Discourse Deixis and Null Anaphora in German

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Abstract

The main aim of this thesis is to provide insight into the interaction of the syntactic and pragmatic properties of German, particularly with respect to the issue of configurationality. This language is particularly difficult to classify as it displays both subject-object asymmetries (a feature of "configurational" languages), but also has a topic position (a feature of "discourse-configurational" languages). In order to avoid the difficulties associated with subtle acceptability judgements from informants, the study presented here is based on a frequency analysis of word order variation in spoken language corpora.

In the first part, I concentrate on the initial position in German main clauses, which is traditionally referred to as the topic position, and using a task-oriented corpus provide the statistics for the following:

- The frequency of the different grammatical functions in initial position, in order to determine the relative frequency of the canonical SVO word order.
- The frequency of the different NP-forms (null anaphora, pronouns, demonstratives, definite and indefinite NPs) in initial position, which are each associated with a particular cognitive status, thus giving insight into the precise nature of the initial position.

These analyses show that the canonical word order occurs in less than 50% of the utterances and that the initial position is most frequently filled with null topics, pronouns and demonstratives, i.e. NP-forms associated with the most salient, "topiclike" entities in the discourse model. Furthermore, the placing of certain adverbials in initial

position is frequently employed to signal the beginning of a new subsection ("transaction") of the dialogue. These results indicate that German is to be placed at the discourse-configurational end of the configurationality scale.

The second part of the thesis examines a specific aspect of the initial position in greater detail, namely the observed correlation between initial position, null topics and discourse-deictic reference to events and propositions. A study of the referents of null topics in the corpus shows that null topics are mainly discourse-deictic, ie have no NP-antecedents but refer to preceding sections of the text. This conflicts with the standard assumption that discourse-deictic reference involves topic shift rather than reference to a continuing topic. In addition, a study of discourse-deictic reference in general in the corpus shows that there is a strong preference for establishing it in initial position, regardless of whether this is done by null anaphora, pronouns or demonstratives.

The results also show that null topics and demonstratives are used far more frequently for establishing discourse-deictic reference than pronouns. This argues against traditional hierarchies of NP-forms and cognitive status which group null anaphora and pronouns together. A comparative study of discourse deixis in an English corpus of similar sort shows that in this configurational language the frequency of anaphora forms is in line with the predictions made by the hierarchies.

A solution to the problems resulting from these analyses is presented in the final part. Here, it is proposed that discourse-deictic reference does not necessarily imply topic shift. Instead, reference to events and propositions expressed by the previous utterance can be the default centre of attention. Compatibility with verbal subcategorisation restrictions assures that the anaphor is interpreted correctly as referring to either an NP or a that-clause.

A comparison with a non-task-oriented corpus shows that in text-types revolving around the completion of a task, the expected negotiations allow propositions and events referred to by whole utterances to be the centre of attention and reference to them is treated as a continuing topic. In non-task-oriented corpora this is not the case and discourse-deictic reference, whilst being in topic position, is established by demonstratives, indicating topic shift. The general conclusion to be drawn from this is

that the non-linguistic context, ie text genre and situation, can influence the choice of NP-form.

Finally, the lack of pronouns for this type of reference is explained by the syntactic restrictions which disallow the occurrence of unstressed object pronouns in initial position in German main clauses. This indicates that given the choice between expressing pragmatic functions by word order or by NP-form, English speakers choose NP-form, whereas German speakers choose word order and adjust the NP-form accordingly – further evidence for the discourse-configurational nature of German.

Declaration

This thesis has been composed by myself and it has not been submitted in any previous application for a degree. The work reported within was executed by myself, unless otherwise stated.

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Any faults in this thesis are, of course, my own.

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You get to know how people put things, the way they use words, just where the stresses fall...I couldn't help thinking that if Rick said 'This is good news,' he probably meant '*This* is good news,' contrasting it with something else, that wasn't. Or maybe I was just being paranoid, as usual.

Iain Banks, *Espedair Street.*

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Chapter 1

Introduction

The concepts *topic* and *focus* are a vital part of the area of *information packaging* (Chafe 1976; Vallduví 1992), which is concerned with how a speaker can manipulate an utterance to ensure the information it conveys will fit in with the hearer's *knowledge store*, ie what the hearer knows. Theories of information packaging attempt to describe the methods that are available to a speaker in order to do this. In other words, information packaging is used to indicate whether expressions in the utterance refer to known or unknown entities and also if any currently present information needs to be changed.

This is also often referred to as *contextual* information because the knowledge store of the hearer is constantly changed and modified during a conversation. Each utterance influences the knowledge store and this must be taken into account by the speaker when encoding any following utterances. The information packaging of each utterance is therefore determined by the content of the utterances preceding it and extra-linguistic contextual factors such as information supplied by general knowledge and visual surroundings.

Cross-linguistically this information is conveyed either by syntactic structure, by intonation or by morphological marking or a combination of any of these. To quote Vallduví & Engdahl (1996) (p.2), information packaging is

> [a] structuring of sentences by syntactic, prosodic, or morphological means

> that arises from the need to meet the communicative demands of a particular context or discourse.

Due to the availability of three different methods of encoding contextual information and the possibility of a number of combinations thereof, there are different language types with respect to information packaging and various attempts have been made to categorise them. Kiss (1995a), for example, categorises languages according to whether they are configurational or discourse-configurational, ie whether the position of constituents in a sentence is determined by their grammatical functions or by their pragmatic status. The criteria she uses for the classification are whether the language has strictly defined topic or focus positions or not.

German is particularly interesting for the issue of discourse-configurationality as it appears to fall between the two types defined by Kiss. As we will see in the course of this thesis, German has a neutral post-verbal accent position to which focussed constituents can be moved. In addition the initial position in main clauses is traditionally regarded as the topic position, because the constituent expressing "what the sentence is about" is frequently moved there. In this sense, German is discourse-configurational.

On the other hand, the canonical word order SVO in which the topic and focus constituents are not moved is also possible in most contexts. Furthermore, the initial "topic" position and the post-verbal "focus" position are frequently occupied by constituents with different pragmatic functions. German thus lacks strictly defined topic and focus positions, and is according to Kiss' criteria to be classed as a configurational language.

The main aim of this thesis is to show that the classification of languages in terms of discourse-configurationality should not be determined by the existence of structurally defined topic or focus positions alone. What I wish to suggest is that a strict binary classification cannot be upheld and that languages should instead be ordered on a scale whose endpoints are configurationality and discourse-configurationality. Such a scale would allow languages to be placed at either end or, alternatively, between the two endpoints. The proximity of a language to either endpoint would then be used to indicate to what extent its word order is determined by pragmatic factors and to what

extent it is determined by grammatical functions.

In order to avoid having to place languages like German in either category suggested by Kiss, I propose that in addition to the criteria given by her, the factors of *frequency* and *necessity* of pragmatically determined word order should also be taken into account. The criterion of frequency is particularly useful for this purpose as it can be evaluated *relative* to the frequency of particular word orders in other languages.

If we compare for example English and German, we see that although they are both classed as configurational, the word order determined by grammatical functions alone (SVO) is far less frequent in German than in English. English word order variations which deviate from SVO (eg topicalisation) are infrequent and therefore highly marked. In German, on the other hand, deviation from the SVO canonical order is not only far more frequent, but in certain contexts also *less* marked than SVO.

The method of study chosen for this thesis is an empirical evaluation of two corpora of spoken German. In any analysis concerned with information packaging it seems paradoxical to rely on intuitions about utterances taken out of context, as it is precisely the context that is of interest. In addition to this, native speaker judgements of acceptability are often unreliable when it comes to evaluating the subtle interactions of word order, morphological NP form and accent placement. For these reasons and as I am interested in the frequency of certain word order variations, it is preferable to have a corpus study with additional support from judgements on artificially created sentences as opposed to relying entirely on the latter form of evidence.

In the analysis presented in the core chapters of this thesis, a task-oriented corpus of spoken German is used to determine how frequently the SVO word order occurs relative to other word orders. As it can be assumed that deviations from the canonical order are brought about by pragmatic considerations, it is hoped that this analysis will provide some insight into the relative importance of information packaging factors in determining word order in this language.

Aside from determining the frequency, this corpus is also used to determine the necessity of pragmatically manipulated word order variations and examples are presented which show that in some contexts the canonical SVO word order is unacceptable.

An alternative way of looking at the issue of discourse-configurationality is to compare not the competition between pragmatic factors and grammatical function in determining word order but instead to compare *the relative importance of the different means of information packaging*, ie word order, prosody and morphological NP form. As the nuclear accent is associated crosslinguistically with focus, the area of prosody is not particularly interesting from this point of view. Concerning word order and morphological NP form, the predictions one could make is that if any conflict arises between these two factors, word order wins out in discourse-configurational languages, and morphological NP form wins out in configurational languages. This is because the connection between word order and information packaging is stronger in discourse-configurational than in non-discourse-configurational languages.

To test the strength of this connection in German, the analysis presented here pays particular attention to null topics and pronouns. Null topics in German are restricted to initial position in main clauses and can occur nowhere else. Unstressed (neuter) object pronouns, on the other hand, can only occur in post-verbal position. These two NP forms can therefore potentially be in conflict with word order which, for information packaging purposes, may require referents to be placed in positions which are not available to those forms.

In order to analyse the choice of NP forms and positions of NPs in the sentence it is necessary to restrict the analysis to NPs with the same type of referent so that a comparison is legitimate. This brings us to the second main issue dealt with in this thesis: in the analysis of the German corpus it was found that there is a strong correlation between initial position in main clauses, null anaphora and discourse deixis. Discourse-deictic reference, ie reference to events, propositions and states referred to by whole utterances or VPs, poses a particularly difficult problem for the theory of anaphora resolution as the antecedent referents are not associated with NPs. In addition, the type of the referent is more difficult to determine than for concrete entities and factors other than grammatical gender and number agreement between antecedent and anaphor must be taken into account.

For the issue of information packaging, discourse-deictic reference is interesting as

it is generally assumed to imply topic shift rather than a continuing ("expected") topic (Webber 1991; Dahl & Hellman 1995). Its association with null topics in German means that it is particularly suited to test the interaction of word order and NP form as null topics are subject to restrictions regarding their placement in the sentence. Furthermore, the association of discourse-deictic reference with the initial position in main clauses means that it is likely to provide an interesting insight with respect to the behaviour of (object) pronouns, as this NP form is banned from initial position.

The thesis is set up as follows: Chapters 2 and 3 provide the necessary background for the area of information packaging. Chapter 2 deals first with the definition of the basic units of information packaging (ie topic and focus) and then deals in turn with the three means of information packaging, ie morphological NP form, prosody and word order. Chapter 3 presents the rules and characteristics of NP form, prosody and word order specific to German. Chapter 4 is devoted entirely to theories of discourse-deictic and abstract object reference, as this is the area chosen as a testing ground for the interaction of NP form and word order in German.

Chapters 5 and 6 deal with the corpus analyses. Chapter 5 presents an analysis of the frequency and necessity of the canonical word order in a task-oriented corpus of spoken German. It also looks at the relation between word order, NP form and discourse-deictic reference in that corpus. Chapter 6 compares the task-oriented corpus with a non-task-oriented corpus to ascertain whether the results found there hold for other text types. It is proposed that the task given to the participants in the first corpus increases the likelihood of discourse-deictic reference occurring as there is an expectation that the negotiations between the participants will involve reference to the whole of the preceding utterance (ie agreement or disagreement with it). The increased saliency of discourse-deictic objects is reflected by the fact that null anaphors are frequently chosen – an NP form associated with a salient referent. A further result of the analyses in these two chapters is that, given a conflict between an NP form and a particular word order in German (ie object pronoun and initial position), word order wins out as a means of information packaging and an NP form is chosed that does not conflict with it (ie null topic or demonstrative).

Finally, Chapter 7 deals with some of the remaining issues raised in Chapters 5 and 6 regarding the analysis of discourse-deictic and abstract objects. A framework is used to present the cognitive representations of abstract objects (Romijn 1996) and it is shown that, leaving the issue of word order aside, the choice between pronouns and demonstratives for this kind of reference is determined by the saliency and specificity of the referents.

Chapter 2

Information Packaging

2.1 Definition of Discourse Functions

This chapter is concerned with the range of different frameworks used to capture the functions of sentential constituents in the field of information packaging and the precise labelling of the functions themselves. The frameworks and functions are analysed separately from the means used to express the functions, ie morphology, prosody and syntax. Regardless of how exactly a given language expresses discourse functions, it is important to first clarify what these functions are.

The frameworks introduced here are concerned with dividing sentences into parts according to the functions of these parts within the discourse or context. Roughly speaking, all theories have in common the assumption that each sentence contains a part conveying important or new information and, optionally, constituents referring to knowledge already present in the hearer's discourse model.

2.1.1 Topic, Focus and Ground

Two of the most frequently used distinctions in the field of information packaging are those of Topic-Comment and Focus-Background. The Topic-Comment division is based on distinguishing the constituent referring to what the sentence is about from the rest of the utterance. The term *topic* is often used in the sense of Halliday's *theme* to mean

a sentence-initial anchoring point, with the *comment* being the rest of the utterance, presumed to contain amongst other things the new, important information. The Focus-Background distinction, on the other hand, separates the new information (focus) from the given information (background). *Focus* is defined by Halliday (1967), for example, as the informative part of the utterance, whilst the *background*, also described as the *presupposition*, "denote[s] the information in the sentence that is assumed by the speaker to be shared by him and the hearer." (Jackendoff 1972).

Whilst most theories are based around distinguishing new from old information, there is an abundance of subtle distinctions in terminology and definitions. For example Prince (1981, 1986) uses the term *open-proposition* in place of *background* and defines it as being the anchoring part of the utterance. She disagrees with Jackendoff's definition and gives examples such as the following, which show that the background is not always what is assumed by both speaker and hearer. In these examples, the b version is what Jackendoff claims to be the presupposition of the a version:

(2.1) a. Mary gave the SHIRT to Harry.

b. Mary gave x to Harry.

(2.2) a. I saw NOBODY at the party.

b. I saw x at the party.

(Vallduví 1993:5)

The formula in Example 2.1b gives a rough indication (when x is read as *something*) of what the speaker assumes to be true if sentence 2.1a is uttered. The same cannot be said of 2.2b with regard to 2.2a. Therefore, using the term *presupposition* to refer to the background is problematic. The open-proposition is, according to Prince, what the speaker assumes to be the knowledge of the *hearer*. If the speaker utters 2.2a s/he assumes that the hearer believes 2.2b to be true. The focus is then the instantiation of the variable x.

In Rooth (1985, 1992) , a refinement of Jackendoff's analysis suggests that focussing an element x provides a set of alternatives. Focussing *shirt*, for example, indicates that

there is a set of alternatives (*p-set*) of the form give'(m,x,h). Prince's open-proposition is equivalent to Rooth's *presupposition skeleton* and Jackendoff's *Presup*, which are derived by substituting a variable for the focus phrase.

Vallduví recognises the importance of both the Topic-Comment and the Focus-Background distinctions, but points out that intonational prominence, which is the most commonly assumed characteristic of focussed constituents is reflected only by Focus-Background. The Topic-Comment partition may have different boundaries, as seen in the following examples:

(2.3) A: What about Mary? What did she give to Harry?
B: Mary [C gave [F a SHIRT] to Harry.]

(2.4) A: What did Mary do?
B: Mary [C [F gave a shirt to HARRY.]]

The Topic-Comment distinction remains the same in both, despite the fact that the Focus-Background partition changes and different constituents are stressed.

Although he agrees with the basic distinctions drawn in previous works, Vallduví draws attention to the redundancy that exists if all superordinate units (ie topic, comment, focus, background) are retained. In many sentences there is an overlap between the comment and the background, as in the following example, where *drinks* is both part of the background and part of the comment:

(2.5) a. A: What does John drink?

b. B:

TOPIC	COMMENT	
John	drinks	beer.
BACKGROUND		FOCUS

Whilst finding both focus and topic to be important concepts, Vallduví notes that there is not much use for the concept of comment, which groups constituents together which, from an information packaging point of view are very different. In the example

above, *drinks* and *beer* are grouped together despite the fact that *drinks* is old information and *beer* new. Vallduví therefore dispenses with the term *comment* keeping only the units *focus, background* and *topic.*

To avoid confusion with terminology in previous works, he introduces slightly modified terms: *Ground* is used in place of background to refer to the presupposition or open-proposition in other frameworks; the term *focus* is kept to refer to the informative part of the utterance.

The Focus-Ground distinction is therefore used to indicate which part of the propositional content adds new information and which part provides further instructions on how this part fits in with the hearer's state of knowledge, or what the speaker assumes the hearer knows.

Vallduví suggests a further division into basic primitives. Within the Ground-Focus distinction, he splits the Ground into *link* and *tail.* The link is similar to the topic or theme, and is assumed to be sentence-initial in most languages [1]. The concept of link is taken from a definition of theme in Travnicek (1962): "the sentence element that *links up* directly with the object of thought, proceeds from it and opens the sentence thereby."[2]

Finally, the tail is given a negative definition. It is essentially that part of the sentence which is neither link nor focus, ie the ground material which does not display linklike behaviour. Unlike the link, the position of the tail is not universally constant.

Example 2.5 above would be given the following analysis in Vallduví's framework:

(2.6) A: What does John drink?
B: $[_g\ [_l$ John] drinks] $[_f$ beer].

Heim's theory of File Change Semantics (Heim 1983) compares the hearer's knowledge store to a filing system. Each file card denotes an entity and contains information on it. The hearer's knowledge about a certain entity is comparable to the entries on

[1] The universality of the ordering of discourse functions will be discussed in Section 2.6.
[2] Italics are my own.

the file card. During a conversation file cards that already exist can be activated or, alternatively, new file cards can be created if the speaker makes reference to a previously unknown entity.

The speaker has various ways of informing the hearer how the information conveyed by the utterance fits in with the hearer's current filing system state. For example, a definite NP informs the hearer that reference is being made to a given entity, therefore the hearer should activate an already existing file card. An indefinite NP, on the other hand, will instruct the hearer to create a new file card. Definiteness, word-order and prosody all serve to make the updating of the hearer's filing system more efficient.

Expressed in Heim's terminology, Vallduví's link is the activation of an existing file card in the hearer's knowledge store and the tail contains the instructions of how the new information fits in at that point. In Vallduví's theory the link necessarily has a contrastive character because it is used as a pointer to a previously unactivated filecard distinguishing it from the activated one (and other unactivated filecards), which is not necessary unless the previous utterance refers to a *different* filecard. Once the filecard has been brought up subsequent reference to it is no longer required. One of the effects that this has is that unstressed pronouns are not considered to contribute to the information packaging structure and in Catalan, which requires links to be left-dislocated, pronouns remain inside the IP (see Section 2.4 for examples). The following English examples show the distinction between links and continuing topics:

(2.7) What about John?
[$_L$ John] [$_F$ loves BEER.]

(2.8) John always drinks beer.
[$_F$ He LOVES it].

In 2.7, the link *John* points to a new filecard and adds the new information contained in the focus *loves beer.* In 2.8, the filecard *John* is already opened because of the previous utterance in which something was predicated of *John.* This sentence therefore has no link. Vallduví claims that the unstressed subject and object pronouns are only there because of the syntactic requirements of English which do not allow these

positions to be empty. The term *link* is thus different from the term *topic*. Topics, as in 2.8, can be *continuing* (ie when there is no topic shift involved) – a feature which is by definition not available for links. A problem arises in some Germanic languages, such as Swedish and German, where the non-link topics are required to move to the same place as the link position. It is not clear how this can be justified in a theory which assumes that they do not contribute to information packaging. This point will be discussed in greater detail in Section 2.4 and Chapter 3.

The terms and definitions which I will use in this thesis are as follows:

- **Focus:** the part of the utterance containing the new information to be added to a filecard.
- **Topic:** the constituent referring to the filecard to which the new information supplied by the focus is added.
- **Link:** a topic constituent referring to a previously dormant filecard to which new information supplied by the focus is added. It occurs in utterances with *topic shift*.
- **Ground:** the rest of the utterance.

The following two sections will describe three subtypes of focus – completive, contrastive and polarity focus. The finer distinctions between different types of focus will become important in the discussion of the corpus data in Chapter 5.

2.1.2 Completive and Contrastive Focus

In most languages word order can be changed to indicate the discourse saliency of constituents (cf Section 2.4). As Vallduví suggests, from a practical processing point of view it makes sense to have the address pointed out before the information is given which is to be added to that address and the instructions of how to add it, and this is why links are sometimes assumed to be obligatorily sentence-initial.

Choi (1996), in her study of scrambling (ie movement of constituents from their canonical position) in German and Korean, notes that moveability of items is dependent

on their informational status. It has been noted, for example, that scrambled elements in German must be *unfocussed* (Lenerz 1977; Webelhuth 1992), ie they may not be stressed or constitute the focus constituent:

(2.9) a. Was hast du gestern gelesen?
(What did you read yesterday?)

b. Ich hab gestern das BUCH gelesen.
I have yesterday the BOOK read
"I read the book yesterday."

c. *Ich hab das BUCH gestern gelesen.
*I have the BOOK yesterday read.

(Lenerz 1977:21)

In 2.9b the items are in their canonical word order, in 2.9c, however, the focussed element *das Buch* has been moved, resulting in ungrammaticality. Choi calls this the Anti-focus effect.

Within the ground elements, too, there appears to be a difference with respect to moveability. As will be seen in Section 2.4.1 in Catalan both link and tail can move, but links are left-detached, whereas tails are right-detached. In German, the difference is manifest in the fact that link elements are more likely to scramble than tail elements.

Choi also notes that despite the Anti-focus effect, there are certain focussed items which can be scrambled namely, those which are *contrastively* focussed that is, they are not regular new information focus filling an informational gap between speaker and hearer (*completive focus*), but are thought to be information contrary to the speaker's or hearer's beliefs. She gives examples from Dik & et al (1981), who propose the following different types of contrastive focus:

(2.10) a. Selecting:
Did Andrew buy chocolate or flour?
He bought CHOCOLATE.

b. Restricting:
Since Andrew bought chocolate and flour, he can make a cake.
No, he only bought CHOCOLATE.

c. Expanding Focus:
Since Andrew bought chocolate, he will be happy.
Yes, but he also bought FLOUR, so he can make a cake.

d. Replacing Focus:
Andrew went to New Mexico.
No, he went to UTAH (not NEW MEXICO).

e. Parallel Focus:
Andrew bought a STARSHIP, but Peter bought a PLANET.

(Choi 1996:98-99)

The following examples show that items with these kinds of contrastive focus can scramble in German:

(2.11) a. *weil Hans das BUCH dem Mann gegeben hat.
because Hans the BOOK(Acc) the man(Dat) given has

b. weil Hans das BUCH dem Mann gegeben hat (nicht die
because Hans the BOOK(Acc) the man(Dat) given has (not the
ZEITUNG).
NEWSPAPER)
"because Hans gave a BOOK to the man (not a newspaper)."

(Choi 1996:98-99)

Choi assumes Vallduví's tripartite articulation which distinguishes link, tail and focus to be essentially correct but makes a further distinction within the focussed

elements, to account for the grammaticality differences in Example 2.11, which show that contrastively focussed items can scramble but not items with completive focus.

Her distinctions are summarized in four different informational categories:

- S = focus, ground
- ground = topic, tail
- focus = completive focus, contrastive focus

Topic and contrastive focus should be grouped together and contrasted with tail and completive focus with respect to moveability. Choi proposes the feature [Prom] for *discourse prominence*, which describes entities selected from a set of alternatives to account for this. The topic of a sentence, similar to the definition of Vallduví's link, is selected from a set of alternatives as being the one which the sentence is about, the contrastive focus is an item which is by definition also contrasted with a set of alternatives. Both are moveable and both are [+Prom]. Although the tail *can* be moved in German, this rarely occurs and in Catalan the target position of tail movement is different from that of topic movement. Completive focus exhibits the Anti-focus effect, which distinguishes it from the moveable items. Tail and completive focus both have the feature [-Prom].

Despite the moveability differences exhibited by contrastive and completive focus, they share the characteristic of representing information new to the hearer's knowledge store. The distinction between ground and focus is captured in Choi's theory by the feature [New], which indicates whether the item in question represents new information or not. The value is [-New] for ground (topic and tail) and [+New] for (completive and contrastive) focus. Choi's cross-classification for the four types is represented in the schema shown in Figure 2.1.

The necessity for distinguishing different types of focus and rheme is also noted in Vallduví & Vilkuna (1998), where a distinction is made between *rheme* and *kontrast.* Rheme is defined as being the new information of the sentence, whereas kontrast is considered to be a semantic category associated with exhaustiveness, identification and

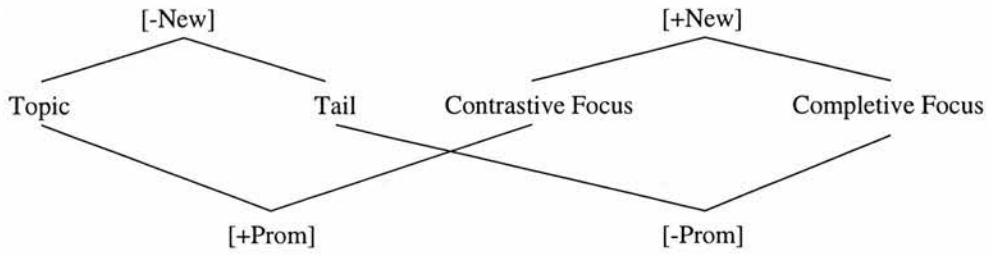


Figure 2.1. The Features of Discourse Functions (Choi 1996)

contrastiveness and involves the generation of membership sets in the sense of Rooth (1985). Kontrasts, unlike rhemes, can be thematic as well, as in the following example, where the rheme is indicated by the square brackets and the kontrastive theme is in bold font:

(2.12) **The first 100m** she ran [in a record TIME].

Vallduvì & Vilkuna's *kontrast* is therefore very similar to Choi's [+Prom] feature which can also be associated both with topics (themes) and focus.

In Choi's thesis the features are used to describe violable constraints on movement in an Optimality Theory account. In this approach, the violation of a rule requiring constituents to remain in their canonical positions, for example, may be less highly ranked than the violation of a rule requiring topics to be fronted. The advantage of such a theory is that it allows rules to be formulated which are then violable. Whilst I will not be using an Optimality Theory approach here, it will become apparent from the German data presented in the following chapter, that there are a number of rules in German which *jointly* contribute to the determination of word order. The basic principle of competing rules appears intuitively to capture the nature of a language whose word order is partly determined by pragmatic rules and partly by grammatical functions.

The precise description of Choi's framework shall not concern us here, but it is important to note the four-way distinction and the relative moveability of items which

is determined by their information status.

2.1.3 Polarity Focus

One final type of focus needs to be introduced here, which has so far escaped classification into any of the above mentioned categories but is of particular importance to the corpus analysis presented in Chapter 5. *Polarity Focus*, *polar focus* (Dik & et al 1981; Gussenhoven 1984) or *Verum-focus* (Höhle 1992) involves focussing of the truth value of a particular utterance, eg

(2.13) A: She's probably eaten all the cake.
B: She HAS eaten all the cake.

(2.14) A: I wonder whether she eats meat.
B: She EATS meat.

(2.15) A: Tim thinks she doesn't like spinach.
B: She DOESN'T like spinach.

Accenting the inflected verb can indicate focus on the semantic content of the verb, eg *What does she do with meat? She EATS meat.* As the context of these examples shows, however, there is no new information in the B-utterances as both NPs and the verb have been given previously. In these cases, accenting the inflected verb indicates that the truth or falsity of the proposition is focussed.

Höhle (1992) claims that this type of focus is semantic, ie involves meaning of some kind, as opposed to, for example, metalinguistic correction or focus on the phonological form of a word, as in the following example:

(2.16) I said TItanic, not BRItannic.

He suggests that Verum-focus involves the introduction of a meaning element VERUM, which is associated with the verb and can be focussed by accenting the verb.

If one assumes that focussing creates a set of alternatives, one of the problems with Verum-focus is that it is not clear what these alternatives are. In some instances,

it is the polarity which is contrastively focussed. However, as Höhle points out, the general assumption is that p → TRUE (p), so an element VERUM seems superfluous. He therefore posits the existence of a set of alternative meaning elements which are concerned with the truth of statements, including sentential adverbs such as *probably, maybe, perhaps*, the negator *not* and VERUM itself. This means that Verum-focus does not only involve contrasting p with $\neg p$ but also with all the degrees of certainty of truth expressed, for example, by the sentential adverbs. The adverbs, *not* and Verum-focus can be combined in an utterance and do not mutually exclude each other, indicating that they are not genuine alternatives. The semantic focus in Verum-focus is therefore on one particular *combination* of these elements which is contrasted with all other possible but excluded combinations.

The previous sections have determined the following basic units of information structure: *topic (and link), completive focus, contrastive focus, polarity focus, ground* and *tail.* These were shown to each have a distinct status with respect to how they fit in with the hearer's knowledge store. The three focus types constitute new information and update the knowledge store, completive focus by adding to it, contrastive focus by adding new and replacing old information, and polarity focus by assertaining the truth or falsity of the proposition expressed by a whole utterance. The topic is information already present in the hearer's knowledge store. It has the function of pointing to a filecard to indicate where the new information supplied by the focus should be added – it is therefore what the sentence is about. I will use the term link for topiclike entities used for activating a filecard, and topic or continuing topic for references to already activated ones. The tail is the old information excluding the topic. It does not point to a filecard to which information is to be added.

Although the five are distinct for the reasons given above, it was also noted that some of them share features. The three focus types constitute new information, topic and tail constitute old information. In addition to this, topic and contrastive focus are each selected from sets of alternatives and are moveable. The criterion of movability was introduced by Choi to justify feature-sharing in her framework. The following sections show how this and other criteria are used to distinguish these five primitives

of information packaging.

In the following sections, the various ways in which languages can encode the above-mentioned discourse functions are introduced. Morphological NP-form, prosody and word order variation appear to be used by all languages (cf Section 2.6). Because all three are used to encode the same type of information there is an interesting and complex interaction between them making it difficult to discuss one without reference to the other. Nonetheless, the three are introduced in turn here as the details specific to each level are important.

2.2 Morphological NP-Form and Cognitive Status

2.2.1 Givón's Topicality Hierarchy

Extensive work into the nature of topics has also been carried out by Givón (1976, 1982, 1983) . In his analyses he concentrates the basic topic-comment distinction, defining the topic loosely as a single constituent equivalent to the *theme* (in Halliday's sense) or the *old information*. However, Givón distinguishes various subtypes of topic which depend upon the structural encoding, ie the NP form chosen for the topic. Compare the following:

(2.17) (He came in) and **0** sat down. (**zero anaphora**)

(2.18) (He came in;) **he** then sat down. (**unstressed pronoun**)

(2.19) (She came in;) then **HE** joined her. (**stressed pronoun**)

(2.20) (The woman came in;) then **the man** joined her. (**definite NP**)

(2.21) ...now **the man, he** never joined... (**left-dislocated NP**)

(Givón 1983:7)

Each of the highlighted NP forms in these examples represents the topic of that utterance, but as Givón points out, they perform different discourse functions. What changes is the continuity and the degree of accessibility. For example, a zero anaphor is

only used if the referent is easily determinable for the hearer (high accessibility) and that entity was the topic of the previous utterance (high continuity). If a topic is encoded as a left-dislocated NP, on the other hand, it is presumably a link in Vallduvi's sense, ie reference to an old but in the discourse previously unopened filecard (low accessibility, low continuity).

As Givón points out, these specific encodings of discourse functions is beneficial to the cognitive processing of an utterance as it allows the hearer to assess the prominence of particular entities and the way in which the new information fits into his or her current knowledge store.

The encoding of topics through NP-form, as shown in the examples above, is, according to Givón, associated with graded continuity on a topicality scale. [3] Within a given discourse there are a number of topics, which vary as to how easily *retrievable* they are. Retrievability is mainly defined by how recently the entity in question was referred to in the discourse, how frequently it was referred to in the previous discourse and how many other intervening topics there are between two mentions of the same topic.

Givón finds it unrealistic to attempt a definition of retrievability or accessibility in terms of discrete ordered categories, because of the complex interaction of these different factors. Instead the area of topic identification is viewed as a "complex functional domain", where references are entered according to the "degree of topic accessibility" (Givón 1983).

Although it is useful to posit the existence of a continuum, certain specific points may still be marked along it to represent the encoding of the degree of topic accessibility. Each syntactic coding device, be it word order, morphology or intonation, can be marked on the accessibility scale according to how accessible a topic is in order to make that kind of encoding possible. The hierarchy proposed by Givón is shown in Figure 2.2.

The whole range of devices presented on this scale is not universally available, but Givón's assumption is that cross-linguistic studies will result in the discovery of an

[3] But see Givón (1992) for a more recent view.

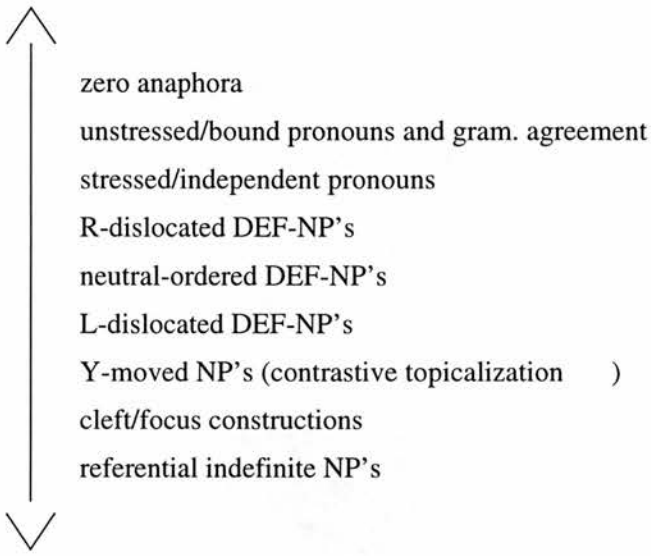


Figure 2.2. Topic Accessibility Scale: Syntactic Coding (Givón 1983:17)

implicational hierarchy of the coding points. That is, the syntactic devices of word order, morphology and intonation which languages use to encode the accessibility of topics may have a relative order along the scale. If a language has two particular coding devices then these are ordered as they are in the above list in terms of their relative expression of retrievability.

However, the conflation of word order, morphology and intonation on the scale is also one of the main problems with Givón's analysis. As will become apparent in the following sections, there is a frequent interaction between one or more of these factors, as all are used as devices of information packaging, which includes the encoding of topics. The interaction of the factors can potentially result in contradictory locations, for example stress is a marker of focus, ie *new* information, yet stressed *pronouns* are placed high on the topicality scale.

A further problem is the imprecise definition of topic itself. The inclusion of word order in the topicality scale indicates that, unlike for Halliday's theme, *sentence-initial* is not a defining factor for Givón's topic. Sentence-initial NPs can function as topics but if they are full or left-dislocated NPs they are placed low on the accessibility scale.

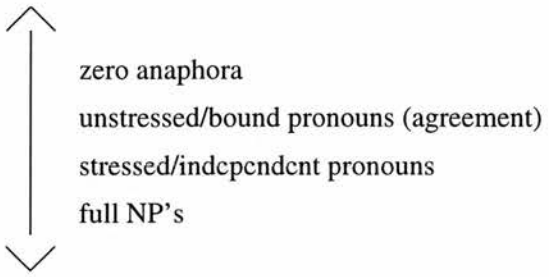


Figure 2.3. Topic Accessibility Scale: Phonological Size (Givón 1983:18)

The elements high on the scale are not restricted to or associated with sentence-initial position. The fact that cleft/focus constructions are included at all indicates that the analysis lacks a clear distinction of the terms topic, comment and focus. Indeed it appears the Givón purposefully avoids defining discrete categories and views the discourse functions as defined in the previous sections as being ordered along the same scale: continuing topics, as defined in the previous sections are at the higher end of the scale, and focus constituents representing new information (stressed, full, indefinite NPs) are at the low end of the topicality hierarchy.

A factor which is important and has been widely recognised in the literature, is that there is a correlation between the amount of phonetic material in an NP and its topicality. For the subscale of phonological size (ie length of constituent), Givón gives the scale shown in Figure 2.3:

This ordering is highly intuitive. As Givón explains "the more disruptive, surprising, discontinuous or hard to process a topic is, the more *coding material* must be assigned to it." (Givón 1983) (p.18). A full NP has a lot of explicit semantic information and can therefore be used to refer to an entity which is not very salient in the discourse. A pronoun in English, on the other hand, has only information as to the number and gender of the entity it refers to and is therefore insufficient as a pointer to less obvious objects. Zero anaphora are at the extreme end of the scale and these are expected to occur only when the entity has been referred to in the immediately adjacent utterance and if there is no intervening topic.

There are advantages to viewing morphological NP-forms as being ordered on a scale. However, this does not allow the cognitive status associated with each individual form to be distinguished categorically, despite the fact that choice of one NP form over another is strictly rule-governed in most contexts. A solution to this problem is proposed by frameworks presented in the following section.

2.2.2 Gundel, Hedberg, Zacharsky

Gundel *et al.* (1993) (henceforth GHZ) examine the correlations between cognitive status and linguistic form. They propose a *Givenness Hierarchy* which orders NP forms according to the degree of givenness of their referents in the discourse. In this sense it is similar to Givón's Topicality Hierarchy, which orders NP forms according to the likelihood that they will be used to refer to the topic of an utterance. As the topic is usually the "most given" entity, it is natural that the two hierarchies are comparable.

In addition to this hierarchy, a further one is proposed for cognitive status, ranging from "in focus"[4], through "activated", "referential" to merely "type identifiable". Each NP-form is therefore associated with a discrete cognitive status.

The cognitive statuses are defined as follows:

- *in focus*: current centre of attention
- *activated*: represented in short-term memory (including conversation participants)
- *familiar*: identifiable due to representation in the memory.
- *uniquely identifiable*: unique referent identifiable on the basis of nominal alone

[4]The term "focus", as used here, is also known as "AI-focus" and expresses salience and givenness in the context, thereby expressing a similar notion to "topic", which is defined as 'what the sentence is about'. This use of the term "focus" can give rise to great confusion. Although it is true that an entity that is "in focus" in the sense we have been using up to now may become the "(AI) focus of attention " in a subsequent utterance, and hence that the two uses of the term are related, in any single utterance the "AI focus" is most likely to correspond to "topic/link" in our terms, and not to the focus. In discussing Gundel et al's work in this section I will stick to their terms, but will either put "in focus" in quotes, or refer to it as "AI focus", in order to make it clear that this is not the sense of focus that is used in the rest of this work.

in focus	activated	familiar	uniquely identifiable	referential	type identifiable
it/0	*this/that*	*that N*	*the N*	indef. *this N*	*a N*

Table 2.1. The Givenness Hierarchy (GHZ 1993:275)

- *referential*: retrieval of existing representation.
- *type identifiable*: a representation of type described is accessed.

The two hierarchies are aligned and each cognitive status is assigned NP forms which are preferentially used to refer to entities having that cognitive status in the conversation. The Givenness Hierarchy is shown in Table 2.1, where the top row indicates the cognitive status and the bottom row gives the associated NP forms. "Type identifiable" being the lowest on the hierarchy, ie associated with the newest entities, requires a full, indefinite NP form as a referring expression. The status "in focus", being the highest, describes entities which were the centre of attention in the previous utterance. It is aligned with unstressed pronouns in English and, in those languages which have them, zero anaphora. Both "in focus" and "activated" (which is associated with the demonstratives *this* and *that*) are applied to entities currently in the short-term memory. The difference between the two statuses is determined by a variety of factors, one of them being grammatical function of the NP, as shown in the following examples:

(2.22) a. My neighbor's bull mastiff bit a girl on a bike.

b. It's/That's the same dog that bit Mary Ben last summer.

(2.23) a. Sears delivered new siding to my neighbor's with the bull mastiff.

b. #It's/That's the same dog that bit Mary Ben last summer.

(GHZ 1993:280)

In 2.22 the fact that the NP *my neighbor's bull mastiff* is in subject position makes it the most likely topic and thus "in focus". It can subsequently be referred to by either a pronoun or a demonstrative. In 2.23, on the other hand, it is introduced in a prepositional phrase, meaning that although it is in the short term memory it is not "in focus" and cannot be referred to by a pronoun.

An important aspect of this hierarchy alignment is that the cognitive statuses are in an entailment relation, meaning that if an entity has a particular status then it also has all the statuses to its right. For example, an entity which has the status "uniquely identifiable" also has the statuses "referential" and "type identifiable". "Type identifiable", which is implied by all other cognitive statuses, is associated with indefinite NPs, and this means that, in theory, indefinite NPs can be used to refer to referents with any other cognitive status. An NP form can therefore theoretically be used for all cognitive statuses to the left of the one it is associated with.

The status "in focus" is at the leftmost edge and, although implied by no other status, itself implies that the referent has all other statuses. This explains why, in Example 2.22 both the pronoun and the demonstrative can be used: the status "in focus" implies that the status "activated" (associated with demonstratives) also holds.

The status "in focus" is the most restrictive status, in the sense that it is implied by no other status. This means that, in English, unstressed pronominals cannot be used to refer to entities with any other status as in this case the referent could not be correctly identified, eg

(2.24) I was walking down the street and #she/a woman asked me for directions.

Whilst it is true that each cognitive status implies the ones to its left it is also clear that NP forms cannot be always used for any status to their right, as the following example shows, where the NP form associated with "type identifiable" is used infelicitously for a "uniquely identifiable" entity:

(2.25) A woman$_i$ and a man stopped me in the street. #A woman$_i$/The woman$_i$ asked me for directions.

It seems that both unclear reference, as in 2.24, and using NP forms for cognitive statuses further to the left, as in 2.25, can lead to confusion. To account for this and restrict the implicational nature of their hierarchy, GHZ draw on Grice's theory of conversational implicature and the Maxim of Quantity which is expressed as follows (Grice 1975):

- Q1: Be as informative as required.
- Q2: Do not be more informative than necessary.

In GHZ, "informativeness" is applied to NP forms and refers to how much information they supply about their referents. NP forms on the right of the hierarchy give more explicit information about their referents than NP forms on the left. At the same time the ones on the right imply lesser cognitive statuses. An indefinite NP form can be used for referents with any cognitive status as it is maximally informative. A pronoun, on the other hand, is minimally informative. It supplies only information on number and gender of its referent and can thus only be used for referents that are "in focus".

Adherence to the Maxim of Quantity ensures that, for example, use of the indefinite article, which explicitly signals that the referent is type identifiable, indicates to the hearer that the referent is not uniquely identifiable. This explains why the indefinite NP is infelicitous in Example 2.25.

The Maxim of Quantity also expresses the idea that a form furthest to the right should only be used if ambiguity would arise from use of another form. If a form further left on the hierarchy suffices, eg a demonstrative adequately and unambiguously refers to an entity which has an "in focus" status, then the speaker should not use the pronoun, which in terms of cognitive status is more informative. This Maxim need not *necessarily* be adhered to but it can help to explain the variety occurring in choice of NP form.

If an implicational hierarchy does exist, one would expect the forms to be distributed across more than one status in actual discourse. GHZ present the results of an empirical crosslinguistic study of choice of NP form in English, Japanese, Chinese, Russian and Spanish to test their hypotheses. The NP forms available in each language

are associated with one or more of the cognitive statuses as are the English forms in Table 2.1 above. The other four languages, for example, have zero anaphora and these are associated with the status "in focus", which describes referents of pronouns in English. Also, in Russian and Japanese there are no definite determiners so the bare noun is associated not only with the status "type identifiable" but also "uniquely identifiable" and "referential".

