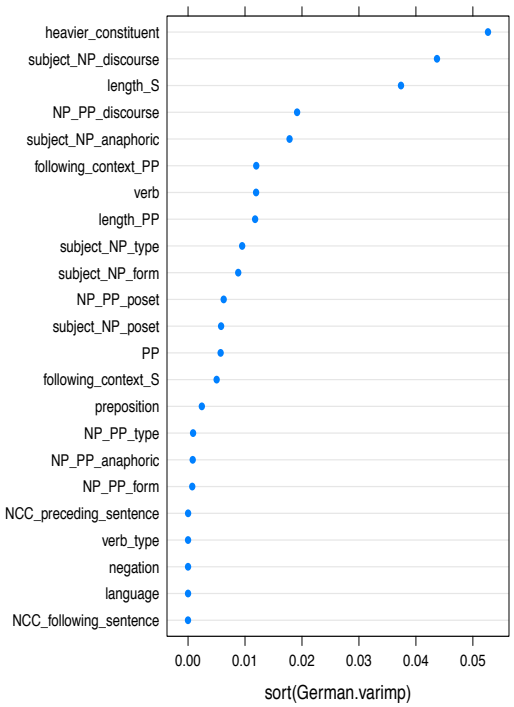

Fig. 38: Cforest PP-preposing vs. CC

Conclusion

As one can see, the feature 'language' does not play a crucial role in the ctree analysis. It indicates clear similarities already explained, as heavy PPs in combination with subject_NPs referring to old information almost exclusively result in the canonical order. When taking the joint cforest graph into account, one can see clear parallels with the monolingual obervations, as the features not having any impact on the decision to alter a canonical order towards a non-canonical one (LOCI and PP-preposing in German) are basically congruent. For English, only a small group of features influences the decision on word order. In German, more features show an effect on the outcome, according to the cforest graphs. Although the results for the cross-linguistic analysis very much gives support for the claim that there are similarities between the languages on the reasons for using the pattern evaluated here, differences can also be established. One major difference is the lack of *be*-verbs in the German data. It may be that in German the pattern observed here does not cover sentences around *be*. As Hawkins (1986) claims, German has more

specific verb meanings than English, which might result in a greater variety of verbs. Additionally, German gives much more emphasis to the following discourse; the connection of the referents of the constituents to what happens following the target sentence has major influence on the word ordering. This cannot be attested for in English in general, German seems to react far more to discourse features than English does. In English the weight is a very strong factor in staying with the default word order. Only in case the weight does not make a decision (or a weak decision), the discourse status becomes more prominent. This is supported by the findings of Arnold et al. (2000), presented before.

After having laid out all the possible combinations of patterns and languages within my data, the concluding chapter will give a summary and will answer to the questions posed throughout this thesis.

5. Conclusion

There are two major claims on the function of word order variation (especially locative inversion in English), namely that it facilitates the production or perception of language by shifting syntactically and functionally heavy NPs towards the end of the sentence (Hartvigson & Jakobsen 1974, Hawkins 1992, Biber et al. 1999, Arnold et al. 2000, Chen 2003) and by providing an ideal organization of information within a sentence (Clark & Haviland 1977, Prince 1981, Birner 1996, a.o.). Additionally, it is stated that inversion expresses locative information (Chen 2003), encoded in the verb type and the preposition involved. Poset relations and anaphoric linkage of the constituents are also brought forward as motives for deviating from the default word order.

Originating from the idea of translation, these claims were tested for English and its syntactic equivalent in German, PP-preposing, in order to find out about the stylistic and functional preferences the two languages display. I therefore wanted to find out under which circumstances (which combination of factors or features) the non-canonical patterns (LOCI and PP-preposing) are favored, as compared to the canonical, the default word order. From these combinations of factors I hoped (i) to be able to infer the use conditions under which the patterns are employed on a monolingual basis, and (ii) to determine whether the two langauges use the structurally identical pattern for equal reasons or not. This was done by first presenting the general opinions in the field on possible reasons for word order alternations (with focus on English). The terminology (givenness, theme-rheme, topic-focus, etc.) was then introduced in order to clearly position this thesis with regard to various terminological ambiguities. In order to be able to determine the functional and stylistic preferences English and German have regarding the syntactic pattern in focus, linguistically motivated fetaures were identified and later used to annotate a representative dataset for each variant. The datasets were acquired with the help of the tool CSniper, following strict rules of random data collection from comparable sources. Following a statistical analysis with R, the major results are as follows.

According to my data, both information packaging and weight organization seem to play a role for both languages, therefore signifying basic structural similarities. The weight aspect surely plays a major role, however, more in the role of a first filter. Especially for English, weight gives clear input on when not to deviate from the default word order. In case relative weight does not indicate a tendency, discourse features take over and further narrow down the preferences the language has for a certain setting. For German, the discourse status of the denotatum of the subject is very important. However, it does not necessarily require old information to precede new information, the connection of the preverbal element to the prior discourse and/or the postverbal element to the following discourse (by some thematic continuation) is what mainly decides for or against preposing.

In the introduction I formulated the questions I – V, which will now be answered to sum up the findings of my thesis.

I. What is the function of locative inversion (LOCI) in English and which (discourse) features favor its use?

Very generally, I can say that LOCI does have an information-packaging function, following the definition of Birner (1996). English stromgly favors (PP-) inversion for sentences involving a logical subject that represents information less familiar than the information represented by the PP.

It is also sensitive to weight, as has been illustrated by many sentences in my dataset. Weight has a filter function. For sentences with a clearly dominating PP, inversion does not seem to be a preferred alternative. There is an overall tendency to order shorter before longer constituents, although not exclusively. In cases going against accounts on syntactic weight, weight does either not make a prediction or information status is the stronger feature. Still, one can give credit to Green (1980:599), who claims that inversion is a stylistic measure "[…] which allows the writer (or speaker) to make the subject NP longer, and thereby pack more material into the sentence" (also see chapter 2) and ultimately to Hawkins (1992). Further features that encourage the use of LOCI are new information encoded in the logical subject, a form of *(to) be* in combination with a heavy logical subject, poset relations of the referent of the NP_PP to the prior context, a locative meaning

(originating in either the verb or the preposition, supporting Chen's (2003) claim), and ultimately the discourse status of the referent represented by the NP_PP, in case it carries information more or equally familiar than that encoded in the subject_NP. All in all, it has to be stated that a combination of factors is what triggers the deviation from the default word order; certain features certainly encourage it.

