

# DISSERTATION

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## Abstract Deutsch

Transitive reflexive Sätze des Deutschen lassen sich unter den Begriff des Mediums fassen. Genauso wie entsprechende Konstruktionen in anderen indoeuropäischen Sprachen sind sie auch im Deutschen mehrdeutig und erlauben eine reflexive, mediale, antikausative und inherent reflexive Interpretation. Nach einem Überblick über die für die folgende Diskussion wesentlichen syntaktischen und semantischen Eigenschaften transitiver reflexiver Sätze wird anhand der Medialkonstruktion gezeigt, daß weder lexikalische noch syntaktische Ansätze in der Lage sind, eine korrekte und einheitliche Analyse der Medialkonstruktion im speziellen und von transitiven reflexiven Sätzen im allgemeinen zu bieten. Deshalb wird für einen neuen, dritten Ansatz argumentiert: a) alle transitiven reflexiven Sätze sind syntaktisch einheitlich zu analysieren; b) vermeintliche syntaktische Unterschiede bzgl. Koordination, Fokus und Voranstellung des (Argument- und Nichtargument-) Reflexivums lassen sich semantisch ableiten; c) (schwache) Reflexivpronomen sind bzgl. ihrer morphosyntaktischen Merkmale maximal unterspezifiziert; d) im Deutschen muß zwischen strukturellen und obliquen Kasusformen unterschieden werden. (c) und (d) erlauben eine einheitliche Analyse der Mehrdeutigkeit des Reflexivpronomens in transitiven reflexiven Sätzen im Rahmen einer entsprechend modifizierten Bindungstheorie. Die in dieser Arbeit entwickelte Theorie wird abschließend auf weitere Eigenschaften der sog. Medialkonstruktion angewandt.

Kasustheory

Bindungstheorie

Reflexivität

Medium

Medialkonstruktion

Argumentstruktur

## **Abstract English**

Crosslinguistically, transitive reflexive sentences in German can be subsumed under the notion of middle voice. Like corresponding constructions in Indo-European languages they are also ambiguous in German and yield a reflexive, middle, anticausative, and inherent reflexive interpretation. First, we give a detailed survey of the syntactic and semantic properties of transitive reflexive sentences that will be relevant in the following discussion. Second, we illustrate by means of the middle construction that lexical and syntactic theories fail to formulate a correct and unified analysis of middle formation in particular and transitive reflexive sentences in general. Therefore, we develop a different and (so far new) approach: a) all kinds of transitive reflexive sentences do not differ in syntax; b) the differences concerning coordination, focus, and fronting of the argument and non-argument reflexive are derived in semantics; c) the morphosyntactic features of (weak) reflexive pronouns are maximally underspecified d) German distinguishes between structural and oblique case forms. (c) and (d) permit a uniform derivation of all four interpretations of the reflexive pronoun in transitive reflexive sentences. This analysis is based on a corresponding modification of the binding theory. Finally, we apply the theory developed in this book to further properties of the so-called middle construction.

Case Theory

Binding Theory

Reflexivity

Middle Voice

Middle Construction

Argument Structure

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# 1 Introduction

This book investigates the syntax and semantics of middle and related constructions in German. We are mainly interested in the following four questions: (i) Why are middle constructions in German and many other languages reflexive? (ii) Can we derive the linking of arguments in middle and related constructions from general principles or do we need construction specific lexical and/or syntactic assumptions? (iii) Which universal and language-specific linking-principles determine the categorial realization of semantic arguments or, to put it the other way round, the semantic interpretation of syntactic arguments in middle and related constructions? (iv) Does the analysis of middle and related constructions provide evidence in favor of either a lexical, a syntactic or a (postsyntactic) semantic approach to argument linking?

The middle construction in German is a particularly interesting case study for the correlation between semantic and categorial selection.<sup>1</sup> First, middle constructions, like passives, are the output of a systematic operation that manipulates the s-selectional and c-selectional properties of underlying ‘simple’ predicates. Both constructions, the middle in (1) and the passive in (2), ‘demote’ the first semantic argument of the verb and ‘promote’ the second semantic argument, which is linked to the syntactic subject instead of its semantic co-argument.<sup>2</sup> However, unlike passives, middle constructions do not change the morphological properties of the underlying predicate in German. The morphosyntactic form of the predicate in the middle construction in (1) does not differ from its ‘active’ counterpart in (3). In both sentences the verb is in the active form.