The results of the study show that the forms are indeed used for referents meeting the minimal required status associated with them. Also, it was shown that many were used to encode higher statuses than the one associated with them. GHZ note, however, that different forms vary as to how frequently they do this.

Demonstratives, for example, are rarely if at all used to express the status "in focus" even though, according to the implicational hierarchy they could. It appears that this use is not informative enough and leads to ambiguity as to whether the referent is "in focus" or merely "activated". In the contexts in which they are used they normally signal a focus shift. This means that the choice of pronominals (zero anaphora, pronouns, demonstratives) is governed by Q1, that is they have a tendency to be maximally informative. Also, indefinite NPs were hardly ever used for referents whose status was higher than (ie left of) "type identifiable", so although they explicitly signal only that the referent is *at least* "type identifiable", by conversational implicature they signal that the referent is not "uniquely identifiable" as otherwise the definite article would have been used.

The choice of other forms is influenced by Q2: definite NPs are often used to refer to "activated" and "familiar" referents, even though the necessary requirements are met for either demonstratives or the demonstrative determiner.

This difference in adherance to the separate parts of Grice's maxim does not undermine the hierarchies, however. The implicational hierarchy simply states that *theoretically* each form can be used to express cognitive statuses to its left. This may be overriden. Grice's theory of conversational implicature is also not a necessary inference and can be overriden in some contexts.

In terms of cognitive status pronouns can be said to be maximally informative as

they indicate that the referent can only "in focus" and have no other cognitive status. Indefinite NPs, however, are the least informative regarding cognitive status as they can theoretically be used for any cognitive status. In terms of encoding of semantic content, on the other hand, pronouns and zero anaphora are the least informative and full NPs the most informative. This latter point is precisely what is indicated in Givón's hierarchy of phonological size (see Figure 2.3 above). GHZ claim that difference in adherance to the Maxim of Quantity by various NP forms is due to the fact that one type of informativeness is complemented by the other type. In other words, as pronominals express so little information about their referents (ie number and gender only) it is necessary for the cognitive status to be restrictive in order to avoid ambiguity (compare Givón's scale of phonological size). Full NPs express a large amount of semantic content and their reference is therefore usually unambiguous regardless of how restricted the cognitive status of their referent is in the context.

2.2.3 Centering Theory

The theories of Givón and GHZ both order NP forms on scales representing increasing saliency in the discourse model. In English, pronouns are placed at the top end of their scales as they are used for the most salient referents in the discourse model, ie the most topiclike entities, where topic means the current centre of attention. This section describes the Centering Algorithm (Grosz *et al.* 1995), which is a model of the attentional state in discourse and also relies crucially on the association of pronouns with high discourse saliency.

Centering Theory (CT) makes predictions about the degree of coherence that holds between two adjacent utterances. It does so by assuming that the NPs in an utterance evoke a set of *forward-looking centres* (Cfs) which are then ranked according to factors of discourse saliency. The factors can vary from language to language. In English, for example, the ranking is assumed to be as follows:

(2.26) Subject ⟨ Object2 ⟨ Object ⟨ Others ⟨ Discourse Unit

This ranking implies that subjects have a higher degree of saliency than indirect

objects, which in turn are more salient than direct objects. The referent of a discourse unit (as referred to in discourse-deictic reference) is assumed to be ranked lower than all other centres. The latter point will be further discussed in Chapter 4, where we will see that null topics are often used for reference to discourse units in German, thereby suggesting a more salient, topiclike status for text sections than implied by the CT ranking.

The highest ranked Cf of an utterance U_i is called the *preferred centre* (Cp). Furthermore, there can be one *backward looking centre* (Cb), which is defined as being the highest ranked element of the set of Cfs in U_{i-1} which is realised in U_i. This means that the Cp of an utterance is a prediction of what the Cb of the following utterance will be. The Cb is equivalent to what we have previously defined as the topic of the utterance. The constraints of CT are formalised as follows:

- For each utterance U_i in a discourse segment D consisting of utterances U_1,..., U_m:

    1. There is precisely one backward-looking center Cb(U_i, D).
    2. Every element of the forward centers list, Cf(U_i, D) must be realised in U_i.
    3. The center, Cb(U_i, D), is the highest-ranked element of Cf(U_{i-1}, D) that is realised in U_i.

In addition to these constraints, CT has four possible transition states from U_{i-1} to U_i. Their definitions are given in Table 2.2. These characterise the degree of coherence between two adjacent utterances and are "based on an estimate of the hearer's inference load, **relative to** other choices the speaker had as to how to realize the same propositional content" (Walker *et al.* 1998) (p.5).

As can be seen from Table 2.2, the characterisation of the transition states is based on whether the Cb of an utterance is the same as or different from the Cp and whether the Cb is identical to the Cb of the previous utterance. $Cb(U_i) = Cb(U_{i-1})$ is equivalent to continuining topic in other frameworks, whereas $Cb(U_i) \neq Cb(U_{i-1})$ is equivalent to topic shift or Vallduví's link.

	$Cb(U_i) = Cb(U_{i-1})$ OR $Cb(U_i) = [?]$	$Cb(U_i) \neq Cb(U_{i-1})$
$Cb(U_i) = Cp(U_i)$	CONTINUE	SMOOTH-SHIFT
$Cb(U_i) \neq Cp(U_i)$	RETAIN	ROUGH-SHIFT

Table 2.2. Centering Transition States (Grosz et al. 1995)

Aside from the constraints, there are rules in CT, one of which orders the transition states. The two rules are formalised as follows:

- For each $Cb(U_i)$ in a discourse segment D consisting of utterances $Cb(U_1)$,..., $Cb(U_m)$:

  1. If some element of $Cf(Cb(U_{i+1}), D)$ is realised as a pronoun in U_i, then so is $Cb(U_i, D)$.
  2. Transition states are ordered. The CONTINUE transition is preferred to the RETAIN transition, which is preferred to the SMOOTH-SHIFT transition, which is preferred to the ROUGH-SHIFT transition.

The first rule, however, is the one most crucial to the analysis presented in this thesis, as it concerns the realisation of pronouns. It states that if any element in an utterance is realised as a pronoun then the Cb must also be realised as a pronoun. This rule, like the hierarchies of GHZ and Givón introduced in the previous sections, essentially associates pronouns with topicality. As the Cb is predicted to be the most salient entity of the previous utterance ($Cp(U_{i-1})$) it is similar to the notion of topic it serves as an anchoring point.

Null Pronouns in CT

We have observed in the discussion of GHZ and Givón's hierarchies that in English pronouns are the NP form associated with the most salient discourse entitites. However, null subject languages such as Greek, Turkish or Italian, additionally have the option

of null anaphora. It was noted in the previous sections that phonological size, ie the length of constiuents and the amount of phonetic content is correlated with the givennes or topicality of their referents. Null anaphora have no phonetic content and are thus placed in highest positions on these hierarchies.

It has been observed that in these languages the null anaphor pro is associated with CONTINUE transitions and overt pronouns with RETAIN or SHIFT (DiEugenio 1990; DiEugenio 1998). This is formalised as follows:

- **Overt Pronoun Rule:**
  An overt pronominal subject (in Greek) should not be construed with the Cp of the previous utterance.

(From Dimitriadis 1995, p.50)

The transition state CONTINUE is a is to be expected, the one most likely to be associated with null anaphora. If a topic shift occurs then the hearer must be given some information about the previously unactivated referent in order for correct identification to occur. Null anaphora, of course, give no information about their referents and are thus not suitable for activation of a filecard or non-CONTINUE states. They are usually used only when the most salient entity of the preceding utterance is also the most salient entity of the current one, ie when the filecard they refer to is already opened.

Di Eugenio, however, notes that null subjects can sometimes also be used for RETAIN or SHIFT transitions. This occurs if the syntactic features of the utterance it occurs in force the null anaphor to refer to a referent different from the Cb of the preceding utterance. This means that not only the features of the anaphor itself can be used to resolve anaphoric reference, but also the features encoded on the verb such as morphological agreement. This concept is also formalised in Dimitriadis (1996)(p.11/12) in the following two rules, where ϕ-features means number and gender agreement features:

- **ϕ-invisibility hypothesis:**
  In selecting an antecedent, pronominals ignore potential antecedents with incompatible ϕ-features.

- **Agentivity rule:**

  An antecedent for a pronominal subject must match it in terms of agentivity as well as number and person.

The following examples taken from Dimitriadis (1995) (p.53/54) illustrate ϕ-invisibility:

(2.27) a. Etsi to$_k$ akousa ki ego$_i$ ap'ta chilia tis Artemis$_j$ to magiko apogevma.
"That's how I$_i$ heard about it$_k$ from Artemis$_j$'s lips that magical evening."
[Cb = it$_k$, Cf = (me, it$_k$, lips, Artemis, evening]

b. *pro*$_j$ M$_i$'iche pari ap'to cheri, ke *pro*$_j$ travikse ksopiso tis$_j$ n'anevoume sto lofo pano ap'ti mikri mas poli.
"(She$_j$) had taken me$_i$ by the hand, and (she$_j$) pulled me$_i$ after her$_j$ to climb the hill above our little town."
[Cb = me, (Cf = she, me, hand, hill, town)]

In 2.27b the null subject is construed as referring to a Cf (*Artemis*) which is neither the Cb of that utterance nor the Cp of the previous one. This is because the verbal agreement features require the null subject to be construed as 3rd person singular not 1st person. As Cb(U$_i$) not= Cb(U$_{i-1}$) (*me* $\neq$ *it*) and Cb(U$_i$) = Cp(U$_i$) (*me*), the transition is SMOOTH-SHIFT, despite the fact that utterances involving null subjects are assumed to be in CONTINUE transitions.

Using verbal features for anaphora resolution is of great importance for any study dealing with null anaphora, which themselves offer no explicit information about their antecedents. We will return to this point in Chapter 5 when discussing the resolution of German null topics in the corpus.

2.3 Prosody

This section now turns to the second aspect of information packaging, which involves prosody, intonation and accenting. One of the main characteristics of focussed[5] constituents is that they are prominent from a prosodic point of view, that is they are

[5]in the sense of Vallduví and Choi

associated with a pitch accent. There is some dispute as to how this association is to be characterised, the two main recent opposing views being the *Radical Focus-to-Accent (FTA) Approach*, which assumes that accenting and focus follow from general pragmatic rules determined by discourse context, and the *Structural FTA Approach*, which assumes that accent placement in the focussed constituent is dependent on structural factors. In this section, the basic phonetic analysis of pitch accents is introduced and these two main approaches discussed.

2.3.1 The Phonetic Realisation of Stress

In an intonational phrase there may be more than one pitch accent, but only one *nuclear* accent[6], which is defined as being the single most prominent one. Accenting is achieved by a significant pitch change usually in combination with a lengthening of the syllable and possibly increased loudness. All accented syllables show a combination of these characteristics but it is usually the final accented syllable which is perceptually the most prominent.

Ladd (1996) makes the distinction between pitch accent, which is the concrete perceptual cue of stress, and stress itself, which is the perceived salience of accented syllables. An important part of the notion of stress is the existence of a hierarchical metrical structure and the relative strength of syllables, which can be altered by stress shift.

A pitch accent in Pierrehumbert's terminology (Pierrehumbert 1980), is a high (H) or low (L) tone associated with a lexically stressed syllable. The most important pitch accent within an intonational group, ie the nuclear accent, is used to signal focus. Although in many languages the nuclear accent is frequently the last pitch accent, Ladd makes it clear that its serial position is not a necessary part of the definition. What is important is that it is perceptually the most prominent accent.

In English, the intonational prominence marking the focus is phonetically realised as an H* level high tone (Steedman 1991), or in Jackendoff's terms, an A accent

[6]This is also sometimes called the *prosodic focus*, but the term will not be used here to avoid confusion with other uses of the term focus.

(Jackendoff 1972). It is this H* pitch accent which can be shifted in some languages to indicate differences in focus. The link, as defined by Vallduví (Section 2.1.1), is marked in English by an L+H* pitch accent (Steedman 1991) (Jackendoff's B accent).

In German also, certain pitch accents are associated with particular pragmatic expressions: H*+L indicates focus, L*+H indicates link constituents (Fery 1992). Unlike in English, however, where the two types of pitch accents are consistently distinct, in German H*+L can occasionally also be associated with link constituents.

The non-distinctiveness of nuclear accents sometimes exhibited in languages such as German, has led some theorists to conclude that the constituent bearing the nuclear accent is no more important than any preceding elements bearing phonetically identical pitch accents. As both Ladd and Fery point out, though, in cases where the focal and the link accents are phonetically identical, the focal pitch accent is not downstepped with respect to the link pitch accent and is therefore perceptually more prominent.

2.3.2 Accent and Scope of Focus

The examples below show that the nuclear accent falls on the constituent in focus.[7] In order to determine the focussed constituents more easily, the utterances have been placed in context. The preceding questions help establish what is given, what requires special emphasis, and what is new to the discourse. [8]

(2.28) Who did Tim see?
Tim saw [CHRIS].

(2.29) Who saw Chris?
[TIM] saw Chris.

In Example 2.28, the constituent *Chris* is the focussed constituent and therefore bears the nuclear accent, as both *Tim* and the verb *saw* are given in the context. In

[7]Throughout this thesis, accenting is indicated by capital letters and the focus constituent is enclosed in square brackets.

[8]It is clear that the most natural response to the question would involve pronominalisation, ie *He saw Chris.*, or just *Chris.* However, the questions preceding the examples are only there to give a rough indication of the context and are not meant as examples of natural conversation.

Example 2.29, the nuclear accent falls on the subject *Tim*, as here it is this constituent which refers to the new entity.

These are fairly straightforward examples, with a one-to-one correlation between accented words and focus constituents, often referred to as *narrow focus.* In other examples, however, it is not possible to equate focus with accent. The nuclear accent itself can only fall on a single syllable but often the scope of the focus goes beyond the word or constituent containing that syllable. This is called *broad focus* and the focus is said to *project* from the accented constituent. The following three statements are identical phonetically and the focus is completive, but, as indicated by the contextual questions, the scope of the focus varies:

(2.30) What did Jacqui climb?
Jacqui climbed [Ben NEVis].

(2.31) What did Jacqui do?
Jacqui [climbed Ben NEVis.]

(2.32) What's new?
[Jacqui climbed Ben NEVis.]

Example 2.30 is similar to 2.28 and 2.29 as the focus is narrow. In Examples 2.31 and 2.32 there is broad focus as it extends beyond the constituent bearing the nuclear accent, ie the whole VP and the whole IP, respectively.

Focussing of the whole utterance is also known as *presentational focus.* The question "What's new?" indicates that none of the constituents are given and the utterance itself could be an "out-of-the-blue" statement.

Though the scope of the focus varies in these three utterances, the nuclear accent placement does not: in all three cases it falls on the final NP of the sentence, leading to ambiguity in an information packaging sense. The conclusion we can draw from the examples seen so far is that the syllable bearing the nuclear accent must at least be part of the focus. The exact nature of the relationship between nuclear accent and focus is not straightforward. What is important to note is the association of accent

and focus, which can be seen from the fact that it is not possible to have the nuclear accent fall outside the range of the focus:

(2.33) What about Ben Nevis?
*[Jacqui climbed] Ben NEVis.

In a presentational focus sentence all constituents are part of the focus and therefore accenting any one of them would not violate the rule that the nuclear accent must fall within the focus. However, as the following examples show, the accent placement in an utterance with presentational focus must follow certain structural rules:

(2.34) What happened?

a. [Jacqui climbed Ben NEVis.]

b. *[JACqui climbed Ben Nevis.]

c. *[Jacqui CLIMBed Ben Nevis.]

d. *[Ben NEVis, Jacqui climbed.]

All three constituents (the two NPs and the verb) are equally important and new to the discourse but the nuclear accent must nonetheless fall on the final NP. This observation has lead people to assume the existence of a *neutral* or *default* position for the nuclear accent. As can be seen in Example 2.29 above, if the final NP is not part of the focus it is possible to shift the accent from its neutral position in order to focus other constituents. However, only if the accent is in the neutral position is a presentational focus reading possible. This means that focus projection can only occur from a particular constituent. The unacceptability of the topicalised Example 2.34d also shows that in addition to neutral accent position, canonical word order is also necessary for focus projection.

This is not only true for presentational focus but for any kind of broad focus. In Example 2.31 it can be seen that for VP-focus the accent must also fall on the final NP, as accenting *climb* would give a narrow focus reading on the verb.

The precise nature of the rules of focus projection, ie the rules for accent placement allowing a broad focus reading have been disputed for a long time.[9] The following sections will deal with two of the most influential views of focus-accent association.

2.3.3 Theories of Focus Structure

The earliest approaches to focus structure relied on syntactic structure for the determination of accent placement. Chomsky & Halle (1968) claimed that the phonology is derived from the syntax and introduced the Nuclear Stress Rule (NSR) and the Main Stress Rule (MSR) for the determination of sentence accent. This was revised by Bresnan (1971) who proposed that the rule should be applied after each syntactic transformation. The rules operate on the basis that if primary stress is assigned, all other stresses in that string are weakened by one. The NSR has as its essence the accenting of rightmost constituents. A strictly syntactic approach was also proposed as late as 1993 by Cinque, who developed the Null Hypothesis of accent placement, which states that stress prominence reflects depth of embedding.

Approaches relying on depth of embedding account for accent placement in a large number of constructions. However, many theorists have opposed this view due to the fact that the number of sentences not obeying the rules, such as the ones given below, is too great to allow them to be classed as exceptions:

(2.35) They followed the lecture ATTENTIVELY.

(2.36) The SUN rose.

The semantic-pragmatic approaches oppose the view that there is a strict relation between syntactic structure and accent placement. What Ladd calls the *radical FTA approach* views the relation between focus and accent as being very clear cut: the important, informative entities of an utterance are accented and the uninformative ones are not (Bolinger 1972).

[9] See Winkler (1997) for a very detailed presentation and summary of the various theories mentioned here.

There is some fairly compelling data in English which would suggest that such an approach is correct. Ladd (1996) gives examples where relative semantic weight of constituents, ie the importance of their semantic content appears to determine where the stress falls. As both theories agree that narrow focus requires the accent to fall on the focussed constituent only, only broad focus examples are relevant:

(2.37) a. He was arrested [because he KILLED a man].

b. He was arrested [because he killed a POLICEMAN].

(Ladd 1996, 5.50, p.181)

Theories based purely on syntactic structure cannot account for the difference between Examples 2.37a and b as both *a man* and *a policeman* occupy the same syntactic position, yet one is accented and the other is not. The NP *a man* which is both the most deeply embedded and the rightmost constituent would be expected to receive the nuclear accent, according to the various syntactic structure theories. The accenting of the verb in 2.37a can only be explained by taking the predictability or semantic richness of the constituents into account: *a policeman* is semantically "more interesting", or in Ladd's terminology, carries more "semantic weight" than *a man* and is therefore accented. The verb *kill* also has more semantic weight than *a man* and therefore is the most accentable item in the sentence.

Further evidence is supplied by Schmerling (1976), who claims that predicates are in general less accentable than arguments. This accounts for the fact that in unaccusative constructions (2.36 above and the two given below) it is not the rightmost or most deeply embedded constituent which is stressed, but the grammatical subject:

(2.38) a. The CAR broke down.

b. The MOON shone.

In intransitives with an agent subject, on the other hand, it is the verb which receives the main accent showing again that the relative semantic weight of the constituents is the deciding factor:

(2.39) a. Celia LAUGHED.

b. Anthony DRANK.

Although accent clearly expresses what is in focus, it is not always the case that the accented constituent can be equated with the focus. The radical approach acknowledges that in broad focus utterances the accent cannot cover the whole of the focus but claims that it falls on the most informative word and that even in within broad focus there are some constituents which are naturally more informative than others.

The drawback of the radical FTA approach is that it necessarily implies a universality of type of accent placement. Proponents of the *structural FTA approach* (Ladd 1980; Gussenhoven 1983) point out that cross-linguistic studies show that languages vary a great deal according to which constituents are accented. Ladd (1996) gives numerous examples showing that with respect to many accenting rules, languages not only differ but can be divided into separate classes. For example, languages vary as to whether they accent the verb or have the accent rightmost in yes/no-questions. In wh-questions the wh-word can either be accented or not but this distinction does not seem to correlate with wh-move and wh-in-situ. Most importantly for the study presented here is that languages vary according to whether they deaccent repeated or "uninteresting" material or not, as can be seen by comparing the following Italian examples with the English examples 2.37a and b, and 2.41 below:

(2.40) a. ...perche ha ucciso un UOMO.
"because he killed a man."

b. ...perche ha ucciso un POLIZIOTTO.
"because he killed a policeman."

(Ladd 1996 5.53, p.183)

The following is an example where *linguistic context* brings about deaccenting, ie when material is repeated:

(2.41) The only article I've got is in GERMAN but I don't READ German.

This, again, is language specific and does not occur in Italian or Catalan, for example, as can be seen in the following Catalan utterance where the accent is not shifted from the neutral accent position (rightmost) despite the constituent in that position containing repeated material:

(2.42) Els vells de l'hospital fan pena; especialment els homes VELLS.
the old in the.hospital looked terrible; especially the men OLD
"The old in the hospital looked terrible, especially the old men."

(Taken from Vallduví 1997, LSA Lecture notes)

Aside from considerations of semantic weight and contextual deaccenting, there are certain words which appear to be, in some languages though not all, *inherently* deaccented, such as pronouns, indefinite pronouns and semi-pronouns. This is the case in English but not, for example, in Italian, where pronouns can receive neutral accents:

(2.43) a. I like JOHN.

b. I LIKE him.

(2.44) a. They've discovered the DRUGS.

b. They've DISCOVERED something.

(2.45) a. Ho sentito MARIA.
"I heard Maria."

b. Ho sentito QUALCUNO.
"I heard someone."

(Ladd 1996, p.180)

These examples show that there must be language-specific rules of accent assignment which are not solely dependent on objective criteria of informativeness. The structure-based FTA approach narrows the problem down to the following two points:

- Which parts of an utterance are focussed?
- How is a given pattern of focus conveyed by location of accent?

(Ladd 1996)

A way of accounting for the deaccenting effects in a universal theory is to assume that all languages have such *accent repellers* (which can be unaccentable items, repeated material, "uninteresting" material) but that both their number and the degree with which they repell it varies.[10] This can explain why in the Italian and Catalan examples above the contextually present and "uninteresting" material carries the nuclear accent in a broad focus context.

A possible universal accent placement rule could be

- Place accent on rightmost constituent

with accent variations between and within languages being accounted for by the number and relative strength of accent repellers.

Crosslinguistic comparisons show that some languages have very rigid accent placement and only allow accent movement for metalinguistic corrections, whereas others have a large number of accent repellers. To summarise, the first problem of what constitutes the focussed constituent in a given sentence is in the realm of semantics and pragmatics and can only be determined by (linguistic and non-linguistic) context. Once it has been determined, it appears that structural principles determine accent placement. There is a default accent position within broad focus constituents but certain constituents can require deaccenting, which is predeterminable but varies crosslinguistically.

[10]This and the crosslinguistic comparisons mentioned in Section 2.4.1 are part of the results of the 1996-97 Focus Group meetings at Edinburgh University Cognitive Science and Linguistics Departments. Members included Beryl Hoffman, D.R.Ladd, Theodora Alexopoulou and myself.

2.4 Word Order

Many mainstream generative syntactic theories have concentrated largely on languages such as English, whose word order is determined almost entirely by theta-role or case assignment. Such languages have designated, hierarchical positions for each grammatical function and are therefore called *configurational.* It is acknowledged that pragmatic considerations can also frequently influence word order, as is evident, for example, in topicalisation and clefting constructions in English:

(2.46) a. Cooties, I can handle.[11]

b. It's John, I can't stand.

c. What I really want to do is fly to Jamaica.

d. Fly to Jamaica is what I really want to do.

e. What he is is annoying.

Constructions such as these usually serve to separate the focus constituent or a contrastive topic from the ground by placing it in initial position. Word order is therefore, alongside morphological encoding and prosody, the third device employed for information packaging. The motivation for the movement is traditionally left to be described at the pragmatic level and finds no explanation within syntactic theory.

In many languages a word order determined by pragmatic factors is far more frequent than in English and often even obligatory. Recent work has placed emphasis on languages with distinct topic and focus positions and it has been noted that in many languages word order is determined as strictly by these considerations as it is determined by grammatical function in languages such as English. The terminology *configurational* and *non-configurational* is therefore misleading as it assumes a free word order if it is not determined by the functions subject and object. Kiss (1995a) introduces the term *discourse-configurational* to describe languages such as Hungarian, Catalan or Greek, which have structural topic and focus positions. This section will introduce some of the

[11] U.Thurman in *Pulp Fiction.*

work carried out in this field by her and by Vallduví (1992), whose studies on Catalan word order and prosody interactions lead to a similar categorisation of languages.

2.4.1 Plastic vs Non-Plastic Languages

As was explained above, English uses pitch accents to express pragmatic functions such as focus and link (topic). The examples given showed that although the nuclear accent signalling focus has a neutral position it is possible to shift it to other constituents to express narrow focus. This, however, is not a universal trait and there are languages which do not allow accent shifting or allow it to a lesser degree.

Vallduví (1992) examines how Catalan expresses discourse functions in ways other than accent shifting. Catalan is said to be underlyingly VOS but for pragmatic purposes any number of arguments may be left- or right-detached and adjoined to IP to result in a different word order, eg:

(2.47) El Joan$_1$ [va deixar una nota damunt la TAULA t_1].
the Joan$_1$ [prt. left a note on the TABLE t_1]

(2.48) El Joan$_1$ [$_{IP}$ hi$_2$ va deixar una NOTA t_1 t_2], damunt la taula$_2$.
the Joan$_1$ [$_{IP}$ loc. prt. left a NOTE t_1 t_2], on the table$_2$.

(2.49) El Joan$_1$ [$_{IP}$ l$_3$'hi$_2$ va DEIXAR t_1 t_2 t_3], una nota$_2$ damunt la taula$_3$.
the Joan$_1$ [$_{IP}$ obj.loc prt. LEFT t_1 t_2 t_3], a note$_2$ on the table$_3$.
"Joan left a note on the table"

(Vallduví 1992)

All three Catalan examples can be translated with the one English sentence. Their propositional content is in principle identical. What differs are the link elements and the scope of the focus.

In Catalan, the nuclear accent consistently falls on the final element in the scope of the focus, which is the core clause. The neutral accent position is retained regardless of how the scope of the focus changes from utterance to utterance.

The utterance in 2.47 is a typical example of a topic-comment structure or, to use Vallduví's terminology, a link-focus construction. The link or the reference to the existing file card is *el Joan* and the whole of the VP is the focus, ie the directions on how to add or change information on that file card. *el Joan* is therefore the only element outside the core IP.

In Example 2.48 the locative phrase *damunt la taula* is not part of the focus, presumably because it was previously mentioned or is evident from the surroundings. It is therefore no longer included in the scope of the focus. As implied by Vallduví's transcription, it is not the case that the nuclear accent has shifted onto a different constituent but rather (as indicated by the trace) that the locative phrase has been moved out of the focus phrase. The nuclear accent is again on the final element of the focus phrase.

That the locative phrase has moved out of the focus phrase rather than the nuclear accent shifted can be seen from examples where more than one constituent is moved out of the focus phrase, as in 2.49. Here, both the object and the locative phrase are part of the ground and have left traces within the focus phrase. In this case, the extraposed constituents are inherently unordered, ie *una nota* and *damunt la taula* could occur in either order without loss of acceptability. Phrases within the main clause IP, on the other hand, are strictly ordered. In addition to this, verbal complements not appearing within the core clause require pronominal clitics to occur in the IP (*l'hi*).

Left-detached elements (*el Joan* in these examples), also leave a trace in the main IP and are also unordered. The difference between left- and right-detachment is that elements to the left (ie sentence-initial) are interpreted as being part of the link, whereas elements to the right of IP are part of the tail.

The conclusion that Vallduví draws from his data is that whereas in English the nuclear accent is shifted along a rigid word order, in Catalan it is the syntax which is used to express pragmatic functions, as the position of the nuclear accent is fixed and constituents are moved out of the main clause IP if they are not part of the focus. Languages such as English, which have a malleable intonation contour are therefore termed *plastic* and Catalan-type languages *non-plastic*.

If one assumes that narrow focus is also an accent attractor and that there is an interaction between this and the repellers, as described in Section 2.3.3, then Vallduví's notion of plastic vs non-plastic languages could also be accounted for as follows: in plastic languages, such as English and German, narrow focus is a strong accent attractor capable of pulling the accent from its neutral position. In non-plastic languages this is not the case and the focussed constituent itself must move to the accent position. Also, in non-plastic languages the number and strength of accent repellers is minimal and repeated or uninteresting examples are nonetheless accented if they occur in the nuclear accent position. Only extremely strong accent attractors, such as metalinguistic corrections, are capable of shifting the accent.

Two final points need to be made on the subject of plasticity: one feature of plastic languages is that only they can have informationally ambiguous strings (Examples 2.30, 2.31, 2.32), ie utterances in which there is more than one possibility for the scope of the focus. This is because, in these languages, narrow focus on the final NP, broad focus on the whole VP and presentational focus all are expressed by leaving the accent in its neutral position. In non-plastic languages, on the other hand, topicalised and focussed constituents must be moved and there is no information packaging ambiguity.

A further implication is that if all languages associate the focus position with the nuclear accent then a fixed accent position, as occurs in non-plastic languages, automatically implies a structurally defined fixed focus position and therefore discourse-configurationality, which will be introduced in the following section.

2.4.2 Discourse Configurationality

The term *discourse configurationality* (Kiss 1995a) is used to refer to languages such as Catalan, whose word order is strictly determined by topic and focus considerations and not grammatical functions.

Initial studies in this field (Li and Thompson 1976 and various studies of the Prague School, cited in Kiss 1995) proposed that the structural relation [NP, S], instead of expressing the usual grammatical subject–VP dichotomy, could also be used to express

the distinction topic–comment. In generative studies it was proposed that the underlying d-structure of all languages is subject-VP but that by a topicalisation process other arguments could be moved to VP-external position. As this process is also available in configurational languages, the difference between the two languages types is only in the frequency with which it occurs. However, this approach does not show that in topic-prominent languages, as will become clear in the analysis of the initial position in German, the topic is an alternative to the subject and not an additionally externalised argument. The VP-internal subject hypothesis (Koopman & Sportiche 1991), which suggests that all arguments including the subject are base-generated in VP-internal position, allows the difference between the language types to be reduced to whether they externalise the subject or the topic.[12]

The distinction between configurational and discourse-configurational languages can be defined by whether there exists a Subject-Object asymmetry or not. If there is such an asymmetry in a language then the language has structural positions determined by grammatical functions and must be regarded as essentially configurational, despite the fact that it may allow additional topicalisation transformations. If no such asymmetry exists but structurally defined topic or focus positions are available, the language can be classed as discourse-configurational. The definition of discourse-configurationality given in Kiss (1995a) is as follows:

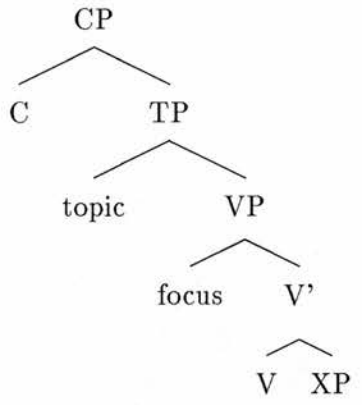
- The (discourse-)semantic function "topic", serving to foreground a specific individual that something will be predicated about (not necessarily identical with the grammatical subject), is expressed through a particular structural relation (in other words, it is associated with a particular structural position, [and/or]
- The (discourse-)semantic function "focus", expressing identification, is realized through a particular structural relation (that is, by movement into a particular structural position).

(Kiss 1995:6)

[12]This paragraph is a summary of a section in the introduction to Kiss (1995)

For Hungarian, for example, structures such as the following have been suggested to account for the obligatory Topic-Focus-Verb order (Kiss 1995b):

(2.50)



The Catalan data discussed in the previous section appear to exhibit movement *out* of a focus position (in Catalan the IP) rather than *into* it, but the core IP is nonetheless clearly identical to the scope of the focus and the link/topic constituents are obligatorily moved to a position to its left. Catalan is therefore discourse-configurational in Kiss' sense.

The structural definition of configurationality and discourse configurationality allows a strictly binary classification to be made. This, however, does not reflect the intuitions about languages, such as German, which do have a subject-object asymmetry but also have very frequent topicalisation. Both English and German, according to Kiss' criteria, are classed as non-discourse-configurational. However, as will be seen in the corpus analysis in Chapter 5 and in the comparison of German and English topicalisation and clefting presented in Chapter 3, topicalisation constructions in the two languages are by no means comparable. They are superficially very similar but in German they occur far more frequently than in English, to the extent that in the corpora analysed here, the canonical word order accounts for less than 50% of utterances. In addition, there are a number of contexts where topicalisation is not only an option, as it always is in English, but rather a necessity and the canonical word order is judged to be unacceptable by native speakers.

What I therefore wish to suggest is that the issue of discourse configurationality cannot be determined alone by whether a language can be proven to have a structurally defined topic position, but also by the *frequency* and *necessity* of topicalisation in this language. It seems more appropriate to assume that languages are ordered along a scale of configurationality, with languages with such a topic position at one end and languages with infrequently occurring and unobligatory topicalisation at the other. This makes it possible for German to be placed somewhere between the two ends of the scale, grouping it neither with English, nor with Catalan.

2.5 The IS-level of Grammar

One of the questions researchers have attempted to answer concerning information packaging is which of the linguistic levels it is associated with.

Logico-Semantic approaches (Szabolcsi 1981; Kenesei 1986; Brody 1990; Uriagereka 1995) assume that focus contributes to the truth-conditional values of utterances and that therefore information packaging either resides in the domain of LF or in domain of syntax from where it can affect LF considerations. Horn (1981) and Jacobs (1988), for example, point out that certain pragmatically motivated syntactic reordering such as clefting may change truth-conditions as they imply exhaustiveness. Whilst focus in general may imply exhaustive focus, this effect is strengthened in examples such as the following with the semantic representation given below (where 1! in the semantic representation means "exactly one") (from Jacobs 1998):

(2.51) Ich hab es LUISE verraten.
I have it LOUISE told.

a. Es ist LUISE, der ich das verraten habe.
it is Louise whom I that told have
"It is Louise, whom I told it to."

b. $\exists 1! y(perf.(verraten'(ich, y, das)) \& y = louise'$

(Jacobs 1988, p.112)

The co-occurrence restrictions for particles indicating non-exhaustive focus such as *auch* ("also") and clefts corroborate Jacob's claims:

(2.52) *Es ist auch Luise, der ich das verraten habe.
*it is also Louise, whom I that told have.

(Jacobs 1988, p.112)

However, he also points out that these particles can felicitously co-occur with focussed constituents in non-clefted constructions:

(2.53) Ich hab's LUISE verraten (und auch PETRA).
I have.it LOUISE told (and also PETRA).
"I told it to Louise (and also to Petra)."

This must indicate that such constructions need not be exhaustive and therefore changing the focussed constituent should not change truth-conditions. The *pragmatic approach* holds the view that focus and topic do not influence truth-conditional content. Jacobs (1988) (p.90-91) notes that although changing the focus-ground structure (*Fokus-Hintergrund-Gleiderung*) involves a re-partitioning of the semantic representation the truth-conditions remain the same. Only utterances with focus sensitive operators (eg *even, only*) have varying truth values depending on the accent placement.

Vallduví's view of information packaging is also non-truth-conditional. In his theory it is regarded as being within a separate module - a universal level of information structure for all languages. Cross-linguistic differences in syntactic structure arise because of the different methods employed to encode information packaging, but the cognitive representations of information packaging themselves remain the same. As was seen in Section 2.4.1, Catalan, for example, uses overt structural representation whereas English uses mainly prosody. The s-structures of a given sentence in the two languages can therefore differ even though their underlying information structure is identical. Information structure and surface syntactic structure must therefore be separate levels.

As Vallduví points out, Chomsky's T-model of the grammar is insufficient to account

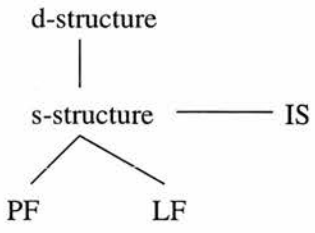


Figure 2.4. IS-Level in the Grammar (Vallduví 1995:147)

for a further information level and so postulates the existence of such a level – the IS-level – which is directly mapped from the S-structure level. This is shown in Figure 2.4. In this model, IS and LF are not identical, as has been proposed in other theories. According to Vallduví IS is not a part of any truth-conditional considerations, which are entirely within the domain of LF.

Assuming that there exists a universal level on which all languages have identical representations of information structure (Vallduví's IS-level) is beneficial for making crosslinguistic comparisons as it enables one assume the existence of equivalent underlying information structures and then compare the syntactic encoding of these.

2.6 Universal Pragmatic Principles

This section discusses some of the universal pragmatic principles, universal cognitive representations which have been postulated. If one assumes a universal cognitive representation, then the organisation of information packaging, whose purpose it is to facilitate sentence processing, should be similar across the world's languages.

Although tendencies have been claimed to exist, there is a great deal of disagreement in the literature as to what they are. The Prague School (Firbas 1964), for example, claims that given precedes new information, which is also implied by theories which assume that the topic or theme is tendentially or by definition at the left edge of the sentence (Halliday 1967; Vallduví 1992). Givón (1982), by contrast, assumes a new – given ordering, represented the scale of constructions shown here, where *comment* is

equivalent to *new* and *topic* to *old*:

(2.54) COMMENT ⟩ COMMENT-TOPIC ⟩ TOPIC-COMMENT ⟩ TOPIC

(Givón 1983:20)

In this scale a construction listed to the left is used for a more continuous topic than the one on the right. By Halliday's definition, the comment-topic construction is not possible as the theme/topic must occur sentence initially. Givón states that although from a processing point of view it can be beneficial to give the topic first before making the comment about it, if the topic is obvious then making the comment becomes a more urgent task. Such contradictions are frequently brought about by a lack of precise definition of concepts such as "given" and "new".

Alternative solutions have been proposed suggesting that it is not new-given status but by other factors which determine ordering. The order definite-indefinite has been proposed and such definiteness effects have been noted for German where scrambling of definite NPs is greatly restricted.

Syntactic complexity is another factor which has been implied in various approaches: Behaghel (1932), for example, formulated the *Gesetz der Wachsenden Glieder*, which describes the tendency of longer elements to follow shorter ones; the Language-Independent Preferred Order of Constituents (LIPOC) Principle of Functional Grammar (Dik 1989) (p.351) states that "constituents prefer to be placed in an order of increasing complexity".

Hawkins (1994) also claims that syntactic weight is the main determinant of word order and that pragmatic or informational notions play a subsidiary role. However, he points out that the major difficulty for determining whether newness, saliency, syntactic complexity, syntactic weight or definiteness ultimately determines word order is "separating the true determinants from the epiphenomena" (p.113).

From the discussion in the sections on morphology, prosody, word order and cognitive status it is clear that there are correlations and interactions to be observed between these factors. GHZ's hierarchy (Section 2.2.2) shows that the more "given" or "salient"

a referent is, the less structural encoding is necessary. This is also reflected in Givón's hierarchy of phonological size (Section 2.2.1). In general, items signalling a more salient cognitive status are shorter than items used for less salient ones, which naturally require more explicit information, and saliency is correlated with definiteness. It is therefore difficult to determine whether it is the cognitive status, definiteness or the amount of phonetic content which ultimately determines the order.

Despite these difficulties, some interesting observations have been made. Gundel (1988) addresses the question of universal topic-comment structures and how these are correlated with the structural properties of languages. Her crosslinguistic study of a large number of languages results in a number of generalisations about information packaging, showing that despite structural differences some important similarities are to be found. She notes that of the four possible orderings of new and old topic and comment (where both types of topic can occur either side of comment), only three occur, as no language has the order *comment – new topic*. She explains this with the following two principles:

- *Given Before New Principle*
  State what is given before what is new in relation to it.
- *First Things First Principle*
  Provide the most important information first.

(Gundel 1988:229)

If a topic (the current centre of attention) is new, ie shifted or contrastive, then both principles force it to occur before the comment, which is always new relative to the topic. However, if the topic is old then both orders *topic – comment*, resulting in left-dislocation and topicalisation constructions, and *comment – topic*, resulting in right-dislocation and it-clefts, can occur, depending on which principle is adhered to. Interestingly, Gundel observed right- and left-dislocation constructions in all languages, showing that languages do not differ so much as to *whether* their word order reflects pragmatic considerations but rather *how* and *how frequently* it does so.

2.7 Summary

This chapter started with the clarification of the basic terminology used to describe information packaging. The concepts *topic*, *focus*, *contrastive focus* and *ground* were agreed upon for the analysis to be presented here.

I then introduced the three main aspects of encoding these pragmatic concepts - morphological NP-form, prosody and word order. Various approaches in discourse analysis were presented which assume a correlation between salience of an entity in the discourse model and NP form, showing that easily retrievable referents require less structural encoding and NPs referring to these take the form of pronouns and null anaphora. The section on prosody discussed the relation between focus projection and accent placement. It was shown that focus projection requires the canonical word order and the neutral accent position, so to a certain extent, accent placement is structurally predictable. However, Ladd's theory of accent placement shows that factors such as semantic weight can lead to the shifting of the accent from its neutral position even in broad focussed constituents – a phenomenon known as deaccenting. The extent of this deaccenting varies crosslinguistically.

This lead on to the discussion of Vallduví's plastic – non-plastic intonation contour and Kiss' configurational vs discourse-configurational distinctions, both of which capture the differences in interaction between word order and prosody in the world's languages. The conclusion drawn from these theories was that word order can be determined either by grammatical or by discourse functions.

Chapter 3

Null Objects and Inf. Packaging in German

3.1 Introduction

Having introduced general theories of information packaging and the means used to express it, this chapter turns to the morphological, prosody and word order characteristics specific to German. In order to determine the place of German on the configurationality scale, it is important to describe the correlation between word order and information packaging. It is clear from the discussions in the previous chapter that all three means of information packaging are available universally but for the issue of discourse-configurationality the relative importance of word order compared to the other two devices must be ascertained. As will be seen in the data presented in this chapter, the nuclear accent in German is, as in all languages, always associated with focus and German has both a set neutral accent position as well as the possibility of shifting the nuclear accent to the focus constituent in a different position. In this respect it lies between English and Catalan on the configurationality scale.

What the study presented here is primarily concerned with is the relative importance of NP form and word order. Special attention is therefore given to the application of the GHZ hierarchy to German and the conflicts that occur when certain NP forms

are limited to or banned from occurring in certain positions. In these cases either word order or NP form must "win out" over the other as a means of information packaging. Cases such as these can then be used to determine to what extent German is discourse configurational. In this chapter I will pay special attention to describing the NP forms in German and the word order variations that are available. This sets the background for the quantitative studies presented in Chapters 5 and 6.

In the following section, which deals with morphological NP form, particular attention is paid to null objects. In German this type of anaphor is restrained both by grammatical as well as pragmatic rules and therefore interesting for the issue of discourse-configurationality. German null objects are compared with English lexically affected objects, which occur in optionally intransitive verbs such as *eat* and *leave* and it is shown that the former are phonologically null anaphora whereas the latter are erased and do not occupy a position in the syntactic representation.

The section on German prosody provides data which determines the neutral accent position in German and also shows that German has accent repellers similar to those in the English data of the previous chapter.