II. What is the difference between THERE and LOCI in English?

As extensively commented upon above, I assume that there is a difference between LOCI and THERE (*there*-insertion with PP-preposing) in English. As I wanted to exclude THERE from the analysis of LOCI, I had to prove that there are functional differences between the two constrcutions. Although there are many instances allowing for both variations, my analysis was able to show that under certain circumstances there is a clear preference for either LOCI or THERE. THERE is, for example, not used with a directional PP. Compared to LOCI it does favor existential meaning. THERE is further strongly dispreferred for sentences with a logical subject representing an evoked entity in the form of a definite NP or a proper name. As THERE prefers to have totally new entities encoded in the postverbal position, it cleary favors indefinite NPs. This is also shown for *be*-sentences with a heavy PP that includes an NP that refers to a specific entity and a postverbal non-referring subject_NP. Although LOCI is possible, THERE is more likely to be chosen in case the canonical order is not an option (which it always is for subject_NPs referring to a specific entity). This preference for non-referring NPs in postverbal position is a consistent feature of THERE and sets it apart from LOCI. THERE also seems to depend more on the relative weight than LOCI does (THERE: 266/300 sentences clearly have a longer logical subject, as opposed to 217/300 for LOCI). The discourse-status is what is most influential for the choice of LOCI, the verb-type gives a hint on possible preferences of THERE, as it prefers verbs of existence.

Considering figure 30, one can state that there are no cases without any preference for either LOCI or THERE in the general statistical model. Although there are

some examples allowing for both LOCI and THERE, it supports my understanding of them being distinct constructions unused under distinct circumstances.

III. What does the surface structure OVS in German (PP-preposing) do?

As Speyer (2007) claimes, German is sensitive to poset relations the preverbal element has to the prior context. This is supported by my data. As German also is sensitive to the length of the constituents and the discourse status of the subject_NP, the syntactic pattern carries similar functions, compared to LOCI. German also tends to avoid the order of familiar information following less familiar information; PP-preposing might therefore also be used to introduce new entites into the discourse. However, only 64/300 sentences have a PP denoting clearly evoked information paired up with a logical subject representing new information. Apart from the relative perspective, German heavily relies on the discourse status of the subject_NP, as relative heaviness is not as strong an indicator for the choice between CC and NCC as it is in English. This can be supported by examples for sentences, which, although including a relatively heavy PP, favor the non-canonical order due to a brand-new subject_NP.

The form of the subject NP and its reference to a specific entity is another strong predictor. For indefinite NPs in subject position the probablility of the non-canonical order raises considerably, even for sentences with a relatively heavier PP. For logical subjects referring to evoked entites, which are longer than the PP, no prediction is made. The decisive factor in German is the possible connection to the following context. NPs, whose referent is continued in the context following the target sentence, almost always appear in postverbal position. One can therefore say that in German the pattern under consideration clearly is used for discourse organization.

IV. Is the structure ‘PP V NP’ in English and German congruent in terms of discourse function?

I feel confident to state that German uses the syntactic pattern PP-V-NP for very similar reasons this pattern is used for in English. However, as will be elaborated on in what follows, the construction might carry more functions, respectively does

not absolutely align with the use conditions identified for English. There seems to be a general tendency to order shorter before longer constituents, as shown for English, where 217/300 sentences show the order predicted by Hawkins in his account on Early Immediate Constituents. The same is true for 206/300 German sentences. Concentrating on discourse functions, the pragmatic account by Birner, which proposes the function of information packaging for LOCI in English, was tested against my data. For English it could be confirmed absolutely, as there are no sentences that carry information in preverbal position that is less familiar than the information encoded in postverbal position. This tendency is also verifiable for German, however, not as strong. And third, PP-inversion is assigned a strong locative meaning. For English this seems to be true, as 185/300 examples include a locative PP, opposed to 118/300 in German. German sentences with the pattern under consideration have more of an existential character, as 170/300 sentences show. What unites both languages is the importance of the discourse status the denotatum of the subject_NP has. Next to the relative heaviness of the constituents and the absolute length of the subject, this factor seems to have the greatest influence on whether a CC or NCC (LOCI or PP-preposing) is favored. Next to the discourse status of the referent of the subject_NP, a strong tendency of the NP_PP to stand in poset relation to the preceeding context could be shown to exist in both languages. Interestingly, for LOCI there were no pronouns in preverbal position, while for PP-preposing there were a few.

What can be seen as a sign against the total congruency of the two syntactic equivalents are the verbs preferred by English and German. Whereas in English the distribution of *be* vs. non-*be*-verbs was 222/78, German did not show any examples involving the counterpart of *be*, namely *sein*. Additionally, for German the context following the NCC is of importance. A constituent that is continued to the following context is very likely to be put in postverbal position, even overriding weight tendencies. This is not the case for English.

In conclusion, one can say that the syntactic pattern under consideration does actually fulfill similar discourse functions in both languages. One assumption might be that the common history the languages share actually shows in the constructional inventory they have today. Especially the English inversion construction, which is

said to be an arachic feature from V2, supports this. However, there seems to be more to the German construction. As I did only consider examples involving comparable verbs, I cannot make an overall statement.

V. How do the results fit in with the state of the art in the field?

My data clearly confirms the importance of the concept of information packaging proposed by Birner (1996), at least for the English data. Hawkins' principle of end-weight (also see Biber et al. 1999) is also supported. The view held by Chen (2003), namely that inversion is used to introduce some new figure into a given ground (also proposed in Levelt (1989), who says that a felicitous sentence introduces a new perspective), can be confirmed for the major part of my data, too.

Throughout this thesis I have contributed arguments to the claim that LOCI and THERE have to be regarded as functionally distinct, eventhough they have many joint characteristics. Furthermore, the functions of LOCI and PP-preposing in German were analyzed in isolation and I showed that, despite the typological differences between English and German, the pattern is used for similar reasons, the factors encouraging the use of either LOCI in English or PP-preposing in German are partly congruent. Both constructions are highly sensitive to the relative weight and the dicourse status of the logical subject.

However, as they are not identical, questions for further research arise. As I did not make quantative claims about the frequency of the constructions, one might ask whether it is true that LOCI, within the range of non-canonical constructions English offers, actually is the most frequently used alternation. This I cannot answer, as I only considered LOCI and THERE. Additionally, I can only make qualitative claims on their use preferences, as I did above. The question on whether the German preposing construction unites the functions inversion and preposing carry in English therefore also falls out of the judgement range, as I did not analyse English preposing seperately. And last but not least, it may be that the German PP-preposing construction involves more verbs than I allowed for. However, as English was the starting point for my analysis and I wanted to have a comparable data base in order to be able to make a general claim on whether there are any similarities in usage conditions between the variants in English and German, the

verbs in German were aligned with those allowed for in English (see Levin 1993). Future research might therefore be interested in a monolingual analysis of the pattern PP-V-NP in German to identify all the verb classes that are compatible with the pattern.

Although many aspects are left unanswered, I think that I was able to contribute to the discussion on the use conditions and preferences LOCI (and THERE) and PP-preposing in German display. The major accomplishment is that I was able to show that, despite typological differences, both languages show similar preferences, they are driven by similar factors when having to decide on whether to stay with the canonical order or to prepose (respectively invert) the canonically postverbal PP.

Apendix

A. Tag Set BNC (BNC Consortium 2007[60])

AJ0 Adjective (general or positive) (e.g. *good, old, beautiful*)

AJC Comparative adjective (e.g. *better, older*)

AJS Superlative adjective (e.g. *best, oldest*)

AT0 Article (e.g. *the, a, an*, *no*) [N.B. *no* is included among articles, which are defined here as determiner words which typically begin a noun phrase, but which cannot occur as the head of a noun phrase.]