- (1) Dieses Buch liest sich leicht  
This book-NOM reads reflexive-pronoun-ACC easily  
‘This book reads easily’
- (2) Das Buch wurde gelesen  
The book-NOM was read  
‘The book was read’
- (3) Hans liest dieses Buch  
Hans-NOM reads this book-ACC  
‘Hans is reading this book’

Besides, middle constructions show an interesting divergence in their c-selectional and s-selectional properties. On the one hand, there is an implicit semantic argument in middle constructions like (1), which is not linked to a syntactic constituent. This implicit ‘logical subject’, which is the first argument of the predicate, is realized as a NP with nominative case (i.e. as the syntactic subject) in the corresponding simple active sentence in (3). Instead of the

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<sup>1</sup> In this introductory chapter we use the terms ‘semantic selection’ (s-selection) and ‘categorial selection’ (c-selection) without any theoretical implications. It will become clear in the course of this study that we do not think that the c-selectional properties of a lexical item can entirely be determined in the lexicon. Apart from that, we use the more neutral term argument linking instead of theta-role assignment, because (i) we will argue that theta-roles are irrelevant for the linking of arguments in middle constructions and (ii) we follow Dowty (1991) in his criticism of the traditional concepts of thematic roles. We will deal with proto-roles and proto-role properties in Chapter 6.

<sup>2</sup> Because of this functional similarity, it is no accident that in many languages the middle construction and the passive are morphosyntactically identical, cf. chapter 2.

verb's first argument its second argument is linked to the subject position (i.e. to a NP assigned nominative case) in middle constructions. This second argument is normally linked to a NP assigned accusative case (i.e. the direct object) in the active counterpart (3).<sup>3</sup> On the other hand, middle constructions in German always c-select an additional accusative reflexive pronoun in the position of the direct object, which is not linked to a semantic argument of the verb in middle constructions.

Further interesting properties of middle constructions are adverbial modification, which seems to be required by most middle constructions, and the characteristic 'generic' interpretation of the implicit argument, which differs from the interpretation of implicit arguments in passives, which are usually interpreted existentially. Hence, we might wonder whether (predicates in) middle constructions idiosyncratically select some kind of adverbial and a 'generic' logical subject, which must not be linked to syntax, or whether these properties of middle constructions can be derived from independent principles of grammar. The next chapter will be concerned with the properties of middle constructions in greater detail.

Recall that arguments which are only s-selected but not c-selected, and vice versa, can also be found in other contexts. In passives the first semantic argument of a predicate can optionally be realized as a by-phrase (cf. 4.a). Furthermore, some semantic arguments of some predicates are only optionally c-selected. They can but need not be linked to a syntactic constituent, as can be seen in (4.b).<sup>4</sup> We already mentioned that the interpretation of the implicit argument in passives differs from the one in middle constructions. The implicit object in (4.b) can receive either the existential or the generic interpretation, cf. chapter 7. On the other hand, not every c-selected element can be linked to a semantic argument of the predicate. In example (4.c) the syntactic subject, the nominative NP *es* ('it'), does not correspond to a semantic argument of the one-place verb *frieren* ('be-cold'). *Frieren* does not assign a semantic role to the subject of the sentence. In this respect the impersonal subject *es* equals the reflexive pronoun in middle constructions.

- (4) a. Das Buch wurde (von Hans) gelesen  
 The book-NOM was (by Hans) read  
 'The book was read (by Hans)'  
 b. Hans schreibt (ein Buch)  
 Hans-NOM writes (a book-ACC)  
 'Hans is writing (a book)'  
 c. ... weil es mich friert  
 ... because it-NOM me-ACC cold-is  
 '... because I am cold'

Middle constructions like (1) combine both an implicit semantic argument (i.e. the 'logical subject' or first argument of the verb) and an obligatorily c-selected constituent that is not linked to a (s-selected) semantic argument of the verb (i.e. the reflexive pronoun). Thus middle constructions include the suppression of a semantic argument as well as the addition of a

<sup>3</sup> So-called adjunct middle constructions might be one exception. We deal with adjunct middles in chapter 2 and chapter 7.