The final section discusses the word order variations in German which occur as a result of topic and focus movement. It is shown that the target position of these constituents is often identical, indicating that a strict topic or focus position, as is assumed to exist in discourse-configurational languages, does not occur in that form in German. Further data shows that, despite topicalisation and focus movement, there is a neutral word order in German main and subordinate clauses, which is determined purely by grammatical functions, as in configurational languages. Finally, a comparison is presented between focussing constructions in English and German, illustrating the different information packaging functions of superficially identical syntactic constructions. This latter point shows that whilst both languages have a grammatically determined neutral word order, movement of constituents in English is far more marked than in German, indicating that German is more discourse-configurational.

3.2 Morphological NP-Form

3.2.1 Null Anaphora and Pragmatic Consistency

The whole range of NP-forms – from pronouns, through demonstratives, definite NPs to indefinite NPs – and their associated cognitive statuses given in GHZ's hierarchy (see Section 2.2.2) can also be found in German. The demonstratives *der, die, das* are, as in English, associated with activated but not "in (AI-)focus" referents. The left-most form in the hierarchy, ie the one associated with the most salient discourse status, is also the unstressed pronoun in its masculine, feminine and neuter forms *er, sie, es.* In contrast to English, spoken German has the possibility of null anaphora in the form of so-called *null topics.* As noted by Huang (1984), null topics are different from the phonologically empty category *pro* in pro-drop languages such as Italian and Spanish. In genuine pro-drop languages the subject can always be left out if it is unemphasized and expletive subjects are never overt. Overt pronouns in these languages are thus interpreted as expressing emphasis. In topic-drop languages, as we will see below, constituents can only be omitted if they are the topic of the sentence. Expletives are usually overt as they cannot be the topic. Also, as far as German is concerned, topic drop is never obligatory and overt pronouns are not interpreted as expressing emphasis.

As shown in GHZ's hierarchy, null anaphora, whether pro or null topics, should also be associated with the "in focus" status of unstressed pronouns. The syntactic and contextual restrictions of these null topics will be presented in the following two sections.

As will be discussed in more detail in Section 3.4, German is a verb second (V2) language in main clauses, requiring the inflected verb to be in second position, and has SVO as its canonical word order. For purposes of topicalisation, constituents or clauses other than the subject may occupy the initial position. These initial constituents may be phonologically null, provided certain syntactic and contextual restrictions are adhered to. Referring to null elements in initial position, a standard German grammar states the following:

> The ellipsis, that is the omission of an element, is – in relaxed colloquial

> speech – always possible if the specific characteristics of a pronoun or an adverb is ascertained elswhere, ie is derivable from the context or situation. If the communication is not to be disrupted, ellipses require a particular context and thus are referring and have a text connective function.
>
> Pure pronouns and demonstratives are omissible as well as occasional adverbials, as long as they are in sentence initial position. *Particularly frequent is the ellipsis of the subject, which statistically is usually in initial position [...] Less frequently, and typically with certain verbs, ellipsis of accusative complements also occurs.*[1]

(Translated from Engel (1988), p.88)

The italicised points state that the canonical word order is subject-initial and as null elements can only occur in initial position, null subjects are more frequent than null objects. The suggested predominance of the canonical word order implies that German is essentially configurational. One of the aims of the corpus study in Chapter 5 is to test this prediction.

Because of the required salience of the referent in the context, the term *topic* is widely used to refer to these constituents in the literature. It appears to be compatible with the definition of continuing topic given in Chapter 2. This can be seen in the dialogue examples below taken from Fries (1988). Fries notes that in general only anaphoric or deictic elements can be omitted, as can be seen in the following null topic examples, which show that NPs, adverbials, verbal complexes and embedded clauses can be antecedents for null topics, but not sentential adverbs. The B utterances, though superficially V-initial, are assumed to have a null anaphor as their initial constituent:

(3.1) **NPs:**

A: Was ist mit Klaus? B: Hab ich seit Wochen nicht gesehen.

A: What is with Klaus? B: Have I for weeks not seen.
"A: What about Klaus? B: I haven't seen him for weeks."

[1] Italics are my own.

(3.2) **temporal, locative, causal, modal adverbials**

A: Die Sofia ist schön. B: Ja, ist sie.

A: The Sofia is beautiful. B: Yes, is she.
"A: Sofia is beautiful. B: Yes, she is."

(3.3) **infinitival verbal complexes**

A: Er will kommen. B: Ja, will er.

A: He wants come. B: Yes, wants he.
"A: He wants to come. B: Yes, he does."

(3.4) **embedded clauses**

A: Er sagte, dass du kommst. B: Ja, sagte er.

A: He said, that you come. B: Yes, said he.
"A: He said that you're coming. B: Yes, he did."

(3.5) **No sentential adverbs**

A: Hans kommt wahrscheinlich? B: *Ja, kommt er.

A: Hans comes probably? B: *Yes, comes he.

(Fries 1988:28)

Null anaphora of the type in 3.3 and 3.4 refer not to concrete entities expressed by an NP-antecedent (as in 3.1) but instead to abstract objects such as events and propositions expressed by antecedent clauses or VPs. The corpus analysis in Chapter 5 shows that these occur very frequently in German and the utterances fulfill particular functions within the dialogues examined. Chapter 4 is devoted to defining and analysing the different types of abstract objects and the NP forms used to refer to them.

Concerning null topics in general, Fries points out that the topicalised constituent must be cataphoric with respect to an empty category (trace) in the same sentence. Because of this local, modal or causal free references are only omittable with decreased acceptability, although temporal references, as in 3.8, are sometimes possible:

(3.6) A: Was war mit der Prüfung? B: *Hab ich geschwitzt.

A: What was with the exam? B: *have I sweated.
"A: What about the exam? B: I sweated during it."

(3.7) A: Was ist mit Köln? B: ?fühl ich mich nicht wohl.

A: What is with Cologne? B: ?feel I myself not well
"A: What about Cologne? B: I don't feel well there."

(3.8) A: Was ist mit Mittwoch? B: Kann ich nicht.

A: What is with Wednesday? B: Can I not.
"A: What about Wednesday? B: I can't make it then."

Klein (1985) and Fries (1988), like Engel, assume that the type of grammatical function plays a role in omissibility. Whilst subjects and objects are easily representable by null topics, genitives and datives are subject to stronger restrictions:

(3.9) a. Was ist mit Sofia?

(What about Sofia?)

b. ?vertrau ich nicht.

?trust I not. (dative)
"I don't trust her."

c. *Geh ich auf den Geist.

*go I on the soul (dative)
"I annoy her."

d. ?Erinnere ich mich nicht.

?remember I myself not (genitive)
"I don't remember her."

e. *Schäm ich mich.

*ashamed I myself (genitive)
"I'm ashamed of her."

(3.10) a. Mir las sie immer Simone de Beauvoir vor und dem Fritz?

me reads she always Simone de Beauvoir to and the fritz(dat.)?
"She always reads Simone de Beauvoir to me and to Fritz?"

b. Liest sie zur Zeit "Wie kommt das Salz ins Meer" vor.

reads she to time "Wie kommt das Salz ins Meer" to
"She's reading "Wie kommt das Salz ins Meer" to him at the moment."

(3.11) a. Fritz spült ja neuerdings immer; was ist denn mit ihm?

Fritz washes prt. recently always; what is prt. with him(dat.)?
"Fritz has always been doing the dishes recently; what's up with him?"

b. *Liest Sofia "Wie kommt das Salz ins Meer" vor.

*reads Sofia "Wie kommt das Salz ins Meer" to
"Sofia's reading "Wie kommt das Salz ins Meer" to him."

(Fries 1988, p.30, 31)

The latter two examples show that the null topic response *Liest Sofia/sie W vor.* becomes unacceptable if there is less semantic consistency between the null topic and its antecedent. Fries, citing Janssen (1984), points out with respect to theta-roles that as these are possibly not semantic primitives but rather bundles of features, some (such as *agent* or *patient*) may more "natural" than others. It appears that the less "natural" a theta role is, the more complex the restrictions for pronoun omission are, eg semantic/structural consistency with respect to adjacent utterance.

Klein (1985), cited in Fries, gives the following hierarchies which reflects the decreasing acceptability of textual ellipses – the lower they are on the hierarchies, the greater the semantic and structural consistency between ellipsis/anaphor and antecedent must be:

- subject ⟨ direct obj. ⟨ indirect obj. ⟨ PP
- infinite verbal element ⟨ NPs
- sentence initial elements ⟨ sentence final elements

(Klein 1985, p.15)

Although Klein and Fries, unlike Engel, do not make explicit predictions about frequency of certain null topic types, the hierarchy above implies that null subjects are easier to produce and occur in a wider variety of contexts than null objects.

A syntactic analysis of null topics is provided by Cardinaletti (1987) who claims that there is a fundamental structural difference in German between null subjects, which are

to be analysed as pro-drop, and null objects, which involve an Op-pro configuration, ie an element pro in object position bound by a base-generated empty operator. Her argument is based on several observable facts, for example that null subjects can only be 1st and 2nd person, whereas null objects can only be 3rd person. Cardinaletti points out that the recovery of the object anaphor's feature content does not depend on verbal agreement (as in pro drop) but on the linguistic or pragmatic context. She supports this with the argument that non-arguments and quasi-arguments, which are non-referential and therefore not contextually recoverable, cannot be null, eg

(3.12) a. *pro wurde t viel getanzt.
*pro was t much danced.
For: "There was much dancing."

b. *pro regnet t gerade.
*pro rains t now
For: "It's raining just now."

(Cardinaletti 1987, p.81)

Her argument for the Op-pro configuration is that the Projection Principle requires there to be an empty category in the argument position (pro), and as the initial pre-verbal position cannot be filled by other elements in a null topic construction, there must be a second empty category (Op) there.

The precise syntactic analysis of null topics is not crucial to the work presented here. Cardinaletti's observation that subject and object drop are not identical, however, is of importance, as will become apparent in the difference in frequency of occurrence in the corpora. Also important is the observation that contextual consistency plays a role, as the null topics of the analysis presented here are text-deictic, ie refer to adjacent sections of the discourse. Both Fries and Cardinaletti agree that topic-drop requires referential identity of the anaphor with an element in the linguistic, situational or textual context and that furthermore text-type restrictions hold in that formal spoken and written language in general do not allow it.

Work carried out on Yiddish null subjects (Prince 1997) distinguishes two types

Clause	Cp	Cb	Transition
(i)	David	?	Continue
(ii)	you	bride$_i$	Rough Shift
(iii)	bride$_i$	bride$_i$	Continue → 0
(i)	you	?	Continue
(ii)	David	David	Smooth Shift
(iii)	bride$_i$	David	Retain → *0

Table 3.1. Centering Analysis of 3.13 and 3.14

of subject drop – one equivalent to ordinary pro-drop, which is restricted to second person singular, and a second type, which is constrained to already established topics. In a Centering analysis of this phenomenon, Prince observes that the latter type is restricted to the Cb (backward-looking centre) after a CONTINUE transition. Compare the following examples (taken from Prince 1997, p.8, to which I have added the interpretation of Cfs given in Table 3.1):

(3.13) a. (i) Doved hot geredt fun die kale$_i$? (ii) Oy, vest du zi$_i$ lib hobn! (iii) **0**$_i$ [=**Zi**$_i$] Iz efsher nock a mol azoy shtark vi er.

b. David talked about the bride$_i$? Oh, are you going to love her$_i$! **0**$_I$ [=**She**$_i$] Is maybe twice as strong as he.

(3.14) a. (i) Ir veyst, az Dovid vet khasene hobn. (ii) Er hot geredt fun di kale$_i$? (iii) **Zi**$_i$/**#0**$_i$ iz efsher nock a mol azoy shtark vi er.

b. You know that David is getting married. He talked about the bride$_i$? **She**$_i$/**#0**$_i$ is maybe twice as strong as he.

In the final sentence in 3.13 there is subject drop, as the referent of the null anaphor (*bride*) is the Cb of the utterance and there is a CONTINUE transition. For a CONTINUE transition to occur, the Cb must equal the Cb of the previous utterance. Prince's rule therefore reflects simply that the (non-second person) subject can be dropped if there is a continuing topic. This is similar to what has been observed for the null anaphor

pro in Greek and Italian (see Section 2.2.3). It captures the notion of semantic and pragmatic consistency also referred to in Fries' and Cardinaletti's analysis of German topic drop.

3.2.2 Null Anaphor vs V1 Analysis

The translation of the examples in 3.1 shows that in many cases, the English equivalent of the German null topic sentence also lacks an object (eg *She is. He does*) and it seems that a justification is required for assuming different syntactic analyses for the two phenomena, ie ellipsis in English and the existence of an empty category in the initial position in German, which is, after all, not a pro-drop language. It is tempting to assume that the null object sentences considered here do not actually contain phonologically null elements but instead are genuinely verb-initial clauses.

German does indeed have a variety of verb initial constructions each associated with a particular function, as shown in the examples below:

(3.15) Gehen wir nach hause!

go we to home
"Let's go home."

(3.16) Kommt er hierher, geh ich schnell weg.

comes he here, go I quickly away
"If he comes here, I'll quickly go away."

(3.17) Hätt ich doch zugehört!

had I only listened
"If only I'd listened."

The first argument against a verb initial interpretation of null topic utterances is that the latter are only possible with transitive verbs or verbs in the perfective tense, whereas the verb-initial constructions such as those in 3.15, 3.16 and 3.17 are not restricted in this way.

Also, in null object transitive constructions, no post-verbal overt object is allowed (3.18) and in the null topic perfectives, the object or participle must be omitted (3.19):

(3.18) A: Hast du ein Auto? (Have you got a car?)

a. B: Ja, 0 hab ich.
B: yes 0 have I

b. B: Ja, ein Auto hab ich.
B: yes, a car have I

c. B: *Ja, 0 hab ich ein Auto.
B: *yes, 0 have I a car
For: "Yes, I have (got a car)."

(3.19) A: Hast du geschlafen?
(Did you sleep?)

a. B: Ja, hab ich.
B: yes 0 have I

b. B: Ja, heute nachmittag hab ich geschlafen.
B: yes, today afternoon have I slept

c. B: *Ja hab ich geschlafen.
B: *yes have I slept
For: "Yes, I did (sleep)."

Furthermore, in these constructions no other element may appear in the preverbal position if one of the arguments has been omitted, eg

(3.20) A: Kaufst du dir jetzt ein Auto?
(A: Are you going to buy a car now?)

a. B: Ja, 0 kauf ich mir (jetzt).
B: Yes, 0 buy I me (now)

b. B: Ja, jetzt kauf ich mir eins
B: yes, now buy I me one

c. B: *Ja, jetzt 0 kauf ich mir.
B: *yes, now 0 buy I me
For: "Yes, I am (going to buy a car now)."

If we assume that the object/participle is structurally present but phonologically null, we can assume that these are ordinary V2-constructions. If we assume a verb initial analysis, on the other hand, a separate set of rules would have to be constructed. The latter option seems less economical.

3.2.3 A Comparison of English and German

Cote (1998) observes that certain verb classes in English allow their objects to be null, eg *eat, leave, see* and *call.* These verbs are categorised according to how they interact with the discourse context. Verbs like *see* and *call*, requiring a contextually salient antecedent, are Salient Object Alternation (SOA) verbs. She cites the following example (p.60), taken from the Brown corpus, in which the relevant verb is marked in bold font:

(3.21) She stopped at the Surcliffes' after dusk, and had a Scotch-and-soda. She stayed too late, and when she **left**, it was dark [....].

In Hudson-D'Zmura's analysis (Hudson-D'Zmura 1998), the objectless verbs refer to an event type – the verb having moved up to an abstract eventuality predicate and the object having been erased. The objects, in these cases, have a syntactic root at event structure but are not present in the surface syntactic structure.

Other verbs with null objects do not allow salient antecedents and are termed IOA (indefinite object alternation) verbs. Both SOA and IOA verbs can introduce objects, which because of their presence at event structure, they can subsequently be referred to, eg:

(3.22) D: We **ate** at Jorges.
M: Was it good?

(Hopper 1992) (p.149, cited in Cote 1998)

Cote claims that the *it* refers to the unmentioned direct object of the verb *eat*, so that M's utterance can be rephrased as "Was what you had to eat good?". This

evidence is not particularly convincing, as the referent of *it* could be argued to be reference to the event *eating at Jorges.* The following statements, for example, are also possible:[2]

(3.23) a. A: We **dined** at Jorges.
B: Was it good?

b. A: We **went** to Jorges.
B: Was it good?

Here, the verbs do not subcategorise for a direct object and in the latter case the verb does not even mention an eating event. The *it* in the subsequent utterances could still be interpreted as referring to the food (or the event). However, if the pronoun is in a context where it unambiguously refers to food, the acceptability increases if it refers to a direct object present in the event structure:

(3.24) a. We **ate** at Jorges. It was far too salty.

b. We **dined** at Jorges. ??It was far too salty.

c. We **went** to Jorges. #It was far too salty.

In addition to verbs like *eat*, there are also verbs which can be objectless but do not allow a contextually salient antecedent:

(3.25) a. A: What are you doing?
B: I'm ironing.

b. A: What are you doing with those shirts.
B: I'm ironing *0/them.

As these examples (adapted from Cote p.60) show, for verbs like *iron* the object cannot be omitted if it occurred explicitly in previous utterances. In 3.25a the action itself is salient, whereas in (b) it is the shirts which are the salient part of the exchange.

[2]These examples were pointed out to me by C. Heycock.

English does not allow null topics and therefore B's utterance in (b) with the null anaphor is ungrammatical.

Cote argues that these null objects are not phonologically null or the result of ellipsis, but rather *lexically affected* arguments. This means that they are present in the lexical representation of the verb but are not part of the syntactic structure of the sentence.

Examples in German, analogous to those above, can be used to show that the null topic utterances must be analysed as having a phonetically null element in initial position. If we translate the examples from above, we see that very similar effects hold with the exception that German *does* allow phonologically null topics:

(3.26) a. A: Was machst du?
(What are you doing?)

b. B: Ich bügel.
B: I iron
"I'm ironing."

(3.27) a. A: Was machst du mit den Hemden?
(What are you doing with those shirts?)

b. B: *Ich bügel.

c. B: <u>0</u> bügel ich.

d. B: Ich bügel sie.
B: I iron them
"I'm ironing them."

If we assume the existence of a phonologically null element which is restricted to initial position in main clauses, then the grammaticality patterns above are explained. As in the English examples, when the focus of exchange is on the event type, the objectless verb is felicitous (Example 3.26). If the object itself is the topic (Example 3.27), the ungrammaticality of the example *Ich bügel.* shows that it cannot be erased or lexically suppressed. Therefore, the grammaticality of *<u>0</u> bügel ich.* proves that there

must be a topic represented at the surface syntactic structure. This can either be done a phonologically null element or by an unstressed pronoun (*Ich bügel sie*).

In Cote's analysis, it is possible for the salient object antecedents of some verbs to be propositions rather than NPs as in the following (abbreviated) example taken from Hopper (1992) (cited in Cote 1998, p.60):

(3.28) G: I'm the one that goes to UT that got you all the fun info.
D: Oh I see. Well, that's quite a coincidence.

In Hudson-D'Zmura (1998)'s analysis, the utterance *I see.* is analysed as referring to an abstract event type, an event of understanding. She uses Lexical Conceptual Structures (LCSs), as defined in Jackendoff (1990), to indicate which arguments are available for reference. LCSs or representations of lexical items built from primitives (their precise nature need not concern us here). For the utterance *I see.* the LCS is as follows:

(3.29) $[_{Event}$ SEE $([_{Thing}\ ], [_{Event}\ o])]$

There is a seeing event which has as its arguments the subject of the seeing event ($[_{Thing}\ ]$) and the object which is "seen" – an abstract null event. The null event as an argument of *see* becomes available for pronominal reference and in Cote's analysis, this is what the demonstrative in 3.28 refers to.

Cote does not assume, however, that the null event itself is pronominal or anaphoric in the sense of ordinary null anaphora or pronouns. In her analysis only *arguments* of the phrasal conceptual structure are available for anaphoric reference. This does not include, for example, the seeing event itself or state expressed by G's preceding utterance. The type of reference we will be discussing in Chapter 4 and in the German corpus analysis, though, is genuine anaphoric reference to events or propositions by pronouns or null anaphora. A distinction must therefore be made between the type of event reference discussed by Cote, and reference to events and propositions which are available for reference for reasons *other* than being arguments of verbs.

In German as in English, there are also SOA verbs requiring a salient propositional antecedent, eg

(3.30) A: Britta ist diejenige, die die ganze Information besorgt hat.
(Britta's the one who got you all the information)

a. B: (Ach so,) ich versteh.
B: (oh right) I understand
"I see."

b. Ja, $\underline{0}$ versteh ich (ja auch.)
yes, $\underline{0}$ understand I
"Yes, I understand that."

As can be seen in these examples, both the SOA verb with the erased object and the verb with a null object present at surface structure are possible. The reason I wish to analyse these as constructions with a different number of arguments at surface structure, is that I believe the interpretations are slightly different. The first example *Ich versteh.* is analogous to the English *I see.*, to be understood as referring as a whole to an abstract event type, this being the salient entity in the focus of exchange. The second example, $\underline{0}$ *versteh ich.*, has as its null topic antecedent the proposition expressed by the preceding utterance.

This is corroborated by subtle differences in acceptability found in the following dialogues:[3]

(3.31) A: Weisst du, dass Hans in Hamburg arbeitet?
(Do you know that Hans works in Hamburg?)

a. B: $\underline{0}$ weiss ich.

b. ? Ich weiss.
"I know."

(3.32) A: Hans arbeitet in Hamburg.

[3]These differences are subtle but a group of 15 informants all gave the same order of preference, almost all of them independently stating that the utterances marked by "?" were not only less preferred but also sounded quite abrupt or rude in that context.

(Hans works in Hamburg)

a. B: Ich weiss.

b. ? 0 weiss ich.
"I know."

In Example 3.31 the focus of exchange is the polarity of the proposition expressed by *You know that H works in Hamburg.* (see Chapter 2, Section 2.1.3). The German verb *wissen* (know) is an SOA verb, requiring a salient antecedent, to be found here in the proposition expressed by *H works in Hamburg.* In Example 3.31 above, the antecedent is introduced to the discourse model *as a complement of the verb "wissen".* Whereas it is perfectly acceptable to have an erased object when this verb is referring to an abstract event type (Example 3.32), this option seems strange when the salient part of exchange is the *wissen* itself plus its arguments (Example 3.31). In this case, there is no reason for one of the arguments to be erased if they salient parts of the exchange. As Fries notes (Section 3.2.1), null topics are permitted only when a high degree of contextual coherence exists.

The syntactic structure of the null object-topic utterances seem to indicate that a zero anaphor analysis is preferrable to an erased object analysis. The function of these clauses in the dialogues will be further explored in Chapters 5 and 6, which contain the actual corpus analyses. Reference to abstract objects and event types, as referred to in Cote's analysis, will be discussed in detail in Chapter 4.

3.3 Prosody

Focus and topic in German are indicated by specific pitch accents, H*+L and L*+H, respectively, but the association is not as strict as in English, as H*+L can also be associated with the topic, providing the subsequent focus H*+L is not downstepped (Fery 1992; Ladd 1996).

The nuclear accent, as in English, must be within the focussed constituent and for broad and presentational focus, German has a neutral accent position from which focus

projection can occur, which, at first glance, appears to be the final NP:

(3.33) a. [Brigitte füttert den HUND.]
[Bridget feeds the DOG.]

b. [dass Brigitte den HUND füttert.]
[that Bridget the DOG feeds.]

Various structural analyses of neutral accent placement in German have been proposed. Jacobs (1991), for examples, builds metrical trees for syntactic constructions by assigning '+' to every element in the construction. In addition, *integrated* elements receive an additional '+', where *integration* can understood as the formation of a semantic unit: an element k is integrated with X if it is the complement (or direct, internal argument) of X. In the examples above, this explains why the NP complement of the verb receives the the main accent in both main and subordinate clauses, regardless of their linear order.

As agentive verbal arguments are not internal or direct arguments, hence are not integrated, this also explains the distinction between unaccusatives and intransitives mentioned in Chapter 2, which also holds in German:

(3.34) a. PETER kommt.
PETER comes

b. Peter KOCHT.
Peter COOKS

(Jacobs 1988, p.122)

Further refinements of this simple rule are necessary. Jacobs notes that certain words cannot bear the neutral accent even if they are in neutral accent position. These are constituents such as pronouns, pro-adverbs, determiners, articles, *jemand* (somebody) and *niemand* (nobody). In Jacobs' theory, these are marked [-na] and are not assigned "+", forcing the main accent onto another constituent, as in the following examples:

(3.35) a. Julian hat BEATRICE geküsst.
Julian has BEATRICE kissed

b. Julian hat sie GEKÜSST.
Julian has sie KISSED

c. Julian hat jemanden GEKÜSST.
Julian has somebody KISSED
"Julian kissed Beatrice/her/somebody."

In Jacobs (1991) the Final Strengthening Rule is added which assigns an extra level of prominence to the last highest column in the metrical grid, thus accounting for the final accent being perceptually the strongest.

The [-na]-feature is reminiscent of Ladd's deaccenting effects (Section 2.3) and the notion of *accent repellers* introduced in Section 2.3. The [-na] elements listed by Jacobs appear to be inherently "uninteresting" (compare *jemanden* and *Beatrice*), or have, like pronouns, as their main purpose reference to contextually present entities.

In a theory based on accent repellers the difference between accent placement in German main and subordinate clauses can be accounted for if one assumes that in this language verbs themselves are accent repellers. This characteristic of verbs is also mentioned in other theories. Both Jacobs (1988) and Schmerling (1976) (Section 2.3.3), for example, note that verbs do not tend to carry the neutral accent.

As was pointed out in Section 2.3.3, not only the type of accent repellers is important but also their relative strength. This means that if we assume that verbs are accent repellers in German, this does not mean that they are never capable of bearing the neutral accent. Pronouns appear to be stronger accent repellers in English and German meaning that in sentences containing only pronouns and verbs the verb is accented, eg:

(3.36) Er KÜSSTE sie.
He KISSED her.

German clearly has a large number of accent repellers and its intonation contour is plastic. However, unlike English, it appears to have a neutral accent position which is

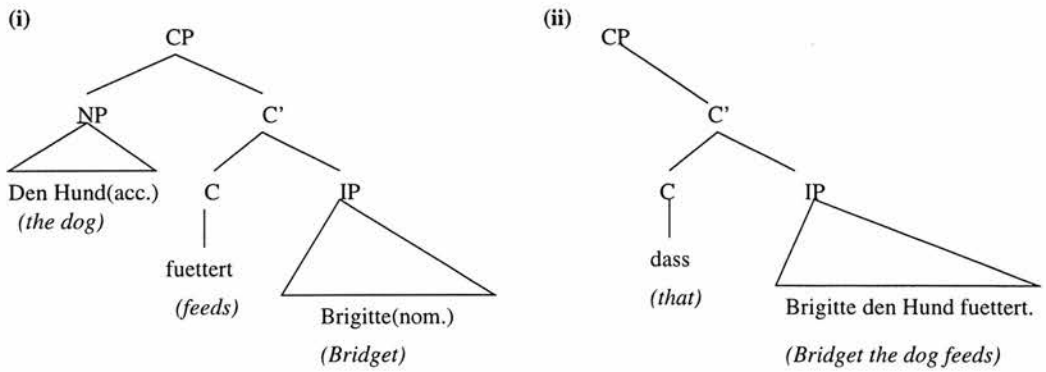
available for narrowly focussed constituents to move into and in this sense, it behaves like non-plastic languages. This along with word order and word order change will be discussed in the next section.

3.4 Word Order

3.4.1 Topicalisation and Focus Movement

As was described above, Kiss' binary division of languages categorises them according to what determines their surface word order, contrasting those, such as English, where grammatical relations of the constituents play the major role with discourse-configurational or non-plastic languages, such as Hungarian or Catalan. However, an examination of other languages quickly shows that this strict division cannot be upheld. In German the canonical word order is SVO for main clauses and SOV for subordinate clauses. It also exhibits V2-effects in main clauses. The traditional analysis (see, for example, Abraham (1995)) assumes that overt complementisers and V2 are in complementary distribution, leading to the conclusion that the verb in main clauses moves to C and another XP to [Spec, C]:

(3.37)



The canonical word order in subordinate and main clauses can be overruled by discourse constraints requiring a particular ordering of topic, focus and contrastive

focus. As the corpus analyses in Chapters 5 and 6 concentrates on main clauses, I will provide only a summary of the different orderings of discourse functions in these:

The contrast in acceptability in 3.38 below clearly shows that for focus projection to work the canonical word order (SVO) and the neutral accent position (final NP) is required:

(3.38) a. **Presentational focus**
Was gibt's neues?
(What's new?)

b. [Klaus hat ein AUTO gekauft].
Klaus has a CAR bought

c. ??[ein AUTO hat Klaus gekauft].

3.39 below shows the optionality that exists in German between moving the accent to the narrowly focussed constituent in the canonical word order, moving the constituent to the neutral accent position and moving both the accent and the focussed constituent to the initial position:

(3.39) a. **Narrow focus**
Wem hast du das Geschenk gegeben?
(To whom did you give the present?)

b. Ich hab dem KIND das Geschenk gegeben.
I have the CHILD the present given
"I gave the present to the child."

c. Ich hab das Geschenk [dem KIND] gegeben.

d. [Dem KIND] hab ich das Geschenk gegeben.

Example 3.40 below is a slightly exceptional construction also observed in Yiddish and Yiddish English (Ross 1967; Prince 1981; Ward 1988), whereby in a seemingly all-focus construction a constituent is fronted. This appears to be in contrast with the ungrammaticality of 3.38c.

(3.40) a. **Y-movement**

Mein Sohn spinnt total.

(My son's gone crazy.)

b. [Einen nagelneuen MERCEDES hat er sich gekauft.]

A brandnew MERCEDES has he himself bought
"He bought a brandnew MERCEDES!"

c. ??[Einen MANN hat er erschossen.]

??A MAN has he shot
For: "He shot a man!"

Prince analyses these as constructions consisting of a highly plausible focus frame and a narrowly focussed constituent instantiating a variable. In Example 3.40b the focus frame is *he bought x.* That sons buy things seems very plausible and could therefore almost be considered as salient in the context, despite the fact that it was not explicitly mentioned. What is new and unpredictable is the object he has bought, ie *a brandnew Mercedes.* This can be placed in the initial position just as the narrow focus in 3.39c. In 3.40c there is no plausible focus frame as sons are not "expected" to shoot people. In this case fronting of a constituent is not possible. This type of construction and its use in Yiddish English is further discussed in Section 3.4.3.

A further restriction holding in main clauses, is that selecting focus (in Dik's sense; see Section 2.1.2) cannot appear in initial position (Example 3.41c), whereas replacing focus can (Example 3.42). Interestingly, the ordering of contrastive topic and contrastive focus in these examples is as predicted in Gundel (1988) (Chapter 2, Section 2.6), where it is stated that having a "new", ie shifted or contrasted topic following a comment/focus is universally non-existent.

(3.41) a. **Contrastive focus (selecting), contrastive topic**

Wo ist das Besteck?

(Where is the cutlery?)

b. [Die MESSER] hab ich [in die KÜCHE] gebracht, [die GABELN] hab
the KNIVES have I in the KITCHEN brought, the FORKS have
ich [auf dem TISCH] gelassen.
I on the TABLE left.
"The knives I put in the kitchen, the forks, I left on the table."

c. ??[In die KÜCHE] hab ich [die MESSER] gebracht, [kauf dem TISCH] hab ich [die GABELN] gelassen.

d. Klaus hat [die MESSER] [in die KÜCHE] gebracht, und er hat [die GABELN] [auf dem TISCH] gelassen.

"Klaus has put the knives in the kitchen and the forks he left on the table."

(3.42) a. **Contrastive focus (replacing)**

Du hast dir doch ein Fahrrad gekauft.

(You bought a bike.)

b. [Ein AUTO] hab ich gekauft, kein Fahrrad.
A CAR have I bought, no bike
"I bought a CAR, not a bike."

It is clear from these examples that German allows a wide variety of different word orders and accent positions and that, compared to English, relatively few restrictions hold. On the other hand, compared to discourse-configurational languages such as Hungarian and Catalan, the pragmatic rules requiring focus and topic movement are relatively lax and in most contexts the canonical word order is at least an option available to speakers.

3.4.2 Clefting Constructions

Although Gundel's analysis, discussed in Section 2.6, showed that the possibility of using word order variation for information packaging purposes is to a certain extent a universal phenomenon, it is clear that the independent syntactic and phonological characteristics of each individual language imposes restrictions. The differences between languages are partly due to the type of constructions they allow from a grammatical point of view but more importantly to the *relative markedness* of the constructions. This is related to the point of frequency (and necessity) of word order variation mentioned above (Chapter 2, Section 2.4.2) as an additional factor of discourse-configurationality, in the sense that the more frequent a construction is the less marked it becomes.

Object fronting for topicalisation purposes, for example, is a great deal more marked in English than it is in German. Focussing and topicalisation structures often consist of violations of the expected *normal* or canonical sentence form. There appears to be crosslinguistic variety in terms of how easily canonical word orders can be violated, and what constitutes such a strong violation in one language may not be particularly marked in another.[4]

Weinert (1995) and Weinert & Miller (1993) compare wh-clefts, reverse wh-clefts and Y-movement (fronting of non-subjects) in English and German. Examples from each language are given below:

(3.43) a. What you want to do is curve round that wood.

b. Was ich noch zusätzlich habe ist eine Wüste.
what I in addition have is a desert
"What I also have is a desert."

(3.44) a. That's what I've done.

b. Das ist genau was ich meine.
that is exactly what I mean

[4]This view of violable constraints and constraint ranking is reminiscent of Optimality Theory. An approach to scrambling in this framework is presented in Choi (1996).

	English	German
Y-movement	contrastive (r)	focus, deictic (f)
Reverse-wh	focus, deictic (f)	strong focus (r)
Wh-cleft	focus, topic-introduction (f)	focus, topic-expansion (r)

Table 3.2. Functions of Clefts and Y-movement

(3.45) a. That I don't know.

b. Das meinte ich.
that meant I

(Weinert 1995)

The conclusions they draw from their corpus analyses of German and English is that although speakers of both languages employ all three devices, the observed frequencies vary and they are associated with different functions. A comparison of the functions is shown in Table 2, where *r* stands for *rare* and *f* for *frequent.* Clefts, whilst occurring frequently in English are used infrequently in German; the reverse is the case for Y-movement. A possible reason for the infrequent usage of clefts in German is the non-contrastiveness of Y-movement constructions in this language, which are therefore more readily available. The German example in 3.45 would be translated into English as *That's what I meant.* and not as *That I meant.*, which has a contrastive reading.

These results can be explained by the syntactic differences of English and German. German word order is a great deal freer, allowing scrambling in subordinate clauses and fronting of most XPs to preverbal position in main clauses. Although German also has a canonical word order, the sentences where movement has taken place are extremely frequent. The utterances exhibiting non-canonical word order do therefore not achieve the same marked effect as their comparatively rare English counterparts.

In English, speakers only resort to a change in word order on rare occasions and to the hearer this will be very noticeable. As will also be seen in the corpus analysis in Chapter 5, a large percentage of German utterances have a non-default word order

and this makes it necessary for the German speaker to resort to other devices, such as clefting, to express extreme markedness. [5]

3.4.3 Illicit Topicalisation

Long-Distance Topicalisation

An increasingly frequent phenomenon in spoken German is topicalisation constructions, which involve "ungrammatical" fronting of constituents to initial position in main clauses. This often involves long-distance movement of constituents. For the issue of configurationality, it is interesting because it shows that pragmatic necessity of topic fronting overrides syntactic rules. Its frequency in conversational German and the lack of subsequent self-correction indicates that we are not dealing with disfluencies or speech errors. The following are transcribed examples which occurred in actual conversations.[6] The topicalised phrases are marked in bold font as are the resumptive pronouns or traces in the canonical position. All German examples are V2 but to facilitate comprehension, the English translations are not.

(3.46) Geologische Stoffe kennen wir. **Alle anderen Stoffe**$_i$ können wir nichts aussagen darüber, wie **sie**$_i$ sich entwickeln.
"Geological materials we know. **All other materials**$_i$ we can't say anything about how **they**$_i$ will develop."

(3.47) **Die beiden**$_i$ will ich mal Brigitte fragen, ob sie **die**$_i$ braucht.
"**These two**$_i$ I'll ask Bridget if she needs **them**$_i$."

(3.48) **Dies Buch**$_i$ wollt' ich dich fragen, ob es dich interessiert mal **t**$_i$ reinzuschauen.
"**This book**$_i$ I wanted to ask you if you're interested in looking at (**it**$_i$)."

[5] This argument may seem circular: markedness is defined by frequency of occurrence and frequency of occurrence is controlled by markedness. However, speakers do tend to agree on which utterances are marked. Also, there are word-order independent features which may help determine what is possible in a given language, eg overt morphological case marking, which makes word order less important for object/subject identification.

[6] I thank Hartwig Eckert for much of the data presented here.

(3.49) **Ein Hauptpraktikum**$_i$ wäre möglich in Polen $\mathbf{t}_i$ zu machen.
"**A practical**$_i$ would be possible to do $\mathbf{t}_i$ in Poland."

(3.50) **Die Bücher**$_i$, die ich froh bin, wenn ich **die**$_i$ los werd.
"**These books**$_i$, which I'm happy if I get rid of **them**$_i$."

(3.51) Ich kann das hier rumgeben. **Wer sich interessiert**$_i$ steht alles drauf $\mathbf{t}_i$.
"I can pass this here round. **Who's interested**$_i$, everything is on it $\mathbf{t}_i$."

According to the grammar rules of German topicalisation, these examples are all ungrammatical. In 3.46, for example, the canonical word order would be as follows:

(3.52) Wir können nichts aussagen darüber, wie sich **alle anderen Stoffe**
we can nothing say about.it, how refl. **all other materials**
entwickeln.
develop.

In the version involving illicit topicalisation, the NP *all other materials* has been moved from inside a subordinate clause to the front of the main clause, a construction which is not possible in standard German. In addition in some of the above constructions there is what could be called a resumptive pronoun in the originating position of the NP in the subordinate clause. Resumptive pronouns have been shown to elminate island constraints, ie constraints on long-distance extraction (cf Prince (1990)). However, in German, as in English they are not considered grammatical in the standard language meaning that in the examples above they are a further non-standard feature.

The context indicates why the topicalised construction is preferred to a canonical one: *all other materials* is not only topic of the utterance but also *contrastive* topic, which is being contrasted with the NP *geological material* in the preceding utterance. As shown in Section 3.4.1, contrastive topics are those which most strongly require fronting. For this example, a possible fronted version would be as follows, where the whole subordinate clause which includes the NP being contrasted is topicalised:

(3.53) *Darüber, wie sich* **alle anderen Stoffe** *entwickeln,* können wir nichts
about.it, how refl. **all other materials** *develop* can we nothing
aussagen
say.

The "ungrammatical" version is possibly a result of unplanned speech, although if this is the case, it is not clear how one should define *planned* speech. A more plausible explanation is that the pragmatic rule requiring the fronting of a contrastive topic is so strong that it overrides the necessity to conform to grammatical rules which disallow such a construction.

Yiddish Movement

In Yiddish dialects of English there is a different form of "illicit" fronting constructions in the form of Y-movement, mentioned in Section 3.4.1. However, in these casese it is not the syntactic rules which are flouted, but the pragmatic constraints governing focus fronting in standard English. Compare the following:

(3.54) **English focus fronting:**
Let's assume there's a device which can do it – **a parser**$_i$ let's call it $\mathbf{t}_i$.

(3.55) **Yiddish English focus fronting:**
What did she see in him? Eleven million! **Eleven million**$_i$ he made $\mathbf{t}_i$ on the Scarsdale Diet.
(conversation about the murder of the Scarsdale Diet doctor)

(Taken from Prince 1996)

Yiddish English focus fronting has the same discourse function as German Y-movement described above, ie there is a "plausible" focus frame and a focus variable which is a discourse entity. In the example given here, the hearer already knows that the doctor made a particular amount of money but the relevance of this fact to the question under discussion (ie what his girlfriend saw in him) is not apparent.

In English focus fronting, on the other hand, there is a focus frame which is known and salient in the discourse and the fronted focus is the value of an attribute. In the example above, *device* is salient in the discourse model and it is general knowledge that devices have names. What is new is the particular name for this device. The difference is formalised by Prince as follows:

(3.56) Focus frame, known and salient: Let's call it X name.
Focus, new value of attribute: X = parser.

(3.57) Focus frame, plausible: He made X on the Scarsdale Diet.
Focus: X = eleven million

The reason for the different discourse functions of focus fronting in standard and Yiddish English is explained by the influence of Yiddish on the latter: Yiddish focus movement, whilst having a different syntactic structure, has the discourse function associated with focus fronting in Yiddish English.

As Prince (1996) points out, in Y-movement "[the] discourse function associated with a syntactic form in one language [is] borrowed such that it comes to be associated as well with a syntactic form in another language." This means that the *discourse function* of focus-fronting in Yiddish is associated with the English *syntactic form* of focus movement.

The reason for this new association is that the syntactic form of Yiddish focus-fronting and the syntactic form of English focus movement are mapped onto the same abstract *Construction-template*, which are defined as being "abstract universal syntactic schemata" (Prince 1996). The Construction-templates are purely syntactic objects and do not have a discourse function by themselves. The Construction-template for Y-movement and English topicalisation is as follows:

(3.58) NP_i - {S - NP_i}

As can be seen from this example, Construction-templates are not based on syntactic structure but rather on the linear order of major constituents, as it is the latter which is used to express the discourse function. Any characteristics which are due

to independently motivated syntactic differences between the two languages are filtered out. For example, both focus movement and Y-movement involve the fronting of a constituent to initial position in the sentence – focus movement in English is assumed to involve the fronting of a constituent to the specifier position of the CP, whereas Y-movement in Yiddish involves movement to the specifier position of IP. The construction-template ignores the differences in the target position of the movement, which are due to language-specific syntactic restrictions, but preserves the information that in both languages the moved constituent precedes the rest of the sentence.

Prince's theory thus captures the importance of linear word order as an expression of information packaging. German illicit topicalisation does not involve the borrowing of a syntactic form from another language, as does Y-movement in English, but can be explained, however, if one assumes the use of a Construction-template. The template presumably forces an "ungrammatical" linear word order in complex sentences in order to achieve the discourse function of topicalisation which it is associated with in simple main clauses.

3.5 Summary

This chapter on information packaging in German discussed the aspects of German NP-form, prosody and word order. It was noted that spoken German, as opposed to English, has the availability of null anaphora for cognitively salient entities, equivalent to continuing topics as defined in Chapter 2. The fact that there exist NP forms which are restricted to a certain position can be taken to be an indicator of the strong influence of pragmatic factors on German word order.

In the prosody section it was noted that German has similar deaccenting effects and accent repellers to English. In addition, the section on word order showed that German has one neutral word order available for different information packaging structures and in these cases the information packaging structure is indicated by a change in intonation contour. These two factors indicate that German has a plastic intonation contour like configurational languages.

However, it was also noted that in many cases the intonation contour remains rigid and constituents are moved to the nuclear accent position to receive focus. The data showed that there are more possibilities for word order variation influenced by topic and focus movement than in English. Weinert & Miller's analysis of topicalisation in the two languages also indicated that these constructions are less marked in German than in English because they are more frequent. In Chapter 2 I suggested that aside from structurally defined topic and focus positions, the frequency and necessity of topicalisation and focus movement should be used as an indicator of discourse-configurationality. German was thus also shown to share characteristics of non-plastic/ discourse-configurational languages.