AV0 General adverb: an adverb not subclassified as AVP or AVQ (see below) (e.g. *often, well, longer* (adv.), *furthest*. [Note that adverbs, unlike adjectives, are not tagged as positive, comparative, or superlative. This is because of the relative rarity of comparative and superlative adverbs.]

AVP Adverb particle (e.g. *up, off, out*) [N.B. AVP is used for such "prepositional adverbs", whether or not they are used idiomatically in a phrasal verb: e.g. in 'Come *out* here' and 'I can't hold *out* any longer', the same AVP tag is used for *out*.

AVQ *Wh*-adverb (e.g. *when, where, how, why, wherever*) [The same tag is used, whether the word occurs in interrogative or relative use.]

CJC Coordinating conjunction (e.g. *and, or, but*)

CJS Subordinating conjunction (e.g. *although, when*)

CJT The subordinating conjunction *that* [N.B. *that* is tagged CJT when it introduces not only a nominal clause, but also a relative clause, as in 'the day *that* follows Christmas'. Some theories treat *that* here as a relative pronoun, whereas others treat it as a conjunction.We have adopted the latter analysis.]

CRD Cardinal number (e.g. *one, 3, fifty-five, 3609*)

DPS Possessive determiner (e.g. *your, their, his*)

DT0 General determiner: i.e. a determiner which is not a DTQ. [Here a determiner is defined as a word which typically occurs either as the first word in a noun phrase, or as the head of a noun phrase. E.g. *This* is tagged DT0 both in '*This* is my house' and in '*This* house is mine'.]

DTQ *Wh*-determiner (e.g. *which, what, whose, whichever*) [The category of

[60] http://www.natcorp.ox.ac.uk/docs/c5spec.html (last accessed June 28, 2015)

determiner here is defined as for DT0 above. These words are tagged as *wh*-determiners whether they occur in interrogative use or in relative use.]

EX0 Existential *there*, i.e. *there* occurring in the *there is* ... or *there are* ... construction

ITJ Interjection or other isolate (e.g. *oh, yes, mhm, wow*)

NN0 Common noun, neutral for number (e.g. *aircraft, data, committee*) [N.B. Singular collective nouns such as *committee* and *team* are tagged NN0, on the grounds that they are capable of taking singular or plural agreement with the following verb: e.g. 'The *committee* disagrees/disagree'.]

NN1 Singular common noun (e.g. *pencil, goose, time, revelation*)

NN2 Plural common noun (e.g. *pencils, geese, times, revelations*)

NP0 Proper noun (e.g. *London, Michael, Mars*, *IBM*) [N.B. the distinction between singular and plural proper nouns is not indicated in the tagset, plural proper nouns being a comparative rarity.]

ORD Ordinal numeral (e.g. *first, sixth, 77th, last*) . [N.B. The ORD tag is used whether these words are used in a nominal or in an adverbial role. *Next* and *last,* as "general ordinals", are also assigned to this category.]

PNI Indefinite pronoun (e.g. *none, everything, one* [as pronoun], *nobody*) [N.B. This tag applies to words which always function as [heads of] noun phrases. Words like *some* and *these*, which can also occur before a noun head in an article-like function, are tagged as determiners (see DT0 and AT0 above).]

PNP Personal pronoun (e.g. *I, you, them, ours*) [Note that possessive pronouns like *ours* and *theirs* are tagged as personal pronouns.]

PNQ *Wh*-pronoun (e.g. *who, whoever, whom*) [N.B. These words are tagged as *wh*-pronouns whether they occur in interrogative or in relative use.]

PNX Reflexive pronoun (e.g. *myself, yourself, itself, ourselves*)

POS The possessive or genitive marker *'s* or *'* (e.g. for 'Peter*'s* or somebody else*'s*', the sequence of tags is: NP0 POS CJC PNI AV0 POS)

PRF The preposition *of*. Because of its frequency and its almost exclusively postnominal function, *of* is assigned a special tag of its own.

PRP Preposition (except for *of*) (e.g. *about, at, in, on, on behalf of, with*)

PUL Punctuation: left bracket - i.e. (or [

PUN Punctuation: general separating mark - i.e. . , ! , : ; - or ?

PUQ Punctuation: quotation mark - i.e. ' or "

PUR Punctuation: right bracket - i.e.) or]

TO0 Infinitive marker *to*

UNC Unclassified items which are not appropriately classified as items of the English lexicon. [Items tagged UNC include foreign (non-English) words, special typographical symbols, formulae, and (in spoken language) hesitation fillers such as *er* and *erm*.]

VBB The present tense forms of the verb BE, except for *is, 's*: i.e. *am, are, 'm, 're* and *be* [subjunctive or imperative]

VBD The past tense forms of the verb BE: *was* and *were*

VBG The -*ing* form of the verb BE: *being*

VBI The infinitive form of the verb BE: *be*

VBN The past participle form of the verb BE: *been*

VBZ The -*s* form of the verb BE: *is, 's*

VDB The finite base form of the verb BE: *do*

VDD The past tense form of the verb DO: *did*

VDG The -*ing* form of the verb DO: *doing*

VDI The infinitive form of the verb DO: *do*

VDN The past participle form of the verb DO: *done*

VDZ The -*s* form of the verb DO: *does, 's*

VHB The finite base form of the verb HAVE: *have, 've*

VHD The past tense form of the verb HAVE: *had, 'd*

VHG The -*ing* form of the verb HAVE: *having*

VHI The infinitive form of the verb HAVE: *have*

VHN The past participle form of the verb HAVE: *had*

VHZ The -*s* form of the verb HAVE: *has, 's*

VM0 Modal auxiliary verb (e.g. *will, would, can, could*, *'ll*, *'d*)

VVB The finite base form of lexical verbs (e.g. *forget, send, live, return*)

VVD The past tense form of lexical verbs (e.g. *forgot, sent, lived, returned*)

VVG The *-ing* form of lexical verbs (e.g. *forgetting, sending, living, returning*)

VVI The infinitive form of lexical verbs (e.g. *forget, send, live, return*)

VVN The past participle form of lexical verbs (e.g. *forgotten, sent, lived, returned*)

VVZ The *-s* form of lexical verbs (e.g. *forgets, sends, lives, returns*)

XX0 The negative particle *not* or *n't*

ZZ0 Alphabetical symbols (e.g. *A, a, B, b, c, d*)