<sup>4</sup> The third argument of the verb *verlesen* ('to read/call out'), i.e. the goal of the reading out, might be an example for an argument that must not project in syntax at all, cf. Höhle (1978). For an analysis of implicit arguments in German see Jacobs (1994) and Rapp (1999).

syntactic argument. The selectional properties of middle constructions are illustrated in (5) – ‘ $\emptyset$ ’ means that this element does not correspond either to a c-selected or to a s-selected entity.

- (5) s-selection: x y  $\emptyset$   
 c-selection:  $\emptyset$  NP<sub>NOM</sub> Reflexive Pronoun<sub>ACC</sub>

Hence, middle constructions have only one element that is both s-selected and c-selected but two elements that are not linked at all. We will see in chapter 2 that so-called impersonal middle constructions actually contain no linked element at all. The German middle construction has so far proved a good example for the study of non-trivial cases of argument linking. It will also turn out to be a good example for illustrating and discussing the differences between lexical, syntactic, and postsyntactic theories of argument-linking.

However, middle constructions become even more interesting as soon as we compare them with morphosyntactically identical constructions. We will see that deeper insight into this issue can be gained if the study of middle constructions is embedded in the more general context of transitive reflexive sentences. In German middle constructions are morphosyntactically common transitive sentences in the active with an accusative reflexive pronoun in the position of the direct object. But the middle interpretation is not the only possible interpretation for transitive reflexive sentences. In addition to the middle interpretation, transitive reflexive sentences can also get a reflexive, an anticausative and an inherent reflexive interpretation. Examples for these four interpretations are given in (6).

- (6) a. Reflexive interpretation:  
 Herr Rossi rasiert sich  
 Mr. Rossi-NOM shaves reflexive-pronoun-ACC  
 ‘Mr. Rossi is shaving (himself)’  
 b. Middle interpretation:  
 Das Buch liest sich leicht  
 The book-NOM reads reflexive-pronoun-ACC easily  
 ‘The book reads easily’  
 c. Anticausative interpretation:  
 Die Tür öffnet sich  
 The door-NOM opens reflexive-pronoun-ACC  
 ‘The door opens’  
 d. Inherent reflexive interpretation:  
 Herr Rossi erkältet sich  
 Mr. Rossi-NOM catches-a-cold reflexive-pronoun-ACC  
 ‘Mr. Rossi catches a cold’

The reflexive interpretation in (6.a) differs from the other three interpretations in one respect. Only in (6.a) the reflexive pronoun is both c- and s-selected and therefore interpreted as a semantic argument of the verb, which is bound by and coreferent with the subject of the sentence. This means that both the subject and the direct object are linked to a semantic argument variable of the verb each. In (6.b), (6.c) and (6.d), on the other hand, the reflexive pronoun is only c-selected but not s-selected and therefore it is not interpreted as a semantic argument of the verb. The reflexive pronoun indicates valency reduction of the first semantic argument of the verb, its logical subject, which is not linked to syntax. Hence, the accusative reflexive pro-

noun in (6) can but need not be linked to a semantic argument of the verb. We call the reflexive pronoun in (6.a) *argument reflexive* and the one in (6.b-d) *non-argument reflexive*.<sup>5</sup>

Beside this first ambiguity of the reflexive pronoun, another ambiguity is responsible for the interpretation of sentence (6.b) on the one hand and sentence (6.c) and (6.d) on the other. This second ambiguity is due to the interpretation of the suppressed semantic argument. We already saw that the first semantic argument of the verb is not linked to syntax if the non-argument interpretation is chosen. In this case it can either be saturated or reduced. The latter operation (argument reduction) completely removes the suppressed argument from the semantic representation. Argument reduction is the more restrictive operation and yields the anticausative and inherent reflexive interpretations. Anticausatives like (6.c) are one-place predicates that are systematically derived from underlying two-place predicates. Argument saturation, on the other hand, means that the implicit argument is bound by a semantic quantifier/operator. The resulting interpretation of argument saturation is the middle interpretation. Argument saturation is less restrictive than argument reduction. It can be applied to most verbs selecting at least one argument. Simplified semantic representations of all four sentences are given in (7). ('x' is the implicit argument in MCs, which is bound by a generic operator, cf. chapter 7, and '∅' stands for the deleted first argument in anticausatives and inherent reflexives).