A further discourse-configurational feature of German was introduced in the section on "illicit" long-distance topicalisations which showed that in spoken German grammar rules can be overridden by pragmatic requirements such as topicalisation. Vallduví's IS-level and the universal pragmatic principles presented in Chapter 2 assume that the cognitive representation of sentences is invariant crosslinguistically. What varies are syntactic constructions and how these are assigned to cognitive representations. As an intermediate between syntactic constructions and cognitive representations of discourse functions is Prince's notion of abstract construction templates. In this chapter this was used to explain the occurrence of the illicit topicalisations in German. Construction templates are abstractions from the syntactic representations of a sentence and only represent linear order of constituents. They are associated both with a specific syntactic construction and a specific discourse function in each language. It seems that in the cases of German long-distance topicalisation the construction template NP-S NP normally associated with simple main clauses is used for complex main clause-subordinate clause constructions brushing aside the syntactic requirements of standard grammar. The new template-syntactic construction pair is then associated with the discourse function of simple topicalisations.

In the following chapter I leave aside for the moment the issue of configurationality and turn to the description of abstract object reference – a type of reference which is frequently associated with null topics in German. Chapters 5, 6 and 7 combine the

issues of discourse-configurationality, null topics and abstract object reference in the form of corpus analyses of spoken German.

Chapter 4

Abstract Objects

4.1 Introduction

The previous chapters discussed amongst other issues of information packaging the relation between NP-forms and cognitive status of referents. It was noted that in spoken German null anaphors are used for reference to entities particularly salient in the discourse model. The corpus analysis, to be presented in Chapter 4, shows that a large percentage of null topics do not have simple NP-antecedents but refer instead to abstract objects indirectly evoked by sections of the preceding discourse. This is interesting for two reasons: **1.** As null anaphors give no information on the semantic content of their referents, it is not clear how discourse deictic null topics are correctly resolved, since they refer to abstract objects evoked by sections of the text varying in size and type **2.** Discourse deictic reference has traditionally been regarded as involving topic *shift* (Webber 1991; Dahl & Hellman 1995), a view which is incompatible with null topic reference to such entities.

As there are many different types of abstract objects, this chapter will be concerned with defining them and describing the rules governing discourse-deictic reference. Asher's framework (Asher 1993), presented in this chapter, draws attention to the importance of the predicating context of the anaphor for determining the exact type of abstract object it refers to. Also introduced are Webber's (1991) evolving tree structures which are used to represent the structuring of discourse regions and their

accessibility for pronominal reference.

The cognitive status of such abstract discourse objects is then discussed in terms of GHZ's hierarchy (Chapter 2), and Dahl & Hellman's (1995) theory of *referent coercion* is presented; this claims that the referents of discourse-deictic anaphors are called into existence by the anaphor itself. This theory can explain why demonstratives are chosen over simple pronouns in English. However, a problem arises for German where it is shown that null topics can also be used to establish discourse-deictic reference. Examples of discourse-deictic null topics taken from the corpus, show that they can be used to refer to all the different types of abstract objects.

Finally, this chapter is also concerned with the difference between cognitive and linguistic representations. Romijn's framework (Romijn 1996) is presented which can be used to represent objects which may not have been explicitly mentioned in the discourse but are nonetheless available for pronominal reference. This is important for the work presented here, since discourse-deictic anaphors are often not substitutes for coherent syntactic strings from the preceding discourse. Romijn's analysis concentrates on uses of the Dutch neuter pronoun without gender-agreeing NP-antecedents. In German, discourse-deictic anaphors are neuter but there is also a high number of neuter anaphors which are not discourse-deictic in the sense discussed so far, but refer to other kinds of abstract objects which may have an NP-representation in the discourse but do not force gender agreement of the pronoun.

For grammatical reasons, certain copula constructions only allow neuter anaphors regardless of whether there is an NP antecedent available. Abstract object reference in copula constructions is thus treated separately from other types of neuter anaphoric reference in this chapter.

4.2 Reference to Discourse-Deictic Objects

4.2.1 Discourse Deixis

The term *discourse-deictic reference* has been used to describe any anaphoric reference without an NP antecedent, that is, reference to "the interpretation of one or more

clauses" (Webber 1991)(p.1) or when the antecedent consists of

- a sentence
- a VP
- several sentences
- discontinuous phrases.

(Dahl & Hellman 1995)

The following are examples of "simple" NP reference, deictic reference and discourse-deictic reference, respectively:

(4.1) Celia gave Julian a present. He liked **it** very much.

(4.2) **That**'s nice! (pointing to a painting)

(4.3) It's always been presumed that when the glaciers receded, the area got very hot. The Folsum men couldn't adapt, and they died out. **That**'s what is supposed to have happened. (Webber 1991, p.1)

The pronoun in Example 4.1 has as its antecedent the NP *a present* in the first sentence, which in turn refers to the physical object described by it. In Example 4.2, the demonstrative deictically refers or "points" to a physical object present in the surroundings of speaker and hearer.

Webber, following Lyons (1977), chooses the term *deictic* to also describe reference of the type exhibited in 4.3, where the objects "pointed" to are the events, states, propositions and facts described by the preceding clause or clauses. The clauses and clause combinations accessible for discourse deictic reference will be discussed in Section 4.2.4.

4.2.2 Types of Discourse-Deictic Objects

The example of discourse-deictic reference given above appears to refer to the complex event described by the previous clauses. However, a clause may also describe propositions or states, and may itself be a linguistic object. All of these abstract objects are available for reference. These will now be described in turn.

Events, States, Facts and Propositions

Dahl & Hellman (1995) list the different levels of abstract objects to which anaphoric reference can be made. These include:

(4.4) **Event:**

John crashed the car. **That** happened yesterday.

(4.5) **Proposition:**

A: John crashed the car.

B: **That**'s not true.

(4.6) **Fact:**

A: John crashed the car.

B: **That**'s surprising.

(4.7) **Pure Textual Deixis:**

A: My number's 3 4 7 2 4.

B: I'm sorry, could you repeat **that**?

Example 4.4 is similar to 4.3 above as the demonstrative refers to an *event.* In 4.5 something is being predicated of the *proposition* expressed by the antecedent clause, namely that it is not true. The truth of the proposition in 4.6 is taken for granted, and the demonstrative refers to a *fact.* The dialogue in 4.7 contains what Lyons (1977) has called *pure textual deixis.* In this case the anaphor points to the linguistic object – the utterance itself – and not anything it refers to or expresses.

Dahl & Hellman (1995) and Asher (1993) note that abstract entity anaphors are not always placeholders for bits of syntactic structure. Whilst it is possible to rephrase

the anaphor using, for example, a clause or a VP, often the constituents required to do this are discontinuous in the antecedent utterance, as in 4.8 (a map description from the corpus), or simply not contextually present in the required form as in 4.9:

(4.8) A: Next to the castle I've got a lake.
B: **That**'s what I've got, too.

(4.9) John told Mary that she should go out with him, and Fred did, too.
(Asher 1993)

In 4.8, B's statement means that he has also got *a lake next to the castle*, but the NP and the PP are discontinuous in the preceding utterance. In 4.9, the sloppy identity reading of the second clause means *Fred$_i$ told Mary that she should go out with him$_i$, too.* The VP in which *him* is co-indexed with *Fred* is not present as an antecedent in this form.

Although Asher agrees that there is a fundamental distinction between ordinary NP-reference and abstract object reference, he notes that within the class of abstract objects a distinction can be made according to their level of concreteness. The entities are ordered along a spectrum ranging from *world immanent* to *abstract.* The range of possibilities is given in Figure 4.1.

Asher uses Bach's term *eventualities* for the *world immanent* entities, which incorporates events and states (Bach 1968). Eventualities behave like most other concrete entities to which reference can be made in the sense that they are located in space and time and can also be causal, eg:

(4.10) The event of Anthony scoring a goal happened at 5 o'clock/took place at Meadowbank Stadium.

(4.11) The event of Anthony scoring a goal caused the team to win the match.

Propositions are at the other end of the scale, labelled "purely abstract" in the sense that they cannot be causal, nor are they located in space and time. Facts are also subsumed under the node "purely abstract", but as can be seen from the following

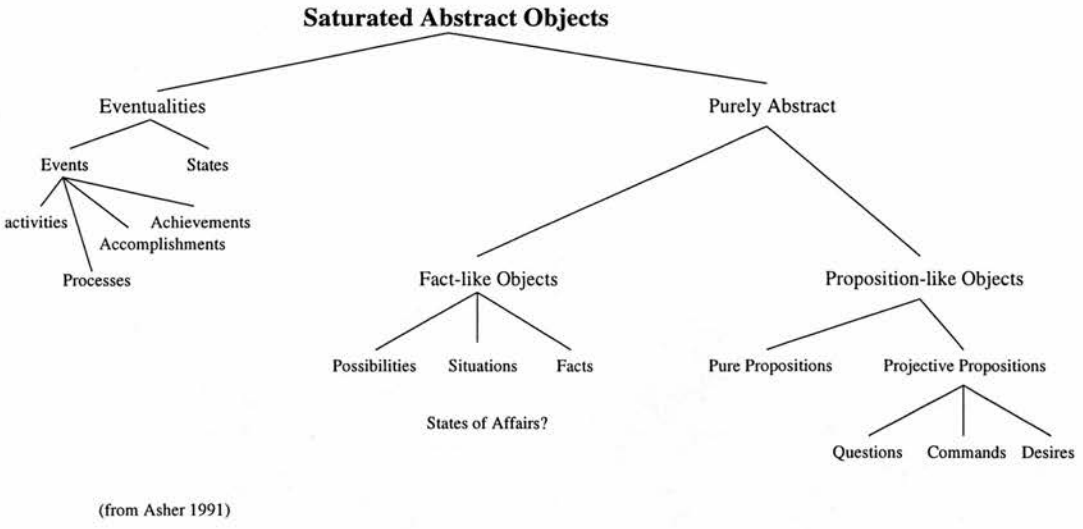


Figure 4.1. Asher's Summary of Abstract Objects (1993:57)

examples, whilst they are not located in space and time, they do have the ability to be causal, and are thus between propositions and eventualities on Asher's scale:

(4.12) *The fact that Anthony scored a goal happened at 5 o'clock.

(4.13) The fact that Anthony scored a goal caused the team to win the match.

Eventualities, being concrete, are independent of linguistic description, ie are entities in the "real world". Propositions and facts, on the other hand, which are both "purely abstract", are "description-dependent", that is they do not exist outside the linguistic representation. Compare the two logically equivalent descriptions below:

(4.14) Anthony drove home drunk.

(4.15) Karla's husband drove home drunk.

If *Anthony* = *Karla's husband*, then the two utterances describe the same event but cannot be said to refer to the same proposition, as the truth-conditions are different: 4.14 is true if and only if the person of the name *Anthony* drove home drunk; 4.15

is true if and only if the man married to Karla drove home drunk. Facts, again, are between events and propositions in this respect. Facts do not exist outside linguistic representation but are not as dependent on it as propositions. The two utterances above are non-identical but express the same fact.

Event Types and Concepts

In addition to the objects listed so far, Asher also considers *unsaturated* objects. These are abstract entities with a missing event argument or missing subcategorized arguments. If we consider again Example 4.9, repeated below with an overt demonstrative, we see that not all the arguments of the textual antecedent of the demonstrative are included in the anaphoric reference:

(4.16) John$_i$ said that Mary should go out with him$_i$, and Fred said that, too.

As was noted above, there is no surface syntactic antecedent which could replace the *that*, which refers to *Mary should go out with an entity co-indexed with the speaker.* In order to obtain a constituent expressing this, the argument *him* in the first sentence has to be abstracted away from the rest of the subordinate clause. A similar problem arises in the following examples taken from Asher (p.246/248).

(4.17) Somebody had to take out the garbage, so Bill did it.

(4.18) The garbage had to be taken out. So Bill did it.

In both cases, interpreting the *do*-ellipsis involves referring back to a VP such as the one in Example 4.17 *take out the garbage.* In 4.18 the VP is of the wrong type, ie *be taken out.*

Asher suggests an operation of *C(oncept)-Abstraction* in the DRT framework (Asher 1993) (p.249), which involves extracting arguments from VPs and clauses leaving behind unsaturated objects which are appropriate antecedents. It does so by making use of the θ-grid of the verbs in clauses containing the anaphors, which give information

concerning the type of antecedent required and therefore which arguemtns need to be extracted.[1]

For example, the θ-grid of the verb *do* is represented as $< AGENT, THEME >$. The theme must be filled by a *concept* discourse referent. This *forces* identification with a predicate of the correct type. Important to the study presented in this thesis is that not only the anaphor itself but also the predicative context of the anaphor and the θ-grid of the verb play a role in determining the antecedent of the anaphor.

Furthermore, in Asher's theory it is the clause containing anaphoric reference itself which brings about the existence of the referent of the anaphor. This is similar to Dahl & Hellman's notion of *referent coercion*, presented below in Section 4.3.2, where it is claimed that the anaphor forces a new referent into existence in the discourse model.

4.2.3 Determination of Entity Type

One aspect in which abstract and individual anaphora differ is the fact that the typing of abstract objects is *fluid*. This means that sentential nominals, such as the demonstratives in the discourse-deictic examples given above, can refer to different types of abstract entities depending on their predication. This kind of fluidity does not seem generally to hold for pronouns referring to concrete entities, such as the one in the following example:

(4.19) I just bought a new bike. **It's** the blue one. / I'll go and get **it**. / **It** was surprisingly cheap. / **It** goes really fast.

Here, the pronoun can only refer to the concrete object.[2]

For abstract objects, it appears to be the linguistic context which determines the type to which the anaphor refers, ie whether it is an eventuality, fact or proposition. In Asher's theory, the importance of the θ-grid of the verb comes into play in the operation of C-Abstraction and was shown to determine what an anaphor is co-indexed with.

[1] See Asher 1993 for details in the DRT framework.

[2] However, as pointed out to me by C. Heycock, certain exceptions can be found, eg *This book was written by Banks.* **It** *weighs 5 lbs.* **It**'*s been selling well all over the country.*, where the references vary between type and token reference.

Similarly, it is the subcategorisation frame of the verb which determines the type of its arguments for abstract entity reference in general.

In the following example, the predicate *be certain of* requires an object argument of proposition type, which is supplied by the *that*-clause of the first sentence (Asher 1993, p. 278):

(4.20) John believes that [Mary is a genius]$_i$. Fred is certain of **it**$_i$.

So, whilst *Mary is a genius* can be said to refer to a *state*, a *proposition* and possibly a *fact*, the pronoun *it* as the object of *be certain* picks out only the proposition as a referent.

Other examples of predicates that constrain the choice of abstract object were given in section 2.1 for event reference (*That happened yesterday*), propositional reference (*That's not true.*), fact reference (*That's surprising*) and pure textual deictic reference (*Could you repeat that?*).

As the first three of these cases were all preceded by the same utterance, *John crashed the car.*, it is clear that it is not the preceding syntactic constituent itself that determines the type of referent, but instead the type of position the anaphor fills in the subcategorisation frame of its main verb.

A similar approach is taken by Webber (1991), who, following Nunberg (1979), provides the description of a referring function which allows the exact interpretation of deictic pronouns. For this, she distinguishes between *demonstrata* (the objects that can be pointed to) and *intended referents* (the entities that can be referred to by virtue of pointing). She cites Nunberg's example of a waiter pointing at a ham sandwich saying:

(4.21) He's sitting at table 20.

(Nunberg 1979, p.149)

In this case, the ham sandwich is the demonstratum and the man who ordered it the intended referent of the pronoun.

The referring function (F) maps the demonstrata (D) to the range of intended referents (R):

- $f : D \rightarrow R$

The range R of the referring function intersects with the set of things that the speaker might be intending to refer to. This set is restricted by the *context*, or in Nunberg's terms by "the nature of the predication, by the morphology of the demonstrative pronoun, and by such contextual considerations as *topic of conversation*" (Nunberg 1979, p.157). In the example above, R intersects with males ("he") who could be sitting at a table ("is sitting at table 20").

Nunberg's statement is also relevant to the rules of anaphor – antecedent compatibility introduced in relation to Centering Theory (cf Chapter 2, Section 2.2.3). These rules state that an antecedent becomes *invisible* for reference if it has incompatible ϕ-features with the anaphor (in Nunberg's terms "the morphology of the demonstrative pronoun") or does not agree with it in terms of agentivity and similar notions ("the nature of the predication").

The advantage of having a referring function, and a range that contains any kind of item as long as it could conceivably be referred to, is that no separate account needs to be found for the different kinds of abstract objects, ie event types, event tokens, propositions and proposition types. The nature of the predication ensures that R intersects the correct type. As the corpus under examination here reveals a number of different types of abstract objects, this feature of the approach is advantageous.

It seems intuitively plausible that when we resolve an anaphor which itself gives little or no information about its referent, we take into account the information that is supplied by the rest of the utterance. Whether an anaphor refers to a concrete NP-entity or to an abstract entity (and if so, of which type) depends on the verb it occurs with. The usefulness of the subcategorisation frame will become apparent in the expansion of the compatibility rules that anaphor and antecedent are subject to, presented in the following chapter.

4.2.4 The Accessibility of Discourse-Deictic Objects

Discourse-deictic anaphors refer to previous sections of the text, but there are also adjacency restrictions concerning the parts of the context that they can access. Using evolving tree structures to represent the regions of the discourse model as the dialogue progresses, Webber (1991) indicates which nodes are accessible for discourse-deictic reference and which are not. The following description of two houses illustrates this:

(4.22) a. There's two houses you might be interested in.

b. House A is in Palo Alto. It's got 3 bedrooms and 2 baths, and was built in 1950. It's on a quarter acre, with a lovely garden, and the owner is asking $425K. But **that**'s all I know about it.

c. House B is in Portola Valley. It's got 3 bedrooms, 4 baths and a kidney-shaped pool, and was also built in 1950. It's on 4 acres of steep wooded slope, with a view of the mountains. The owner is asking $600K. I heard all **this** from a real-estate friend of mine.

d. Is **that** enough information for you to decide which to look at?

e. *But **that**'s all I know about House A.

The central part of the text is clearly divided into two sections, each containing the description of a house. Each section contains more than one clause. At the end of each section a demonstrative is used to refer to what is described by the preceding utterances (*that* for House A; *this* for House B). Finally, in (d) the demonstrative *that* picks out the referents of the whole preceding discourse, ie what is referred to by (b) and (c) together.

The unacceptability of the utterance in (e) shows that once section (b) is closed off and the description in section (c) has started, (b) (ie the description of House A) is no longer accessible for reference. Webber represents this discourse with the tree structure shown in Figure 4.2.

In her theory, the only segments available for discourse deictic reference are those represented by nodes on the *right frontier* of the tree. The node representing the

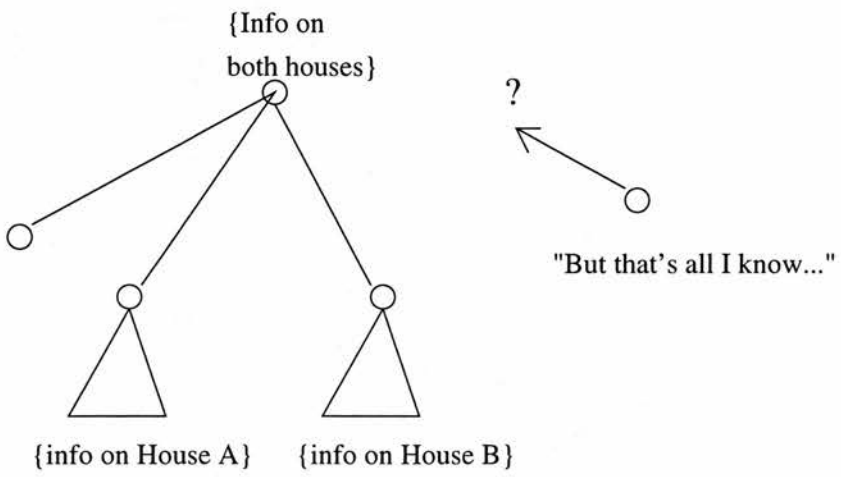


Figure 4.2. Discourse Tree Structure (Webber 1991)

description of House A is not available individually for reference after House B's description, only together with the node representing House B, as their joint node at the top is on the right frontier. The description of House B, on the other hand, is available for reference both separately and jointly with House A's description.

The matter changes when the individual parts of the two descriptions are intertwined, as in

(4.23) a. There's two houses you might be interested in:

b. House A is in Palo Alto, House B in Portola Valley. Both were built in 1950 and both have 3 bedrooms. House A has 2 baths, and B, 4. house B also has a kidney-shaped pool. House A is on a quarter acre, with a lovely garden, while House B is on 4 acres of steep wooded slope, with a view of the mountains. The owner of House A is asking $425K. The owner of House B is asking $600K. **1. That**'s all I know about House A. **2. This/That** I heard from a real-estate friend of mine. **3.** Is **that** enough information for you to decide which to look at?

The structure of this text is quite different from the one in Example 4.22. Here, there is only one chunk of information consisting of a joint description of both houses. As Webber points out, only the demonstrative in **3** refers successfully, as it refers to the segment as a whole. The demonstratives in **1** and **2** are not easily resolved because House A's description is inextricably connected to House B's and cannot be referred to separately.

4.3 The Cognitive Status of Abstract Objects

Dahl & Hellman (1995) claim that use of the demonstrative implies topic *shift* and not *continued* topic and the fact that demonstratives, but not pronouns, are frequently associated with abstract, non-NP reference is thought to be indicative of the newness of these evoked entities and their previous non-existence in the discourse universe. In general, they observe, an NP referent as topic seems more expected or more likely, than reference to what is expressed by the utterance as a whole.

This is also what is implied by the Centering Hierarchy introduced in Chapter 2, Section 2.2.3, where the discourse unit, ie the referent of discourse deictic anaphora, is placed below the grammatical functions of NPs as being the least likely preferred centre (Cp) of an utterance. The hierarchy implies that pronominal reference to a discourse unit can only involve a continue transition (ie $\mathrm{Cb}(\mathrm{U}_i) = \mathrm{Cb}(\mathrm{U}_{i-1})$) if no NP is available as an antecedent.

This section will deal with the choice of anaphoric form and the implications this has for the cognitive status of abstract objects in the discourse model.

4.3.1 Choice of Pronominal Form

The examples below show that, in English at least, demonstratives are preferred for reference to utterances or VPs. We see here that with these predicates use of the pronoun inhibits discourse-deictic reference, whereas use of the demonstrative allows both that and reference to a simple NP:

(4.24) a. Tim bought <u>a new bike</u>. **It**'s great.

b. Tim bought a new bike. **That**'s great.

(4.25) a. A: My number's 3 4 7 2 4.

b. B: I'm sorry. Can you repeat **that**? (your number; the utterance)

c. B: I'm sorry. Can you repeat **it**? (your number)

d. B: I'm sorry, I didn't hear a word you said. # Could you repeat it?

The pronoun in Example 4.24a refers back to the NP *a new bike.* In 4.24b, the demonstrative refers discourse-deictically back to the whole utterance *Tim bought a new bike.* As the verb contexts are identical, the difference between the two is due to the form of the anaphor alone.

In Example 4.25b the demonstrative could refer to either the number or the whole previous utterance, whereas in 4.25c the pronoun can only refer to the number. A speaker would not use the sentence *Could you repeat it?* to ask for repetition of a whole utterance. This is made clear in 4.25d: the context *I didn't hear a word you said* makes sure that *Could you repeat it?* cannot refer to a subpart of the utterance and it becomes infelicitous.

With predicates such as those in the following examples, by contrast, the anaphor is always interpreted discourse-deictically, regardless of its form:

(4.26) John crashed the car. **It/That** happened yesterday. (J crashed the car; # the car)

(4.27) A: John crashed the car. B: No, **It/That**'s not true. (the fact that J crashed the car; # the car)

In these examples, both the pronouns and the demonstratives can only have discourse-deictic reference, and cannot refer to a simple NP antecedent. The reason for the non-ambiguity is to be found in the context of the pronoun itself, in particular the verb of which it is an argument, and is not due to the form of the anaphor. The influence of the predicative context, in particular the choice of verb, was described in Nunberg's and Asher's theories presented in the previous section and will be formalised in Chapter 5.

It is sufficient to point out here that in utterances where the context *does* allow ambiguity, there is preference for *that* referring to the abstract object/proposition rather than back to a single NP. This is shown in the following examples, where *is not true* could either predicate something of the previous utterance or of the NP *the story* in the previous utterance:

(4.28) a. A: John told me the story yesterday.

b. B: **That**'s not true.
(the fact that J told you the story; # the story)

c. B: **It**'s not true, though.
(the story; ??that fact that J told you the story)

Once propositional reference has been established, however, the pronoun can easily be used:

(4.29) B: **That**'s not actually true, but **it** could have been.
(*that:* the fact that...; *it:* the fact that...)

In German, the ambiguity between discourse-deictic and NP-reference is further reduced because of the grammatical gender of the pronouns, which inhibits certain resolutions. Discourse deictic reference can only be established by neuter anaphors:

(4.30) a. A: Hast du auf deiner Karte einen Wasserfall neben einem Baum?
(A: Have you got a waterfall(m.) next to a tree on your map?)

b. B: Ja, das hab ich. **(state-reference)**
B: yes that(n.) have I)

c. B: Ja, den hab ich. **(NP-reference)**
B: yes that(m.) have I

The neuter demonstrative refers to the state described in the preceding question, ie the state of a waterfall being next to a tree. B indicates through his answer that this state is also present on his map. B's second utterance does not allow this type

of reference as the demonstrative is not neuter but agrees in gender with the NP *Wasserfall.* In this case, B indicates that he has also got a waterfall on his map, namely the one which is next to the tree. Reference to a state, however, is not made, since only neuter anaphors can establish abstract object reference.

The presence of a neuter NP in the context can lead to ambiguity between NP- and discourse-deictic reference and in this case, as in English, a demonstrative is preferred for the latter:

(4.31) a. A: Oliver hat sich ein neues Fahrrad gekauft.
(A: Oliver bought himself a new bike(n.))

b. B: Ja, es ist wirklich schön.
(B: Yes, it is really nice.)

c. B: **Das** ist ja schön, aber **es** überrascht mich nicht.
B: that is prt. nice, but it surprises me not
"That's nice but it doesn't surprise me."

In B's first utterance the pronoun refers to the referent of the NP *ein neues Fahrrad.* In the second version of B's utterance, the demonstrative refers to the fact that Oliver bought himself a new bike and not to the bike itself. As the continuation of B's second utterance shows, reference to the abstract object can be made through a simple pronoun once the entity has been added to the discourse model by the preceding demonstrative. The *es* also refers to the entity *the fact that Oliver bought a new bike.* It should be noted that this is not possible without the previous reference. If the first part of the utterance (*das ist ja schön*) is omitted the pronoun is unfelicitous:

(4.32) A: Oliver hat sich ein neues Fahrrad gekauft.
B: Das/??Es/ 0 überrascht mich nicht.

This example also shows that in German discourse-deictic reference can be established by a null topic: both *das* and *0* are acceptable, only *es* is not. This fact provides problems for GHZ's hierarchy, as null anaphors are grouped with pronouns regarding

the cognitive status of their referents. This will be discussed in more detail in the following section.

Asher (1993) also notes that the choice of pronoun can sometimes influence the proximity of the abstract entity being referred to, as seen in the following example:

(4.33) The "liberation" of the village had been a disaster. [Some of the Marines had gone crazy and killed some innocent villagers. To cover up the "mistake", the rest of the squad had torched the village, and [the lieutenant had called in an air strike]$_j$]$_i$. At first the battalion commander hadn't believed **it**$_i$/**this**$_i$/**that**$_j$.

(Asher 1993, p.50)

Proximal *this* (and to a lesser extent *it*) picks out the entire discourse topic (the "liberation" of the village), ie it indirectly picks out what is being described by the whole paragraph. The distal demonstrative *that* picks out the proposition expressed by the previous clause only. The proximal demonstrative is discourse topic-oriented, the distal demonstrative non discourse topic-oriented. This is also seen by the fact that if the text consists of only one sentence, *this* is used for self-referential propositions which naturally make reference to the discourse topic, as in *This is a sentence containing seven words.*

To summarise, although the linguistic forms *0, it, this* and *that* can be used for discourse deixis, it appears that there is a strong preference for demonstratives and (in German) null anaphors over pronouns for anaphoric reference to non-NP constituents. In cases where the pronoun is used, some contexts unambiguously determine the type of referent. In ambiguous contexts, use of the pronoun favours NP-reference, whilst use of the demonstrative favours non-NP reference. In addition to the choice of syntactic form for the anaphor, adjacency of the anaphor to the non-NP constituent it refers to appears to be essential.

4.3.2 Referent Coercion

The choice of NP form as an indicator of the referent's cognitive status was described in Chapter 2. The fact that demonstratives are chosen over pronouns for discourse-deictic reference signals that the abstract object referred to by the preceding utterance or VP is not the most salient entity in the discourse model despite being adjacent to the anaphor. This section returns to the correlation between NP-form and cognitive status, this time concentrating on pronouns vs demonstratives and discourse-deictic reference.

Passonneau (1991) provides a statistical analysis of the use of pronouns and demonstratives in the Brown Corpus to examine the new-given status of *antecedents* of anaphors. She shows that the choice between pronoun and demonstrative for reference to NP-antecedents is strongly influenced by the givenness status of this antecedent NP. Both *it* and *that* were used for *given* and *not given* antecedents, but if an NP is given, subsequent reference is far more likely to be made by pronouns, and if it is not given, by demonstratives. This finding supports GHZ's hierarchy, according to which *in focus*, the highest cognitive status on the hierarchy, is associated with pronouns and the lower cognitive status, *activated*, with demonstratives.

Whilst finding that *it* and *that* can both be used for new and given antecedents, Passonneau shows in further statistical evaluations that there appears to be a correlation between use of a pronoun and a continuing Discourse Segment Purpose (DSP) (Grosz & Sidner 1986). The DSP is defined as the intention that underlies a certain part of the discourse, eg the describing of an event, convincing someone of something or, in a task-oriented dialogue, the completion of a subtask etc. Passonneau introduces the term Local Center (LC) for an entity which has been referred to by uses of a pronoun in two adjacent utterances, eg

(4.34) **1.** I don't have the mental capacity to handle uh what I would like to teach which'd be philosophy or history at U of C uh with that level students um **2.** maybe with time and experience I'll gain **it 3.** but I don't have **it** now

(Passonneau 1991, p. 66)

The second usage of the pronoun, according to her, signals that the speaker wishes the utterance containing it to be included in the DSP of the previous utterance.

Passonneau also points out that the lexical roots of the matrix verbs of the clauses containing the two pronouns were identical in 30% of LC cases (eg *gain* and *have*, from 4.34, which both imply "possession"), but only in 11% of clause pairs with an *it* - *that* sequence. She concludes that maintaining both an LC and the same lexical verb serves as a cue that the speaker is continuing in the same DSP.

Passonneau's pronoun-LC correlation reflects the fact that subsequent uses of a pronominal signal to the hearer that the speaker expects this entity to remain salient in the discourse. If the speaker expects subsequent utterances to be concerned with a new topic, she must somehow indicate this, for example, by using the demonstrative rather than the pronoun. Further analyses by Passonneau shows that this is the case: uses of *that* (particularly non-subject *that* referring to a non-subject NP) indicate that the referent is not an LC but instead peripheral to the DSP. An analysis of the subsequent utterances showed that use of the demonstrative is a good indicator that this referent will not be referred to again.

The results strengthen the claim made in Isard (1975) that referring expressions are dual-faced in that they are constrained by the previous context whilst also incrementing the following context. In this sense, demonstratives "re-evoke entities whilst simultaneously signalling their peripheral status." (Passonneau 1991, p.68). This seems to be supported by Passonneau's claim that *it* correlates with discourse topics and the grammatical function Topic, whereas *that* correlates with the very different grammatical function, (new, contrastive) Focus. She supports this with the following examples:

(4.35) **That/*it** I bought for my mother, but I could get another one for you.

(4.36) Pepper is okay, but don't add more curry. It's **?that/*it** that makes me sneeze.

The points discussed so far are the accessibility of abstract objects, the choice of anaphoric form and their cognitive status. We now turn to a related question of when and how these entities are called into existence. One view of abstract entity anaphora

(Dahl & Hellman 1995) is that the anaphoric elements themselves result in adding a new discourse entity to the context. This is identical to the notion of *accommodation* (Lewis 1979), where it is not the occurrence of the antecedent itself which evokes an entity into the universe of discourse, as is the case with NP-antecedent anaphors, but rather the anaphor which is used to refer to the discourse entity.

Passonneau (1991) supports this view and shows that whilst entities introduced by referential NPs are still available for reference after intervening pronominal reference, referents of discourse-deictic anaphors are not. This is because the latter do not exist in the discourse model unless referred to and are lost immediately afterwards unless referred to again. She uses examples such as the following to justify this claim:

(4.37) I noticed that Carol insisted on sewing her dresses from non-synthetic fabric.
That's an example of how observant I am.
And **they** always turn out beautifully.
That's because **she**'s allergic to synthetics.

(4.38) I noticed that Carol insisted on sewing her dresses from non-synthetic fabric.
She should try the new rayon challis.
That's because she's allergic to synthetics.

(Adapted from Passonneau (1991), p.69)

Here, the first *that* in Example 4.37 refers to what is being described in the whole previous sentence. The third utterance *and they always turn out beautifully* contains a reference to the NP *her dresses* which, despite not being mentioned in the immediately preceding utterance, can be resolved without difficulty.

The use of the demonstrative *that* in the final utterance, however, is infelicitous. It is intended to refer back to what is being described by the subordinate clause of the first sentence *Carol insisted on sewing her dresses from non-synthetic fabric*, but this is more than two utterances away (not right-frontier), and therefore inaccessible. The referent of the NP *Carol*, however, is still available in the third utterance despite being absent from the second. A similar effect is found when the intervening pronominal

has a referential NP antecedent, such as the intervening *she* in the second utterance of Example 4.38, which inhibits correct resolution of the discourse-deictic *that.*

Passonneau refers to non-NP reference as *intratextual deixis*, which, although similar to Webber's discourse deixis, "involves referents related to grammatical constituents rather than to discourse segments." (p.68).

Passonneau's view that discourse deixis involves reference to entities which do not exist in the discourse model unless they are referred to is also shared by others. Dahl & Hellman (1995), for example, assume that non-NP antecedents form the basis for a referent-creating operation. Webber claims that it is the act of *ostension* itself, ie the pointing of a pronoun to an individual, that can add new individuals to the model. This means it is fundamentally different in nature from other anaphoric reference by definite NPs or pronouns, where it is usually assumed that reference is being made to an entity *already present* in the discourse model, be it through linguistic or non-linguistic contextual salience.

According to Webber, reference to an abstract entity is similar to the process of *accommodation*, defined by Lewis (1979), in which a definite NP *can* introduce a new entity to the discourse model, rather than referring to a previously mentioned one. She provides the following example:

(4.39) I walked up to the first house on my list. I noticed that *the side door* was wide open.

Here, the new entity *the side door* is only added to the discourse model when it is actually mentioned. Webber notes that it is not necessarily the case that houses have side doors, so the existence of the object cannot be presupposed.

On closer examination, it seems that only certain entities can be introduced by accommodation. There has to be a certain plausibility behind the existence of the newly added object. Compare Example 4.39 with the following:

(4.40) I walked up to the first house on my list. # I noticed that *the giraffe* was eating leaves in *the garden.*

(4.41) I'm in the nativity play - I'm one of the Hawaiian dancers.
(McPherson 1996, 3.56)

It is not necessarily the case that houses have gardens, but the reason for the unacceptability of the second clause in this example is the introduction of the object *giraffe* by the definite NP, not the object *garden.*

The second was uttered by a six-year-old taking part in Christmas celebrations for the first time and the humor is due to the fact that to the child it seems plausible to have Hawaiian dancers in a nativity play, hence the introduction with a definite NP, whereas to adults it does not. Saying *I'm one of the three wise men*, on the other hand, would be plausible and hence felicitous for adults.

It seems that objects which can felicitously be introduced to the discourse model by a definite NP must somehow correspond to the notion of context-construability defined by Prince (1981), or *reliable stereotypes* (McPherson 1996). Whilst not being necessarily present, the existence of these objects does require a certain likelihood which, in the context of *houses*, applies to *gardens* and *side doors* but not to *giraffes* and which, in the context of *nativity plays*, does not apply to *Hawaiian dancers.*

So far, I have described the relation between discourse structure and abstract entity reference thereby making clear which entities are available for reference. In addition, I have also pointed out the important correlations between choice of pronominal form for discourse-deictic reference and between pronominal form and cognitive status.

The terms *re-evoking* (Passonneau), type *coercion* (Dahl & Hellman), *ostension* (Webber) and *referent-creating* (Webber) have been used to describe discourse-deictic reference and all carry with them the implication of a non-given, and particularly a non-topic status. However, this section and the following section show that in German null topics, pronouns and demonstratives, which are associated with different cognitive statuses, can establish discourse-deictic reference. If different NP-forms are chosen it is possible that a distinction must be made between expected and unexpected discourse-deictic reference. What needs to be determined is not only what kind of abstract entities exist in general, but what kind of abstract entities exist *in the discourse model.* That is, is there a process of accommodation involved, which allows pronominal reference to

be made to discourse-new entities?

The following section gives examples taken from the corpus of the different types of discourse-deictic reference discussed above and the determination of their antecedents.

4.4 Cognitive and Linguistic Representations

Aside from the different types of abstract objects referred to by clauses and VPs there is a further type which can be referred to by simple NPs. The definition given in Section 4.2 states that discourse deixis involves anaphoric reference to non-NP antecedents.

Given this definition it seems that the type we will be discussing in this section does not strictly speaking constitute discourse deixis. However, it is similar for two reasons: the first is that the NPs in question, such as *meeting*, *conference* or *fair*, seem to evoke entities in the cognitive representation which are not simple and concrete such as those evoked by NPs like *apple* or *chair*, but complex and abstract, similar to those evoked by whole phrases and clauses. The NP *apple*, for example, will evoke the cognitive representation of an apple. For the NP *meeting*, on the other hand, there is no concrete object it refers to which could be used as a basis for forming the representation. Instead, *meeting* refers to a complex object consisting of, amongst other things, the agenda, the attenders, the time and the place, all of which are interconnected and many of which can subsequently be referred to as discourse-old entities.

The second reason for including this type of reference in the study is that in Dutch and German, anaphoric reference can be made to these complex objects not only by gender agreeing but also by neuter demonstratives and pronouns. Neuter anaphoric reference without gender agreeing NP antecedent is also the hallmark of discourse-deictic reference.

The description of this type of reference separated from Section 4.2.2, for the reason that it will be presented simultaneously with the introduction of a descriptive framework (Romijn 1996) capable of accounting for the different types of abstract objects. The framework provides a unified account of all neuter anaphoric reference with no gender-agreeing NP antecedent and distinguishes this group from that of anaphoric

reference to NPs referring to concrete entities.

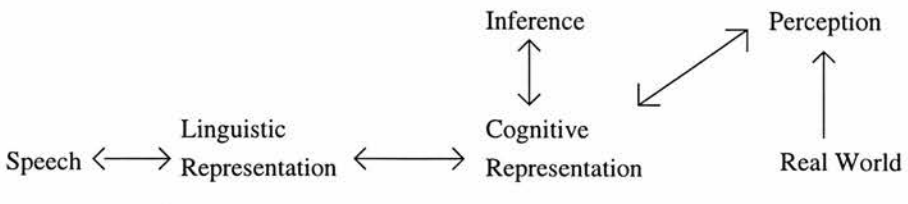
The types of references which will be discussed and added to our repertoire of abstract object reference are as follows:

- Neuter reference to (non-neuter) NPs denoting abstract entities, eg *meeting, fair.*
- Neuter reference in copula constructions.
- Neuter reference to concrete entities not explicitly mentioned but present in the verbal argument structure.
- Neuter reference to concrete entities not explicitly mentioned, not present in the verbal argument structure but present in the cognitive representation.

4.4.1 Romijn's Framework

In Romijn's description of abstract object reference in Dutch (Romijn 1996), she provides a framework for cognitive and linguistic representations which is based on the Mental Models Theory of Johnson-Laird (1983). In Romijn's theory a cognitive representation can contain information from three different sources: the linguistic input, the setting and inference as represented in the following schema:

(4.42)



(Translated from Romijn 1996, p.30)

In this framwork NPs can evoke *markers* which are similar in nature to Heim's *files* in File Change Semantics (Heim 1982). The word *Ian*, for example has a linguistic representation as in (b) and a cognitive representation as in (c):

(4.43) a. Ian

b. NP proper name (m., sing.)

c. E1(m., sing.)(Instantiation: human); identity(ian)

The cognitive representation (CR) of the entity marker E contains information about the number and gender of the NP it was evoked by. The *instantiation* indicates what the NP could refer to. The exact identity can vary from situation to situation, but it, as shown in the example, must refer to a human. The identity in this particular situation is indicated as being *ian*. As can be seen, the representation in the CR contains more information than that in the linguistic representation (LR), ie information from inference, general knowledge of the world and perception.

A distinction is further made between *entity markers* (*E*), which are evoked by NPs referring to concrete entities, and *complex object markers* (*C*), evoked either by NPs referring to abstract entities (eg *the situation*, *the meeting* etc) or by whole utterances (to be discussed below). The objects evoking markers of type C are therefore similar to the abstract objects discussed in the previous sections.

If the markers are evoked by anaphors as opposed to full NPs, they contain a *variable feature* (*Evar*, *Cvar*), which requires deletion through unification with an entity of the same kind (Evar unifies with E; Cvar unifies with C). As will be seen below, anaphors can refer to entities with explicit linguistic representations or those which are implicit by being present in the argument structure of the verb.

4.4.2 NPs Denoting Abstract Objects

The following are examples of NPs referring to abstract objects in Dutch:

(4.44) a. Hoe was de vergadering(f.)?
Ze hebben **het/ze** verzet naar morgen.

b. How was the meeting(f.)?
The postponed **it/her/him** to tomorrow.

(Romijn 1996, p.43)

This type of NP can be referred to in Dutch either by a pronoun agreeing in gender or by a neuter anaphor. In Romijn's framework the first utterance is represented as follows:

(4.45) ?C1 (Inst.: being situation)
Element1: E1(f., sing.) (Inst.: meeting)/
C2(Inst.: meeting situation)
Element1: E1 (m/f, sing.) (Inst.: human); is head
E2(m/f, sing./pl.) (Inst.: human); is participant
Core: activity: meeting
Element2: C3(Inst.:agenda).
Setting: Time: this morning.
Place: *
?Qualification: *
Core:
Setting: Time: past

(Modified from Romijn 1996, p.109)

The utterance *How was the meeting?* evokes the complex object marker C1. Embedded in this is representation of the NP *the meeting.* This evokes both an entity marker E1 and a complex object marker C2. Embedded in C2 is all the information that we can infer upon hearing the word *meeting*, ie that there is a head of the meeting and participants involved, that there is a meeting activity and also that there is a time and a place of meeting. Finally, the *qualification*, that is how this particular meeting was, is uninstantiated as indicated by the asterisk.