B. STTS Tag Set (University of Stuttgart[61])

OS	DESCRIPTION	EXAMPLES
ADJA	attributives Adjektiv	[das] große [Haus]
ADJD	adverbiales oder prädikatives Adjektiv	[er fährt] schnell, [er ist] schnell
ADV	Adverb	schon, bald, doch
APPR	Präposition; Zirkumposition links	in [der Stadt], ohne [mich]
APPRART	Präposition mit Artikel	im [Haus], zur [Sache]
APPO	Postposition	[ihm] zufolge, [der Sache] wegen
APZR	Zirkumposition rechts	[von jetzt] an
ART	bestimmter oder unbestimmter Artikel	der, die, das, ein, eine
CARD	Kardinalzahl	zwei [Männer], [im Jahre] 1994
FM	Fremdsprachliches Material	[Er hat das mit ``] A big fish [" übersetzt]
ITJ	Interjektion	mhm, ach, tja
KOUI	unterordnende Konjunktion mit ``zu" und Infinitiv	um [zu leben], anstatt [zu fragen]
KOUS	unterordnende Konjunktion mit Satz	weil, dass, damit, wenn, ob
KON	nebenordnende Konjunktion	und, oder, aber
KOKOM	Vergleichskonjunktion	als, wie
NN	normales Nomen	Tisch, Herr, [das] Reisen
NE	Eigennamen	Hans, Hamburg, HSV
PDS	substituierendes Demonstrativpronomen	dieser, jener
PDAT	attribuierendes	jener [Mensch]

[61] http://www.ims.uni-stuttgart.de/forschung/ressourcen/lexika/TagSets/stts-table.html (last accessed June 28, 2015)

	Demonstrativpronomen	
PIS	substituierendes Indefinitpronomen	keiner, viele, man, niemand
PIAT	attribuierendes Indefinitpronomen ohne Determiner	kein [Mensch], irgendein [Glas]
PIDAT	attribuierendes Indefinitpronomen mit Determiner	[ein] wenig [Wasser], [die] beiden [Brüder]
PPER	irreflexives Personalpronomen	ich, er, ihm, mich, dir
PPOSS	substituierendes Possessivpronomen	meins, deiner
PPOSAT	attribuierendes Possessivpronomen	mein [Buch], deine [Mutter]
PRELS	substituierendes Relativpronomen	[der Hund ,] der
PRELAT	attribuierendes Relativpronomen	[der Mann ,] dessen [Hund]
PRF	reflexives Personalpronomen	sich, einander, dich, mir
PWS	substituierendes Interrogativpronomen	wer, was
PWAT	attribuierendes Interrogativpronomen	welche[Farbe], wessen [Hut]
PWAV	adverbiales Interrogativ- oder Relativpronomen	warum, wo, wann, worüber, wobei
PAV	Pronominaladverb	dafür, dabei, deswegen, trotzdem
PTKZU	``zu'' vor Infinitiv	zu [gehen]
PTKNEG	Negationspartikel	nicht
PTKVZ	abgetrennter Verbzusatz	[er kommt] an, [er fährt] rad
PTKANT	Antwortpartikel	ja, nein, danke, bitte
PTKA	Partikel bei Adjektiv oder Adverb	am [schönsten], zu [schnell]
TRUNC	Kompositions-Erstglied	An- [und Abreise]

VVFIN	finites Verb, voll	[du] gehst, [wir] kommen [an]
VVIMP	Imperativ, voll	komm [!]
VVINF	Infinitiv, voll	gehen, ankommen
VVIZU	Infinitiv mit ``zu'', voll	anzukommen, loszulassen
VVPP	Partizip Perfekt, voll	gegangen, angekommen
VAFIN	finites Verb, aux	[du] bist, [wir] werden
VAIMP	Imperativ, aux	sei [ruhig !]
VAINF	Infinitiv, aux	werden, sein
VAPP	Partizip Perfekt, aux	gewesen
VMFIN	finites Verb, modal	dürfen
VMINF	Infinitiv, modal	wollen
VMPP	Partizip Perfekt, modal	gekonnt, [er hat gehen] können
XY	Nichtwort, Sonderzeichen enthaltend	3:7, H2O, D2XW3
$,	Komma	,
$.	Satzbeendende Interpunktion	. ? ! ; :
$(	sonstige Satzzeichen; satzintern	- [,]()

C. Numerical values for Cforest analyses

LOCI vs. CC

following_context_PP	language	negation
-9.090909e-06	0.000000e+00	0.000000e+00
NCC_following_sentence	NCC_preceding_sentence	NP_PP_form
0.000000e+00	1.818182e-05	3.818182e-04
NP_PP_anaphoric	NP_PP_type	subject_NP_form
4.090909e-04	5.636364e-04	1.400000e-03
subject_NP_type	subject_NP_poset	NP_PP_poset
1.472727e-03	1.709091e-03	1.936364e-03
following_context_S	length_PP	PP
4.545455e-03	5.963636e-03	6.154545e-03
verb	verb_type	subject_NP_anaphoric
9.136364e-03	9.818182e-03	1.072727e-02
NP_PP_discourse	preposition	subject_NP_discourse
1.185455e-02	2.148182e-02	2.662727e-02
length_S	heavier_constituent	
4.770909e-02	1.247364e-01	

Fig. 39: Numerical values for cforest analysis LOCI vs. CC

THERE vs. CC

NP_PP_type	language	negation
-9.090909e-06	0.000000e+00	0.000000e+00
following_context_PP	NP_PP_form	subject_NP_poset
9.090909e-05	2.727273e-04	4.545455e-04
NP_PP_poset	NP_PP_discourse	length_PP
3.281818e-03	4.227273e-03	5.290909e-03
subject_NP_form	verb	verb_type
2.210909e-02	2.384545e-02	3.816364e-02
NCC_preceding_sentence	NCC_following_sentence	following_context_S
0.000000e+00	0.000000e+00	8.181818e-05
NP_PP_anaphoric	preposition	PP
1.054545e-03	2.236364e-03	3.100000e-03
subject_NP_anaphoric	subject_NP_discourse	subject_NP_type
7.681818e-03	1.249091e-02	1.260000e-02
length_S	heavier_constituent	
6.031818e-02	9.799091e-02	

Fig. 40: Numerical values for cforest analysis THERE vs. CC

LOCI vs. THERE

```
subject_NP_discourse NCC_following_sentence
       -5.454545e-05          -3.636364e-05
            language               negation
        0.000000e+00           0.000000e+00
subject_NP_anaphoric   following_context_PP
        0.000000e+00           0.000000e+00
     NP_PP_anaphoric NCC_preceding_sentence
        2.909091e-04           4.181818e-04
            length_S            NP_PP_poset
        5.636364e-04           1.163636e-03
          NP_PP_form        NP_PP_discourse
        1.181818e-03           4.081818e-03
           length_PP             NP_PP_type
        6.400000e-03           6.763636e-03
                 verb       subject_NP_poset
        8.627273e-03           8.809091e-03
           verb_type    heavier_constituent
        1.070000e-02           1.560000e-02
 following_context_S        subject_NP_type
        1.810000e-02           2.198182e-02
     subject_NP_form                     PP
        2.396364e-02           3.493636e-02
         preposition
        1.171364e-01
```