- (7) a.  $W < r_1, r_1 >$      $W = \text{waschen}, r = \text{Rossi}$     (reflexive interpretation)  
 b.  $S < x, b >$          $S = \text{schneiden}, b = \text{Brot}$     (middle interpretation)  
 c.  $O < \emptyset, f >$          $O = \text{öffnen}, f = \text{Fenster}$     (anticausative interpretation)  
 d.  $E < \emptyset, r >$          $E = \text{erkälten}, r = \text{Rossi}$     (inh. refl. interpretation)

The ambiguity of reflexive constructions is a widespread phenomenon that can be observed in many Indo-European and non-Indo-European languages. All four interpretations in (6) come under the notion of *middle voice* and have more or less identical counterparts in various other languages. Like many other languages, German uses a reflexive marker (the accusative reflexive pronoun) to encode a variety of related interpretations. Thus, German middle constructions are one possible interpretation of what we will call the middle voice.

This book deals with the ambiguity of the reflexive pronoun and the interpretation of implicit arguments in transitive reflexive sentences. As will be discussed at length in chapter 3, nearly all recent approaches to middle constructions and anticausatives derive their s-selectional and c-selectional properties in the lexicon and/or in the syntax. They are based on the assumption that the syntax of verbal arguments is completely determined by the selectional properties of a verb in co-operation with general linking-principles. Therefore, these analyses require some lexical and/or syntactic manipulation of the argument structure of the underlying verbs in (6.b), (6.c) and (6.d). They must somehow prevent the linking of the first semantic argument to the syntactic subject, promote the second semantic argument and add a reflexive pronoun, which does not correspond to a semantic argument of the verb. By contrast, we argue for a

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<sup>5</sup> Nothing depends on this terminology. We use it only to distinguish these two different interpretations of reflexive pronouns. The argument reflexive is also called 'echt reflexiv' or 'anaphorical *sich*' and the non-argument reflexive 'unecht reflexiv', 'lexical *sich*', and 'Fügungs-*sich*', cf. Haider (1982) and Reis (1981). Fagan (1992) calls the argument reflexive 'referential' and the non-argument reflexive 'nonreferential'. This terminology is somewhat misleading, because reflexive pronouns are never referentially independent.

new approach that takes the syntactic surface more seriously. We keep the minimal assumption that all transitive reflexive sentences are equal, because we do not find any empirical (or conceptual) evidence for the assumption that the transitive reflexive sentences in (6) must be assigned different syntactic structures or that they contain lexically different kinds of verbs. This change in viewpoint enables us to develop a uniform analysis that derives all four interpretations of transitive reflexive sentences illustrated in (6) from the same underlying syntactic representation. This makes the theory proposed in this book superior to lexical and syntactic approaches, which both do not offer a conclusive and uniform analysis of the ambiguity of transitive reflexive sentences in German. Besides, both lexical and syntactic approaches need additional ad hoc stipulations, which are not necessary in the postsyntactic analysis developed in this book.