In subsequent utterances such as those in Example 4.44b, anaphoric reference can be made either to the entity marker E1 (meeting) or to the complex object marker C2 (meeting situation). The pronouns in 4.44b evoke markers with the variable feature *var* and thus require unification with an appropriate marker. The feminine pronoun evokes a marker of type Evar(f., sing), the neuter pronoun evokes a marker of type Evar(n., sing) or of type Cvar, which would be represented as follows:

(4.46) C2 (Inst.: postponing situation)
Element1: Evar(pl.); postpone Cvar
Core: activity: postponing
Element2: Cvar; is postponed
Time1: this morning
Time2: tomorrow
Setting: time: past

Embedded in the CR of the utterance *They postponed it to tomorrow* (C2) is an entity marker with the variable feature evoked by the pronoun *they* and the complext object marker Cvar evoked by the neuter pronoun *it*. Evar(pl.) can unify with E1 in 4.45 (ie the participants) as these are of the correct type (E) and have the correct agreement features (plural). Cvar can unify with C2, ie the meeting situation, as both are complex object markers.

4.4.3 Implicit Antecedents in Verbal Argument Structure

The neuter pronoun can also refer to concrete entities which have not been explicitly mentioned but are present in the verbal argument structure, as in the following example:

(4.47) Celia ate at Maxi's. **It** was a bit salty.

The pronoun *it* does not refer to any entity explicitly mentioned in the first sentence. However, it is clear from the context that *it* refers to the food consumed. For the sentence *We ate at Maxi's.*, Romijn's framework would depict the cognitive representation as follows:

(4.48) C1 (Inst.: eating situation)
Element1: E1(f.sing.)(Inst.: celia)
Core: activity: eating
Element2:*
Location: Maxi's

The complex object marker *C1* is evoked by the sentence. It contains no variable feature but is *instantiated*, as we know what kind of complex object we are dealing with, ie an eating situation. Aside from complex object markers, there are also entity markers, such as *Element 1*, which, in this case, is feminine singular and instantiated with the particular entity *celia*.

The core represents the argument structure of the verb and locative and temporal information related to it. Here, the activity is *eating* and this activity took place at a location referred to as *Maxi's*. In addition to this information, the core also contains *Element 2* which is not instantiated. The asterisk shows that we do not know what exactly was being eaten in this situation. However, the fact that the element is represented at all reflects that it is part of our general knowledge, ie that we know that in an eating situation there is an entity that is being eaten. Because of this implicit but salient knowledge, it is possible for us to refer to this entity in subsequent sentences, as in *It was a bit salty.*.

In Dutch, antecedent NPs and anaphors are expected to exhibit gender agreement. Romijn examines cases where the neuter pronoun *het* appears to have NP-antecedents of a different gender:

(4.49) Jolanda at. Het smaakte haar erg lekker.
Jolanda ate. It tasted her very tasty.
"Jolanda ate. It tasted very good (to her)."

(4.50) Jolanda aat een lolly. Het/Hij smaakte haar erg lekker.
Jolanda ate a lolly(f.). It(n.)/(f.) tasted her very tasty.
"Jolanda ate a lolly. It tasted very good (to her)."

(Romijn 1996)

Example 4.49 is analogous to the English example of reference to an implicit entity, with the neuter *het* being used to establish this reference. Example 4.50 is different in that the entity being eaten is explicitly mentioned. What is unusual here is that the pronoun can either be masculine, agreeing with the antecedent *een lolly*, or it can be neuter as in the first example, thereby not agreeing with any antecedent NP.

In Romijn's proposal, anaphoric reference by a pronoun which agrees in gender with the antecedent *hij* is simple: the pronoun evokes an uninstantiated marker with a variable feature *Evar (f.sing.)*, which unifies with an appropriate entity from the context (*een lolly*).

The neuter pronoun, on the other hand, can refer either to an entity or, if no compatible entity is available, to the complex object (C1) evoked by the whole previous utterance. This is shown in the following frames for Example 4.50, where *Cvar* and *Evar* stand for uninstantiated variables for complex objects and entities, respectively:

(4.51) C1(inst.:eating situation)
Element 1: E1(f.,sing.)(inst.:human); identity(jolanda)
Core: activity:eating.
Element2: *
Taste value: *
Setting: Time:past

(4.52) C2(inst.:tasting situation)
Element1: Cvar; Taste value: very tasty, Evar(f.,sing.)
Core: State: taste
Element2: Evar(f.,sing.); tastes Cvar
Taste value: very tasty
Setting: Time:past

The *het* in C2 evokes the complex object variable Cvar, which unifies with C1. This unification forms a new "filecard" (Heim 1982), which contains the information of both C1 and Cvar. The element *erg lekker* is matched with the element of the same sort in C1, ie *Taste value.* As will be discussed below, discourse-deictic reference to the previous utterance is similar, as the discourse-deictic neuter pronoun also unifies with the complex object marker of the previous utterance.

Both entity and complex object reference bring about a connection between the complex networks of the cognitive representation frames of the utterances. By connecting two complex networks a new one is formed to which more can be added subsequently.

4.4.4 Implicit Antecedent in Cognitive Representation

Anaphoric reference to complex objects and implicit entities is found in both written and spoken language. Despite this, there appear to be certain references which are deemed too vague or informal for written use. The previous section dealt with reference to implicit entities present in the verbal argument structure. However, reference is also possible to entities which are not present at that level but only exist in the CR. The latter type is not accessible for anaphoric reference in written language.

Romijn captures the difference in formality through depth of embedding within the frames. The following is an example of reference in spoken language to an implicit entity, which is too deeply embedded to be accessible in formal, written language:

(4.53) Ik kijk altijd naar het jeugdjournaal.
I watch always to the youth.news
"I always watch the Youth News."

(4.54) Ze leggen *het* daar veel beter uit.
They present *it* there much better out.
"They present it much better there."

The cognitive representation frames for these utterances are as follows:

(4.55) C1(inst.:watching situation)
Element 1: E1(m./f.,sing.)(inst.:human); identity(speaker)
Core: activity:watching.
Element2: E2(n.sing.)(inst.:Youth News)/
C2(inst.:Youth News)
Element1: E2(m./f., sing./pl.) (inst.:human); newscasters
Core: activity: presenting
Element2: news items
Setting: Time: daily
Setting: Time:present, always

(4.56) C1(inst.:presenting situation)
Element1: Evar(m./f.,pl.)
Core: activity: presenting
Element2: Cvar; presented much better.
Classification: much better
Setting: Time: present

The *het* in the second utterance refers to an entity deeply embedded within the C1 of the first utterance. Although it is general knowledge that presenting of news items is involved in news programs, the news items themselves are not present implicitly or explicitly in the *argument structure* of the main verb in the first utterance (ie *kijken* "watch"). In Example 4.50, in the previous section, the food consumed, though not explicitly mentioned, is present in the argument structure of the main verb *eten* ("eat") and thus available for reference both in informal, spoken language and formal, written language.

Romijn's study of two comparable corpora shows that the use of *het* without an explicit NP antecedent is almost twice as frequent in spoken than in written language, indicating that even if such reference is theoretically acceptable, it is avoided in certain text styles. She concludes from these facts that in written language the linguistic representation is important, whereas in spoken language the perceptual and knowledge

registers are more heavily relied on.

As will be shown in the following chapter, this is also the case in the spoken German corpora, where anaphoric reference is frequently made with neuter anaphors lacking a clear antecedent. A large percentage of these anaphors occur in copula constructions, where anaphor-antecedent agreement is subject to certain grammatical restrictions. The details of these restrictions will be discussed in the next two sections.

4.4.5 Copula Constructions

Neuter Anaphora in Copula Constructions

Romijn notes that some copula constructions obligatorily require a neuter pronoun in subject position even in the presence of a concrete NP-antecedent. The same phenomenon is found in German, compare the following:

(4.57) a. Siehst du den roten Strauch neben dem Kaktus?
(Can you see the red bush(m.) next to the cactus?)

b. Ja, es/*er ist eine grosse Pflanze.
Yes, it(.n)/*he(m.) is a large plant(f.).

c. Ja, *es/er ist gross.
Yes, *it(n.)/er(m.) is large.

In constructions of the form *pronoun + copula verb + NP* the pronoun must be neuter, in those of the form *pronoun + copula verb + AdjP* the pronoun must agree in gender with an appropriate NP-antecedent. In Romijn's analysis verb *be* has a different meaning in the two types of construction: in the be+NP construction it means "has the value of" (*heeft de waarde van*), in the be+AP construction it describes a quality and means "is valid with respect to" (*geldt met betrekking tot*) (p.89). It seems to be the case that in German and Dutch copula constructions the neuter anaphor is a pronominalised predicate. This works only if there is another NP present which something can be predicated of, eg 4.57b above. If there is another predicate in the same sentence as in 4.57c, this results in ungrammaticality. This also explains why the

agreement of the copula verb always goes with the NP and not with the *es* (Compare: *Es *ist/sind die Eltern.* "It *is/are the parents.")

In copula+AdjP constructions only subject pronouns of the type Evar are allowed (Example 4.57c), which obligatorily agree in gender with an NP in the preceding discourse.

The neuter pronouns in copula+NP constructions are either entity markers and unify to their left (ie with an entity in the preceding discourse) or, as in Example 4.57b, they are complex object markers (*Cvar*) and must unify with entities to their right. Once unification to the right has occurred, the complex object marker inherits the values of the entity marker ("a large plant") and becomes *Evar*. However, the entity marker is not of the right type to delete the variable feature, which requires the markers to be of identical type (ie two entity markers or two complex object markers). The variable feature is still present, bringing about a further unification process. This time the unification is to the left with an appropriate entity marker in the preceding utterance ("the red bush"), where the variable feature is deleted.

The pronoun *het* in copula constructions can also be discourse-deictic, as in Example 4.58 below:

(4.58) a. Jan snoepte gedurende de hele voorstelling.
Jan ate during the whole performance.

b. Het was gewoon belachelijk.
It was really ridiculous.

(Romijn 1996, p.100)

In Example 4.58, the *het* in the copula+AdjP construction evokes a complex object variable Cvar, which can unify to its left with another complex object, ie the one evoked by the whole preceding utterance, thus deleting its variable feature. This leads to the creation of a third complex object which has the following frame:

(4.59) C3 (inst:eating situation)
Element1: E1(m.sing.)(inst:human);(identity(jan);eating

Core: activity: eating

Element2: *

Taste value: *

Setting: Time: past, during the whole performance.

Qualification: be really ridiculous.

The complex object marker *het* can also unify to the right, as in Example 4.60, where the *het* is a quasi-argument:

(4.60) Het schijnt dat Jan gedurende de hele voorstelling snoepte.
it seems that jan during the whole performance ate
"It seems that Jan ate during the whole performance."

Here there is a second complex object marker (*eating situation*) in the same sentence as a complement of the verb *schijnen*. This also leads to the deletion of the variable feature.

A Comparison of English and German

In English, also, there are certain copula constructions which do not allow the subject pronoun to agree with an NP antecedent, eg

(4.61) a. Who's the culprit?

b. *He/It's John.

c. He/It's a man with dark hair and glasses.

(4.62) a. I met someone in the street yesterday.

b. *He/It/?That was John.

c. *He/It/??That was a man with dark hair and glasses.

(4.63) a. I met John in the street yesterday.

b. He/*It/*That's a doctor.

c. He/*It/That's the doctor I was telling you about.

The examples show that the subject NP-anaphor must be neuter in copula plus NP constructions when its antecedent is non-specific (Example 4.62). If the antecedent is specific, as in Example 4.63, the subject NP-anaphor must agree with it in number and gender.

What is striking about the latter example, is that although a neuter pronoun is not allowed, a demonstrative is (Example 4.63c). The sentences in 4.62 show the reverse, namely that the neuter pronoun is preferred over the demonstrative.

These contrasts indicate that *it* and *that* access different kinds of objects. In the previous sections it was noted that demonstratives are preferential for establishing discourse-deictic reference. The examples above are similar. Copula constructions following an utterance with a specific NP allow monotonic anaphoric reference by a pronoun with feature-agreement. If the NP in the context is non-specific it does not create a referent which is available for subsequent reference, hence, despite the fact that the number and gender may be known, the following pronoun may not have feature-agreement.

In this respect, English is no different from German, which also does not allow gender agreement if the antecedent is non-specific. However, as we saw in the previous section, German also does not allow number or gender agreement if the antecedent is specific:

(4.64) Ich hab gestern einen Baum gefällt. Es/*Er war ein Apfelbaum.
I have yesterday a tree(m.) chopped. It(n.)/*It(m.) was an appletree.
"I chopped a tree down yesterday. It was an appletree."

(4.65) Ich hab gestern zwei Bäume gefällt. Es/*Sie waren Apfelbäume.
I have yesterday two trees(m.) chopped. It/*They were appletrees.
"I chopped two trees down yesterday. They were appletrees."

Although the copula verb agrees with the postverbal NP, the subject NP is always required to be neuter *es*. In English, the subject NP is required to agree in number and gender with an NP antecedent. The problem of post- or pre-verbal NP agreement does not arise as both are either singular or plural. This seems to indicate that the

subject pronoun in English copula+NP constructions evokes a marker of the type Evar, whereas in German it evokes a marker of the type Cvar. What this means is that in English the neuter anaphor in copula constructions is not a pronominalised predicate as it is in German. This can also be seen by contrasts such as the following, which show that *es* can stand for an adjective construction whereas *it* cannot.

(4.66) Ich bin froh. Du bist es auch.

(4.67) I'm happy. *You're it, too.

An exception to this are English it-clefts, eg

(4.68) a. What did you chop down?

b. It was appletrees (I chopped down).

c. *They were appletrees (I chopped down).

The German copula+NP constructions are presumably elliptical it-clefts short for, eg *Es war ein Apfelbaum, den ich gefällt hab.* (gloss: it was an appletree that I chopped have). If this is the case then the neuter pronoun is an expletive, similar to the *het* in Example 4.60, above. As English allows both, it remains to be explained why German requires an abbreviated it-cleft and does not allow a copula construction with Evar-type subject in this context, although these are felicitous in others:

(4.69) a. Wer ist Hans?
Who is Hans?

b. Er ist mein bester Freund.
He is my best friend.

In this section the similarities were discussed between discourse-deictic reference and other non-concrete entities which can be referred to with the neuter demonstrative in languages with gender agreement. In the following section I will presented actual examples of the different types of abstract object anaphora in German taken from the corpora to be quantitatively analysed in Chapter 5. I will give examples of null topics,

pronouns and demonstratives. As will be seen, it is clear that the anaphors refer to abstract rather than concrete objects, as they are neuter and do not agree in gender with any antecedent NPs; in the null topics used to establish this type of reference they can be replaced felicitously only by neuter demonstratives and not by overt anaphors agreeing with any NP in the context.

4.5 Abstract Object Anaphora in the Corpus

In the following, I shall attempt to determine exactly what type of referents the discourse-deictic null anaphors have by trying to find accurate paraphrases for the referents of the discourse-deictic null anaphors, in other words I shall try to insert full syntactic constituents in the position of the null topic. One should keep in mind, however, as noted by Asher and explained above, it is not always the case that discourse-deictic anaphors can be substituted by coherent parts of syntactic structure as they often have discontinuous or incomplete constituents as antecedents, or concepts and ideas that have not been explicitly referred to previously.

Where possible, the subcategorisation of the main verb will be used to finally determine the nature of the null topic, in accordance with Asher's proposal.

4.5.1 Event and State Anaphora

In the first instance, I shall examine reference to entities at the *world immanent* end of Asher's scale – events and states. As with most types of abstract entity anaphora, it is not easy to determine exactly what the null topics in these utterances refer to. The verb *haben* (have) in 4.70 and 4.71 below expresses the notion of possession. It can take as a complement either an individual concrete entity anaphor, or one referring to a state, as in *I've got that state/configuration of landmarks on my map.* In most examples in the corpus both types would be syntactically and pragmatically felicitous. In my analysis I assume that the reference is to an individual concrete entity if the context is a discussion of the existence of this entity on the map. If, on the other hand, the discussion is not only about the concrete entity itself but about the entity *being in*

a particular location I will analyse the reference as state anaphoric.

(4.70) a. A: ja südöstlich äh des Aussichtspunktes habe ich n zaun
(yes south-east of the viewpoint I've got a fence)

b. B: mhm 0 hab ich auch.
B: mhm 0 have I too.
"I've got that, too."

(4.71) a. A: haben wir doch nicht die gleichen Telefonzellen? ich hatte meine TZ zirka 7cm unterhalb aeh oberhalb der unteren kante
(have we not got the same phone boxes after all? I had my phone box about 7cms below err above the lower edge)

b. B: oberhalb der unteren Kante ja 0 hab ich auch.
B: above the lower edge yes 0 have I too.
"I've got that, too"

This assumption is justified by the fact that in the cases I have analysed as individual concrete entity reference, when the null anaphor is replaced with a demonstrative, a demonstrative is preferred which agrees with the NP antecedent in gender. For the state reference examples, on the other hand, either a demonstrative agreeing in gender with the concrete antecedent or a neuter demonstrative can be substituted. Compare the examples below where the neuter demonstrative refers to a state and the masculine demonstrative refers to a concrete entity (*fence* or *waterfall*, respectively):

(4.72) a. A: ja südöstlich äh des Aussichtspunktes habe ich n Zaun
(yes south-east of the viewpoint I've got a fence(masc.))

b. B: mhm den/das hab ich auch.
B: mhm that(m./n.) have I too.
"I've got that, too."

(4.73) a. A: hast du n Wasserfall?
(have you got a waterfall(masc.)

b. B: ja den/??das hab ich.

B: yes that(m./??n.) have I.
"I've got it."

c. A: und hast du den (Wasserfall) neben der Burg?

(and have you got the/(it) (waterfall) next to the castle?)

d. B: ja, ??den/das hab ich.

B: yes, that(??m./n.) have I.

In Example 4.72, a version of 4.70 above, both the masculine and the neuter demonstrative are acceptable, indicating that concrete and abstract entity reference are possibilities in that context. The neuter demonstrative in Example 4.73b, which has the only gender applicable for abstract entity anaphora, is judged by native speakers to be infelicitous in these particular contexts. This is because the existence of a concrete entity is being ascertained. The demonstrative is expected to refer to the entity and must therefore agree with it in number and gender.

The continuation of the dialogue in Example 4.73d shows that what requires to be ascertained is not the existence of an entity (this has already been accomplished) but rather the configuration of entities on the map. The existence of the waterfall has been ascertained and now speaker B makes a statement that he "has" the state of the waterfall being next to the castle. This requires the neuter demonstrative.

Example 4.71 above is similar: both participants have ascertained that they each have a phone box on their map. Then A expresses doubts about the location of both phone boxes by uttering the question *"Do we not have the same phone boxes?"*. He goes on to describe the exact location of his phone box and B's final utterance is an act of agreement that there are identical states depicted on both maps.

The null topic could refer to the complex NP *eine Telefonzelle 7cm oberhalb der unteren Kante* (a phonebox 7cm above the lower edge), which would appear slightly odd given that B only has one phone box on her map and its existence has already been ascertained. More natural would be the same NP with a possessive determiner as in one of the following:

(4.74) a. B: ich hab meine Telefonzelle zirka 7cm oberhalb der unteren
I have my phonebox ca 7cm above the lower edge
Kante

b. B: meine Telefonzelle hab ich zirka 7cm oberhalb der unteren
my phonebox have I ca 7cm above the lower edge
Kante

The complex NP with the indefinite article is inside the PP and the two together form a single constituent, which can be seen from the fact that they can both occur simultaneously in the initial position (as seen in 4.76 below), which is only available for one constituent. The PP is information necessary for the identification of the indefinite. The same cannot be said about the NP with the possessive determiner where the PP description is additional information about a definite (identifiable) NP. The two do not form a single constituent and cannot both be fronted (4.75).

(4.75) ??meine TZ zirka 7cm oberhalb der unteren Kante habe ich auch
??my ph.b. ca 7cm above the lower edge have I too

(4.76) eine TZ zirka 7cm oberhalb der unteren Kante habe ich auch
a ph.b. ca 7cms above the lower edge have I too

The only way to correctly express the possessive option would be with the two constituents separated, as in:

(4.77) meine TZ habe ich auch zirka 7cm oberhalb der unteren Kante
my ph.b. have I too ca 7cms above the lower edge

The possessive option therefore requires both deictic shift and reference to a discourse entity introduced by a constituent which does not exist in that form in the previous context. As has been pointed out before, though, whilst making the resolution slightly more complex, these options are still both available to speakers.

Regardless of the option one wishes to choose, it seems clear that this type of reference is different from reference to a previously unmentioned single entity, especially one whose location is not being discussed, as in (38 a) above. Speakers frequently first ascertain the existence of an object on the map and come back to it at a later point to discuss its location in relation to other objects.

Finally, two further examples should be given which involve different verbs. In these, reference appears to be made to an entity which is continuously salient in the discourse, despite rarely being mentioned explicitly – the path or the line being described and drawn:

(4.78) a. ja aber ich kann ja einfach zwischen der TZ und dem Hotel durch, ja gehen wir mal einfach...
(yes but I can just go between the phonebox and the hotel, yes let's just go...)

b. ...so 0 passt genau
...right 0 fits exactly
"Right, it fits perfectly."

(4.79) a. A: hattest du dann auch noch n Aussichtspunkt ausserhalb und noch ne Wiese ausserhalb?
(did you also have a viewpoint outside and a meadow outside?)

b. B: aeh ja
(yes)

c. A: 0 müsst ich nämlich eigentlich auch noch äh ergänzen
A: 0 should I therefore really also also er complete
"Because I should really also complete/add that."

References to the path being described are interesting as null topics are frequently used but demonstratives in that position would have to be neuter, and not masculine or feminine as any noun which could possibly be used to explicitly refer to this, such as *Pfad (m.)* (path), *Weg (m.)* (way), *Route (f.)* (route), *Beschreibung (f.)* (description)

or *Linie (f.)* (line). In the context given above, the altered utterance with a non-neuter demonstrative becomes unacceptable:

(4.80) so *der/*die/das passt genau
right that(*m.)/(*f.)/(n.) fits exactly
"Right, it fits perfectly."

For concrete individual entity reference this verb normally requires the demonstrative subject to agree in gender with the antecedent NP, as in:

(4.81) a. A: Probier mal die blaue Hose an.
(try on the blue trousers(f.))

b. B: die/??das passt genau
B: that(f.)/(??n.) fits exactly
"They fit perfectly."

4.5.2 Event Type and Concept Anaphora

What individual entity reference and state reference have in common, is that both are concrete. This is not the case for reference to event types and concepts discussed in this section, which is more abstract and involves unsaturated entities, that is entities referred to by a verbal constituent where not all arguments are present, eg:

(4.82) a. A: da de- gehst du quasi durch den Zaun
(you kind of go through the fence)

b. B: ja 0 mach ich.
B: yes 0 do I.
"Yes, I'll do that."

(4.83) a. A: ähm du gehst du machst n Halbkreis
(you do a semicircle)

b. B: ja 0 habe ich schon.
B: yes 0 have I already.
"Yes, I've already done that."

(4.84) a. A: jetzt musst du doppelt so lang hochgehen
(now you have to go up twice as long)

b. B: doppelt so lang das wär ja'n ganzer...
(twice as long that would.be part.a whole...)

c. ...na ja $\underline{0}$ kann ich doch.
...oh well $\underline{0}$ can I part.
"oh well I suppose I can (after all)."

In Example 4.82, $\underline{0}$ presumably refers to the action type expressed by the whole VP *durch den zaun durchgehen* (go through the fence). However, substitution of the full constituent is not possible as the utterance already contains a main verb, the action verb *machen* (do), whose θ-grid is $< AGENT, THEME >$. As well as individual discourse referents, *machen* can take concept discourse referents as arguments, represented in DRT by predicative DRS's where the process of C-abstraction gives the appropriate event type (see Section 4.2.2).

Example 4.83 is similar. What is being referred to is the action expressed by the action verb *machen* and its individual discourse referent argument *einen halbkreis* (a semicircle).

The third is similar to VP-ellipsis. What is phonetically unexpressed is the reference to the VP *doppelt so lang hochgehen* (go up twice as long). Again, the entity referred to is abstract and unsaturated.

If an explicit syntactic constituent is substituted for the null topic, different results are achieved.

(4.85) *durch den Zaun durchgehen mach ich
through the fence through.go do I

(4.86) einen Halbkreis gemacht habe ich schon
a semicircle done have I already

(4.87) doppelt so lang hochgehen kann ich doch
twice as far up.go can I part.

Whilst it is clear that all three altered versions are pragmatically unacceptable purely due to the fact that they are overly explicit in the given context, only the first is completely out for syntactic reasons, ie it contains two full verbs *machen* and *durchgehen.* The second and third examples are cumbersome but acceptable from a grammatical point of view. However, only the third contains an unaltered syntactic string from the context *doppelt so lang hochgehen.*

In the syntactic antecedent string of Example 4.82, the verb is inflected for second person singular and discontinuous: *gehst...quasi durch den Zaun* (go.2ps through the fence). In the replacement for the anaphor it would be infinitival *durch den Zaun durchgehen.* Similarly, in Example 4.83 the verb is inflected for second person singular: *machst einen halbkreis* (do.2ps a semicircle) and replacement of the null topic would require it to be changed to the past participle and the word order changed from VO to OV. In Example 4.84 no change is necessary as the antecedent string happens also to be the complement of a modal and is not subject to change by agreement features.

Whether the syntactic string is identical to its coreferent or not, the entities referred to here are unsaturated as they have no specific event argument and no subject argument, ie the subject (I, you) is referred to in the *context* of both references but does not feature in the references themselves. According to Asher's definition (cf Section 4.2.2), this type of anaphoric reference is therefore reference to unsaturated abstract entities: *event types* or *concepts* which may either have only the event argument place unsaturated or other argument places as well.

4.5.3 Fact Anaphora

Facts are between propositions and eventualities on the scale of world immanence, as they can be causal (like eventualities) but are nonetheless purely abstract (like propositions) (Section 4.2.2).

As with the other types of abstract entity anaphora, the status of fact anaphors is determined by their context and the subcategorisation frame of the verb of which they are an argument.

In the following example, taken from the corpus of interviews used in Chapter 6,

the truth of a proposition has been asserted meaning that the reference is also to a fact:

(4.88) a. A: Wie sieht so ein typischer Tag aus von Ihnen?
A: What does your typical day look like?

b. B: Es gibt keinen typischen Tag. Und **das** ist meines Erachtens die erste Unterschiedlichkeit zu vielen anderen Berufseinheiten.
B: There is no typical day. And **that** is in my opinion the first difference to many other professions.

The second part of B's utterance shows that the truth of the proposition is not being asserted, but that it is taken for granted. The referent of the demonstrative is therefore not the proposition but the fact. The utterance containing it can be rephrased as *the fact that there is no typical day is the first difference....* In addition, the antecedent has polarity focus (see Chapter 2, Section 2.1.3) and it has therefore been ascertained that the proposition is true before anaphoric reference was established, as can be seen from the accenting of the verb: "Es GIBT keinen typischen Tag." (*There IS no typical day*).

There are other instances of fact anaphors in the corpus which have an idiomatic character. One example will be analysed here:

(4.89) a. A: ich bin im Osten der Pyramide
A: I'm to the east of the pyramid.

b. B: ja schuldigung
B: yes sorry.

c. A: 0 macht nichts.
A: 0 makes nothing
A: "It doesn't matter/that's okay."

In this example, A's first utterance is a correction of a statement made by B, in which he assumed that A was to the west of the pyramid. B then accepts the correction by apologising and A's second utterance is an expression of forgiveness, such as *it's ok,*

don't worry. In A's second utterance, the null topic could be substituted by a *that*-clause, eg

(4.90) dass du das Falsche gesagt hast macht nichts
that you the wrong.thing said have makes nothing
"It doesn't matter that you said the wrong thing."
"The fact that you said the wrong thing doesn't matter."

There is no explicit antecedent here. B's utterance is elliptical but implicitely states *I'm sorry I said the wrong thing/I made a mistake.*

4.5.4 Propositional Anaphora

Propositions are at the *abstract* end of Asher's spectrum as they are not located in space and time, nor can they be causal.

(4.91) a. A: mhm ich kann dir jetzt gar nicht so ganz folgen
(mhm I don't quite follow)

b. B: ach vergiss es ich mach einfach einen Bogen...
(oh forget it I'll just do an arch)

c. ... 0 ist ja egal.
... 0 is part. of.no.importance
"It doesn't matter/it's all the same."

This example is similar to the one for fact anaphora given above (Example 4.89) in that it involves a mistake being made and then forgiveness being expressed by the clause containing the null topic. However, it is slightly different as the antecedent here is presumably explicit. Various possibilities come to mind, eg

(4.92) ob ich einen Bogen oder einen Kreis mache ist ja egal
whether I an arch or a circle make is part. of.no.imp.
"It's all the same whether I do an arch or a circle."

(4.93) ob du es verstehst oder nicht ist ja egal
whether you it understand or not is part. of.no.imp.
"Whether you understand it or not doesn't matter "

The predicate *ist egal* preferentially takes a whether-or-clause as its complement, similar to the English version *it's all the same* where the antecedent of *it* is usually a set of alternatives and not a simple that-clause or an NP. Presumably this type of anaphora is *projected* proposition anaphora - a term Asher employs to describe propositions expressed as questions, commands or desires, usually the complements of predicates such as *ask, allow, be necessary.*

4.5.5 Other Abstract Objects

This section will present an example of the types of abstract objects discussed in Section 4.4 in Romijn's framework. Anaphoric reference to these objects does not involve discourse deixis in the sense that it involves non NP antecedents but rather it involves non-gender agreeing anaphors and/or NP antecedents referring to abstract objects.

In the example below, the complex object referred to by the feminine NP *eine Transaktion* is subsequently referred to by the neuter demonstrative:[3]

(4.94) a. Das Risiko einer reinen Transaktionsorientierung ist, dass sie sich fuer eine Transaktion$_i$(f.) sich bewerben und dann sagen: We are the best, we can do that. Und dann machen Sie **das**$_i$(n.).

b. The risk of a pure transaction orientation is that you apply for a transaction$_i$(f.) and then say: we are the best, we can do that. And then you do **that**$_i$(n.).

Substituting the full NP for the demonstrative is grammatical and also pragmatically acceptable: *Sie machen die Transaktion* ("You do the transaction.") This proves that this is indeed the antecedent to the anaphor. Substituting a gender agreeing demonstrative is not ungrammatical but less acceptable: *Dann machen Sie die.* (*Then you do that(f.).* This is identical to the type of reference examined in Dutch by Romijn, discussed in Section 4.4.2.

[3]The English phrases "We are the best, we can do that." were spoken in English in the original.

4.6 Summary

This chapter has described the different types of abstract objects that can be referred to by neuter anaphors in German (and Dutch) despite there being no gender-agreeing NP antecedent.

Romijn's framework was introduced to distinguish formally between reference to linguistic entities and reference to entities in the cognitive representation. The use of the neuter pronoun for a variety of different kinds of abstract objects was described:

- Reference to an NP-antecedent describing an abstract object (eg situation, meeting)
- Reference to entities present in the verbal argument frame but with no explicit linguistic representation
- Obligatory neuter anaphor in copula+NP constructions
- Quasi-argumental reference in weather verbs, raising and clefting constructions
- Discourse-deictic reference to the previous utterance or VP

It seems that what these types of reference have in common is that the neuter anaphor is a **pronominalised predicate**. The lack of agreement between the anaphor and the verb in copula constructions shown in 4.4.5 was taken to be grammatical proof of this. Also in the references with abstract object-denoting NP-antecedents, it is frequently the implied *activity* which is referred to by the anaphor. Discourse-deictic reference frequently involves reference to an *event* or a *state*, ie to a particular activity or state usually referred to by a predicate (the VP).

The fact that in English and German demonstratives are preferred for establishing this kind of reference over the NP form associated with the most salient discourse entities, ie unstressed pronouns, seems to suggest that in some cases at least, there is *referent coercion* involved, that is the abstract referent only comes into existence when it is anaphorically referred to and is not salient previous to this reference.

The examples of abstract object reference in the German corpus, showed that, in German, discourse-deictic reference can also be established by null topics. This fact and the preference for demonstratives over pronouns leads to an apparent conflict in the GHZ cognitive status hierarchy which predicts that pronouns and null anaphors are grouped together.

It is also not clear how null topics, which are associated with the most salient entity in the discourse model, can achieve referent coercion. As a tentative solution it was suggested when an anaphor is used for discourse-deictic reference the exact type is determined by the information encoded in the predicate of the anaphor or the verbal subcategorisation requirements. If this is the case, then resolution is facilitated by the context of the utterance containing the anaphor and the hearer is less reliant on its precise form. This idea will be further developed in the following chapter.

The following chapter presents a frequency analysis of abstract object reference in corpora of spoken German to determine the relative frequency of null anaphors, pronouns and demonstratives in naturally occurring discourse. Romijn's framework will be used to represent the utterances and the antecedent referents in order to determine if the nature of the cognitive and linguistic representation affects the NP form of the anaphor.

Chapter 5

Discourse Deixis and NP-Form

5.1 Introduction

The previous chapters discussed the methods available for information packaging: choice of NP form, word order and accenting. Although all languages employ these methods for this purpose, they vary as to how they do it. We have seen that in some languages, for example, word order is primarily determined by pragmatic functions, in others discourse context and speaker intentions play a subsidiary role and influence the grammatically determined word order only in exceptional cases. The German data in Chapter 3 indicate that word order in this language is strongly influenced by both pragmatic and syntactic constraints. This means that information packaging can either be expressed by word order change or by shifting the accent. In an utterance with narrow focus, for example, the focussed constituent can be moved to initial position or, alternatively, the canonical word order can be kept and the accent moved to the canonical position of that constituent. Because both options are available, there is often more than one way of encoding a sentence in a given context. For this reason, a frequency analysis of word order and anaphors in natural dialogues, as presented in this chapter is preferrable to an analysis based purely on intuitions about constructed sentences taken out of context.

As was suggested in Chapter 2 the issue of discourse-configurationality should rely not only on the existence or non-existence of structurally defined discourse functions

but also on frequency of topicalisation constructions. In this chapter the frequency is examined of the different grammatical functions expressed in initial position, in order to assess the relative frequency of the canonical SVO word order. A language in which the canonical word order (ie the word order determined by grammatical functions alone) occurs infrequently must be assumed to have a word order mainly determined by pragmatic factors.

This chapter also attempts to address the issue of whether German has syntactic position which is tendentially associated with topics or with focus by examining the distribution of NP forms in pre- and post-verbal position in main clauses. The theories of GHZ and Givón presented in Chapter 2 claim that certain NP forms are associated more with topicality than others. Chapter 3 showed that in German almost any kind of constituent (topic, contrastive topic, focus) can *potentially* occur in initial position in main clauses. The frequency analysis of different NP-forms in initial position in the corpus attempts to examine whether it is more frequently used as a topic position (filled with null anaphors, pronouns, demonstratives) or as a focus position (filled with indefinite full NPs).

The second part of the chapter examines null anaphors in more detail. These are interesting for the issue of configurationality because they are subject to stronger syntactic and pragmatic constraints than other anaphors. This is due to the fact that they are restricted to initial position in main clauses and also require semantic and contextual consistency with their antecedents as they contain no explicit information concerning their referents.

One of the results of this analysis is that the null anaphors in the corpus are mainly discourse-deictic, ie refer to the type of abstract objects described in Chapter 4. In order to facilitate a comparison of null and non-null anaphors with similar referents this part of the chapter also provides an analysis of pronouns and demonstratives with abstract object referents to determine how a choice is made between the three NP forms. The results show that mainly null anaphors and demonstratives are used, but not pronouns. This is problematic for the predictions made in the GHZ hierarchy, according to which null anaphors and pronouns are grouped together and should behave similarly with

respect to the type of reference they are used for.

A comparison with English, a strictly configurational language, is also presented. The frequency analysis of a similar corpus highlights some of the differences between English and German, for example that in English demonstratives are most frequently used for discourse-deictic reference, followed by pronouns, followed by VP-ellipses (ie phonologically null constituents). If we compare the English VP-ellipses with discourse-deictic null anaphors in German (both are phonologically null), the English anaphors are in line with the GHZ hierarchy, whereas German NP-forms are not.

In the final section, solutions are proposed for the problems resulting from the corpus analyses. It is suggested that we can explain the frequent use of null anaphors instead of demonstratives in the German corpus if we assume that discourse-deictic reference does not necessarily involve topic shift but can also involve a continuing topic. In the previous chapter attention was drawn to verbal subcategorisation information for the determination of abstract entity type. In this chapter a rule is formalised which takes into account this information and uses it for the purposes of anaphor resolution. In particular, verbal subcategorisation information is used to indicate whether an NP- or a that-clause complement is required. This information can be used to facilitate a correct resolution of both NP- and discourse-deictic anaphors, regardless of the relative saliency of the referents. This is particularly important for the resolution of null anaphors as these supply the hearer with no explicit information about their referents.

Finally, the lack of discourse-deictic pronouns is explained by taking into account the syntactic restrictions which disallow object pronouns in topic position. This is a case where two means of information packaging, ie NP form and word order are in conflict and word order wins out. As suggested in Chapter 2, this could also be counted as a discourse-configurational feature of the language.

5.2 The Map Task Corpus

The corpus chosen for the analysis is the German Maptask Corpus,[1] a task-oriented corpus consisting of 12 recorded and transcribed German dialogues which are each between five and ten minutes long. It is based on the HCRC Map Task (Anderson *et al.* 1991), which was designed for the recording of natural-sounding dialogues. The participants are each given a schematic map with a constellation of landmarks, which is not visible to the other participant. The instruction *giver* has a route marked on his or her map and the task is to describe this route to the *follower*. The two maps are similar but not identical: all landmarks consist of a schematic drawing and a label (eg *vast meadow, crane bay* etc), some landmarks are shared whereas others are only present on one map, some occur on both maps but are in different positions or have different labels. The difficulty therefore lies not only in describing the route but also in ascertaining which landmarks occur on both maps and whether they are in the same locations or not. This is explained to the participants before they carry out the task. Examples of the maps along with sample dialogues are given in the appendix.

The advantages of the Map Task are that it allows a large corpus of spontaneous, unscripted dialogues to be recorded, whilst simultaneously allowing certain factors to be systematically altered and modified for purposes of comparison. In addition, because the maps are available to the observers of the experiments and the task is clearly defined, the dialogues can be objectively evaluated concerning the success of communication strategies. The end result, for example, can be evaluated by comparing the route drawn by the follower with the route on the giver's map.

In naturally occurring conversations one of the problems for the discourse analyst is to objectively decide which of the entities referred to by NPs are familiar to the participants and which are not. This is especially difficult if the participants are acquaintances. In the Map Task, the entities referred to, ie the landmarks, constitute a closed set, which is known to the observer, who is thus able to differentiate between

[1] Devised by Regina Weinert, funded by the University of Hull Research Support Fund. Data collected and transcribed by Gillian Razzaki.

entities new and old to the discourse and familiar and unfamiliar to giver and follower.

Carletta *et al.* (1997) develop a coding scheme for the Map Task dialogues which assumes three different levels within the dialogue – *utterance function*, *game structure* and *higher-level transaction structure*. Using the different levels allows the dialogues to be coded in a more reliable way. The idea behind the levels is that the purpose of an utterance can be described both at utterance-level itself but also within larger segments of the dialogues that deal, for example, with subtasks such as the description of a route segment.

At *utterance level*, each utterance in the Map Task is classified according to whether it is an *initiation*, ie sets up a discourse expectation about what will follow, or a *response*, ie fulfils an expectation set up by a previous initiation. Initiations can be commands or instructions for the follower, statements explaining a particular configuration of landmarks, or questions, which naturally are posed with the expectation of a response. Responses can be simple yes/no-replies, clarifications of information given in the initiation, or acknowledgements, which indicate that a move has been understood, accepted or just heard.

The next higher level is that of *conversational games*, which is defined as "a set of utterances starting with an initiation and encompassing all utterances up until the purpose of the game has been either fulfilled or abandoned" (Carletta et al. 1997: p.14). In the simplest form, this could be a pair of utterances consisting of a question and a response to it ("Do you have a stone circle?" "Yes, I do."). In addition to the initiations and responses, *ready* moves are diagnosed as those which occur after a dialogue game is completed and signal that a new game is to be started, such as *okay* and *now* in the following:"*Okay.* Now go straight down.", "*Now*, I have a banana tree instead.". Carletta et al suggest treating them either as a distinct move class or as discourse markers which are part of the subsequent moves.

Finally, the level of *transactions* is concerned with subdialogues which accomplish larger steps of the task. Map Task participants do not usually attempt to describe the whole route in one go but generally break it down into smaller, manageable segments. A transaction in the Map Task could be the sequence of utterances which result in the

follower completing a route segment.

The existence of different levels in the dialogues is important for the analysis of German, in particular the level of transactions and subdialogues resulting in the completion of parts of the route. As will be seen in the examples taken from the corpus, the words used to signal this often take up the initial position in the main clause, thereby excluding any topiclike entity from occurring in this position.

The analysis of this corpus is the main part of the study. Only main clause utterances were taken into account, the reason for this being that we are mainly interested in the analysis of null anaphors and the rules and reasons for their occurrence. In order to determine their function, it was necessary to compare them with utterances where a null anaphor could *theoretically* have occurred but did not. As null anaphors cannot occur in subordinate clauses, questions or imperatives, these were not taken into account.

5.3 The Initial Position in Main Clauses

This section discusses the role of the main clause initial position, which is frequently referred to in the literature as the "topic" position. However, as was shown in Chapter 3, there are various problems associated with this labelling. Firstly, the term "topic" is not clearly defined and is thus vaguer than desirable in a formal syntactic analysis. Secondly, the data showed that focussed constituents also occur in that position. This section sets out to find a clearer description of the initial position by looking at what constituents speakers *most frequently* place there. This is done in two ways: the first subsection looks at the frequency of the canonical word order by determining the relative frequency of subject-initial utterances compared to non-subject initial utterances. For this study, the order of post-verbal constituents is not taken into account.

The second subsection is concerned with the frequency of different NP-forms, ie null anaphors, demonstratives, pronouns and full NPs, regardless of their grammatical function. As was discussed in Chapter 2, there is a correlation to be observed between

NP-forms and cognitive status of constituents in the discourse model. Syntactic positions mainly containing pronominal forms and null anaphors are presumably associated with topic entities, whereas those containing mainly indefinite NPs are presumably associated with focussed constituents.

In the third subsection I will present a frequency analysis of null anaphors in the corpus with respect to their grammatical function, ie whether they are subjects or non-subjects. This is intended to test the hypotheses made by Engel (1988) and Klein (1985) (Chapter 3, Section 3.2.1) which state that as the canonical position of subjects in German is identical to the position that null anaphors are restricted to, and as null subjects can occur in a wider variety of contexts they are thus expected to occur more frequently than null objects.

5.3.1 Grammatical Functions

Before presenting the frequency analysis I shall give examples of the different grammatical functions and non-NP constituents that occur in initial position in the corpus:

NP-initial

(5.1) **Nominative:**

a. **Ich** hab keine Steine.
I have no stones

b. **Der Zaun** ist bei mir über der Wiese.
the fence is by me over the meadow
"The fence is above the meadow on mine."

(5.2) **Accusative:**

a. **Hotel** hab ich nicht

hotel(acc.) have I not
"I haven't got hotel."

b. **Den** hab ich auch.

that(acc.) have I too
"I've got that one, too."

(5.3) **Dative:**

a. **Dem Fluss** folgen wir jetzt.

the river(dat.) follow we now
"Now we follow that river."

b. **Dem** folgen wir jetzt.

that(dat.) follow we now
"Now we follow that."

The word orders exhibited in 5.1 are canonical, with the subject NP in initial, preverbal position. Examples 5.2 and 5.3 involve the straightforward fronting of an object NP.