Fig. 41: Numerical values for cforest analysis LOCI vs. THERE

LOCI vs. THERE vs. CC

```
NCC_following_sentence NCC_preceding_sentence            language
         -6.042296e-05          -3.625378e-05        0.000000e+00
              negation   following_context_PP          NP_PP_form
         0.000000e+00           6.646526e-05        2.537764e-04
      NP_PP_anaphoric            NP_PP_poset          NP_PP_type
         8.398792e-04           2.634441e-03        3.039275e-03
      NP_PP_discourse       subject_NP_poset           length_PP
         7.897281e-03           8.030211e-03        8.990937e-03
 subject_NP_anaphoric    following_context_S                 verb
         9.432024e-03           1.043505e-02        1.882175e-02
      subject_NP_form   subject_NP_discourse                  PP
         2.034441e-02           2.099094e-02        2.250151e-02
      subject_NP_type              verb_type            length_S
         2.437462e-02           2.802417e-02        3.508157e-02
         preposition    heavier_constituent
         8.401813e-02           9.659819e-02
```

Fig. 42: Numerical values for cforest analysis LOCI vs. THERE vs. CC

PP-preposing vs. CC

NCC_following_sentence	language	negation
-9.090909e-06	0.000000e+00	0.000000e+00
verb_type	NCC_preceding_sentence	NP_PP_form
0.000000e+00	9.090909e-06	7.363636e-04
NP_PP_anaphoric	NP_PP_type	preposition
8.181818e-04	8.818182e-04	2.418182e-03
following_context_S	PP	subject_NP_poset
5.018182e-03	5.718182e-03	5.800000e-03
NP_PP_poset	subject_NP_form	subject_NP_type
6.254545e-03	8.809091e-03	9.500000e-03
length_PP	verb	following_context_PP
1.177273e-02	1.194545e-02	1.197273e-02
subject_NP_anaphoric	NP_PP_discourse	length_S
1.781818e-02	1.914545e-02	3.738182e-02
subject_NP_discourse	heavier_constituent	
4.370000e-02	5.265455e-02	

Fig. 43: Numerical values for cforest analysis PP-preposing vs. CC

LOCI vs. PP-preposing

negation	NCC_following_sentence	NCC_preceding_sentence	NP_PP_fc
0.000000e+00	1.360544e-05	8.163265e-05	2.131519e-
NP_PP_anaphoric	NP_PP_type	verb_type	following_context_
3.628118e-04	8.979592e-04	1.609977e-03	3.514739e-
subject_NP_form	language	preposition	subject_NP_pos
3.854875e-03	3.936508e-03	5.473923e-03	5.764172e-
subject_NP_type	NP_PP_poset	following_context_S	length_
6.049887e-03	6.253968e-03	7.705215e-03	8.544218e-
PP	subject_NP_anaphoric	NP_PP_discourse	ve
8.698413e-03	1.392290e-02	1.475737e-02	1.549206e-
subject_NP_discourse	length_S	heavier_constituent	
4.119274e-02	4.192290e-02	8.068934e-02	

Fig. 44: Numerical values for cforest analysis LOCI vs. PP-preposing

References

Abbott, B. 1992. Definiteness, existentials, and the 'list' interpretation. In: Barker, C. and D. Dowty, (eds.), *SALT II: Proceedings of the Second Conference on Semantics and Linguistic Theory,* Columbus: The Ohio State University, 1-16.

Abbott, B. 1993. A Pragmatic account of the definiteness effect in existential sentences. In: *Journal of Pragmatics 19*(1), 39-55.

Allerton, D. J., 1978. The notion of 'givenness' and its relations to presupposition and to theme. In: *Lingua 44*, 133-168.

Arnold, J. E., A. Losongco, T. Wasow and R. Ginstrom. 2000. Heaviness vs. Newness: The Effects of Structural Complexity and Discourse Status on Constituent Ordering. In: *Language*. *76*(1), 28-55.

Baayen, R. H. 2008. *Analyzing Linguistic Data*. *A practical Introduction to Statistics using R*. Cambridge: Cambridge University Press.

Bader, M. & J. Häussler. 2010. Word Order in German: A Corpus Study. In: *Lingua 120*, 717–762.

Behaghel, O. 1909/1910. Beziehungen zwischen Umfang und Reihenfolge von Satzgliedern. In: *Indogermanische Forschungen 25*, 110-142.

Bennett, J. 1976. *Linguistic Behaviour*. Cambridge: Cambridge University Press.

Biber, D. & B. Gray. 2010. Challenging stereotypes about academic writing: Complexity, elaboration, explicitness. In: *Journal of English for Academic Purposes 9(1)*, 2–20.

Biber, D., S. Johansson, G. Leech, S. Conrad & E. Finegan. 1999. *Longman Grammar of Spoken and Written English* (2nd. ed.). London: Longman.

Birner, B. J. 1994. Information Status and Word order: An Analysis of English Inversion. In: *Language 70*(2), 233-259.

Birner, B. J. 1995. Pragmatic Constraints on the Verb in English Inversion. In: *Lingua 97*, 233-256.

Birner, B. J. 1996. *The Discourse Function of Inversion in English*. New York: Garland Publishing.

Birner, B. J. & G. Ward. 1992. On the interpretation of VP inversion in American English. In: *Journal of Linguistics 28*, 1-12.

Birner, B. J. & G. Ward. 1993. There-Sentences and Inversion as Distinct Constructions: A Functional Account. In: *Proceedings of the Nineteenth Annual Meeting of the Berkely Linguistic Society*.

Birner, B. J. and G. Ward. 1998. *Information Status and Noncanonical Wordorder in English*. Amsterdam: John Benjamins.

Bolinger, D. 1977. *Meaning and Form*. New York: Longman.

Breivik, L. E.. 1981. On the interpretation of existential *there*. In: *Language 57*(1), 1-25.

Bresnan, J. 1994. Locative Inversion and the Architecture of Universal Grammar. *Language 70*(1), 72-131.

Bresnan, J., A. Cueni, T. Nikitina, & R. H. Baayen. 2007. Predicting the dative alternation. In: Boume, G., I. Kraemer, & J. Zwarts (eds.). *Cognitive Foundations of Interpretation* (pp. 69-94). Amsterdam: Royal Netherlands Academy of Science.

BNC Consortium 2007. *The British National Corpus*, version 3 (BNC XML Edition). Distributed by Oxford University Computing Services on behalf of the BNC Consortium. URL: http://www.natcorp.ox.ac.uk/

Breiman, L. 2001. Random forests. In: *Machine Learning*, *45(*1), 5–32.

Brown, G. & G. Yule. 1983. *Discourse analysis*. Cambridge: Cambridge University Press.

Chafe, W. 1970. *Meaning and the structure of language*. Chicago: University of Chicago Press.

Chafe, W. 1974. Language and Consciousness. In *Language 50*(1), 111-133.

Chafe, W. 1976. Givenness, Contrastiveness, Definiteness, Subjects, Topics, and Point of View. In: Li, C. N. (ed.). *Subject and Topic* (pp. 25-55). New York: Academic Press.

Chafe, W. 1992. Information flow in speaking and writing. In: Downing, P., S. D. Lima & M. Noonan. (eds.) *The Linguistics of Literacy* (pp. 17-29). Amsterdam: John Benjamins.

Chafe, W. 1994. *Discourse, consciousness, and time: the flow and displacement of conscious experience in speaking and writing*. Chicago: University of Chicago Press.

Chafe, W. 1996. Inferring Identifiability and Accessibility. In: Fretheim, T.. & J. K. Gundel (eds.). *Reference and Referent Accessability* (pp. 53-76). Amsterdam: John Benjamins.