We will argue in chapter 5 that (weak) reflexive pronouns are not lexically specified for the morphosyntactic feature [R], because their  $\Phi$ -features are maximally underspecified. Elements that are not lexically specified for [R] can but need not be interpreted as semantic arguments. Therefore the linking of the syntactic subject can be mediated by a (weak) reflexive pronoun, if the former binds the latter. In this case, the syntactic subject is not linked to the first but to the second semantic argument of the verb. Roughly speaking, the reflexive pronouns in (6.b), (6.c), and (6.d) (i.e. the non-argument reflexives) function as a place-holder for the linking of the syntactic subject, which is thus linked to the second argument variable of the verb. Furthermore, we will argue in chapter 5 that in German, non-argument reflexives must be assigned structural case. Hence, only transitive reflexive sentences permit the syntactic subject to be linked to the second argument of the verb. The first assumption that (weak) reflexive pronouns are lexically underspecified for the feature [R] seems to be valid crosslinguistically, whereas the second assumption that non-argument reflexives must receive structural case is language-specific. We do not think that all languages draw similar distinctions between structural and oblique case. On the other hand, (weak) reflexive pronouns universally seem to be the less specified pronominal elements and various languages use (weak) reflexive pronouns to indicate valency reduction. It seems to be a universal property that the morphologically less specified elements need not be interpreted as semantic arguments. Note, however, that (weak) reflexive pronouns have quite different morphosyntactic properties crosslinguistically, cf. chapter 2. Thus our postsyntactic analysis we develop for German transitive reflexive sentences does not necessarily hold for the middle voice in other languages. We come back to this issue in the final chapter.

As a consequence of our analysis, syntactic arguments that are not specified for [R] need not be linked to a semantic argument of the verb themselves. Any other syntactic argument (i.e. personal pronouns, demonstratives, definite NPs, and indefinite NPs) corresponds to a semantic argument of the verb. We will see that every syntactic argument must be linked to a semantic argument, except for non-argument reflexives and impersonal subjects. This is in accordance with the first part of the theta-criterion (i.e. each argument bears one and only one theta-role). Note, however, that our account permits two strictly defined exceptions. Both exceptions are pronominal elements that serve a specific grammatical purpose. The second part of the theta-criterion, on the other hand, is no longer a valid linking-principle, as we will argue throughout this book. We will see that the s-selectional properties are not a wellformedness condition for syntactic representations or, more generally, for the computational system, although they are an essential part of the meaning of a lexical item determining the semantic interpretation of predicates. This shift towards the semantic interpretation of syntactic arguments allows for a uniform analysis of all four sentences in (6). Moreover, we can account for

the implicit argument and (the c-selection of) the reflexive pronoun in middle constructions, anticausatives, and inherent reflexives without additional stipulations. According to our analysis, the non-argument reflexive is not lexically selected by the verb. Instead it is licensed by the grammatical function it fulfills. Hence, our approach predicts that the categorial properties of arguments are not always and completely determined in the lexicon. Finally let us briefly look at another example that confirms this prediction: V2 complement clauses in German. In German the propositional argument of some verbs can be realized as a V2-clause. Therefore, we might claim that some verbs, as for example *glauben* ('believe') in (8), can c-select either a complementizer-initial verb-final clause (8.a) or, alternatively, a V2 complement clause (8.b). Verbs like *bedauern* ('regret'), on the other hand, can only c-select complementizer-initial verb-final clauses (9.a). Embedded V2-clauses are ungrammatical with these verbs, as can be seen in (9.b).

- (8) a. Ich glaube, dass ein Sturm aufkommt  
I believe that a storm up-comes  
'I believe that a storm breaks'
- b. Ich glaube, ein Sturm kommt auf  
I believe a storm comes up  
'I believe that a storm breaks'
- (9) a. Ich bedaure, dass ein Sturm aufkommt  
I regret that a storm up-comes  
'I regret that a storm breaks'
- b. \*Ich bedaure, ein Sturm kommt auf  
I regret a storm comes up  
'I regret that a storm breaks'

This is, however, only part of the story. Consider the examples in (10) below. As soon as we add a negation or a dative object to the sentences in (8), the second example (8.b) with the V2 complement clause becomes ungrammatical. Hence, embedded V2-clauses cannot simply be c-selected in the lexicon by some verbs s-selecting a propositional argument. V2-clauses have, roughly speaking, specific semantic properties which restrict the contexts they can occur in. As opposed to complementizer-initial verb-final clauses, V2 complement clauses are always assertional (or [-presuppositional]). Therefore they cannot be interpreted immediately in the scope of the negation in (10.b) or the negative predicate *bedauern* ('regret') in (9.b). This would contradict their assertional character.<sup>6</sup> As for dative objects, Vogel (1998:24) argues

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<sup>6</sup> Gärtner (1998) points out that V2 adverbial clauses and V2 relative clauses are subject to the same restriction. As opposed to the V-final adverbial clause in (i.b), the V2 adverbial clause in (i.a) cannot be interpreted in the scope of negation. Therefore, only sentence (i.b) is ambiguous. Sentence (i.a), on the other hand, can only mean that she did not go to Frankfurt and the reason for this is that she is ill. The same holds for V2 relative clauses, which are also ungrammatical in the scope of negation, cf. (ii.b).