As was seen in Chapter 3, non-NP constituents can also occur in the topic position, such as prepositional phrases, the particle *da* ("there"), the adverbials *dann* ("then"), *jetzt* ("now") and subordinate clauses:

PP-initial

(5.4) **Prepositional Phrase:**

Unter der Telefonzelle steht bei mir Telefonzelle.

under the phonebox stands by me phonebox(nom.)
"Under the phone box is written 'phone box'."

In Example 5.4, the location of the phone box has been discussed in the preceding context. The focus of this utterance is the label "phone box" under the picture of the phone box. The NP referring to the label is placed in the final position of the utterance

and receives the nuclear accent. The option of placing the nominative constituent in initial position is ruled out as this would lead to a strongly contrastive interpretation: # *"TeleFONzelle steht bei mir unter der Telefonzelle."*. The canonical version gives rise to the interpretation that the exact wording of the writing under the picture is being discussed, as would be the case if the preceding context had been the question "What is written under the phone box?". This is not the case, instead, the speaker of the utterance in 5.4 is offering unsolicited information about the writing. As was discussed in Chapter 3, focus fronting is possible in German if the remaining context in the utterance is "plausible" or "expected". Neither is the case in this example as the verb *stehen* ("is written") is new and not necessarily expected.

***da*-initial**

(5.5) **"Da":**

Da hab ich noch n Brunnen davor.

there have I also a well there.before
"I've also got a well in front of that."

As shown in Example 5.5, *da* can be a substitute for a full prepositional phrase occurring in the preceding context. However, although it is not grammatically necessary, there can be a seemingly vacuous repetition of this element in post-verbal position: in the example above there is a second *da* as part of the *da*+preposition construction *davor*. *da* can occur in combination with any preposition (eg *darüber* ("there.over"), *darunter* ("there.under") *daneben* ("there.next")). These compounds can occur in both initial and post-verbal position in main clauses, eg

(5.6) a. Davor hab ich einen Baum.
there.front have I a tree

b. Ich hab einen Baum davor.
I have a tree there.front
"I've got a tree in front of it/there."

Except in northern German dialects, the *da* cannot be separated from its preposition:

(5.7) % Da hab ich einen Baum vor.
% there have I a tree front

The neutral lexical accent of this construction varies depending on its position in the sentence: *DAvor* in initial position and *daVOR* in postverbal position. This means that when placed in initial position where accented constituents can only receive a contrastive topic reading, the semantic content of *da* is interpreted as being contrastive and the content of the preposition is interpreted as given. If the semantic content of the item as a whole is to be treated as non-contrastive it must be placed in postverbal position as in Example 5.6 b. The speaker of the utterance in 5.5 has a pragmatic conflict: the PP-antecedent of *da* was mentioned in the adjacent utterance, therefore making it a topic in the utterance given here – this requires it to be in initial position. If it were to be placed there as part of the *da*+preposition construction it would be accented and receive an unintended contrastive reading. The preposition, on the other hand, has not been previously mentioned and this requires it to be in post-verbal position. As the two cannot be separated, the speaker places *da* in initial, topic position, where being on its own it can remain unaccented, but repeats it again as part of the *da*+preposition construction in sentence-final position.

This repetition is not perceived as disfluent or ungrammatical by native speakers and occurs frequently in the corpus. However, the repetition of the *da* in postverbal position is colloquial and in terms of the rules of standard grammar it is ungrammatical. Like the examples of "illicit" topicalisation given in Chapter 3, this is also a case where pragmatic considerations override the rules of standard grammar.

Adverb-initial

(5.8) **"Dann/Jetzt":**

a. **Jetzt** machste einen Bogen über die Ruine drüber.
now make.you an arch over the ruin over
"Now you make an arch over the ruin."

b. **Dann** darf ich vielleicht kurz meine Ostsee beschreiben.
then may I perhaps quickly my east.sea describe
"Then I can perhaps quickly describe my east sea."

Almost a quarter (23%) of the main clauses have the temporal adverbs *dann* ("then") and *jetzt* ("now") in initial position. A closer examination of the structure of the discourse and the discourse purposes of these utterances indicates that the main effect of the adverbs is not only to add their semantic content to the utterance but to indicate how the utterance they occur in fits in with the surrounding context, that is they have a text organising function.

In order to interpret their function correctly it is necessary to take into account the different levels of text organisation such as those suggested by Carletta *et al.* (1997) (cf Section 5.1) or Engel (1988) (p.89), who refers to words with this function as *Gliederungssignale* ("sectioning signals"). According to Engel, they have the function of clarifying the organisation of the text building process. In his classification of sectioning signals, aside from *opening* and *closing* signals, which occur at the very beginning or very end of a text, there are also *position markers* which are text internal and indicate beginnings and ends of argument and conversation sequences.

Amongst the position markers, Engel differentiates between the following: pre-textual markers (*Vorschaltungen*) such as *A further problem is...*; post-textual markers (*Nachschaltungen*) such as *That's it.*; reaction signals (*Reaktionssignale*) indicating the hearer's continued attention (such as *Yes?* and *Pardon?*).

The initial elements *dann* and *jetzt* fullfil the function of pre-textual markers in Engel's terminology. In Carletta et al's terminology, the utterances with initial adverbials are at the beginning of new *transactions* or new *game moves*. The preceding discourse

of the examples above shows that there has been an initiation move and a number of utterances leading up to a response move for that initiation. This has resulted in either the location of a landmark being ascertained, or a smaller part of the route being described by the giver and completed by the follower. The transaction previous to the utterances given above has therefore been completed. As described in Carletta *et al.* (1997), the participants are aware of the dialogue substructures and speakers often clearly signal that a new game is to be initiated. Engel gives examples showing that this can be accomplished by whole phrases, such as *I now turn to...* or *A further problem is...* The analysis of the Map Task shows, however, that it is most frequently accomplished by single words at the beginning of utterances, such as *ok*, or *right* in English and in German by *ok* and the adverbials *dann* and *jetzt*.

Only *dann* and *jetzt* were taken into account in this analysis as in German only these actually occupy the initial, pre-verbal main clause position (see Examples in 5.8). Others such as *ok*, *also* ($\neq$ English also) are CP-external and leave the topic position to be otherwise filled, eg

(5.9) Also, du musst jetzt geradeaus.
prt., you must now straight.ahead

(5.10) Ok, du gehst dann rechts
OK, you go then right

Often it is the case that the utterances concerned contain topiclike definite or pronominal NPs with antecedents in the immediately adjacent utterance, eg *die Ruine*, in Example 5.8 above. In these cases, the new transaction markers compete with the topiclike entities for initial position.

Vallduví & Engdahl (1996), citing the following example, discuss a similar case in Swedish (where the topic of the utterances is enclosed in square brackets):

(5.11) a. [$_t$ Sen] gick vi till stora grissuggan.
[$_t$ then] went we to big sow.the

b. [$_t$ Hon] hade just fatt smagrisar, nio stycken.
[$_t$ she] had just had piglets, nine of.them

c. [$_t$ Dom] tyckte Kerstin om att titta pa.
[$_t$ them] liked Kerstin to watch

(from: Barnens dag i Bullerbyn, by Astrid Lindgren)

Here, the temporal adverb *sen* is compared with the continuing topics *hon* and *dom* as both types of constituents are frequently fronted. Vallduví & Engdahl claim that such fronting "seems to play a role in establishing a temporal sequencing between events in a narrative.".

The fact that the adverbials *dann* and *jetzt* are placed in the initial position instead of the discourse-old entities indicates that German sentence structure is not only concerned with information packaging in terms of focus and topic constituents but also is very frequently (23% of the time) used to signal the discourse function of the utterance, ie how it contributes to the structure of the larger dialogue and *the text organisation.*

Subordinate clause initial

(5.12) **Subordinate Clause:**
Wenn du auf den Wald runterläufst biegst du nach osten ab.
if you on the forest down.run turn you to east off
"If you go down to the forest you turn off east."

Example 5.12 shows that speakers also change the canonical word order by placing whole subordinate clauses in initial position. The pragmatic reasons for this can be found by examining the content of the main and subordinate clauses. For the example given here, the context shows that speaker and hearer have previously agreed on the location of the forest on their maps. The content of the verb "run down to" is new to the discourse and could therefore be expected to occur after the verb in the main clause.

However, relative to the information contained in the main clause it is "uninteresting" or carries less "semantic weight" (see Chapter 2, Section 2.3). The important new information is contained in the main clause "turn off to the east". This, unlike the subordinate clause, contains no old information and is the actual focus of the utterance as a whole.

In this example the speaker does not have the option of placing only the old constituent ("the forest") in initial position as it is part of a subordinate clause. The comparison of the two clauses shows that, whilst both contain new information, the subordinate clause is, relatively speaking, less important or new than the main clause and thus fronted. These constructions show that speakers, when constrained by syntactic rules, choose a word order which is non-optimal from an information packaging point of view (eg combined fronting of old and new material) but is preferential compared to the other options (eg leaving the topic in post-verbal position).

5.3.2 Frequency of Initial Grammatical Functions

This section now turns to the frequencies of the above-mentioned constituents in initial position in the corpus. The canonical word order SVO in German is defined entirely by grammatical functions. If any constituent other than the subject is in initial position this must be due to pragmatic rules.

Table 5.1 shows the frequencies of different types of constituents that occur in initial position in four of the dialogues chosen at random containing a total of 290 main clauses. The NP constituents are categorised according to whetehr they are NP or non-NP constituents and if they are NP constituents according to their grammatical function. The different morphological NP forms are not distinguished and null anaphors have been counted as NPs, which depending on their linguistic context are classed as either nominative, accusative or dative.

The table indicates that the canonical subject-initial order is the largest of the groups at 41%. This could be due to one of two reasons: either it is the case that grammatical functions are important for determining word order or that there is a natural correlation between subjecthood and topicality. The latter has been suggested,

	Subj.	DO.	IO.	PP	Da	Dann/Jetzt	Sub. Clause
Number	120	41	1	20	31	67	10
Percent	41%	14%	1%	6%	11%	23%	3%
Total	41%	59%					

Table 5.1. Initial Position and Grammatical Function

for example, by Givón (1983).

An important finding is that the subject-initial word order, though it occurs frequently, occurs in less than 50% of main clauses. This means that although it may be the case that in many utterances the word order is determined by grammatical function, in *most* cases it is determined by pragmatic factors. There is one problem with the hypothesis that subject-initial implies a grammatically determined word order: a common analysis of German word order states that all utterances involve movement of the verb out of the IP to C and also movement of an argument into the specifier position of CP (see, for example, (Abraham 1995) and Chapter 3, Section 3.4.1). The argument that moves to SpecCP could be object or subject and there is no easy justification for assuming that subject-initial main clauses should receive a different interpretation. However, this thesis does not set out to give a syntactic analysis of German word order – what we are concerned with here is the relative importance of syntactic vs pragmatic factors. Furthermore, this analysis suggests that even the canonical word order may be determined by pragmatic factors, in which case the percentage of pragmatically determined word order variations increases. In many if not most of the subject-initial utterances the subject is also the topic and so in these cases the word order is also pragmatically determined.

It was suggested in Chapter 2 that the issue of discourse-configurationality should not be resolved alone by the identification of a structurally defined topic or focus position but also by the *frequency* of the non-canonical word order. What we can determine at this point is that *at least* over half if not all of the utterances in the dialogues examined have a pragmatically determined word order. This indicates that word order is an important means of information packaging in German.

Furthermore, the large percentage of "semantically empty" adverbials in initial

position, indicating new transactions, shows that not only information packaging but also dialogue structure is expressed by word order.

5.3.3 NP-Form

As shown in Chapter 2, information packaging can be achieved not only by word order variation but also by morphological encoding of NPs, indicating which referents are new and which are old to the discourse. The hierarchies correlating NP-form and the cognitive status of their referents show that pronouns, null anaphors and demonstratives are used for reference to "topiclike" entities and full, indefinite NPs for reference to focussed entities. An additional way of analysing the effect of information packaging on word order in German is thus to observe the frequencies with which the different NP-forms occur in certain positions. A position which is favoured by pronouns and demonstratives is tendentially a topic position, whereas a position favoured by indefinite NPs is a tendentially focus position.

Table 5.2 shows the types of NP-forms and their frequencies occurring in initial and in postverbal position. The table takes into account all the NPs occurring in the four dialogues. The statistics are difficult to evaluate for various reasons and should be treated with caution. For example, the pre-verbal position is the only one which is *required* to be filled meaning that for intransitive verbs the placement of the subject expression in initial position is not a true choice but obligatory. What we are interested in, however, is what speakers do *given the choice between various grammatical word orders.* Also, certain NP-forms, such as proper names (eg the use of words as names for the locations: *hotel* in place of *the/a hotel* in Example 5.2), occurred so infrequently that a statistical evaluation of their placement within the utterance becomes insignificant. Finally, the number of constituents occurring in post-verbal position is not restricted, meaning that the total number of these constituents is higher than that of initial consituents. This makes a comparison between the two more difficult. The table should be treated with caution but there are some points that it makes very clear:

The first point is that indefinite NPs, whilst occurring fairly frequently in the four

	Indef.	Def.	Prop.N.	Dem	Pron.	Null	Total
Pre-V.	1	19	5	25	35	15	100
Post-V.	27 (20%)	48(35%)	3(2%)	1	59 (43%)	n.a.	138

Table 5.2. Initial Position and NP-form

dialogues analysed, are almost exclusively placed in post-verbal position (27 out of 28 instances). Secondly, demonstratives, of which there are 26 instances, with one exception always occur in pre-verbal position (25 out of 26 instances). The significance of these data is so high that it is legitimate to draw some theoretical conclusions.

It seems that despite the different options existing, speakers *preferentially* place topiclike, anaphoric entities in initial position, ie demonstratives and null anaphors which are, unlike full NPs, associated with saliency in the discourse model. There is therefore some justification in the label *topic position.* Null anaphors are obligatorily placed in initial position, meaning that their distribution does not give insight into the conscious decision-making process of the speakers. However, the fact that they occur so frequently means that they must be taken into account in any analysis concerned with the nature of the initial position. They are discussed in greater detail in the following sections.

Full, indefinite NPs, which are associated with new entities, or entities which are focussed, are preferentially placed in post-verbal position, which, as discussed in Chapter 3, is the neutral position of the nuclear accent.

Definite NPs and pronouns in pre- and post-verbal position appear to be equally preferred thus not allowing any concrete conclusions to be drawn. It appears that they do not particularly favour any position. As discussed in Chapter 2, definite NPs are midway on the GHZ scale. They are usually used for old entities but sometimes also can be used to refer to new entities. For example, although both giver and follower are aware of the fact that their maps are not identical and thus locations are often introduced by indefinite NPs before their existence has been ascertained, there are many cases where this fact is ignored and (with frequently resulting misunderstandings) discourse-new entities are introduced by definite NPs, eg

(5.13) A: du gehst an dem Baum vorbei.
(A: you go past the tree)
B: Ich hab keinen Baum.
(B: I haven't got a tree)

The process of accommodation is also observable. For example, if the speaker assumes the existence of the referent to be implied, the use of an indefinite form is considered unnecessary (eg *we approached the hotel...***the side door** *was open.*). In the Map Task accomodation occurs frequently. Also, the map itself, its edges, sides, top and bottom are introduced by processes of accomodation and not with indefinites.

So, as definite NPs can refer to both discourse-new and discourse-old entities, it is not surprising that their distribution in main clauses is not as clearly defined as that of indefinites, which can only refer to new entities. Furthermore, what we are concerned with here is the determination of topic and focus positions and these cannot be equated with "old" and "new" entities, respectively. As was shown in the chapters on information packaging, whilst the focus of an utterance is information which is unfamiliar to the hearer it need not involve new entities (eg "Who did you see?" "I saw [JOHN]."). It is therefore only to be expected that definites distribute equally across focus and topic.

The position of pronouns also does not appear to be restricted, with 35 occurring in initial and 59 occurring in post-verbal position. Most of the pronouns in the corpus are first or second person singular, with only the occasional one being used to refer to the locations on the map, which are preferentially referred to by full NPs or demonstratives. It has been frequently noted that the participants of the discourse, ie the entities referred to by first and second person pronouns, appear to be treated separately from other entities in the discourse model (see for example Givón 1983). This means that, unless contrastively focussed, *ich* and *du* are treated neutrally and not evaluated according to whether they are discourse-new or discourse-old.

The implications this has for the placement of pronouns in the sentence is that they are used as "gap-fillers", meaning that they are there for reasons of grammar rather than fulfilling one of the functions of information packaging. The summary

of German word order variation in Chapter 3 showed that there are positions in the main clause which are preferentially filled by either the topic, contrastive topic or a focussed constituent. If the utterance in question has a topic, constrastive topic or a sentential adverbial indicating a new transaction, this constituent is placed in initial position. If there is no such entity, the V2-requirements of German still force the initial position to be filled. As has been shown, focussed constituents can only be placed there in exceptional circumstances and usually occur post-verbally, as this is where the preferred focus position is. The first or second person pronouns in most of the Map Task utterances are neither topic nor focus and, in addition, are usually the subject of the sentence. As was discussed in Chapter 2, although non-canonical word orders are often preferable, the canonical word order is acceptable in the highest number of different contexts. Because of this the subject first or second person pronoun can often be placed in initial positon despite not being the topic, without diminishing the acceptability of the utterance. The distribution of these unstressed pronouns in the corpus thus confirms Vallduví's assumption mentioned in Chapter 2 Section 2.1.1, that they do not contribute to information packaging but are there for structural reasons.

5.3.4 Null Anaphora in the Corpus

This section now turns to the analysis of the grammatical function of null anaphors in the corpus. In Chapter 3, Section 3.2.1, the theories of Fries (1988) and Engel (1988) were presented which suggested that because the subject is most frequently placed in initial position and null topics are restricted to this position, it is to be expected that null subjects occur more frequently than null objects. The analyses in the previous sections, however, showed that in the corpus presented here the canonical word order is not the most frequent one and that it can therefore not automatically be assumed that the corpus contains more null subjects than null objects.

In the 1185 main clause utterances examined, taken from the 12 dialogues, there were 53 instances of null anaphors. The first striking observation made, as shown in Table 5.3, is that null subjects are far less frequent than the group of null objects, null prepositional phrases and null subordinate clauses (25% and 75%, respectively).

Non-Subject	40	75%
Subject	13	25%
Total	53	100%

Table 5.3. Null Anaphora and Grammatical Function

This is in contradiction with the assumptions made by Klein (1985) (see Chapter 3), who places subjects highest in his hierarchy of acceptability of textual ellipses. In his theory, the occurrence of non-subject null anaphors is greatly constrained by the required semantic and structural consistency between anaphor and antecedent. One would therefore expect a larger number of null subjects as these require the least semantic and contextual consistency between them and their antecedents and there are thus more opportunities for their occurrence.

An explanation for this result will be proposed in the following sections where it is shown that there is a correlation between discourse deixis and null anaphors and that discourse-deictic reference is usually established as grammatical object.

To summarise, the tables shown so far have indicated the following:

- Over 50% of utterances (if not all) have a pragmatically determined word order.
- The initial position is associated with topiclike NPs; focuslike NPs are preferentially placed in post-verbal position.
- There are more null objects in the corpus than null subjects.

What these three results have in common is that they suggest a discourse-configurational nature for German. It appears that the word order determined by grammatical functions occurs far less frequently than expected, implying that the pragmatically determined word order is less marked than previously assumed. This is supported by the frequency of null objects, as it is claimed that the most frequent type of null anaphors in German is that which is most unmarked in that position.

5.4 Discourse Deixis and Null Anaphora

The following sections now turn to an analysis of discourse-deictic references and the choice of NP forms involved. This type of reference is particularly interesting as the lack of gender and number agreement means that the correct resolution of null anaphors, pronouns and demonstratives is more difficult than anaphoric reference to concrete entities. It thus increases the relative importance of the correct choice of NP form which must be unambiguous to avoid confusion in the process of anaphora resolution.

Furthermore, as we will see below, the analysis of the corpus gave quite striking results with regard to the correlation between null anaphora, discourse-deictic reference and the initial/topic position of German main clauses. As null anaphora and initial position are important for the issue of configurationality it seems justified to examine this type of reference in detail.

This section will deal with the frequency of null anaphors and discourse-deictic anaphors in the corpus. By providing a statistical analysis I hope to test the assumptions about discourse deixis and topicality which were introduced in Chapter 4. In particular, I wish to see if discourse-deictic reference is necessarily associated with topic shift, as has been claimed by Webber (1991), Gundel *et al.* (1993) and Dahl & Hellman (1995). Another point I will test is the assumption made in GHZ that null anaphors can be put in the same category as unstressed pronouns and associated with the most salient cognitive status, *in focus*.

5.4.1 Discourse Deixis in the Corpus

The antecedent type of null anaphors is captured in Table 5.4, which shows the ratio of NP- vs non-NP antecedents (non discourse-deictic and discourse-deictic). The analysis shows that of the 53 null anaphors 72% were discourse-deictic, ie did not have NP-antecedents.

These results indicate that there is a connection between discourse deixis and null anaphora. So far, however, all that is established is that the most common use of null

Discourse-Deictic	38	72%
Non Disc.-Deictic	15	28%
Total	53	100%

Table 5.4. Reference of Null Anaphora

Demonstratives	52	56%
Null Anaphora	30	32%
Unstressed Pronouns	11	12%
Total	93	100%

Table 5.5. Discourse-Deictic Reference and Syntactic Form

anaphors is for discourse-deictic reference. We now need to determine whether, in addition, null anaphors are the most common way of establishing discourse-deictic reference. This information can only be obtained by looking at all the cases of discourse-deictic reference in the corpus and the NP-forms used for them and seeing how frequently null anaphors are used *relative* to the other forms.

As mentioned above, only main clause utterances were taken into account as these are the only constructions where null anaphors can theoretically occur. In subordinate clauses, imperatives or questions there is no option to use a null anaphor, meaning that use of a demonstrative or pronoun does not indicate a conscious decision against a null anaphor. In main clauses, on the other hand, speakers have the option of using full NPs, demonstratives, pronouns or null anaphors. A frequency analysis can thus indicate which of the four forms are particularly associated with discourse-deictic reference. The study presented here features only demonstratives, pronouns and null anaphors, the reason being that *anaphoric* full NP reference to discourse-deictic entities is extremely rare. Anaphoric reference is generally established by short definite NPs (*the man*) or pronouns (*he*). Discourse-deictic anaphoric reference by full NPs would involve a rather cumbersome full repetition of a long string of words, eg *The fact that John crashed the car...*, *John's crashing the car...*, and is thus less likely to occur. The frequency of NP-form occurrence for discourse-deictic anaphoric reference is shown in Table 5.5.

This table shows that, as predicted in Chapter 2, demonstratives are the most

frequently used form for establishing discourse-deictic reference (56%). Pronouns are also used but to a lesser degree (12%). What the theories of discourse deixis presented in Chapter 2 did not predict is that such reference would be established to such a large extent (32%) by null topics. It is assumed that discourse-deictic reference involves topic shift, hence the use of demonstratives, and that pronouns are used only for repeated reference to the same abstract object.

As the anaphoric references presented in the table are all first time references, the frequencies contradict the standard theories. First of all, given that the GHZ's and Givón's hierarchies and the Centering analyses associate null anaphors and pronouns with topic continuity, it is not clear how null anaphors and unstressed pronouns could establish reference when topic shift is involved. This leads to the assumption that discourse-deictic reference does not *necessarily* involve topic shift. Secondly, even if discourse-deictic reference involves continuing topics as well as topic shift, an explanation is required for why pronouns are used so infrequently compared to the other two forms.

If we compare this with the alignment heirarchy of syntactic form and cognitive status set up by GHZ we find the conflict shown in Figure 5.1. The ordering of the NP forms in this figure is intended to reflect their ordering on the GHZ hierarchy shown in Chapter 2, Section 2.2.2. Null anaphors in the GHZ hierarchy are grouped with pronouns and together they are associated with a cognitive status (*in focus*) separate from demonstratives (*activated*). One would therefore expect the frequency of null anaphors and pronouns to be similar. However, there are less than half as many pronouns (11 instances) as null anaphors (30 instances).

In addition, it appears that there is a "gap" along the hierarchy between zero anaphors and demonstratives. In GHZ it is assumed that when a particular form is used to refer to an entity, its associated cognitive status implies that the cognitive statuses to its right also hold of that entity. Potentially, at least, this means that any of the structural forms associated with the other statuses to the right should be (with certain pragmatic restrictions) legitimately usable. For the NP forms presented in Figure 5.1 this means that if null anaphors can be used to refer to an entity, then pronouns

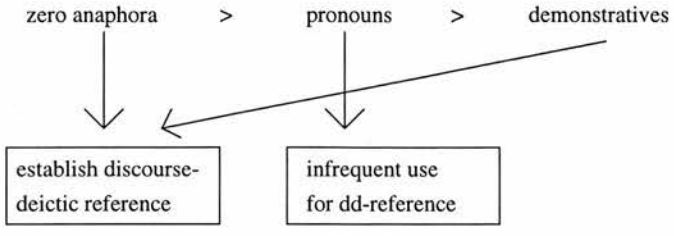


Figure 5.1. Cognitive Status, Discourse Deixis and Form

Initial Position	81	87%
Post-verbal Position	12	13%
Total	93	100%

Table 5.6. Discourse-Deictic Reference and Position

can also be legitimately used; likewise if pronouns can be used then demonstratives are also available potentially for this reference. As the figure also shows, zero anaphors and demonstratives are used frequently to establish discourse-deictic reference but pronouns are only infrequently used for this purpose. We thus find a conflict indicated by the crossing of the arrows that associate NP forms with type of reference.

A final point that needs to be raised regarding null anaphors is their position in the utterance. As was shown in Chapter 3, null anaphors in German are restricted to initial position in main clauses. This obligatory requirement is specific to them and not shared by other anaphoric forms, such as demonstratives and pronouns. One point of interest is to see whether the type of reference is associated with particular anaphoric NP forms or whether it is associated with a particular *position*. Table 5.6 shows the correlation between discourse-deictic reference and the position of the anaphor in the main clause, ie whether it is in initial position or not. As can be seen, in the vast majority of cases (87%), discourse-deictic reference is established in initial position.

Given that such a high percentage (32%) of discourse-deictic reference is established by null anaphors (which are restricted to initial position) it is not surprising to find a large number of instances of this type of reference in initial position. However, 56%

of discourse deictic reference is established by demonstratives, and these, in turn, are free to occur anywhere, subject to pragmatic and contextual considerations. Taking all this into consideration, having 87% of these references in initial position is a reliable indicator that there is a strong preference for discourse deixis to occur in initial/topic position *aside* from its strong correlation with null anaphors.

The conclusions we can draw from the analyses presented here are as follows:

- The majority of null anaphors are discourse-deictic.
- Discourse-deictic reference is preferably established by demonstratives and null anaphors, but less frequently by pronouns.
- Discourse-deictic reference is preferably established in initial position.

5.4.2 Unacceptable Canonical Word Order

One final point of interest needs to be made with respect to the combination of discourse deixis and null anaphora which is also important for the issue of configurationality. An analysis of the utterances shows that many of the discourse-deictic null object utterances are unacceptable in their canonical form. Compare the following:

(5.14) A: Jetzt gehst du waagerecht hoch.
(Now you go up horizontally)
B: Waagerecht?...nein, senkrecht.
(Horizontally?...no, vertically.

a. A: Äh, 0 mein ich. (Textual Deixis)
A: oh, 0 mean I.
"Oh, that's what I mean."

b. A: ?? Das mein ich.

c. A: #Ich mein das.

d. A: #Ich mein es.

(5.15) A: Jetzt am Zaun vorbeigehen und links hoch.
(Now go past the fence and up left.)

a. B: Gut, 0 mach ich. (Event Type)
B: good, 0 do I
"Ok, I'll do that."

b. B: ??Das mach ich.

c. B: #Ich mach das.

d. B: #Ich mach's.

As can be seen from these examples, substituting the null object from the original utterance with an overt anaphor leads to decreased acceptability. If in addition the word order of the utterance is changed to canonical SVO order the sentence becomes infelicitous in that context. Native speakers judge these utterances to be "rude" and "abrupt", thus very different from the originals which are part of a fluent conversation. The reasons for this will be discussed in the next chapter, which deals with discourse deictic utterances and their functions in more detail. However, these observations are also important for the issue of configurationality. If German is to be classed as configurational, it is not clear how a pragmatically influenced word order as exhibited by the original null topic/object-initial utterances can be *obligatory* rather than *optional* like clefts in a configurtional language such as English. The German examples above are examples of word order which is *necessarily* determined by pragmatic factors. In Chapter 2 it was suggested that necessity of pragmatically determined word order along with its frequency of occurrence and structurally defined topic and focus positions are markers of discourse-configurationality. We leave these utterances to be discussed in detail at a later point (Chapter 6, Section 6.2.1), but can add it here as supporting evidence for the discourse-configurational nature of German.

5.5 A Comparison with English

We have seen so far that in a semi-configurational language such as German there is an interaction between NP-form and word order, as both are used to indicate the pragmatic status of referents in the discourse. In order to isolate the features which are specific to German, this section provides a comparison with English, a language exhibiting fairly strict configurationality. In English, the SVO word order can only be manipulated for information packaging purposes in exceptional cases and speakers almost exclusively rely on NP-form variation and accenting for information packaging purposes. To allow a comparison with the German data, the analysis here concentrates on anaphors with equivalent referents, ie discourse-deictic anaphors.

5.5.1 Functional Differences of NP-forms

Before presenting the results of the frequency analysis I will give examples of the anaphors taken into account there and discuss what determines the choice of NP forms in English and German.

Distal Demonstratives

Distal demonstratives (*that*) in English are used most frequently when the giver describes a location or a configuration of landmarks and the follower makes a statement about it with a copula construction, eg

(5.16) A: and up past a tree next to a waterfall.

a. B: No, **that**'s not on mine.

b. B: **That**'s where we are.

c. B: Is **that** right?

d. B: **That** sounds good.

e. B: I've got **that**.

f. B: **That**'s good.

g. B: **That**'s it.

h. B: **That**'s me.

The examples in 5.16 show that, as in German (cf Chapter 4, Section 4.5), the English demonstratives can be used for different kinds of discourse-deictic reference. Examples a and b are reference to a state or location on the map. Utterances c, d, e and f are examples of pure textual deixis and the anaphor could be replaced with *what you just said* or *your description.* Utterances g and h are more idiomatic in nature – the *that* is difficult to paraphrase but it clearly has no NP-antecedent.

Reference to states on the map are possible even when no landmarks have been mentioned, ie even if there are no available NP-antecedents in the previous utterance, eg

(5.17) A: just go straight east forget about going up a wee bit
B: right
A: **that**'s where we are.

The demonstrative *that* is also used if a statement is made about the activity suggested by A, ie event type reference:

(5.18) B: I'll do **that**/I've done **that**.

In English, as in German, the anaphors frequently appear to have a clear NP-antecedent but the lack of agreement shows that something more abstract is being referred to. In German, this is shown by lack of gender agreement. This is not available as a test in English for object reference, but there are some examples of lack of number agreement. Compare the following:

(5.19) a. A: Hast du einen Wasserfall neben einem Baum?
A: have you a waterfall(m.) next.to a tree(m.)?

b. B: Nee, **das** hab ich nicht.
B: No, **that(n.)** have I not.

(5.20) A: See the wee seagulls at the ravine?
B: Uh-huh
A: Just about up there?
B: Above **that**. yeah.

In the German Example 5.19, the *das* could be interpreted as referring back to the NP *Wasserfall* in A's utterance. As discussed in Chapter 4, however, the potential antecedent and anaphor do not agree in gender and the demonstrative must therefore be interpreted as referring to a state, eg the state of the waterfall being next to a tree.

In Example 5.20 there is a similar problem of lack of anaphor-antecedent agreement as the potential NP-antecedent *the wee seagulls* is plural, but reference is made with singular *that* rather than plural *those*. The demonstrative must then also be interpreted as referring to a more abstract object such as the state of the configuration of landmarks *the seagulls at the ravine*.

As in the German Map Task, it appears to be the case that the participants regard the states and configurations on the map as abstract rather than concrete entities. If the speakers were referring to an observed scene (ie actual seagulls) it is more likely that they would use *those*.

Proximal demonstratives

The equivalent of the proximal demonstrative *this* does not occur in the German Map Task corpus. In English it is used when reference is being made to the same type of object (route/description/activity) as the referents of *that*, but in a sense the utterance comments on *work-in-progress*, eg

(5.21) A: Okay, right (laughs)
B: We got the same map? haven't we? it's my fault (laughs)
A: Paul, **this** is...**This** is lousy
B: I know...I know what you're meaning

(5.22) A: And then you go across and stop.
B: **This** is a... By the way **this** is about like 5 cms down from the top of the page?

(5.23) A: No, yeah yeah no not across to there. Vertical right? A vertical line ...**this** is quite good...vertical line and stop just where the R is.

(5.24) A: And then ehm...How could you say **this**? Have you got the pebbled shore?

In Example 5.21, speaker A's second utterance comments on their task-solving, which is still in progress as he makes the comment, as indicated by his use of the present tense. A similar comment at the end of the dialogue would presumably contain the distal demonstrative, eg *That was lousy.* In 5.22, the interjection *by the way* signals that a parenthetical insertion is being made, in other words the main route description is interrupted and a comment is made concerning the location of the route segment that is still being described. Similarly, in 5.23 the description is actually interrupted, commented on (*this is quite good*) and subsequently completed.

English proximal demonstratives are also used for discourse-deictic reference when the referent does not yet exist. In 5.24, the *this* could be paraphrased as *what I'm about to say.* The *and then* marks the beginning of a new section of the description so, unlike in the three other examples, here there is no possible antecedent for the demonstrative

in the preceding context. The following comparison shows that in German the distal demonstrative is used in equivalent contexts:

(5.25) And then ehm...How could you say **this**/??**that**? Have you got the pebbled shore?

(5.26) Und dann ähm....Wie könnte man **das**/??**dies** jetzt sagen? Hast du das Steinufer?

As shown in this example, the utterance is most natural sounding if the adverb *jetzt* ("now") is inserted immediately after the demonstrative, to indicate that the referent is the current utterance or the utterance about to be produced. The *jetzt* in this use is different from the adverb in initial position used to indicate the beginning of a new game or transaction (see Section 5.2).

Pronouns

Pronouns are used in English and German for what I shall call "global topics" which require no explicit mention as they are always salient to the discourse. In the Map Task this includes "the task" and "the route/path/description", eg

(5.27) A: There's a parked van.
B: right
A: And you're se you're se...
B: I've got it
A: You've worked **it** out already

(5.28) A: you're at the top of the alpine garden?
B: right ok I'm here right
A: or have you drawn another line?
B: I've got **it**. no I'm at the top

(5.29) A: so the parked van didn't come in?
B: the parked van was nothing to do with **it**

(5.30) A: Up from the allotments but along about 12 cm...
B: Can we do **it** in straight lines

(5.31) a. ja aber ich kann ja einfach zwischen der TZ und dem Hotel durch, ja gehen wir mal einfach...
(yes but I can just go between the phonebox and the hotel, yes let's just go...)

b. ...so 0 passt genau
...right 0 fits exactly
"Right, it fits perfectly."

The highlighted *it* in Example 5.27 does not have an NP-antecedent, nor can it be said to refer to a section of the previous discourse. Instead, it refers to "the problem" that the participants are trying to solve. The utterance *I've got it* in 5.28 is idiomatic and signals that the speaker has understood or solved the problem – the *it* presumably referring to the description. In 5.29 also the *it* has no NP or textual antecedent and refers instead to the task in general. Finally, in 5.30, the pronoun refers to a section of the route to be described and could be paraphrased as *the route description.*

Regarding reference to abstract objects, it appears that the global topic, ie the task of the Map Task in these dialogues, is more salient than the abstract objects referred to by preceding sections of the text. The former are referred to by pronouns, the latter by demonstratives, indicating a difference in saliency in the discourse model. This point is discussed in more detail in Chapter 6.

Null Objects and Ellipsis

A detailed comparison of these utterances with German null anaphor utterances was presented in Chapter 3, Section 3.2.3. The conclusion was that in the English utterances the objects or VPs are *erased* and there is a true form of ellipsis, whereas the German utterances contain anaphoric objects which are phonologically null. It seems that the objectless constructions in the English Map Task corpus contain verbs which behave like SOA (salient object alternation) verbs, which require an explicit object antecedent

in the constext. Examples of SOA verbs are given below (repeated from Chapter 3):

(5.32) She stopped at the Surcliffes' after dusk...she stayed too late and when she **left**, it was dark...

(5.33) A: I'm the one that goes to UT that got you all the fun information.
B: I **see**.

The object of *left* requires a salient antecedent NP and the object of *see* requires a salient antecedent which is a proposition so the object is discourse deictic. The construction is therefore similar to the auxiliaries with null objects in the following examples:

(5.34) A: Have you got an alpine garden?
B: Have I hell!
A: You've not?
B: Oh yeah I do. I do.

(5.35) F: Can you do this, aye?
G: I think you can.

(5.36) A: Well...in my map I think the line is within the avalanche.
B: It is.

The elided constituents are *have an alpine garden, do this* and *within the avalanche*, respectively.

These are similar to the examples of SOA verbs as the antecedent VP must be salient in the context. In English, but not in German, there is the additional restriction that it must occur in exactly the same linguistic context as shown by the repetition of the auxiliary:

(5.37) A: Du gehst rechts am Wasserfall vorbei und links zum See.
B: Gut, hab ich./Mach ich./Kann ich machen.

(5.38) A: you go up past the waterfall and right to the lake.
B: Ok, *I have./ *I can./ *I do./ I will. /I've got **that**./ I'll do **that**.

(5.39) A: Have you got a waterfall and a lake?
B: I have./I do.

A comparison with German null anaphor utterances shows that the functions of the two constructions in dialogues is similar. As will be discussed in more detail in the following chapter, in both corpora these utterances have Verum Focus (see Chapter 2, Section 2.1.3), that is the truth or falsity of the propositional content is in focus. The English examples occur almost always following a direct yes-no question, as in 5.39, to which the response is a repetition in statement form of the question but with the nuclear accent on the verb and no overt object. In the German examples the function is similar but the context is far less restricted. The utterances themselves are confirmations/disagreements, as in English, but the question they are a response to is often only implied as can be seen from 5.37 above, where the null anaphor utterances follow a statement. One reason for this could be that the global topic of the task-oriented dialogue involves constant negotiations and thus the questioning of utterances and responses to them are always expected. This possibility will also be discussed in the following chapter.

In both the German example 5.37 and the English example 5.38, there is also no direct question but the nature of the Map Task makes it clear that any of the giver's utterances could be followed by a response to it. This is sufficient in German to make A's statement a topic of the following utterance, represented by a null object. The null anaphor utterances therefore have Verum Focus, with the verb containing no new semantic information. The global topic of the English Map Task is the same but the ellipses in this context are ungrammatical. They are only acceptable following a direct question as in 5.39.

It seems that there must be a structural reason why utterances with VP-ellipsis are excluded despite the fact that they are grammatical in other contexts. If the statements in the above examples were followed by an explicit question (equivalent to the implied

ones mentioned above), the VP-ellipsis utterances in English becomes acceptable:

(5.40) A: You go up past the waterfall and right to the lake. Have you got that?/Can you do that?
B: I have./ I can.

Furthermore, the English VP-ellipses in the corpus only occur with auxiliaries and modals, eg *I can. I will. I do. I have.* and contain an exact repetition of the auxiliary in it or the dummy verb *do* which stands proxy for main verbs as in Examples 5.39 and 5.40, with a few exceptions, such as *I will* in 5.38 above. As was seen in the German Map Task, the type of verb is far less restricted and main verbs occur frequently *Schätz ich. /Weiss ich.*

What the English verbs have in common is that they contain little semantic content of their own. Auxiliaries and pleonastic *do* contain features of number, tense and mood but little else. In the analysis of the German null anaphor utterances it was also noted that the verbs themselves contain no new information, their semantic content often being implied by the context. In the English ellipsis and the German null anaphor utterances the focus, ie the new information is the polarity of the proposition expressed by the preceding utterance. The difference between the two is that the restrictions on the German verbs are less strict and they may have semantic content of their own.

As mentioned above, the two constructions are syntactically distinct. Although both consist of a subject and an inflected verb the null element in German can be substituted with a demonstrative (eg *Das kann ich.*, whereas a demonstrative cannot be put in place of the elided VP in English (eg**I can that.*). This shows that the ellipses involve the deletion of the VP, whereas null anaphors are phonologically null NPs. However, this brings us to an interesting comparison: both types frequently involve discourse-deictic reference, eg reference to events and event types. Events and event types are expressed by VPs so it is to be expected that discourse-deictic null anaphors are the equivalent of VP-ellipsis in English – the null anaphors, despite being NPs, refer to the same type of entity as the elided VPs in English.

	English		German	
Demonstratives (this)	51(9)	54%(9%)	52	56%
Pronouns	33	35%	11	12%
Ellipses/Null Anaphora	10	11%	30	32%
Total	94	100%	93	100%

Table 5.7. Discourse-deictic Reference and Syntactic Form

It is clear that this comparison should be treated with caution: what we are concerned with in the study here is the choice of morphological NP-form from the range presented in the GHZ hierarchy and how it reflects cognitive status. Only in the German utterances can speakers be said to have made a choice regarding NP-form. We have seen here that the objects in the English versions are non-existent, meaning that no "choice" of NP-form has been made. However, the pragmatic similarities are striking enough for the comparison to be of interest.

5.5.2 Frequency of NP-forms

The results of the frequency analysis of the English Maptask, shown in Table 5.7, are different from those the German Maptask, which are shown again in the table for ease of comparison. In English, demonstratives occur most frequently for discourse-deictic reference and pronouns slightly less frequently. Upon examining the English corpus a significant number of utterances were found of the type discussed in the previous section, which involved ellipsis of the VP (eg *I can., I will.*) and fulfilled a discourse function very similar to the German null anaphor utterances. Although the German null anaphora utterances and the English VP-ellipses are syntactically distinct, the ellipses have been included in this comparison because the pragmatic similarities and the fact that they both involve "abbreviated" sentences. Table 5.7 therefore compares not only the frequencies of demonstratives and pronouns but also compares the frequency of English VP-ellipses with the frequency of German null topics.

Unlike the German data, the ordering of NP-forms in terms of frequency in English is not in conflict with the saliency hierarchies of Givón or GHZ.

As in German, the largest group in the English corpus is that of the demonstratives,

but almost a fifth of these are proximal demonstratives (*this*), whose German equivalent *dies* does not occur at all in the German Map Task corpus. Also, the percentage of pronouns is far larger in the English corpus. The number of ellipses in English is a great deal smaller than the number of null topics in German. It is not clear whether it is legitimate to compare the two types and this will be discussed in more detail below. However, assuming for the moment that they are equivalent, then the decreasing frequency from demonstratives, pronouns, ellipses (null anaphors) reflects the ordering of these form on the GHZ hierarchy. As explained above, the frequency of the German data gives the ordering demonstratives, null anaphors, pronouns.

5.6 Explanation of the Results

The conclusions that have been drawn so far are the following: **1.** The initial position in German main clauses has been shown in the corpus to be mainly occupied by non-subject constituents, indicating a pragmatically determined word order, and by null anaphors, pronouns and demonstratives, indicating that German uses this position for topics. **2.** A large percentage of utterances have the new transaction-signalling adverbs *jetzt/dann* in initial position, indicating that, aside from information packaging, word order in German is also used to encode information concerning higher levels of discourse-structure. Both this and the first point confirm the discourse-configurational nature of German. **3.** There is a strong correlation between discourse-deictic reference and null anaphors in German, indicating that discourse-deictic reference does not necessarily involve topic shift. **4.** A comparison of discourse-deictic anaphors in the English and German Map Task corpora shows that the relative frequency of pronouns and demonstratives in English is in line with NP-form/cognitive status hierarchies, but that in German null anaphors group with demonstratives in terms of frequency and there is a distinct lack of pronouns.