Chen, R. 2003. *English Inversion: A Ground-before-figure Construction*. Berlin: Mouton De Gruyter.

Chen, R. 2011. The mind as ground: A study of the English existential construction. In: Panther, K.-U. & G. Radden (eds.) *Motivation in Grammar and the Lexicon* (pp. 49-70). Amsterdam: John Benjamins.

Chiarcos, C. 2011. On the Dimensions of Discourse Salience. In: Dipper, S. & H.

Zinsmeister (eds.) *Beyond Semantics. Corpus-based Investigations of Pragmatic and Discourse Phenomena. Proceedings of the DGfS Workshop, Göttingen, February 23-25, 2011*. (Bochumer Linguistische Arbeitsberichte; 3), 31-44.

Chomsky, N., 1965. *Aspects of the theory of syntax*. Cambridge: MIT. Press.

Chomsky, Noam. 1971 Deep structure, surface structure and semantic interpretation. In: Steinberg, D. & L. Jacobovis (eds.). *Semantics, an Interdisciplinary Reader in Linguistics, Philosophy and Psychology*. Cambridge: Cambridge University Press. 183-216.

Clark, H. & E. Clark. 1977. Psychology and Language: An Introduction to Psycholinguistic. New York: Harcourt.

Clark, H., & S. Haviland. (1977). Comprehension and the given-new contract. In: Freedle, R. (ed.), *Discourse production and comprehension* (pp. 1-40). Hillsdale: Erlbaum.

Clark, H. & T. Wasow. 1998. Repeating words in spontaneous speech. In: *Cognitive Psychology 27*, 201-242.

Culicover, P. & R. Levine. 2001. Stylistic Inversion on English: A Reconsideration. In: *Natural Language & Linguistic Theory 19*, 283-310.

Coopmans, P. 1989. Where Stylistic and Syntactic Processes Meet: Locative Inversion in English. In: *Language 65*, 728-751.

Coseriu, E. 1988. *Sprachkompetenz: Grundzüge der Theorie des Sprechens*. Tübingen: Gunter Narr Verlag.

Crystal, D. 2010. *The Cambridge Encyclopedia of Language*. 3rd ed. Cambridge: Cambridge University Press.

Dahl, Ö. 1974, Topic-Comment structure revisited. In: Dahl, Ö. (ed.). *Topic and*

comment, contextual boundness and focus (pp. 1-24). Hamburg: Buske.

Daneš, F. 1968. Some thoughts on the semantic structure of the sentence. In: *Lingua 21*, 55-69.

van Dijk, , T. A. 1977. *Text and Context*. London: Longman.

Dorgeloh, H. 1995. Viewpoint and the organization of informative discourse. On the discourse function of full inversion in English. In: Warvik, B., S. K. Tanskanen & R. Hiltunen (eds.). *Organization in Discourse. Proceedings from the Turku Conference*. 223-230.

Dorgeloh, H. 1997. *Inversion in Modern English: Form and Function*. Amsterdam/Philadelphia: John Benjamins.

Downing, A. & P. Locke. 2006. *A University Course in English Grammar*. (2nd ed.). Oxon: Routledge.

Dretske, F. I. 1981. *Knowledge and the flow of information*. Cambridge: MIT Press.

Drubig, H. B. 1988. On the discourse function of Subject Verb Inversion. In: Klegraf, J. & D. Nehls (eds.). *Essays on the English language and applied linguistics on the occasion of Gerhard Nickel's 60th birthday* (pp. 83-95). Heidelberg: Julius Groos.

Eckart de Castilho, R., S. Bartsch & I. Gurevych. 2012. CSniper – Annotation-by-query for non-canonical constructions in large corpora. In *Proceedings of the 50th Meeting of the Association for Computational Linguistics (ACL) 2012*, Jeju, Republic of Korea. 85-90.

Emonds, J. E. 1976. *A Transformational Approach to English Syntax*. New York: Academic Press.

Erdmann, P. 1976. *There sentences in English : a relational study based on a corpus of written texts*. München: Tuduv.

Firbas, J. 1964. On defining theme in functional sentence perspective. In: *Travaux linguisitiques de Prague*, 267-280.

Firbas, J. 1971. On the concept of Communicative Dynamism in the theory of Functional Sentence Perspective. In: *Sbornik prac. filosofick. fakulti brnensk. universiti A 19/71*, 135–144.

von der Gabelentz, G. 1894. *Hypologie der Sprachen. Eine neue Aufgabe der Linguistik*. In: *Indogermanische Forschungen 4*, 1–7

Gary, N. 1976. *A Discourse Analysis of certain root transformations in English*. Bloomington: Indiana University Linguistics Club.

Givón, T. 1983. Topic Continuity in Discourse: An Introduction. In: Givón, T. (ed.). *Topic Continuity in Discourse: A quantitative cross-language Study* (pp. 1-42). Amsterdam/Philadelphia: John Benjamins.

Givón, T. 1988. The pragmatics of word order: Predictability, importance and attention. In: Hammond, M., E.A. Moravcsik & J. Wirth. (eds.). *Studies in Syntactic Typology* (pp. 243-284). Amsterdam: John Benjamins.

Givón, T. 1993. *English Grammar: A Function-Based Introduction*. Vol. II. Amsterdam /Philadelphia: John Benjamins.

Givón, T. 1995. *Functionalism and Grammar*. Amsterdam: John Benjamins.

Goldberg, Adele. 1995. *A Construction Grammar Approach to Argument Structure*. Chicago/ London: Chicago University Press.

Goldberg, A. 2006. *Constructions at Work: The Nature of Generalization in Language*. Oxford: Oxford University Press.

Gómez-González, M. - A. 2001. *The Theme-Topic Interface. Evidence from* English. Amsterdam: John Benjamins.

Green, G. 1980. Some wherefores of English inversions. In *Language 56*, 582-601.

Green, G. 1982. Colloquial and Literary Uses of Inversions. In: Tannen, D. (ed.). *Spoken and Written Language: Exploring Orality and Literacy* (pp. 119-154). Norwood: Ablex Publishing.

Gregory, M. L. & L. A. Michaelis. 2001. Topicalization and Left-Dislocation: A Functional Opposition Revisited. In *Journal of Pragmatics 33*, 1665-1796.

Gries, S. 2009. *Quantative Corpus Linguistics with R: A Practical Introduction*. New York: Routledge.

Gundel, J. K. 1985. Shared knowledge and topicality. In: *Journal of Pragmatics 9*, 83-107.

Gundel, J. K. 1988 Universals of topic-comment structure. In: Hammond, M., E. A. Moravcsik, & J. R. Wirth (eds.). *Studies in syntactic typology* (pp. 209-239). Amsterdam: John Benjamins.

Gundel, J. K.; N. Hedberg & R. Zacharski. 1993. Cognitive Status and the Form of Referring Expressions in Discourse. In: *Language 69*(2), 274-307.