- (i) a. Sie fuhr nicht nach Frankfurt [ weil sie ist krank ]  
She went not to Frankfurt because she is ill  
'She didn't go to Frankfurt because she is ill'
- b. Sie fuhr nicht nach Frankfurt [ weil sie krank ist ]
- (ii) a. Peter hat einen Freund, der ist krank  
Peter has a friend who is ill
- b. \*Peter hat keinen Freund, der ist krank  
Peter has no friend who is ill

that the dative object *dem Hans* triggers the presupposition ‘Hans told me before that a storm breaks.’<sup>7</sup> Hence, the proposition denoted by the complement clause in (10.d) is [+presuppositional] and V2 complement clauses are excluded again. We conclude that the grammaticality of V2 complement clauses cannot be reduced to c-selectional properties of lexical items (for more details see Vogel 1998, Gärtner 1998, and Steinbach 1999).

- (10) a. Ich glaube nicht, dass ein Sturm aufkommt  
I believe not that a storm up-comes  
‘I do not believe that a storm breaks’  
b. \*Ich glaube nicht, ein Sturm kommt auf  
I believe not a storm comes up  
c. Ich glaube dem Hans, dass ein Sturm aufkommt  
I believe the Hans-DAT that a storm up-comes  
‘I believe Hans that a storm breaks’  
d. \*Ich glaube dem Hans, ein Sturm kommt auf  
I believe the Hans-DAT a storm comes up

In sum, our analysis of transitive reflexive sentences provides a good argument for a more liberal interaction between semantic and categorial selection in grammar. We hope that our analysis sheds new light on the understanding of the middle voice and more generally on the understanding of the principles of argument selection and argument-linking.

In the following chapters we will be concentrating mainly on German, but the discussion also includes data from English, Dutch, Italian, Modern Greek, and Russian to illustrate the fundamental pattern of the middle voice. Above all, we will be dealing with binding theory and linking theory. We will focus on the thematic interpretation of reflexive pronouns and other syntactic arguments in German. The (traditional) distinction between structural and oblique (or inherent) case and the morphosyntactic properties of reflexive pronouns will turn out to be another important issue. In this context we will also consider the distinction between weak and strong reflexive pronouns. In addition, we will address further syntactic and semantic properties of middle constructions, anticausatives and inherent reflexives and we will briefly turn to anticausatives. Last but not least, the following topics will also be relevant at several points of the discussion: fronting and word order in German, the syntax and semantics of co-ordination, focus theory, and genericity. The syntactic analysis of transitive reflexive sentences is mainly based on *Government and Binding Theory* (Chomsky 1981) and its recent developments (Chomsky 1993 and 1995). Our binding theory is a modified version of the binding theory of Reinhart and Reuland (1993) and Pollard and Sag (1994). With respect to the interpretation of syntactic representations we essentially follow the standard assumption of Montague Semantics and the focus theory developed in Rooth (1985 and 1992). We are mainly dealing with the (thematic) interpretation of sentences. Relevant theoretical notions and important modifications will be introduced in the course of the discussion.

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<sup>7</sup> Note that dative objects do not always trigger presuppositions as can be seen in (i). This depends on the semantic interpretation of the dative object. In example (10.d) the dative object is the source of his belief. In contrast to this, the dative object in (i) is the goal of my speech (cf. Gärtner 1998).