This section draws upon the observations made in the previous chapters concerning the nature of discourse-deictic pronouns and abstract objects. A solution is proposed which relies on allowing a salient cognitive status of discourse-deictic referents to be

presumed, thus accounting for the observations of point (3) above. In the second part, it is suggested that point (4) above can be explained by taking into account the relative importance of word order vs NP-form as a means of information packaging in the two languages. Both accounts support the findings of points (1) and (2) above, in that they suggest that German word order is predominantly determined by information packaging rather than grammatical function.

5.6.1 Compatibility Restrictions on Anaphora Resolution

Suggestions that the null anaphor utterances in German are idiomatic rather than being the result of the application of information packaging rules can be dispelled if one takes into account not only the varying length of the utterances (idiomatic expressions tend to be short), but also the large variety of verbs occurring in them. This is shown in Figure 5.2.

The majority of utterances contain the verb *haben* "to have (expressing possession)/understand". All other verbs can take a clausal complement, or expressed semantically, they can have complements expressing an event, state, proposition or fact, ie have a complement of the type expressed by discourse anaphors, eg[2]

(5.41) Ich schätz, dass er kommt.
I assume that he comes.

(5.42) Ich mein dass er kommt.
I think/mean that he comes.

(5.43) Ich weiss dass er kommt.
I know that he comes.

(5.44) Ob er kommt ist egal.
Whether he comes is no.matter
"It doesn't matter whether he comes."

[2]The German verb *wissen* ("know") is distinct from *kennen* ("know"), in that it requires a clausal complement.

	Verbs	Frequency	Total
Null Subjects	sein (copula be)	4	13
	gehen (go)	3	
	passen (fit)	2	
	koennen (be able to)	1	
	folgen (follow)	1	
	machen (do)	1	
	aussehen (look like)	1	
Null Objects	haben (have/understand)	18	32
	machen (do)	5	
	meinen (mean/assume)	2	
	schaetzen (assume)	1	
	wissen (know)	1	
	muessen (have to/be obliged)	1	
	sagen (say)	1	
	koennen (be able to)	1	
	vorstellen (imagine)	1	
	ueberlegen (think/ponder)	1	
Other	sein (be)	5	7
	haben (have/understand)	1	
	gehen (go)	1	

Figure 5.2. Verbs Occurring with Null Anaphora.

The subcategorisation requirements of the null anaphors verbs have this feature in common. As shown in Chapter 4, Section 4.2.3, information encoded on the verb has been taken into account in various works dealing with anaphora resolution or the availability of referents for anaphoric reference (Asher 1993; Nunberg 1979). Nunberg provides a formula containing a referring function whose range intersects the set of things that the speaker might be intending to refer to. The advantage of this is that no separate account needs to be found for the problem of *fluidity* of abstract objects, ie the simultaneous existence of event types, event tokens, propositions and proposition types as possible referents. This set is restricted by the context, or in Nunberg's terms by "the nature of the predication, by the morphology of the demonstrative pronoun, and by such contextual considerations as "topic of conversation"" (Nunberg 1979, p.157). In Asher's terminology, it is the θ-grid of the verb (eg $< AGENT, CONCEPT >$) which brings about the existence of the required abstract object through a process of argument extraction.

As shown in Chapter 2, Section 2.2.3, rules of anaphora – antecedent compatibility have also been proposed to supplement Centering Theory. These state, for example, that an antecedent becomes *invisible* for reference if it has incompatible ϕ-features with the anaphor (Dimitriadis 1996) (in Nunberg's terms "the morphology of the demonstrative pronoun") or does not agree with it in terms of agentivity and similar notions ("the nature of the predication").

Dimitriadis (1996) assumes that factors such as ϕ-invisibility can account for the non-ambiguity of potentially ambiguous reference. However, the null anaphors occurring in this corpus are to a large extent (75%) null objects, meaning that there are no available disambiguating agreement features on the verb. Furthermore, the Agentivity Rule is not relevant in the Map Task dialogues as the ambiguity lies in whether the reference is to an object, a landmark or a discourse segment, all of which are non-agentive.

I propose that an expansion of the ϕ-invisibility rule to a rule concerned with *all* syntactic features of the verb including selectional restrictions is necessary to account for these cases in German.

In order to account for the anaphors in the Map Task corpus, I propose that these compatibility rules be generalised as follows:

- **Compatibility Rule:** In selecting an antecedent, pronominals ignore antecedents which are incompatible,

where *incompatible* means having incompatible ϕ-features expressed on the antecedent referring expression or on the verb, incompatible agentivity, and also being *an incompatible verbal complement.* The verb, then, supplies the information of whether its complement should have an NP or a clause as its antecedent. If it requires a clause, it also supplies the information of whether the antecedent is the state, event, event type, proposition or fact expressed by the clause.

The following examples illustrate how the predicate of the anaphor can disambiguate between not only concrete vs abstract entity anaphors but also between *types* of abstract entities:

(5.45) a. **A:** der ist'n kleines bisschen höher als der Zaun
(it's a little bit higher than the fence)

b. **B:** ja, so ungefähr, 0 weiss ich nicht so genau
B: yes so roughly 0 know I not so exactly
"Yes, roughly, I don't really know."
Complement: *clause (proposition), *event, *event-type, *state, *NP*

(5.46) a. **A:** du solltest erst an der burg vorbeigehen
(you should first go past the castle)

b. **B:** gut, 0 mach ich
B: good, 0 do I
"Ok, I'll do that."
Complement: *event-type, *event, *proposition, *state, *NP*

As in Example 5.45, if the anaphoric element is the object complement of a verb like *wissen* (know), which (unlike the English verb "know") can only take an abstract, clausal complement expressing a proposition, it is clear that it cannot be resolved as one of the concrete NP antecendents (eg **Ich weiss den Zaun.* (*I know the fence)) but instead must refer to the proposition *whether it is a bit higher than the fence.* It can also not be resolved as any other kind of abstract object (eg event, state) as the θ-grid of the verb does not allow this.

Similarly, in Example 5.46, a null anaphor which is the complement of the verb *machen* (do) cannot be interpreted as referring to a concrete entity that was referred to in the previous utterance (eg **Ich mach die Burg* (*I'll do the castle)). Instead, the verb requires as its complement a concept expressed by a VP such as *an der Burg vorbeigehen* (go past the castle).

It seems intuitively plausible that when we resolve an anaphor which itself gives little or no information about its referent, we take the information into account that is supplied by the rest of the utterance. Whether an anaphor refers to a concrete NP-entity or to an abstract entity (and if so, to which type) depends on the verb it occurs with. The Compatibility Rule describes the use of this information.

The rule now accounts for all null topic utterances in the corpus which do not have non-auxiliary *haben* as a main verb. *haben*, however, is problematic as it is ambiguous between the auxiliary interpretation, as occurs in the perfective tense, and the main verb expressing possession. It can take a simple NP complement or a non-NP complement, eg

(5.47) I have the landmark/object

(5.48) I have the landmark in that location.

(5.49) I have understood your last utterance/ your description/ the whole previous DU.

The utterances that still require an explanation are those with null topics and the verb *haben* which occur immediately after utterances with explicit mention of an object

or landmark. In these utterances the ambiguity is not resolved by the nature of the verb, as it potentially allows both clausal and concrete complements. The following example taken from the corpus illustrates this point:

(5.50) a. **A:** ja so bis zum Hotel nach oben.
(A: yes up to the hotel)

b. **B:** ja 0 hab ich.
B: yes 0 have I.
"I've got that/it."

In Example 5.50, *hotel* could be a possible complement of the verb *haben*, and so could the various abstract entities plus a past participle, eg

(5.51) Ich habe **das Hotel**
"I've got the hotel (on my map)"

(5.52) Ich habe **deine Aussage verstanden.**
"I've **understood your utterance.**"

(5.53) Ich habe **deine Anweisung befolgt.**
"I've **carried out your instruction.**

It is clear to native speakers that the latter two are the most probable intended meanings: the wider context shows that the existence of the hotel on both maps has been ascertained. Furthermore, speaker A is not asking B directly whether she has a hotel on her map as this is taken for granted, so no subsequent reference to the hotel is expected. If reference were to be made, it would have to be more explicit than in the form of a null anaphor. In the context given above, the only way of expressing the meaning of 5.51 would be with a definite NP, eg *Ja, das Hotel hab ich.*

However, null topic utterances containing such ambiguous main verbs are not taken care of by the extended Compatibility Rule. In the Centering ranking the Discourse Unit is ranked *lower* than the overt centres (Dimitriadis 1996; Walker *et al.* 1994) (cf Chapter 2, Section 2.2.3), implying that discourse-deictic reference is marked and less

likely to be established in topic position than reference to concrete entities. What this ranking also implies is the following: if there is only one pronoun then this must be the Cb (ie topic) of the utterance. If there is to be a CONTINUE transition between the two utterances then the referent of this pronoun must be identical to the Cp (highest ranked centre) of the previous utterance. Given ambiguity of anaphoric resolution, associating the anaphor with an NP in the previous utterance leads to a smoother transition than associating it with the discourse unit, as the latter is not the preferred centre.

The second rule of Centering states that speakers prefer smoother transition states over rough/shift transition states – the fact that, given ambiguity, speakers prefer an interpretation where the null anaphor is interpreted as referring to the discourse unit indicates that, for the German Map Task corpus at least, this ranking is not correct and that the discourse unit in some cases *can* be the preferred centre, ie the highest ranked entity.

This possible solution implies that in the Map Task corpus the Discourse Unit is the *default* referent of anaphors. This is strongly supported by the evidence presented above in Table 5.4, which shows that *most* of the null anaphors in the corpus (72%) are used for discourse deixis and only some (28%) are used for reference to NP antecedents.

If one assumes that the discourse-deictic object is the default referent then the problematic references are those where the verb allows both clausal and NP complements but the *concrete* entity is preferred over the abstract one. Cases such as these do occur, but the corpus shows that these are almost exclusively to be found immediately after direct questions, as in the following example where the null anaphor refers to *Burg* (castle):

(5.54) a. **A:** Hast du **die Burg**?
(Have you got **the castle**?)

b. **B:** Nee, 0 hab ich nicht.
B: No, 0 have I not.
"No, I don't have (the castle)."

If we assume that questions (as opposed to statements) cannot establish events,

propositions or states as discourse referents, then the correct anaphoric resolution is accounted for in these cases: the Discourse Unit is not available for reference so the null anaphor must refer to a concrete entity. Even if the DU is ranked above all other entities, an NP entity can still be the preferred centre if there is no DU available.

At least for the corpus under examination here, it is safe to assume that *the Discourse Unit is the default antecedent for anaphors.* Where an anaphor does not refer to a Discourse Unit, this is made clear from the subcategorisation frame of the verb or the availability of a Discourse Unit for reference.

5.6.2 Word Order vs NP-Form

In this section, we return to the problem of the frequency "gap" shown in Figure 5.1 and Table 5.5 above where it was shown that there is a preference for discourse deictic reference to be established by null anaphors and demonstratives rather than unstressed pronouns. So far, we have concentrated on stressing the importance of word order in German as a means of expressing information packaging. A crucial tenet of this thesis is that there is no binary distinction to be made between discourse- and non-discourse configurational languages. As with most languages, in German there is an interplay between pragmatic and syntactic factors and neither one of the two is *solely* responsible for determining word order. One of the main purposes of this thesis is to determine areas of the language where either one wins out over the other, as this information will give insight into the configurationality issue.

In Chapter 3 it was noted that German is subject to V2-restrictions and that there is a subject-object asymmetry. In order to explain the lack of pronouns used for discourse-deictic reference it is necessary to take another syntactic restriction into account.

The GHZ hierarchy, which aligns NP-forms and cognitive status assumes that if the whole range of NP-forms is available, speakers are likely to choose the one most closely associated with the cognitive status of the referent in question. However, whilst German has a fairly free word order, as shown in Chapter 3, certain NP-forms are subject to syntactic restrictions. As the following example shows, unstressed neuter

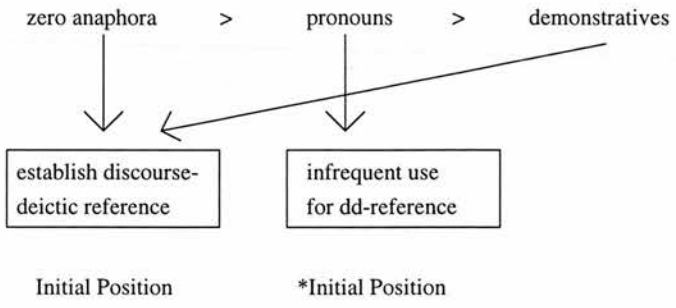


Figure 5.3. Form, Discourse Deixis and Position

object pronouns are barred from the initial position:

(5.55) *Es mag ich nicht.
*It(acc.) like I(nom.) not.

Taking this syntactic restriction into account, it becomes clear why discourse-deictic reference is so infrequently made with unstressed pronouns: the grammatical gender of discourse-deictic reference is neuter and, as has been shown in this chapter, Section 5.4.1, Table 5.6, this type of reference has a strong preference for initial position. In addition, an analysis of the utterances in question shows that the reference was almost exclusively established in the form of a grammatical object. Zero anaphors and demonstratives can occur in initial position, whereas object neuter pronouns cannot. As shown in Figure 5.3, in the area of morphological NP form the grammatical restriction disallowing neuter pronouns in initial position overrides the pragmatic rules, which would lead one to expect a grouping of null anaphors with pronouns for similar referents of similar cognitive status.

Expressed differently, in a language which is largely configurational, such as English, one would expect that given a conflict between morphological encoding of NP-form and word order as means of information packaging, the former would win out as the latter is predominantly a marker of grammatical function. Both are employed to a certain extent, but if the two conflict, word order wins out and the NP-form is changed accordingly. It appears that in German, however, *word order wins out over morphological*

encoding of NP-form as a means of information packaging. In English, word order is rarely used for information packaging purposes and speakers almost exclusively rely on NP-form and accenting. For this reason, there is no conflict on the hierarchies and the frequency ordering is demonstrative, pronoun, ellipsis, ie the cognitive status is more consistently reflected by NP-form variation than in German.

5.7 Summary

One of the points this thesis set out to discuss is the rejection of a strict binary classification of languages into configurational and discourse-configurational. Evidence from German indicates that this language in particular is difficult to classify in this respect and is thus an appropriate choice to test the hypothesis that there are languages which fall between the two endpoints of a configurationality scale. Despite the lack of a clearly defined topic or focus position, it is apparent that any deviation from the canonical word order is brought about by the effects of information packaging. Expressed loosely, speakers move constituents from their base positions to draw attention to them. The utterance is thus manipulated to aid the hearer's understanding of how the content of the utterance fits in with the current knowledge store. Word order (as one of the means of information packaging) is universally used for this purpose and languages only differ as to the *frequency* and, more importantly the *necessity* of this operation.

An empirical study involving the analysis of natural language corpora was deemed to be the best method of research for the reason that native speaker judgements on word order acceptability of utterances are unreliable. Indeed, it appears paradoxical to determine the influence of information packaging on word order by basing a study on sentences without or in an artificially created context. German fails to qualify as discourse-configurational using Kiss' two defining criteria of having either a structurally defined topic or focus position: as was shown in Chapter 3, the initial position in main clauses is occupied by constituents exhibiting a variety of discourse functions, although some are preferred over others and some (eg contrastive focus) are ruled out.

What we have seen from the frequency tables presented in in this chapter is that

the "canonical" SVO word order of main clauses in German accounts for less than 50% of main clause utterances. Although there are to my knowledge no equivalent studies available for discourse-configurational languages, one would expect a similar result for these.

Concerning the necessity of pragmatically determined word order, this chapter also presented data in contexts where speakers do not have the option of the canonical word order. In strictly configurational languages such as English, word order variation is possible, for example in the form of clefting, but this is always an option and not an obligatory rule. In Section 5.4.2 German sentences with unacceptable *canonical* word order were presented (eg *Ich mein das*), which although not ungrammatical, lead to a different interpretation of the utterance compared to the non-canonical form.

Evidence for the importance of pragmatically manipulated word order variation was also presented in Chapter 3, in the form of frequently produced "illicit" long-distance topicalisations. These constructions clearly override grammar rules of standard German. In cases where standard grammar and the requirements of information packaging conflict, we have seen that the latter frequently win out in spoken German.

The conclusion that can be drawn from the evidence presented here is that German cannot be classed as configurational in the same sense as English. Its lack of strictly defined topic and focus positions do not allow it to be classed as discourse-configurational in the sense of Hungarian or Catalan. To date no further subcategories of languages have been defined yet the evidence here shows that a binary classification is not desirable. In addition, it shows that German should be placed more toward the discourse-configurational end of the scale as it shares the characteristics of frequency and necessity of a pragmatically determined word order with those languages.

Also discussed in this chapter was discourse-deictic reference. Some interesting initial observations have been made in the process: contrary to expectations expressed in the literature, discourse deixis in the Map Task corpus frequently involved null anaphora, indicating a continuing topic rather than a topic shift. Demonstratives also featured strongly but unstressed pronouns were underrepresented. An explanation was found for the latter point by drawing upon the interaction of grammar rules and

pragmatic requirements. It was noted in the previous paragraphs that German word order frequently and sometimes obligatorily respects pragmatic rules, ie if there is a conflict between grammatical functions and pragmatic functions as determiners of word order, pragmatic functions win out. The lack of pronouns for discourse-deictic reference also offers evidence for the influence of pragmatics but approached from a different angle: if there is a conflict between NP-form and word order as a means of information packaging, word order wins out. What both points have in common is that they argue for a strong link in German between word order and pragmatic requirements – a feature of discourse-configurationality.

In the following two chapters we discuss some of the unresolved issues brought about by this study concerning the nature of discourse deixis. This is related to the issue of pragmatically determined word order as it was noted in this chapter that there is a strong correlation between discourse deixis, initial "topic" position and null anaphora. Discourse deixis occurs frequently in the corpus and appears to have a significant effect on the overall frequency of word order which justifies a closer examination of this phenomenon.

So far, we have established in the form of the Compatibility Rule that verbal subcategorisation restrictions are necessary to achieve correct anaphora resolution – a point which is particularly important where null anaphors are concerned as they themselves give no information concerning their referents. The next chapter introduces a second, non-task-oriented corpus for comparison to determine whether the phenomena observed here regarding discourse deixis are specific to the Map Task.

In the Map Task corpus almost all of the abstract object references were discourse-deictic. In the Interview corpus, however, a quarter of the abstract object references were to other abstract objects. In the following chapter the analysis is therefore expanded to include anaphoric reference not only to discourse-deictic entities but to all abstract objects presented in Chapter 4, Section 4.4, that is neuter anaphoric reference with no gender-agreeing NP antecedent. In Chapter 7, Romijn's framework (as presented in Chapter 4) is used to facilitate the representation of the non-concrete referents and to determine the choice of pronouns vs demonstratives for these referents.

Chapter 6

The Function of Discourse-Deictic Utterances

6.1 A Comparison of Two Corpora

Despite the advantage that the Map Task provides a large amount of unscripted speech there are many features of the conversations which may be specific to task-oriented dialogues. Due to the nature of the task, a large part of the conversations are concerned with describing and checking the configuration of landmarks. The speakers are aware that there may be misunderstandings and are always explicitly or implicitly negotiating with each other. For this reason I have chosen a non-task-oriented corpus for comparison, which will allow me to ascertain which of the observed characteristics generally hold in the language and which are specific to that type of dialogue.

The corpus chosen is an interview corpus and consists of two 45-minute recorded and transcribed interviews of bank employees conducted by a sociology student[1], and two transcribed interview dialogues taken from newspapers. The two sociology interviews involve complex topics but the manner in which the conversations are conducted is friendly and informal. One of the newspaper interviews is a discussion between an industry manager and the German politician Klaus Schröder. The dialogue is fairly

[1] I thank Oliver Vopel for providing me with these recordings.

formal at first but turns into a heated discussion where more colloquial language is used. The other is an interview between a journalist and an author and is fairly formal throughout.

As the interview corpus (unlike the Map Task corpus) contains many references to different kinds of abstract objects, I have included not only discourse-deictic reference but all types of abstract object reference, ie discourse deixis and anaphoric reference to NPs denoting abstract objects. The different types of reference were shown in Romijn's analysis of abstract object reference in Dutch (cf Chapter 4, Section 4.4 and Section 4.6) to be similar in that the neuter anaphor acts as a pronominalised predicate, as was also shown to be the case for neuter anaphors in copula constructions. In light of these facts, a conflation seems justified. In the following sections, the correlations between abstract object reference and NP-form and abstract object reference and position are presented and compared with the figures of the Map Task analysis.

6.1.1 Abstract Object Reference and NP-Form

The first surprising finding in the Interview corpus is that there are only two instances of null topics in total. This means that there cannot be a strong correlation between null topics, discourse deixis and initial position as observed in the Map Task corpus. The tables presented in this section concentrate on the distribution of discourse-deictic *es* and *das*.

As explained in Chapter 4, Section 4.4.5, there are restrictions specific to copula constructions in German where anaphoric reference *must* be made by a neuter anaphor, eg:

(6.1) a. Siehst du den roten Strauch neben dem Kaktus?
(Can you see the red bush(m.) next to the cactus?)

b. Ja, es/*er ist eine grosse Pflanze.
Yes, it(.n)/*he(m.) is a large plant(f.).

c. Ja, *es/er ist gross.
Yes, *it(n.)/er(m.) is large.

		es		das	
		1st	>1	1st	>1
main cl. init.	**subj.**	0	0	123	29
	obj.	0	0	1	1
main cl. noninit.	**subj.**	6	4	2	0
	obj.	0	1	9	1
subordinate cl.	**subj.**	4	0	0	1
	obj.	0	0	0	0
questions	**subj.**	1	0	13	2
	obj.	0	0	1	1
Total		11	5	149	35
		16		184	

Table 6.1. Pronominal Form in Copula Constructions

		es		das	
		1st	>1	1st	>1
main cl. init.	**subj.**	2	2	38	6
	obj.	na.	na.	29	10
main cl. noninit.	**subj.**	4	3	2	0
	obj.	4	0	16	5
subordinate cl.	**subj.**	0	0	7	1
	obj.	0	0	19	1
questions	**subj.**	1	0	10	0
	obj.	0	0	13	2
Total		11	5	134	25
		16		159	

Table 6.2. Pronominal Form in Non-Copula Constructions

(Repeated from Chapter 4.)

For this reason these are treated separately in the analysis despite the fact that the distribution of NP forms shows no significant difference for the two. Table 6.1 and Table 6.2 show the correlation between pronominal form and discourse-deictic reference in copula and non-copula constructions, respectively. The tables give the numbers for the NP-form chosen for first mention and also for second, third and fourth mentions (>1) of the same discourse-deictic entity. As null anaphors are not an issue here, subordinate clauses and questions have also been included alongside main clauses.

The tables show that regardless of sentence type, grammatical function or mention,

demonstratives are preferred over the unstressed pronoun *es*, in both copula and non-copula constructions. In both tables the numbers in the two columns representing *das* are far higher than the numbers in the columns representing *es* (184 vs 16 for copula constructions and 159 vs 16 for non-copula constructions). In addition the numbers in the final column which show the use of *das* for repeated mention (Total 35 for copula and Total 25 for non-copula) are higher than the numbers in both columns representing *es* (Total 16 in both tables).

The use of pronouns for first vs second mention is significantly different: in the non-copula constructions, for example, there is a total of 30 instances of second mentioned entities, almost 17 % of which (5) are pronouns. The same table shows that there are 145 first mentions, only 7.5% (11) of which are pronouns. This means that the use of pronouns increases for second mention over first mention.

However, the fact that repeated mention of the same abstract entity does not lead to obligatory use of the pronoun is surprising. The examples of abstract object reference in Chapter 4 showed that whilst demonstratives are used for establishing abstract object reference, once this had occurred, pronouns can be used without causing ambiguity. This is the case for both English and German. However, the tables indicate that even if speakers have the option of using pronouns, they prefer to continue using demonstratives. Examples of this repeated mention and a possible explanation are given below.

Table 6.3 shows the choice of NP-form for discourse-deictic reference. As can be seen, the results are very different for the two corpora. In the Map Task Corpus demonstratives and null topics are used to establish discourse-deictic reference far more frequently (56% and 32%, respectively) than pronouns, which were only used in 12% of the cases. In the Interview Corpus, on the other hand, demonstratives were used almost exclusively for this purpose (86%). Pronouns also occurred in only 12% of cases but there were only two cases of null topics.

As described in the previous chapter, the results of the NP-form choice in the Map Task corpus bring about a conflict on GHZ's hierarchy, as both demonstratives and null anaphors are frequently employed for discourse-deictic reference and pronouns are

	Map Task Corpus		Interview Corpus	
Demonstratives	52	56%	106	86%
Pronouns	11	12%	15	12%
Null Anaphora	30	32%	2	2%
Total	93	100%	123	100%

Table 6.3. Abstract Object Reference and Syntactic Form

	Map Task Corpus		Interview Corpus	
Initial Position	81	87%	89	72%
Post-verbal Position	12	13%	34	28%
Total	93	100%	123	100%

Table 6.4. Abstract Object Reference and Position

the least represented group. The explanation given in the previous chapter took into account the preference for establishing discourse-deictic reference in initial position combined with the restrictions against object pronouns in that position.

Taking the GHZ hierarchy into account, the results of the Interview Corpus are easier to explain. The percentage of pronouns in the two corpora is identical but in the interview corpus the lack of null anaphors is made up for by a higher number of demonstratives. If discourse-deictic reference does not involve the continuation of an expected topic, but the activation or production of an unexpected topic, then it is clear why speakers prefer demonstratives over pronouns and pronouns over null topics: pronouns and null topics are only used for entities very salient in the discourse model and are less suitable for introducing new entities to the discourse model, but demonstratives are used for entities which are activated but not currently "in focus", ie the most salient.

In Section 6.2 of this chapter I will attempt to find an explanation of why the results of the two corpora are so different, ie why in the Map Task corpus discourse deixis does not necessarily involve topic shift, whereas in the Interview corpus it does.

6.1.2 Abstract Object Reference and Position

A second important result of the corpora comparison is shown in Table 6.4, which gives the correlation between abstract object reference and position in the main clause.

In both corpora a high percentage of this type of reference is made in the initial topic position of the main clause. The slight difference in frequency between the two corpora is due to the occurrence of null anaphors in the Maptask Corpus, which are restricted by syntactic rules to initial position.

The fact that there is an overwhelming preference for this type of reference to be made in initial topic position even in dialogues containing few or no null anaphors appears also to indicate that an event or proposition can be the centre of attention. In the following section the wider contexts of the utterances in question are examined in order to find an explanation for why the frequencies of demonstratives and null topics in the two corpora are so different despite the fact that their position in the utterance, which signals information packaging status, is the same.

6.2 Discourse functions of discourse-deictic utterances

The varying frequency of null topics in different text types has often been explained by stylistic variation. As null anaphors are not available in written German it is clear that if discourse-deictic reference is to be established in initial position only the demonstrative is possible. One would also expect more demonstratives and fewer null topics in oral texts which are, in Labov's sense, more formal. This is possibly the case as in some of the interview dialogues the speakers are aware of the fact that the dialogue may be transcribed and published.

The fact that there are many more demonstratives in the interview corpus than in the Map Task corpus can only partially be explained by style, however. Firstly, there was not a high degree of formality as not all interviews were subsequently printed and the banking interviews were informal conversations, as could be determined by listening to the tapes. Secondly and more importantly, a comparison of the utterances concerned shows that the function of those containing null anaphors is very different from the function of those with demonstratives. This can be demonstrated by a selection of typical examples from the corpora (4.84, 6.3, 5.15 below are from the Maptask Corpus, 6.5 is an extract from a SPIEGEL-magazine discussion from the Interview Corpus, its

translation is given in 6.6). As would be expected from a language whose word order can be determined by pragmatic rules and by grammatical functions, German frequently has more than one grammatical variant of a sentence in each given context. In Examples 4.84 – 5.15 the null anaphors could theoretically be replaced by demonstratives without resulting in ungrammaticality. In the Schröder-Henkel dialogue, the position of the demonstratives could also be filled by null topics. As pointed out in the introduction, it should be made quite clear, therefore, that this analysis is not concerned with pure grammaticality but with relative pragmatic acceptability[2].

(6.2) A: Jetzt musst du doppelt so lang hochgehen
(Now you have to go up twice as long.)
B: Na ja, 0 kann ich doch. (Event Type)
B: oh well, 0 can I too
"Oh well, I suppose I can (after all)."

(6.3) A: Jetzt gehst du waagerecht hoch.
(Now you go up horizontally)
B: Waagerecht?...nein, senkrecht.
(Horizontally?...no, vertically.
A: Äh, 0 mein ich. (T.D.)
A: oh, 0 mean I.
"Oh, that's what I mean."

(6.4) A: Jetzt am Zaun vorbeigehen und links hoch.
(Now go past the fence and up left.)
B: Gut, 0 mach ich. (Event Type)
B: good, 0 do I
"Ok, I'll do that."

(6.5) Schröder: Ich habe ja schon gesagt, dass nicht alles, was Sie sagen,
Schröder: I have prt. already said that not everything what you say

[2]Where *T.D.* stands for *pure textual deixis.*

falsch ist.

wrong is

Henkel: **Das** ist ja schon mal ein Fortschritt. (Fact)

Henkel: **that** is prt. already prt. an improvement

Schröder: Ja eben.

Schröder: Yes exactly.

Henkel: (zum SPIEGEL) **Das** müssen Sie unbedingt drucken (T.D.)

Henkel: (to Spiegel) **that** must you definitely print

Schröder: **Das** können Sie zweimal drucken! (T.D.)

Schröder: **that** can you twice print

(6.6) Schröder: I have already said that not everything you say is wrong.

Henkel: Well, **that**'s already an improvement.

Schröder: Yes, exactly.

Henkel: You definitely have to print **that**.

Schröder: You can print **that** twice.

As mentioned in the previous Chapter, Section 5.4.2, some of the null anaphor utterances have decreased acceptability if the null anaphors are replaced with overt pronouns and, particularly, if they are given in canonical word order rather than OVS.

If we substitute demonstratives for the null anaphors in Examples 6.2 – 6.4 the resulting dialogues are less fluent:

(6.7) A: Jetzt musst du doppelt so lang hochgehen

B: Na ja, das kann ich doch.

(6.8) A: Jetzt gehst du waagerecht hoch.

B: Waagerecht?...nein, senkrecht.

A: Äh, das mein ich.

(6.9) A: Jetzt am Zaun vorbeigehen und links hoch.

B: Gut, das mach ich.

Native speakers agree that the dialogues in 6.2 – 6.4 are very fluent and it appears that the speakers are in agreement with each other. This is not so much the case in 6.7 – 6.9. If we compare 6.3 and its equivalent 6.8, for example, it seems clear that in 6.3, A is conscious of the fact that she has made a mistake. In her first utterance she talks about "going up horizontally", which is obviously non-sensical, and is subsequently corrected by B. Her final utterance *Mein ich.* can be interpreted as meaning "sorry, that's what I meant.". In 6.8 on the other hand, A's final utterance *Das mein ich.* gives the impression that A thinks B has not listened to her. Her response could be reformulated as "But that's what I said!". In 6.7 and 6.9, the demonstrative does not lead to apparent disagreement but the transition from A's utterance to B's is regarded by native speakers as less fluent.[3]

Independently of how exactly one characterises these differences, it is clear for most native speakers that the utterances containing null anaphors have a higher degree of acceptability. This is also strongly confirmed by the frequency of null topics in these contexts. As indicated in Chapter 5, Section 5.4.2, the effect is reinforced if the canonical SVO word order is given, as can be seen in the following version of 6.3 (repeated from Chapter 5), which is completely rejected by most native speakers:

(6.10) A: Jetzt gehst du waagerecht hoch.
B: Waagerecht?...nein, senkrecht.
A: ??Äh, ich mein das.

The effect here is even stronger than in 6.8 that A is convinced she said the right thing in the first place. SVO word order in versions of 6.2 and 6.4 lead to similar effects. If acceptable at all in this context, the effect of the utterance is very abrupt. Reasons for this will be discussed below in Section 6.2.1

This means that both the choice of NP form as well as the position of the anaphor in the sentence are important for the function of the utterance. For the configurationality debate, the unacceptability of utterances such as those in 6.10 is a further pointer to the discourse-configurational nature of German. In Chapters 2 and 3 it was pointed

[3] As determined by a group of 15 informants.

out that, generally speaking, the canonical word order is the order that is acceptable in the largest number of contexts. This is certainly true for configurational languages such as English, whose SVO word order is acceptable in *all* contexts. As indicated in Chapter 5, Section 5.4.2, the fact that there are contexts in German where the canonical SVO word order is *unacceptable* indicates that it is to be placed towards the discourse-configurational end of the scale.

Turning now to the examples of discourse-deictic demonstratives, a version of 6.5 in which the demonstratives have been replaced by null anaphors also changes the impression of the dialogue:

(6.11) Schröder: Ich habe ja schon gesagt, dass nicht alles, was Sie sagen, falsch ist.
Henkel: 0 Ist ja schon mal ein Fortschritt.
Schröder: Ja eben.
Henkel: 0 Müssen Sie unbedingt drucken.
Schröder: 0 Können Sie zweimal drucken!

In this example the perceived formality changes. The dialogue seems more colloquial than one would expect from this type of discussion, showing that null anaphors are indeed associated with a particular style. An explanation is nonetheless required for why in some contexts, eg those in 6.2 – 5.15, null anaphors do not give the impression of an overly colloquial dialogue. In certain contexts it appears that null anaphors are acceptable and even preferential whereas in other contexts this is not the case.

In the following sections it will be suggested that in the dialogues containing discourse-deictic null anaphors there is an *expectation* that comments will be made on the previous utterance but that when this expectation is not present, demonstratives are used for discourse-deixis. The ordering of null anaphors and demonstratives on GHZ's hierarchy therefore correctly reflects the saliency difference of discourse units referred to by these anaphors. In order to explain this, the focus structure of the utterances will be taken into account.

6.2.1 Focus in Null Anaphor Utterances

In Chapter 2 it was shown that choice of NP-forms is one of the means of information packaging, the other two being accent placement and word order. Although the three are not necessarily connected, it was also made clear that there is a strong interaction between them. For example, some languages have a topic position to which the topic constituent obligatorily moves; definite NP and pronouns are normally used for entities old to the discourse so it is to be expected that the constituents in the topic position usually take on one of those forms; also, the nuclear accent is obligatorily part of the focus so it is presumably also rarely the case that the constituent in topic position is accented, unless it is a contrastive topic. In this way, the three factors are correlated with each other.

Accented Verbs and Polarity Focus

In order to determine the information packaging structure in the null anaphor utterances it is necessary to take the other two factors, ie accent placement and word order into account. In most null anaphor utterances it is the verb that is accented, eg

(6.12) 0 MEIN ich.
0 MEAN I.

(6.13) 0 HAB ich.
0 HAVE I.

Utterances in their canonical SVO form with full NP objects have the neutral accent placement on the object position (cf Chapter 3, Section 3.3), eg

(6.14) [Ich hab ein AUTO.]
[I have a CAR.]

In the null anaphor utterances above the accent is not in its neutral position. Shifting of the accent from neutral position can occur for two reasons: either because a different constituent is narrowly focussed or because of deaccenting phenomena. As

discussed in Chapter 2, Section 2.3.3, there are various reasons why an entity in neutral accent position can be deaccented. Examples taken from Ladd (1996), repeated below, showed that different words have different semantic weight or informativeness and that this cannot be calculated from the explicit context alone. Constituents with low semantic weight are less informative and thus deaccented despite being part of the focus, and pronouns in general are deaccented:

(6.15) I brought her a bottle of Talisker, but it turns out she doesn't LIKE whisky.

(adapted from Ladd 1996 175 5.28.b)

(6.16) a. I like JOHN.

b. I LIKE him.

Neutral accent placement rules require the final NP to be accented, eg if the second conjunct of 6.15 were in isolation, the rightmost NP *whisky* would carry the nuclear accent (*She doesn't like WHISKY.*). Because of the name "Talisker", *whisky* is already prominent in the discourse model and must be deaccented despite not having been mentioned explicitly. Deaccenting involves accent shift from the constituent in neutral accent position to another, in these cases the verb. The contrast in 6.16 shows that some words, such as pronouns and demonstratives can never bear a neutral sentence accent thereby always forcing the accent to occur on the verb. In Chapter 2 the term *accent repeller* was introduced as a cover term for all words which do not bear the nuclear accent in broad focus utterances despite being in neutral accent position.

As was seen in Chapter 3 (examples repeated below), deaccenting phenomena though not universal are also observable in German:

(6.17) Er küsste BEATRICE.
He kissed BEATRICE.

(6.18) Er KÜSSTE sie.
He KISSED her.

In the null anaphor utterances above, however, the word order has been changed. In addition the object NP is phonologically null and the other NP *ich* is a pronoun, hence also an accent repeller.

As shown in Chapter 2, Section 2.1.3, accenting the verb can occur for a number of reasons. It could mean that the verb is narrowly focussed, ie the focus is on its semantic content. Example 6.18 could occur in the context of *What did Beatrice's boyfriend do?* or in the context of *What did he do to Beatrice?* – in the former the whole VP is focussed and the object pronoun is deaccented (an accent repeller) thus requiring the accent to shift to the verb; in the latter context only the verb is focussed and must bear the nuclear accent.

A further type of utterance which involves accenting the verb is *Verum-Focus* (Höhle 1992) or *polarity focus*, ie when the focus of the utterance is the truth value of a proposition. Example 6.18 is also a possible response to the question *Did he kiss Beatrice?*, in which case the verb *kiss* in is accented despite not containing any new semantic information in order to indicate the truth of the proposition.

In spoken German, null topic utterances are frequently used for polarity focus, as in the following:

(6.19) A: Kennst du Brigitte?
(Do you know Bridget?)
B: Ja, 0 KENN ich.
B: Yes, 0 KNOW I.

(6.20) A: Machst du mal die Tür zu?
(Will you shut the door?)
B: Ja, 0 MACH ich.
B: Yes, 0 DO I.

(6.21) A: Du kennst Brigitte nicht.
(You don't know Bridget.)
B: 0 Kenn ich DOCH.
B: 0 Know I TOO.
"I DO know her."

In these utterances the verbs or the asserting particle *doch* carries the nuclear accent, not because these contain new information and are thus part of the focus constituent, but because the Verum-Focus requires it. The focus of the utterance is the acceptance or rejection of the previously expressed proposition and not the semantic content of the verb. It is my hypothesis that the null anaphor utterances in the Map Task fulfil a similar function despite not containing a repetition of a previously mentioned verb.

The Map Task examples 6.2 – 6.4, repeated here with the accent indicated, occur in contexts which show that the verbs themselves do not contain unexpected, new information.

(6.22) A: Jetzt musst du doppelt so lang hochgehen
(Now you have to go up twice as long.)
B: Na ja, 0 kann ich DOCH.
B: oh well, 0 can I too
"Oh well, I suppose I can (after all)."

(6.23) A: Jetzt gehst du waagerecht hoch.
(Now you go up horizontally)
B: Waagerecht?...nein, senkrecht.
(Horizontally?...no, vertically.
A: Äh, 0 MEIN ich.
A: oh, 0 mean I.
"Oh, that's what I mean."

(6.24) A: Jetzt am Zaun vorbeigehen und links hoch.
(Now go past the fence and up left.)
B: Gut, 0 MACH ich.
B: good, 0 do I
"Ok, I'll do that."

B's utterance in 6.23 shows that the dialogue is about what is *meant* by A. The verb *meinen* ("mean") therefore in A's second utterance does not contain any new semantic information and is not narrowly focussed, despite being accented. In 6.24 the theme of

the conversation is a certain activity ("walk past", "go up"), for which the verb *machen* ("do") is a substitute. The new information in B's utterance is his agreement to carry out the suggested activity, not the activity itself. In both of these examples the null anaphor utterance can be interpreted as having polarity focus.

In 6.22 the broader context shows that the dialogue is about B's *ability* to go up for a certain length. Despite the fact that the verb *können* ("can", "be able to") is not explicitly mentioned, it is "given", in the same sense as *whisky* in 6.15 above. This utterance contains the particle *doch* which must receive the nuclear accent to express polarity focus, as shown in 6.21 above.

If we compare this to the examples of VP-ellipsis in English given in Chapter 5, Section 5.5, and repeated below, we find that these have a similar function:

(6.25) F: Can you do this, aye?
G: I think you can.

(6.26) A: Well...in my map I think the line is within the avalanche.
B: It is.

They occur either following a direct question (6.25) or an implied one (6.26). As with the German examples, there is no new semantic content in the verb and the focus is on the polarity of the proposition. The difference between the German and the English examples is merely that in English only auxiliaries, modals and *do* can be used and in most cases they involve an exact repetition of the verb from the preceding utterance. In German null anaphor utterances there is no restriction on the type of verb and full verbs as well as auxiliaries are used.

Canonical Word Order and Explicit Anaphors

Let us now return to the observation that the equivalent utterances with demonstratives instead of null topics and particularly with canonical SVO word order are less acceptable or completely rejected. The GHZ hierarchy shows that explicit anaphors, as opposed to null anaphors, imply a lesser degree of saliency of the referent.

This is also reflected by the Overt Pronoun Rule of CT (Chapter 2, Section 2.2.3), repeated here:

- **Overt Pronoun Rule:**
  An overt pronominal subject should not be construed with the Cp of the previous utterance.

(From Dimitriadis 1995, p.50)

In the cases examined here it means that using an explicit anaphor implies that the event or proposition expressed by the whole preceding utterance is not actually the main topic of discourse in the preceding context. In Centering terms, if we assume as suggested in Chapter 5 that the DU is ranked highest, this means that the preferred centre (Cp) of the preceding utterance is referred to by a demonstrative rather than a null anaphor or unstressed pronoun. This is equivalent to referring to a continuing topic with an NP form that implies topic shift (or link). This goes against the Overt Pronoun Rule and, unsurprisingly, leads to decreased acceptability.

However, what leads to outright rejection of the utterance is the canonical word order. As the canonical word order is of course grammatical, the reason for the unacceptability must be found in the information packaging structure and how this is encoded by linear order of constituents. The following examples show how word order in German is used to indicate not only what the continued or shifted topic is, but also what is part of the focus constituent.

For the question in 6.27 there are two possibilities: either a response with a continuing topic (a) or a response with topic shift (b):

(6.27) Was hat Julian mit Beatrice gemacht?
What did Julian do to Beatrice?

a. Er KÜSSTE sie.
he KISSED her

b. Die KÜSSTE er.
her KISSED he

In the following example topic shift is not possible:

(6.28) Was hat der Freund von Beatrice gemacht?
What did Beatrice's boyfriend do?