Gundel, J,.K. & T. Fretheim. 2004. Topic and focus. In: Horn, L. & G. Ward (eds.). *Handbook of Pragmatic Theory* (pp. 175-196). Malden: Blackwell.

Gundel, J. K., N. Hedberg & R. Zacharski. 2011. Underspecification of Cognitive Status in Reference Production: the Grammar-Pragmatics Interface. Pre-Cog Sci 2011. Boston, Massachusetts. *Proceedings of the Annual Cognitive Science Society Meeting 4(*2), 249-268.

Hajičová, E. 1984. Topic and Focus. In: Sgall, P. (ed.). *Contributions to*

Functional Syntax. Semantics and Language Comprehension (LLSEE, 16) (pp. 311-321). Amsterdam: Elsevier.

Halliday, M. A.K. 1967. Notes on transitivity and theme in English: part 2. In: *Journal of Linguistics 3*(2), 199-244.

Halliday, M.A.K: 1974. The Place of 'Funtional Sentence Perspective' in the system of linguistic description. In: Daneš, F. (ed.) *Papers on Functional Sentence Perspective* (pp. 43-53). The Hague/Paris: De Gruyter.

Halliday, Michael A.K. 2004. *An Introduction to Functional Grammar*. 3rd. ed. London: Edward Arnold.

Halliday, M.A.K. & R. Hasan.1976. *Cohesion in English*, English Language Series 9. London: Longman.

Hartvigson, H. & L. K. Jakobsen. 1974. *Inversion in Present-Day English*. Odense: Odense University Press.

Haviland, S. E. & H. Clark. 1974. What's New? Acquiring New Information as a Process in Comprehension. In: *Journal or Verbal Learning and Verbal Behaviour 13*(5), 512-521.

Hawkins, J. 1978. *Definiteness and Indefiniteness*. Atlantic Highlands, NJ: Humanities Press.

Hawkins, J. 1986. *A comparative Typology of English and German*. London: Croom Helm.

Hawkins, J. 1990. A Parsing Theory of Word Order Universals. In *Linguistic Inquiry 21*(2), 223-261.

Hawkins, J. 1992. Syntactic Weight Versus Information Structure in Word Order Variation. In: Jacobs, J. (ed.). *Informationsstruktur und Grammatik. Linguistische Berichte, Sonderheft 4/1991-1992* (pp. 196-220). Opladen: Westdeutscher Verlag.

Holler, S. & J. M. Hartmann. 2012. Locative inversion in English: Implications of a rating study. In: Featherston, S. & B. Stolterfoht (eds.). *Empirical Approaches to Linguistic Theory* (pp. 241-265). Berlin: De Gruyter.

Hothorn, T., K. Hornik & A. Zeileis. 2006. Unbiased Recursive Partitioning: A ConditionalInference Framework. In: *Journal of Computational and Graphical Statistics, 15*(3), 651–674.

Hothorn, T., K. Hornik, C. Strobl & A. Zeileis. 2015. *Package 'party: A Laboratory for Recursive Partytioning*. Published: February 24, 2015. URL: http://cran.r-project.org/web/packages/party/party

Huddleston, R. 2002. The clause: complements. In: Huddleston R. & G. Pullum. *The Cambridge grammar of the English language* (pp. 213-322). Cambridge: Cambridge University Press.

Jackendoff, R. 1972. *Semantic interpretation in generative grammar.* Cambridge, MA: MIT Press.

Jungen, O. & H. Lohnstein. 2006. *Einführung in die Grammatiktheorie*. München: Wilhelm Fink Verlag.

Kerz, E. 2012. The role of genre in information structuring in English. In: *Belgian Journal of Linguistics 26*, 143-159.

Kim, J.-B. 2003. English Locative Inversion: A Constrained-Based Approach. In: *Ene* (Korean Journal of Linguistics), *28*(2), 207-235.

König, E. & V. Gast. 2012. *Understanding English-German Contrasts*. (3rd ed.). Berlin: Erich Schmidt.

Kreyer, R. 2006. *Inversion in Modern Written English*. Tübingen: Gunter Narr Verlag.

Krifka, M. 2008. Basic notions of information structure. In: *Acta Linguistica Hungarica 55*(3-4), 243-176.

Kuno, S. 1972. Functional Sentence Perspective: A case study from Japanese and English. In: *Linguistic Inquiry 3*, 269-320.

Kuno, S. 1978. Generative discourse analysis in America. In: Dressler, W.U. (ed.). *Current Trends in Textlinguistics* (pp. 275-294). Berlin: De Gruyter.

Lakoff, G. 1990. *Women, Fire and dangerous things: what categories reveal about the mind.* 2nd. Ed. Chicago: University of Chicago Press.

Lambrecht, K. 1994. *Information Structure and Sentence Form*. Cambridge: Cambridge University Press.

Langacker, R. 1987. *Foundations of Cognitive Grammar, Vol 1. Theoretical Prerequisites*. Stanford: Stanford University Press.

Levelt, W. 1989. *Speaking: from Intention to Articulation*. Cambridge: The MIT Press.

Levin, B. 1993. *English Verb Classes and Alternations: A Preliminary Investigation*. Chicago: University of Chicago Press.

Levin, B. & M. Rappaport Hovav. 1995. *Unaccusativity: At the Syntax-Lexical Semantics Interface*. Cambridge: MIT Press.

Levine, R. 1989. On focus inversion: syntactic valence and the role of a SUBCAT list. In: *Linguistics 27*, 1013-1056.

Levinson, S. C. 1983. *Pragmatics*. Cambridge: Cambridge University Press.

Lyons, J. 1975. Deixis as the source of reference. In: Keenan, E. L. (ed.). *Formal semantics of natural language* (pp. 61-83). Cambridge: Cambridge University Press.

Lyons, J. 1977. *Semantics*. Cambridge: Cambridge University Press.

Mann, W. C. & S. A. Thompson. 1988. Rhetorical Structure Theory: Toward a Functional Theory of text Organization. In: *Text, 8*(3), 243–281.

Mathesius, V. 1929/1975. A Functional Analysis of Present day English on a General Linguistic Basis. The Gague: De Gruyter.

Matthews, P. 2007. *Oxford Concise Dictionary of Linguistics* (2nd. Ed). Oxford: Oxford University Press.

Mitchell, B. & F. Robinson. 2001. *A Guide to Old English* (6th ed.). Malden: Blackwell.

Müller, F. H. 2004. *Stylebook for the Tübingen Partially Parsed Corpus of Written German (TüPP-D/Z)*. URL: http://www.sfs.unituebingen.de/tupp/doc/stylebook.pdf

Musan, R. 2006. Informationsstrukturelle Dimensionen im Deutschen. In: *Zeitschrift für germanistische Linguistik 30*(2), 198-221.

Newmeyer, F. 2003. Grammar is grammar and usage is usage. In: *Language 79*, 682-707.

Penhallurick, J. 1984. Full-verb inversion in English. In: *Australian Journal of Linguistics 4* (1), 33-56.

Prado-Alonso, C. 2011. *Full-verb inversion in spoken and written English*. Bern: Peter Lang.