(i) Ich sage dem Hans, dass ein Sturm aufkommt  
I say to-Hans that a storm up-comes

This monograph is organized as follows: The next chapter introduces the different interpretations of transitive reflexive sentences in more detail. We are concentrating on those constructions that yield a ‘non-standard’ interpretation: middle constructions, anticausatives, and inherent reflexives. We already saw that in all three constructions the reflexive pronoun is not interpreted as a semantic argument of the verb. In section 2.1 we start off with a discussion of the middle construction in German. On closer inspection many seeming properties of the German middle constructions turn out to be partly misconceived. Section 2.2 continues with anticausatives and inherent reflexives. The last part of chapter 2 widens the perspective and takes further Indo-European languages into consideration. As opposed to most Indo-European languages German is a *one-form* language (Kemmer 1993), which means that German has only one kind of reflexive pronoun whereas many other languages make a distinction between weak and strong reflexive pronouns. The ambiguity of transitive reflexive sentences in German is, however, quite regular: Like German, many Indo-European languages use (weak) reflexive pronouns to indicate different but semantically related interpretations. In these languages the (weak) reflexive pronoun can be called a morphosyntactic *middle marker*. It is the accusative reflexive pronoun in the position of the direct object that we call a middle marker in German.

Chapter 3 discusses various lexical and syntactic analyses of middle constructions in English, Dutch, Italian and German. We mainly focus on middle constructions because they are less restricted than anticausatives and inherent reflexives. Moreover, the middle construction is the most controversially debated kind of transitive reflexive sentences. While most linguists agree that anticausatives should be derived in the lexicon, it is less clear whether middle constructions are to be derived in the lexicon or in the syntax. We will see that neither of these analyses gives a satisfactory derivation of middle constructions. Especially so-called impersonal middle constructions turn out to be a serious problem. Moreover, neither lexical nor syntactic approaches offer a uniform analysis of transitive reflexive sentences. For this reason we will argue for a different and (as far as we can see) new kind of analysis, which allows a unified treatment of all four interpretations of transitive reflexive sentences. The ambiguity of transitive reflexive sentences is derived at the interface between syntax and semantics.

One consequence of this assumption is that all transitive reflexive sentences share the same syntactic structure. The syntax of transitive reflexive sentences is the topic of chapter 4. The first part of this chapter deals with word order in the German middle field. The reflexive pronoun always behaves the same way irrespective of its semantic interpretation. The second part deals with certain differences between the reflexive pronoun that is interpreted as an argument of the verb (*argument reflexive*) and the one that is not linked to an argument variable of the verb (*non-argument reflexive*). These differences concerning coordination, focus, and fronting have been taken as evidence for the assumption that the non-argument reflexive differs in syntax from the argument reflexive. We show, however, that these differences do not follow from an analysis which draws a distinction between two different kinds of reflexive pronouns in syntax (e.g. argument vs. adjunct). By contrast, these differences follow from the different semantics of the argument and non-argument reflexive. Only the argument reflexive introduces an argument variable on its own, which is a necessary condition on coordination, focus, and fronting of the accusative reflexive pronoun. Hence, there is no need to propose two different kinds of reflexive pronouns and two different kinds of transitive reflexive sentences in syntax.

Chapter 5 turns to the problem of argument linking in transitive reflexive sentences. In 5.1 we briefly introduce the binding theories of Reinhart and Reuland (1993 and 1995) and Pollard and Sag (1994). Our analysis of the ambiguity of the reflexive pronoun in the position of the accusative object is based on a slightly modified version of these theories. We develop our analysis of (non-) argument reflexives in two steps. First, we distinguish syntactic arguments, i.e. A-elements, from A'-elements. Syntactic arguments are those NPs that are assigned structural case. In German only nominative and accusative cases are structural. In the remainder of this chapter, we confine ourselves to syntactic arguments, i.e. to elements that bear structural case. Oblique case will be discussed in section 6.2. Second, we define the binding conditions relative to syntactic and semantic arguments. Syntactic arguments are subject to the *General Condition on A-chains*, according to which every A-chain must be headed by exactly one [+R]-expression. Reflexive pronouns, which are not lexically specified for [R], can either be [-R] or [+R] depending on the syntactic context. In the former case, they must form an A-chain with another A-expression specified as [+R]. In the latter case, they can (and must) head their own A-chain. In section 5.2 we show that the argument and non-argument readings of the accusative reflexive pronoun in transitive reflexive sentences can be derived from these two specifications of the lexically underspecified reflexive pronoun in the position of the direct object. The reflexive pronoun specified as [+R] heads its own A-chain, which is linked to the second argument position of the verb. On the other hand, the reflexive pronoun specified as [-R] is part of a complex A-chain headed by the syntactic subject, a [+R]-expression. Again, the head of the (complex) A-chain is linked to the second argument position of the verb. Hence, a complex A-chain maps the syntactic subject onto the second argument.