(6.29) a. Er KÜSSTE sie.
he KISSED her

b. ??Die KÜSSTE er.
??her KISSED him

In a b the response gives the required information, ie what Julian did, but it is nonetheless unacceptable because the continuing topic *Julian/er* is not in initial position. What is interesting about this example compared to 6.27 above, is that *Beatrice* is not available as a shifted topic despite being mentioned in the context. The reason is that this constituent is part of the NP *der Freund von Beatrice* and this status appears to exclude it from becoming the topic in the subsequent utterance. The only acceptable version is one where the object occurs postverbally. As we saw in Chapter 2 in the discussion on prosody, postverbal object pronouns (ie pronouns in their canonical position) can become part of a broader focus constituent if the verb is accented. This is the case in 6.28 a. The contextual question determines that focus of the response must be the whole VP including the object as this is the important information. The reason for the deaccenting of the object is not because it is not part of the focus but because it is an accent repeller. The constituents contained in the focussed constituent must remain in canonical word order in order for focus projection to be available.

What this example shows is that postverbal pronominal objects can construed as being part of the focus constituent. Placing them in initial position eliminates this possibility which is the reason for the unacceptability of 6.28 b, where the object *must*

be part of the focus. In the null anaphor utterances of the Map Task, placing the object in postverbal position could lead to it being construed as part of the focus constituent.

An additional factor for the unacceptability of certain word orders is that it is not possible to introduce a new topic which goes against any of the possible expectations of a continued or shifted topic. Compare the following:

(6.30) Was hat der Freund von Beatrice gemacht?
What did Beatrice's boyfriend do?

a. Er KÜSSTE sie.
he KISSED her

b. ??Sie KÜSSTE ihn.
??she KISSED him

The unacceptability of 6.30 b is due to the fact that the focus of the exchange (ie what activity was carried out by Julian) is ignored by the response to the question, which instead gives information about an activity carried out by Beatrice. Of course, the equivalent response in English is also pragmatically unacceptable and therefore it does not give us information about German word order. However, the example is effective in showing that the reason for unacceptable canonical word order can be that the expectations of the other speaker have been violated. For the null anaphor examples this means that the unacceptability of the canonical word order indicates that there is a constituent in topic position which is different from the expected topic.

The canonical word order versions of the null anaphor utterances above can thus be unacceptable for three reasons:

- The abstract object is the (continuing or shifted) topic and is preferentially placed in initial position (Example 6.27).
- The abstract object must not be construed as being part of a broad focus constituent and cannot occur in postverbal position (Example 6.28).
- Placing an entity other than the expected topic in initial position can lead to a violation of discourse expectations (Example 6.30).

The null anaphor utterances indicate that the speaker regards the discourse-deictic entity to be the topic of the current utterance and the focus of exchange is the polarity of the previous statement, not the semantic content of the whole VP.

6.2.2 Focus in utterances with demonstratives

The three utterances containing demonstratives in Example 6.5 (repeated below with nuclear accent indicated) do not show polarity focus but contain new semantic information. The referent of the discourse-deictic anaphor *das* is given in the context, and the new information is contained in the predicate, ie *ist ein Fortschritt, müssen Sie drucken, zweimal.*

(6.31) (i)Schröder: Ich habe ja schon gesagt, dass nicht alles, was Sie
(i)Schröder: I have prt. already said that not everything what you
sagen, falsch ist.
say wrong is
(ii)Henkel: **Das** [ist ja schon mal ein FORTSCHRITT.]
(ii)Henkel: **that** is prt. already prt. an improvement
(iii)Schröder: Ja eben.
(iii)Schröder: Yes exactly.
(iv)Henkel: (zum SPIEGEL) **Das** [müssen Sie unbedingt DRUCKEN.]
(iv)Henkel: (to Spiegel) **that** must you definitely print
(v)Schröder: **Das** können Sie [ZWEIMAL] drucken!
(v)Schröder: **that** can you twice print

As is clear from the context and indicated by the square brackets, the whole VP in utterance (ii) is in focus. For this particular dialogue no recording was available but it is clear for native speaker intuitions[4] that the nuclear accent has to fall on the rightmost NP. Reference is made by the demonstrative to the discourse entity *the fact that S said that not everything H says is wrong*, but this is not the expected topic. If we assume

[4]This was again checked with informants.

for the moment the standard Centering ranking which places the DU at the *lower* end of the scale then the (embedded) subject of Schröder's first utterance is *nicht alles, was Sie sagen* ("not everything you say"). This, being both the subject and the only NP in the preceding utterance (aside from the reference to the two participants) is according to most topicalisation predictions the most likely topic for the next utterance. For this reason, the referent of the demonstrative in utterance (ii) (ie the *whole* of utterance (i)) is not a continuing topic but rather a *link* in Vallduví's sense or a shifted topic. It points to a filecard different from the one activated at the time of utterance. In utterance (iv), repeated reference is made to the same discourse entity, but again the semantic content of the whole VP is in focus. This time, because the NP *Sie* in neutral accent position is an accent repeller, the rightmost verbal element *drucken* must receive the nuclear accent even though it is not narrowly focussed. The final utterance (v) is an almost verbatim repetition of Henkel's preceding one (iv). The emphasis is on *zweimal*, which is narrowly focussed and hence must receive the nuclear accent.

It is surprising here that the demonstrative is chosen despite repeated reference to the discourse entity expressed by the same utterance, ie *(S said that) not everything H says is wrong.* As shown in Chapter 4, Section 4.3.1, demonstratives are preferred for *establishing* reference to a discourse deictic entity but subsequent reference can be made by ordinary pronouns. In terms of the CT ranking the DU of utterance (i) has become an NP in utterance (ii) and should therefore be the Cp (discounting the reference to the participants). However, it seems that discourse-deictic referents are an exception and are always ranked lowest in this corpus. This is also implied by the lack of pronouns and null anaphors used for this type of referent. In 6.31 the NP referring to the abstract object is always encoded as a link rather than a continuing topic.

The reason for this low ranking of DU's is presumably that they disappear from the discourse model in the utterance following the one containing the anaphoric reference to them. This feature of that type of reference was described also by Passoneau (cf Chapter 4, Section 4.3.2).

In the null anaphor utterances with polarity focus it is questionable what the focus constituent actually is (see Chapter 2 and Höhle (1992) for detailed discussions). However, it is clear that the discourse-deictic anaphor is not part of the focus and also that it is not a link. In Vallduví's framework it does not contribute to the information structure of the utterance as it does not point to a filecard (its referent filecard is already activated) or add something new to it. Both the null anaphor and the demonstrative in these examples appear to be topics in the traditional sense but a further distinction is required to differentiate between topics which are links (encoded as demonstratives) and continuing topics (encoded as null anaphors).

6.2.3 The Influence of Extra-linguistic Factors

To summarise the analysis so far, demonstratives are used when reference is made to the previous utterance as a whole and the predicate supplies new information. Usually this means that the reference in the initial position was not made to the "expected" topic and that it is therefore in information packaging terms a link. Null topics, on the other hand, are used when the semantic information of the verb is somehow given (explicitly or implicitly) and the participants expect a statement to be made about the previous utterance (eg agreement or disagreement with it).

In the interview dialogues, which contain a higher percentage of demonstratives for abstract object reference than the Map Task corpus, it appears that the discourse-deictic referents are ranked lowest on the Centering ranking, meaning that they cannot be referred to by the NP form reserved for continuing topics. In the Maptask Corpus, on the other hand, there are many demonstratives but a far higher percentage of null topics than in the interview corpus. Bearing in mind that null anaphors are regarded as being colloquial and are not available in formal or written German, the fact that they are so highly represented requires an explanation.

The difference between the two corpora can be explained by assuming the standard Centering ranking for the interview corpus but a ranking which places the DU in highest position (as suggested in Chapter 5) for the Map Task corpus. In order to explain the use of different rankings for the two corpora it is necessary to take extralinguistic factors

such as text type into account.

The task which the participants in the Maptask dialogues have to complete requires frequent discussion and opinions regarding the utterances of one of the speakers. The participants know that misunderstandings can arise concerning the route or the location of particular landmarks. For this reason there is *a general expectation that an utterance will be followed by agreement or disagreement regarding its content as a whole.* In this sense, the utterance itself is often an expected topic. Reference to this utterance (discourse-deictic reference) can be established by a null topic as as the abstract object it refers to is a salient entity in the discourse model. In addition to this, the verb in these sentences, despite not being *explicitly* mentioned previously, usually does not contain new semantic information but is accented for polarity focus. The focus of these sentences is the truth value of the proposition.

In the Interview Corpus there is no expectation that reference will be made to the utterance as a whole as there is no task involved and thus also no expected misunderstandings and negotiations. Discourse-deictic reference is also frequently made but the reference is incorporated in a sentence which predicates something new of the abstract object. The referent of the anaphor is not an already established topic, as is the case in the utterances preceding the null topic sentences. The referent of the demonstrative is encoded as a link as it points to a new filecard. It is possible that this type of reference involves adding a referent to the discourse model through the use of the anaphor itself (*referent coercion*), as suggested by Dahl & Hellmann 1995), possibly through a process of accommodation. The referent only becomes a topic in the utterance containing the anaphor. The form of such anaphors cannot be phonologically null as its referent is not salient enough and the demonstrative is chosen instead.

So far we have discussed what determines the choice between null anaphors and demonstratives for reference to abstract objects. We have determined that null anaphors are preferred when reference to the preceding utterance as a whole is expected, and we also noted that these utterances fulfilled the discourse function of agreeing or disagreeing with the propositional content of the antecedent proposition (polarity focus).

Chapter 5 also provided reasons for why such reference was relatively infrequently established by unstressed pronouns. However, the tables in this and the preceding chapter show that pronouns *do* occur in both corpora. Chapter 7 now turns to the problem of determining how the choice is made between pronouns and demonstratives.

Chapter 7

Cognitive Representation and NP-Form

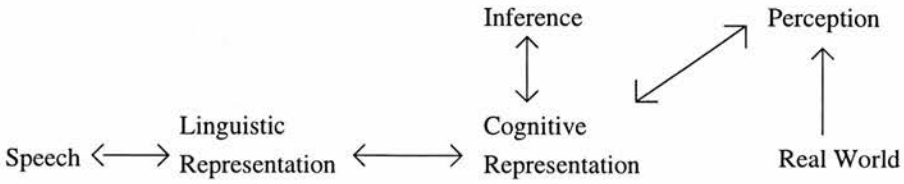
7.1 Introduction

In the previous chapters we discussed the use of neuter demonstratives, neuter pronouns and null topics using examples of discourse-deictic reference in German. However, the tables include all kinds of abstract object reference, including those introduced in Chapter 4, Section 4.4 as part of the discussion of Romijn's framework for cognitive and linguistic representations (Romijn 1996). Romijn included discourse-deictic reference in her account as well as any kind of reference made by the neuter pronoun with no gender-agreeing NP-antecedent. Concentrating only on pronouns, she does not, however, discuss the choice of NP-form. The remainder of this chapter will discuss the different types of abstract objects in German and the choice of NP-form used to refer to them.

Using examples of discourse-deictic reference only, an explanation in terms of text type was found to account for why this is sometimes made with null topics and sometimes with demonstratives. This only accounts for a limited set of abstract objects and does not explain the choice between demonstratives and pronouns in the interview corpus.

In Chapter 4, we discussed Romijn's framework, which crucially relied on the distinction of the following different levels of representation:

(7.1)



(Repeated from Chapter 4, Section 4.4)

The hypothesis in the following sections is that the form of the abstract object anaphor in text types where there is no expectation of reference to the preceding utterance (eg the Interview corpus) is determined by whether the antecedent is present in the cognitive or in the linguistic representation of the utterance containing it. It will also be suggested that the depth of embedding of the referent in the cognitive representation as depicted in Romijn's representations is important for determining the choice of NP form.

The results of the corpus study in Table 6.1 and Table 6.2 in Chapter 6, show that there is a very strong preference for using demonstratives rather than pronouns for abstract object reference in general. There is also a strong preference for these to occur in initial position when in main clauses, regardless of whether they are subjects or objects. This preference is so strong that even for 2nd, 3rd or 4th reference to the same abstract entity demonstratives are chosen over pronouns. In the following sections some examples of reference to both discourse-deictic and non-discourse-deictic abstract objects taken from the corpus will be discussed in detail to determine when demonstratives and when pronouns are used.

7.2 Preferred *das*

The following is an example from the corpus of repeated reference to the same object by demonstratives:[1]

[1] For brevity's sake, in the following examples no gloss is provided, only a translation. The German demonstratives are translated with *that*, the pronouns with *it*, regardless of how natural this sounds in

(7.2) a. **A: ...diese Acquisition**$_i$ ist natürlich manchmal schon so,...wie Klinken-putzen. Also wie jemand, der Versicherungen verkauft.
(**this acquisition** is sometimes like...like doing door-to-door sales. Like somebody who sells insurances.)

b. **B:** Haben Sie **das**$_i$ schon mal gemacht? Haben Sie schon mal jemanden angesprochen?
(Have you ever done **that**? Have you ever approached someone and talked to them?)

c. **A:** Ja.
(Yes.)

d. **B:** Wie war **das**$_i$?
(How was **that**?)

e. **A: Das**$_i$ ist ziemlich schwierig teilweise.
(**That** is sometimes quite difficult)

The three occurrences of the demonstrative in this extract appear to refer back to the NP *Acquisition*. Despite there being an NP-antecedent which the *das* presumably refers to, there are similarities between this type of reference and discourse-deictic reference. Firstly, the NP-antecedent, which is feminine, does not agree in gender with the neuter demonstrative, as would normally be required for anaphoric reference. In fact, for normal anaphoric reference feature agreement is one of the factors used to achieve unambiguous anaphora resolution. Secondly, the demonstrative in 7.2b is the complement of the verb *machen* ("do"), which requires an event type or concept as its complement and which according to the Compatibility Rule (Chapter 5, Section 5.6.1) cannot refer to a concrete entity.

In Romijn (1996) (Chapter 4, Section 4.4) this type of object is grouped together with discourse-deictic objects because both types require reference by a neuter anaphor and neither have an NP-antecedent referring to a concrete entity. This indicates that both are complex, abstract objects

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English.

The representation of the utterance in 7.2a is as follows in Romijn's framework:

(7.3) This acquisition is like doing door-to-door sales.

(7.4) C1 (Inst.: be situation)
Element1: C2(f.sing.)(Inst.: acquisition situation)
Element1: E1(m/f.sing)(Inst.:pers./company); buyer.
E2(m/f.sing.)(Inst.:pers./company); seller.
Core: activity: acquiring
Element2: E1(n.sing.)(Inst.:object)
Core: state: be
Qualification: like door to door sales
Setting: now

In this representation there are two abstract objects: C1 which is the complex object referred to by the whole utterance, ie the state *Acquisition is like doing door-to-door sales*, and C2 which is the complex object referred to by the NP *acquisition*. Due to our knowledge of the world, this NP does not evoke a simple, concrete entity but a whole complex object in our cognitive representation including buyer, seller, the activity of acquiring and the object to be acquired, without any of these being explicitly mentioned.

The subsequent utterance 7.2b evokes the following cognitive representation:

(7.5) Have you ever done that?

(7.6) ?C1 (Inst.: do situation)
Element1: (m.sing.)(Inst.: hearer); has done Cvar
Core: activity: do
Element2: Cvar; has been done
Qualification: *
Setting: past

The demonstrative *das* is capable of evoking both an entity marker (Evar) as well as complex object markers (Cvar). In 7.2b evoking an entity marker is not possible

as the demonstrative is a complement of the verb *machen* ("do"), which requires a complex object as its complement. There are two possible candidates for unification in 7.4: the *be situation* C1 and the *acquiring situation* C2. Romijn does not go into the details of how a decision is made between the two, distinguishing only between entity and complex object markers which require a marker of the same type for unification. It is clear from the discussion in Chapter 5 and the Compatibility Rule though, that a distinction must be made between different types of complex object markers, ie those referring to events, states, propositions or event types.

In Example 7.4, C1 is a state and C2 denotes an event type. In Example 7.6 the Cvar in Element2 must be unified with a complex object denoting an event type as the verb ("has been done") implies that its complement refers to an activity. Cvar can thus only unify with C2 of the preceding utterance, which is both of the right marker type (ie C and not E) and the right complex object type (ie event type). During the unification process it picks out the activity in the core, ie *acquiring*.

A's answer *yes* subsequently eliminates the *?* from C1 in 7.6. In 7.2d B requests an instantiation for the *qualification* in C1, by asking how that *particular* event was. In repeated reference to the same entity, the Cvar evoked by the demonstrative in d is unified with the already unified Cvar = C2 elements of utterances 7.4 and 7.6. In e, A uses the neuter demonstrative again to evoke a Cvar, which this time must unify with the C2 element in 7.4 as it refers to the general event type and not a specific incidence. The predicate *is sometimes quite difficult* instantiates the *qualification* slot in C2 of utterance 7.4.

A further point, not discussed by Romijn, is that, as the corpus analysis shows, reference to all complex, abstract objects is preferably established by demonstratives, rather than pronouns. The complex object described by the NP *Acquisition* is referred to three times in this short extract, each time by a demonstrative, despite the fact that no activation of the entity is necessary, as it remains salient throughout (ignoring for the moment the switch between general event type and specific incidences of the event).

It should be stressed here again that we are not concerned with complete unacceptability or ungrammaticality but rather with grades of acceptability. In the dialogue above, changing the *das* to *es* does not lead native speakers to reject the utterances. In many cases there is an area of overlap where either *das* or *es* could be used. However, the versions with the demonstrative are usually *preferable* and this is strongly underlined by the frequency results showing that *es* was chosen only 16 out of 159 times (Chapter 6, Table 6.2).

7.3 Preferred *es*

7.3.1 Referential vagueness

This section now turns to some corpus examples where the simple pronoun is preferable. The first type of situation is where the *es* is referentially vague, as in the following example, taken from one of the banking interviews:

(7.7) a. Wie ich damals ihr erstes Fax bekommen habe, da war mir schon irgendwie klar, dass da doch eine gewisse Dissens besteht zwischen dem, was Sie erwarten und so, wie **es** bei uns ist.

b. When I got your first fax I kind of realised that there is a certain difference between what you expect and how **it** is here.

In this example, the anaphor is neither discourse-deictic, nor does it have an antecedent NP referring to a complex object in the linguistic context. Replacing it with a demonstrative (*wie das bei uns ist* "how that is here") gives the false impression that discourse-deictic reference is being made or that there is an antecedent present. The pronoun is similar to those in idiomatic expressions such as *Wie geht's?* ("How's it going?"), where it refers to a person's well-being but only vaguely and most speakers would be hard-pushed to find an specific referent.

In the following example, also taken from a banking interview, which contains both a demonstrative and a pronoun with complex object referents the contrast between the two becomes particularly clear:

(7.8) a. ..es ist auch am Markt bekannt, dass bestimmte Branchen negativ gesehen werden und dass **das** auch auf ein Unternehmen ausstrahlt, das dieser Branche zugerechnet wird, mag **es** unter ihnen selbst noch so gut sein.

b. ..and it is known in the market that certain branches are regarded negatively and that **that** can have effects on a company which belongs to that branch, no matter how good **it** is amongst them.

The demonstrative refers back discourse-deictically to the referent *dass bestimmte Branchen negativ gesehen werden* ("that certain branches are regarded negatively"). Replacing that *das* with *es* leads to a far less acceptable utterance, despite the fact that both NP-forms are grammatical in that position. The pronoun in the final clause, on the other hand, does not have a clear antecedent. It could best be paraphrased as *the atmosphere*, *the understanding*, or *the success* of the company, none of which are explicitly mentioned.

In order to determine the place of the referent in the cognitive representation, let us turn again to Romijn's framework. In her framework, the representation of the NP *company* would include the employees of that company, which are subsequently referred to by the pronoun *ihnen* ("them"):[2]

[2]I have added the numbers at the bottom indicate the level of embedding. This notation is not used by Romijn.

(7.9) E1(f.sing.)(Inst.: company)/ C1 (Inst.: company-state/situation)
Element1: E1(m/f, sing.)(Inst.:person); is manager
E2(pl.)(Inst.:person); are employees
Core: activity: do business
Element2: C2(Inst: business)
Element1:...
Core:...
Qualification: *
Setting: Place: building
L.1 *L.2* *L.3*

Assuming that the *es* refers to how the business of the company is going (*Qualification: **), we see that this is deeply embedded in the cognitive representation (Level 3). The NP *das Unternehmen* ("the company") evokes the complex object C1 which contains the entity markers evoked by the general knowledge that there are managers and employees working in a company. These entity markers are present at the second level of embedding and can be unproblematically referred to by a number-agreeing pronoun, such as *ihnen* ("them") in the above example.

Inside the core there is the activity, ie the work in the company, here loosely described as *doing business*. Embedded at the third level is a complex object C2 which is evoked by the term *business*. It is also part of our general knowledge that there is work going on in the company. The complex object C2 has various elements associated with it, the details of which are not given here. One of these elements is the *qualification*, ie how well the business of the company is doing. It is part of our general knowledge that business can go well or badly, but the value of this is uninstantiated as no comment has been made on it at the time when the complex object NP *company* is uttered.

We see that the qualification slot is present in the cognitive representation but also that it is embedded at the third level. In the previous section it was shown that abstract object reference made by demonstratives is usually to elements embedded at the second level, usually the *core* activity. The type of reference seen in Example 7.8

is thus reference to a more deeply embedded entity.

Neuter pronouns, as in the above two examples, appear to be used when there is no antecedent in the linguistic or first or second level cognitive representation of the context. Romijn also discusses such vague reference but does not mention any difference in NP-form chosen for the two types in Dutch. The difference noted by her is only that reference to more deeply embedded entities is restricted to spoken language whereas the other types (discourse-deictic and with complex-object-evoking antecedent) are possible in both spoken and written form (see examples in Chapter 4, Section 4.4.4).

Romijn discusses further cases of *seemingly non-referential "het"* , where there is no clear linguistic antecedent NP, no antecedent present in the argument structure or even in the deeper embedded structure of the complex object evoked by the previous utterance. The referent in these cases is evoked on the basis of general knowledge alone, eg

(7.10) Anna's made **it** in the City.

In Romijn's opinion, these are not strictly speaking non-referential. In most cases, an NP could be substituted for the pronoun (eg *a good career, a life for herself*). In German, this type of reference is also preferentially established by the pronoun rather than the demonstrative. The following example is taken from an E-mail, which is similar in style to spoken language:

(7.11) a. der arme Alex liegt krank im bett, hat sich wohl ziemlich fies den magen verdorben, so richtig mit fieber, kotzen etc. aber der spinner musste natuerlich heute morgen erstmal zur arbeit gehen, und kam dann direkt wieder nach hause, warum muessen maenner immer so uneinsichtig sein??? ich werde ihn dann mal wieder aufpäppeln, morgen wird **es** hoffentlich besser gehen.

b. Poor Alex is ill in bed, he's got a really bad stomach upset, with temperature, puking etc but the idiot of course insisted on going to work this morning and had to come straight back home again, why do men always have to be so stubborn??? I'll get him back on his feet, tomorrow **it**'ll hopefully go better.

In this extract the *es* does not have an explicit or implicit antecedent. It vaguely refers to the person's health or general well-being and is understood almost as an idiomatic expression, as part of people's general knowledge. If it were replaced by *das*, which is perfectly felicitous in this context, the meaning is altered in that the referent is less vague. One would be more likely to interpret it discourse-deictically, eg as referring to Alex's going to work, which had been described as being unsuccessful and has an antecedent at the linguistic level. The demonstrative seems to indicate that there is a referent present in the linguistic context or first level embedding in the cognitive representation, whereas the pronoun tends to indicate that a referent is to be found in a more deeply embedded level.

This is similar to abstract object reference where there is no linguistic context at all. For example, if a person returns home after an interview or a party, they are likely to be asked *Wie war's?* ("How was **it**?) or *Wie ist* **es** *gelaufen?* ("How did **it** go?"). In these cases, as in English, the demonstrative is completely infelicitous. From a linguistic point of view, the reference is vague as there is no explicit antecedent at all. Cognitively, however, it is salient enough for reference to be made.

7.3.2 Intrasentential Reference

Aside from reference to deeply embedded and vague entities, the second type of reference where *es* is preferred is for discourse-deictic or complex object reference to entities in the same sentence. The following two utterances taken from the banking interviews are examples of this:

(7.12) a. Wir unterstützen junge Talente, die sich neue Opportunitäten suchen, weil ich davon überzeugt bin, dass **es** Mehrwert schafft.

b. We support young talents who look for new opportunities, because I am convinced that **it** creates added value.

(7.13) a. Wenn ich,... die Investition von Tag null bis zum Ausscheiden rechne, dann bin ich davon überzeugt, dass **es** vielleicht gerade auf Null aufgeht.

b. If I... work out the investment(f.) from day zero up to their leaving then I am convinced that **it**(n.) maybe comes out at about nil.

The neuter pronoun in Example 7.12 refers discourse-deictically back to the abstract object event *unterstützen junge Talente, die sich neue Opportunitäten suchen* ("it supporting young talents who look for new opportunities"). In 7.13 the neuter pronoun refers to the complex object evoked by the feminine NP *die Investition von Tag null bis zum Ausscheiden* ("the investment from day zero up to the leaving"). In both cases the antecedent occurs in a *subordinate* clause in the same sentence as the anaphor. The demonstrative would not be infelicitous in this context, yet a large part of the neuter pronouns in refer to entities in the same sentence, indicating that this is a factor which favours them.

In the context of the utterance in Example 7.13 reference to the same entity (*Investition*) is subsequently made again after two intervening utterances. The second time, the demonstrative is used:

(7.14) a. Wenn ich **das** längerfristig sehe, habe ich einen Payoff.

b. If I see **that** in the long run, I have a payoff.

This shows that although demonstratives are preferred when there is a linguistic antecedent, if the anaphor and antecedent are very close, as occurs in subordinating conjunctions, the pronoun is used.

In *coordinating* rather than subordinating conjunctions, and in clauses with syntactic independence such as reported speech, the demonstrative is preferred, as in the following, taken from the same dialogue:

(7.15) a. Es kommt einmal und **das** wissen wir.

b. It'll happen and we know **that**.

(7.16) a. Sobald es unter die Gürtellinie geht sagen wir, **das** ist nicht unser Stil.

b. As soon as it goes below the belt we say **that** is not our style.

In both cases the demonstrative refers back to the complex object evoked by the first clause, ie *it'll happen* and *it goes below the belt*, respectively.

7.3.3 Repeated Reference

It was mentioned in Chapter 6, Section 6.1, that repeated reference to the same abstract entity is frequently made by demonstratives. However, *if* the pronoun is chosen for reference to discourse-deictic entities which are *not* deeply embedded, it is usually the case that this occurs for repeated reference, ie not to establish reference to an abstract object, eg

(7.17) a. A: Sie können schreiben, wenn sie sich über jemanden geärgert haben.
B: Kommt **das** vor?
A: **Das** kommt auch vor, ja. [...] **Das** ist [...] eher nicht der Fall. Aber **es** kommt vor.

b. A: You could write when somebody really annoyed you.
B: Does **that** happen?
A: **That** also happens, yes. [...] **That** is normally not the case. But **it** happens.

(7.18) a. A: ...mit dem Kunden ein Geschäft machen.
B: Wenn es ein kleineres Unternehmen ist, stell ich mir **das** noch relativ..., nein, dann stelle ich mir **es** eigentlich schwierig vor.

b. A: ...to do business with the client.
B: If it's a smaller company then I imagine **that** to be relatively..., no, then I actually imagine **it** to be difficult.

In Example 7.17 there are four references to the same entity *somebody writes that somebody really annoyed him/her*, the final one is made with the pronoun rather than the demonstrative. In 7.18 reference to the entity *do business with the client* is established by a demonstrative, but then in an instance of self-repair subsequent reference to the same entity is made with a pronoun.

7.4 *Es* vs *Das*: Directionality of Reference

In addition to the referential uses discussed so far, there are also quasi-argumental uses of *es*, which bear a strong resemblance to discourse deixis, eg

(7.19) **Es** ist schön, dass du kommst.
It is nice, that you're coming.

The pronoun seems to refer to the following subordinate clause, and can indeed also be replaced by it:

(7.20) Dass du kommst, ist schön.
That you're coming is nice.

Vikner (1995), following Hoekstra (1983) and Bennis (1986), argues that these are not truly expletive subjects, ie non-arguments, but rather, like arguments, are assigned theta-roles.

Examples 7.21 and 7.22 below show furthermore that in German, quasi-arguments are also different from non-arguments (Example 7.23) in that the former can be replaced by demonstratives, as is also evident (in colloquial German) in weather sentences, but the latter cannot:

(7.21) Es/Das ist schön, dass du kommst.
It/that is nice, that you're coming.

(7.22) Es/Das regnet.
It/That rains.

(7.23) Es/*das ist ein Junge gekommen.
It/*that is a boy arrived.

The *es* in sentences such as 7.21 appears to be cataphoric, leading the hearer to expect a referent in the form of a clause. The demonstrative in such contexts, on the other hand, does not have the same effect, and the subsequent clause it refers to is similar to a right-dislocation construction. This can be seen by the differences in accent placement, which indicate that the main clause containing *das* requires its own nuclear accent, and is therefore independent:

(7.24) [Es ist SCHÖN], dass du angerufen hast.
It is NICE, that you called have.

(7.25) [Es ist schön, dass du ANGERUFEN hast].

(7.26) [Das ist SCHÖN], dass du angerufen hast.
That is NICE, that you called have.

(7.27) *[Das ist schön, dass du ANGERUFEN hast].

The square brackets indicate the scope of the focus and show that for a broad focus reading the accented constituent is the rightmost one in a neutral accent position in its clause. In sentences with the demonstrative, the nuclear accent must be on the final element of the main clause, indicating that the subsequent subordinate clause is an appendage and not truly a part of the main sentence structure. The utterance becomes ungrammatical if the nuclear accent falls in the subordinate clause, which cannot be part of the broad focus. For those containing the pronoun, the main accent can either go on the rightmost element of the main clause or on the constituent in

neutral accent position of the subordinate clause, indicating that the subordinate clause can be contained in the main structure and is not necessarily right-dislocated.

The obligatory de-accenting of the subordinate clause in those sentences with the demonstrative indicates that the clause contains *given* information, similar to the information in the dislocated constituents in ordinary right-dislocation which also cannot be accented, eg

(7.28) He$_i$'s a really nice GUY, John$_i$.

(7.29) *He$_i$'s a really nice guy, JOHN$_i$.

In 7.28 the focus of the utterance is in the predicate of the main clause and the right-dislocated constituent *John* merely serves to fully identify the referent of the pronoun *he*, which is presumably given in the context but not easily identifiable. This is the normal purpose of right-dislocation structures. In 7.29 the accent placement indicates that there is a narrow focus on *John* and that the referent of this NP is new to the discourse. This is incompatible with the previously established pronominal reference and thus the utterance is unacceptable.

In the same way, it seems clear that what the *das* in examples such as 7.26 is referring to is present in the *previous* discourse and is merely repeated in the subordinate clause. This is also possible in the pronoun version 7.24, but equally acceptable is an accent pattern indicating that the subordinate clause contains new information, as in 7.25. In this example, the pronoun is cataphoric.

Despite the fact that there is a tendency for *es* to be cataphoric and for *das* to be anaphoric, in many cases in the corpus, the two are interchangable and both are grammatically acceptable in the same linguistic context. The reason for this is that in natural dialogues it is often very hard to determine what is given and what is new to the discourse and also what exactly the abstract object anaphor refers to. However, as the examples above have shown, if the context and the status of the referents are defined precisely, the generalisation holds. The structures found in the corpus are reminiscent of the extraposed CP case given in Example 7.25 above and statements such as the following, which was taken from an E-mail:

(7.30) a. Das E-Werk ist ein riesiger Techno-Tempel. Kostet 20DM Eintritt. Dafuer kann man sein Ecstacy auf Reinheit testen lassen (wirklich!!). O.K., ich geb's$_i$ ja zu, ich habs noch nie probiert.$_i$

b. The E-werk is a huge techno-temple. Costs 20 Marks entrance fee. For that you can test your Ecstacy for purity (really!!). Ok, I admit **it**$_i$, I've never tried it.$_i$

The abbreviated *es* refers to the sentence following that clause *Ich hab's noch nie probiert* ("I've never tried it.") . It is the equivalent of the construction with a subordinate clause:

(7.31) Ich gebe (es) ja zu, dass ich's noch nie probiert hab.
I give (it) part. to, that I.it yet never tried have
"I admit that I've never tried it."

Replacing the pronoun with a demonstrative is infelicitous unless what is being admitted has been previously mentioned. Compare the following:

(7.32) ??O.K., ich geb **das**$_i$ ja zu, ich hab's noch nie probiert.$_i$

(7.33) a. **A:** Du hast es doch noch nie probiert.$_i$
(A: You've never even tried it.)

b. **B:** Gut, **das**$_i$ geb ich zu.
B: good, that give I to
B: Ok, I admit it.

This distinction between pronoun and demonstrative is particularly obvious where ambiguities can arise as to the directionality of reference, ie anaphoric or cataphoric. Compare the following example, in a taken from an E-mail, with the altered version (b) below:

(7.34) **A:** Ich krieg bald das Geld$_i$.
(A: I'm getting the money soon$_i$.)

a. **B:** Prima. **Das**$_i$ sollte genug Motivation sein, die Arbeit fertigzukriegen.
(B: Great. **That**$_i$ should be enough motivation to finish the work.)

b. **B:** Prima. **Es**$_j$ sollte genug Motivation sein, die Arbeit fertigzukriegen$_j$.
(B: Great. **It**$_j$ should be enough motivation to finish the work.)

As can be seen from the subscripts, in version a the demonstrative quite clearly refers back to A's utterance *Ich krieg bald das Geld.* ("I'm getting the money soon."). The response could be paraphrased as *Getting the money soon should be enough motivation to finish the work.*. Version b can only be made felicitous if it were paraphrased as *Finishing the work should be enough motivation.*, where the object of the motivation is left unexpressed. Again, the demonstrative is anaphoric, the pronoun cataphoric.

There are some examples where the demonstrative also appears to be cataphoric, as in the following extract:

(7.35) a. Hoffentlich bist du gut aus Frankreich zurueckgekommen, mit sicherlich tonnenweise Lobesreden ueber deinen Vortrag im Koffer. Ich find **das**$_i$ richtig prima, dass du so oft vor fachpublikum ueber dein Thema sprechen kannst$_i$.

b. Hopefully you got back ok from France, surely with loads of praise about your presentation in your suitcase. I find **that** really great that you can talk so frequently in front of knowledgeable people about your subject.

There are two possible ways of analysing this utterance. The first is to take the demonstrative to be cataphoric, referring to the subsequent subordinate clause. The second possibility is that it is simultaneously anaphoric and cataphoric, similar to right-dislocation structures involving concrete entity anaphors, eg

(7.36) I saw Michael and John$_i$ at the party. He$_i$'s a really nice guy, John$_i$.

In Example 7.35, the demonstrative refers to the abstract entity expressed by *that you can talk so frequently in front of knowledgeable people....* However, *talking in front of knowledgeable people* is also implied by the implicit reference to the conference visited, ie the trip to France, the presentation. These implicit references are also picked up by the demonstrative, which is therefore also anaphoric.

7.5 Summary

The data given in the previous sections indicates that anaphoric reference to abstract objects differs substantially from anaphoric reference to concrete entities with antecedent NPs. These differences are reflected by the NP-forms chosen. Pronouns appear to be genuinely anaphoric and have NP-antecedents. They refer to entities which are so salient that they can easily be retrieved and the hearer requires no explicit information. When used to refer to abstract objects they refer to those types which are easily retrievable because they have already been mentioned before (repeated reference), because they are in the same sentence (intrasentential reference), or those types where the speaker does not intend to refer to a specific entity and thus does not supply enough information for one to be retrieved (vague reference).

Demonstratives, on the other hand, are used for first mentions and for deictic reference. They are used for abstract objects when *ostension* is involved, ie when the entity in question is actually brought into the discourse model by the anaphoric reference itself. The corpus study also showed that, in German, demonstratives can be used for repeated reference to the same abstract object.

The findings can be summarised as follows:

Pronouns are used for:

- Vague reference.
- Intrasentential reference.
- Cataphoric reference.

- Repeated reference.
- Non-deictic reference.

Demonstratives are used for:

- Anaphoric reference.
- Ostension
- Repeated reference.
- Deictic reference.

7.6 Conclusions

According to Romijn, reference can be made to entities in the linguistic representation, but also to entities in the cognitive representation, which integrates the levels of inference (what we can infer from the mention of other entities, eg *company* → *manager*) and perception of the real world (what we see and hear). Entities at the inference level and entities at the level of cognitive representation can be referred to in Dutch by neuter anaphors – in her examples, the pronoun *het*.

As mentioned before, Romijn does not discuss the choice of anaphoric form, which is what we are concerned with here. All types of abstract objects discussed in Romijn and in the preceding chapters can be referred to with neuter anaphors in German. However, we have identified a distinction between abstract object reference using demonstratives and abstract object reference using pronouns.

We have seen in this chapter that for abstract objects in German, reference is made with demonstratives if the antecedent is present at the linguistic level representation of the utterance it occurs in. Demonstratives can also be used if the antecedent referents are not present in the linguistic level representation but can be directly inferred from information given at the linguistic level, eg *acquisition* → *acquiring* in Example 7.2.

Pronouns, on the other hand, are used if the referent is present in the cognitive representation only and embedded more than two levels in Romijn's representations (*company* → *business* Example 7.8). We termed this type of reference *vague* reference. Pronouns are also used for cataphoric reference, where the referents are are not present at the linguistic level at the time of utterance.

What this implies is that demonstratives are used for abstract entities which are more salient in the linguistic representation than those referred to by pronouns. This seems to go against the predictions made in GHZ's hierarchy where it is suggested that demonstratives are used for entities less salient than the referents of pronouns.

One way to reconcile these conflicting observations is to take the notion of *specificity* into account. We can divide the forms in GHZ's hierarchy into two groups: those on the right (ie full NPs) which give more specific information concerning their referents and those on the left (ie demonstratives, pronouns, null anaphors) which only give information as to the grammatical number and gender of their referents. This means that those on the right are used when the referent is less easily determinable for the hearer and those on the left are used when the referent is very salient and thus easily accessible.

GHZ, however, do not separate these two groups in the hierarchy and all NP forms are ordered relative to each other on a scale of increasing saliency of discourse referents. This means that within the two groups the individual forms are also ordered: demonstratives are used for less salient referents than pronouns and null anaphors, whilst indefinite NPs are used for less salient referents than definite NPs.

The less salient the referent is, the more specific the reference must be. The term *specificity* can be interpreted differently depending on which of the two above-mentioned groups of NP forms we are concerned with. For example, *being more specific* can mean choosing a full NP over a demonstrative as the phonetic content of the former supplies more semantic information about its referent than the latter. It is rare that if a full NP is used there is any ambiguity in the context concerning its referent, whereas with demonstratives and pronouns there is frequently more than one referent which the anaphor could legitimately be used to refer to in terms of feature compatibility. Full

NPs are therefore more specific because they narrow down the choice of referents by giving more explicit information.

Within the group of demonstratives and pronouns it is less clear how the term *specific* could be applied. If we assume that specificity in general means narrowing down the set of potential referents and that the ordering on GHZ hierarchy reflects decreasing specificity from right to left, then pronouns are the *least* specific of the NP forms. What the data from the corpora have shown is that demonstratives are used as pointers to referents present in the linguistic representation, be it through discourse deixis or through reference to other abstract objects which are realised at that level. Whilst the phonetic content of demonstratives does not give more information regarding the referent than the phonetic content of pronouns, demonstratives indicate specificity (relative to pronouns) and thus initiate a search for an appropriate referent in the hearer. Pronouns, on the other hand, do not give the signal to narrow down the set of potential referents in the search for a specific one – in terms of resolvability they are the most problematic for the hearer. They can thus only be resolved if the referent is either extremely salient, ie present in the linguistic context, or *if the speaker is not attempting to refer to a single particular referent.*

The latter point seems particularly valid if one takes into account the nature of spontaneous dialogues, such as the ones examined in this study. It is an important feature of spontaneous speech that it is not pre-planned. Although theories of anaphora resolution attempt to determine the precise rules used by hearers to obtain the referents of pronouns, it is clear that in unplanned speech the speakers themselves may be uncertain as to what the referents are or, more importantly, may purposefully wish to be vague. Take an example of reference to entities deeply embedded in the cognitive representation:

(7.37) A: How was the meeting this morning?
B: They postponed it to tomorrow.

In this example the precise referent of *they* is presumably not obtainable for the hearer. It is equally important to note, however, that the speaker presumably has

no interest in giving such precise information. What is important in this exchange is that the meeting was postponed. It is taken for granted that somebody made the decision to postpone it. A more specific NP such as *the manager, the participants, the people involved* would surely lead to a more precise resolution but it is clear that precise resolution is not always in the interest of economy in spoken language. Spontaneous speech is designed to get the important information from the speaker to the hearer as efficiently as possible. Being more specific than necessary clutters up the message and leads to a slowing down of the information transfer. Other examples of this were given above (eg 7.11 "Tomorrow it'll hopefully go better." and 7.7 "There is a difference between what you expect and how it is here.").

To conclude, "vague" reference, seemingly non-referential reference and reference to deeply embedded entities in the cognitive representation can be grouped together. In these cases the speaker does not have particular entity in mind and the NP form chosen is therefore the least specific, ie the one that does not narrow down the group of potential referents, ie the unstressed pronoun. Demonstratives, on the other hand, are used when the speaker has a specific abstract entity in mind – either a discourse-deictic entity or an entity referred to by an abstract object NP.

7.7 General Conclusions

This thesis set out to explore the factors that determine word order in German. The analysis of abstract object reference in German provides an insight into the interaction of word order and NP-form for the encoding of discourse entities. GHZ's hierarchy is based on NP-form alone but it was shown here that the ranking is only useful in contexts where the whole range of NP-forms exists. In German, where null topics are restricted to and object pronouns are banned from initial position, there is no true choice of NP-form and the hierarchy is no longer valid – demonstratives are chosen over pronouns, not for the purpose of encoding a particular cognitive status, but for the purpose of encoding the correct informational status of the entity by placing it in initial position.

The discussion of information packaging in German in Chapter 3 shows that constituents can occur in initial position in main clauses to indicate both topicalisation, contrastive topicalisation and focussing. The corpus analysis of word order frequencies in spoken language presented in Chapter 5 indicates that, although German has a canonical word order (SVO), this occurs in less than 50% of the utterances, implying that over half of the observed utterances exhibited a word order primarily determined by factors of information packaging. So, whilst German is not configurational in the way that English is, whose word order is predominantly determined by the grammatical functions of the constituents, it also cannot be said to be discourse-configurational in Kiss' sense as it does not exhibit a clearly defined topic or focus position.

The comparison of discourse-deictic reference in a task-oriented with a non-task-oriented corpus in Chapter 6 showed that word order and NP-form in German is not only influenced by linguistic factors but also by extra-linguistic factors such as text type and degree of formality. Kiss' binary classification based on discourse-configurationality seems to imply that there are only two linguistic levels which may have an effect on word order: information packaging or grammatical function. The analysis presented here shows that there are in fact many more.

Languages are capable of expressing many different types of information: stylistic, pragmatic, semantic and syntactic. There is a large amount of cross-linguistic variation concerning how specific languages achieve this, word order being one of the means employed for these purposes – it is used for stylistic purposes, it expresses information packaging through topicalisation and focus movements, it can be used to indicate the scope of quantifying expressions, it may differentiate statements from imperatives and questions and can also convey information on grammatical function. In light of these facts it does not seem reasonable to attempt to classify languages according to whether their word order is determined *either* by grammatical function *or* by the functions of topic and focus. Whilst it may be legitimate to attempt to classify languages according to which factors *primarily* determine their word order, I hope to have shown that a true characterisation of word order can only be achieved by taking into account the interaction of many different factors.

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