Prince, E. 1981. Toward a taxonomy of given/new information. In: Cole, P. (ed.). *Radical Pragmatics* (pp. 223-254). New York: Academic Press.

Prince, E. 1986. On the syntactic marking of presupposed open propositions. In: Farley, A., P. Farley & K.-E. McCullough. (eds). *Papers from the Parasession on Pragmatics and Grammatical Theory at the twenty-second regional meeting* (pp. 208-222). Chicago: Chicago Linguistic Society.

Prince, E. 1992. The ZPG letter: Subjects, definiteness, and information-status. In: Thompson, S. & W. C. Mann. (eds). *Discourse Description: Diverse Analyses of a Fundraising Text* (pp. 295-325). Amsterdam/Philadelphia: John Benjamins.

Quirk, R., S. Greenbaum, G. Leech & J. Svartvik. 1972. *A Comprehensive Grammar of the English Language*. London: Longman.

R Development Core Team (2013). R: *A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0, URL http://www.R-project.org/.

Rando, E. & D. J. Napoli. 1978. Definites in There-sentences. In: *Language 54*(2), 300-313.

Reinhart, T. 1981. Pragmatics and Linguistics: An Analysis of sentence topics. In: *Philosophica 27*(1), 53-94.

Rochemont, M. 1986. *Focus in generative grammar*. Philadelphia: John Benjamins.

Rochemont, M. & P. Culicover. 1990. *English Focus Constructions and the Theory of Grammar*. Cambridge: CUP.

Roland, D., F. Dick & J. L. Elman. 2007. Frequency of basic English grammatical structures: A corpus Analysis. In: *Journal of Memory and Language 57*, 348-379.

Rooth, M. 1992. A theory of focus interpretation. *Natural Language Semantics, 1*(1), 75–116.

Ross, J. R. 1968. *Constraints on Variables in Syntax*. Ph.D. dissertation MIT 1967. Bloomington : Bloomington : The Linguistics Club of Indiana.

Sampson, G. 1980. *Schools of Linguistics: Competition and evolution*. London: Hutchinson.

de Saussure, F. 1916/1959. *Cours de linguistique générale*, trsl. by Wade Baskin. New York: McGraw-Hill.

Schiller, A., S. Teufel, C. Thielen & C. Stöckert. 1999. *Guidelines für das Taggen deutscher Textcorpora mit STTS*. IMS Stuttgart und SfS Tübingen, Stuttgart und Tübingen. URL: http://www.sfs.uni-tuebingen.de/resources/stts-1999.pdf

Sgall, P., E. Hajičová & E. Benešová, 1973. *Topic, focus and generative semantics*. Kronberg: Scriptor.

Sgall, P. 1974. Focus and contextutal boundedness. In: Dahl, Ö. (ed.). *Topic and comment, contextual boundness and focus* (pp. 25-51). Hamburg: Buske.

Speyer, A. 2007. Die Bedeutug der Centering Theory für Fragen der Vorfeldbesetzung im Deutschen. In: *Zeitschrift für Sprachwissenschaft 26*, 83-115.

Speyer, A. 2010. *Topicaliszation and stress clash avoidance in the history of English*. Berlin, New York: De Gruyter.

Stalker, J- C. 1988. A Discurse Model for Standard English. In: Klegraf J. & D. Nehls. (eds.). *Essays on the English language and applied linguistics on the*

occasion of Gerhard Nickel's 60th birthday (pp. 439-449). Heidelberg: Julius Groos: Heidelberg.

Strobl, C, J. Malley & G. Tutz. 2009. Am Introduction to Recursive Partitioning: Rationale, Application, and Characteristics of Classification and Regression Trees, Bagging, and Random Forests. In: *Psychological Methods 14*(4), 323-348.

v. Stutterheim, C. & W. Klein. 2008. Mündliche Textproduktion: Informationsorganisation in Texten. In: Janich, N. (ed.). *Textlinguistik. 15 Einführungen* (pp. 113-131). Tübingen: Narr.

Siewierska, A. 1993. On the interplay of factors in the determination of word order. In: Jacobs, J., A. von Stechow, W. Sternefeld &T. Vennemann. (eds.). *Syntax: An international handbook of contemporary research* (pp. 826-846). Berlin: De Gruyter.

Taboada, Maite & William C. Mann. 2006. Rhetorical Structure Theory: looking back and moving ahead. In: *Discourse Studies 8*, 423-459.

TÜPP/D-Z.2014. Universtät Tübingen. See Müller 2004.
URL: http://www.sfs.uni-tuebingen.de/ascl/ressourcen/corpora/tuepp-dz.html

Vallduví, E .1992. *The informational component*. New York/London: Garland.

Vallduví, E. & E. Engdahl. 1996. The linguistic realization of information packaging. In: *Linguistics 34*(3), 459-519.

Ward, G. 1988. *The semantics and pragmatics of Preposing*. New York/ London: Garland Publishing.

Ward, G. 1990. The Discourse Functions of VP Preposing. In *Language 66*(4), 742-763.

Ward, G. & J. Hirschberg. 1988. Intonation and Propositional Attitude: The Pragmatics of L*+H L H%. In: *Proceedings of the Fifth Eastern States Conference on Linguistics*. 512-522.

Ward, G. and E. Prince. 1991. On the Topicalization of Indefinite NPs. In: *Journal of Pragmatic*s *16*, 167-177.

Ward, G. & B. J. Birner. 1995. Definiteness and the English Existential. In: *Language 71*(4), 722-742.

Ward, G. & B. J. Birner. 2001. Discourse and Information Structure In: Schiffrin, D. & D. Tannen. (eds.) *Handbook of Discourse Analysis* (pp. 119-137). Oxford: Blackwell.

Ward, G., B. Birner & R. Huddleston. 2002. Information Packaging. In: Huddleston R. & G. Pullum. *The Cambridge grammar of the English language* (pp. 1363-1447). Cambridge: Cambridge University Press.

Wasow, T. 2002. *Postverbial Behaviour*. Stanford: CSLI Publications.

Webelhuth, G. 2011. Motivating non-canonicality in Construction Grammar: The case of locative inversion. In: *Cognitive Linguistics 22*(1), 81-105.

Weil, H. 1844 / 1978. *The Order of Words in the Ancient Languages Compared with that of the Modern Languages*. Amsterdam: John Benjamins.

Weskott, T., R. Hörnig, G. Fanselow & R. Kliegl. 2011. Contextual Licensing of Marked OVS Word order in German. In: *Linguistische Berichte 225*, 3-18.

White, A. P. & W. Zhong Liu. 1994. Bias in Information-Based Measures in Decision Tree Induction. In: *Machine Learning 15*, 321–329.

Widdowson, H. 1979. Rules and Procedures in Discourse Analysis. In: Myers, T. (ed.). *The Development of Conversation and Discourse* (pp. 61-71). Edinburgh: Edinburgh University Press.

Wilson, D. & D. Sperber. 1979. Ordered entailments: an alternative to presuppositional theories. In: Oh, C.K. & D. Dinneen. (eds.). *Syntax and semantics. XI. Presupposition* (pp. 299-323). New York: Academic Press.