In chapter 6 we turn to the difference between middle constructions and anticausatives and argument linking in unaccusatives and we give further evidence for the distinction between structural and oblique case. In subsection 6.1.1 we argue that the difference between middle constructions and anticausatives results from the interpretation of the implicit first argument (the logical subject) of the predicate: it can either be bound by a (generic) quantifier (middle construction) or deleted (anticausative). We call the former operation argument saturation and the latter argument reduction. In subsection 6.1.2 we deal with one-place verbs. We show that our analysis provides an indirect argument against a syntactic distinction between unergatives and unaccusatives. The distinction between structural and oblique (or inherent) case, which requires additional motivation, is the topic of section 6.2. We discuss accusative and dative objects in German and give several empirical arguments for a distinction between structural and oblique case. In German dative case is oblique. By contrast, nominative and accusative are structural cases. Following Vogel and Steinbach (1995 and 1998) we analyze dative objects as adjuncts in syntax. This analysis accounts for the empirical differences between accusative and dative objects and explains why dative reflexive pronouns are excluded from A-chain formation. As a consequence, dative objects cannot be promoted to subject in middle constructions and anticausatives.

In chapter 7 we turn to middle constructions again. Our analysis predicts that middle constructions are simple transitive reflexive sentences. Hence, middle constructions do not exist in the lexicon, nor is there a special middle-syntax. Therefore, the (semantic) properties of middle constructions should follow from their specific semantic interpretation. In the first part of chapter 7 we discuss the 'generic' interpretation of middle constructions. We argue that an implicit argument can either be bound by an existential quantifier or by a generic quantifier/operator. We will see that in middle constructions the implicit argument is bound by a generic quantifier. Existential quantification, on the other hand, yields the passive interpreta-

tion. Hence, German shows a division of labor between middle constructions and passives with respect to the interpretation of the implicit first argument. The second part of chapter 7 argues that the quasi-obligatory adverbial modification can be derived from the following pragmatic licensing condition: an utterance must be informative to be pragmatically licensed. This approach enables us to explain why middle constructions without adverbial modification are not always felicitous or, to put it the other way round, why middle constructions usually involve some adverbial modification. Finally, we turn to adjunct middle constructions which are only grammatical in very specific contexts in German. Although adjunct middle constructions are interpreted on the basis of complex A-chains, they are licensed by non-configurational conditions.

Chapter 8 summarizes our analysis of transitive reflexive sentences in German and concludes with a short discussion of middle and related constructions in those languages which we already discussed in chapters 2 and 3. Finally we briefly illustrate how to apply our analysis to corresponding constructions in English.

## 2 Middle Constructions and Middle Voice — What does a Middle look like?

Transitive reflexive sentences in German can be related to major topics like diathesis, *genus verbi* or grammatical voice, valency reduction, or argument structure alternations. Argument structure alternations systematically change the selectional properties of verbs. That is, they can change the categorial properties of arguments, they can add or delete syntactic and/or semantic arguments and they can add secondary predicates. Finally, they can also change the meaning of the underlying verb and the morphosyntactic form of verbs e.g. by adding an affix or a separable verbal particle to the verbal stem. Middle constructions do not significantly change the underlying basic meaning of verb. In the middle construction like (1) the verb *schneiden* ('cut') still denotes a two-place relation between a cutting person (the implicit argument) and something ('the bread') that is cut ('RP' stands for reflexive pronoun).<sup>8</sup>

- (1) Das Brot schneidet sich leicht  
The bread-NOM cuts RP-ACC easily  
'The bread cuts easily'

However, the middle construction changes the selectional properties of the underlying verb. The syntactic subject in (1.a), the nominative NP *das Brot*, is not linked to the first (or external) but to the second (or internal) semantic argument of the verb *schneiden* – i.e. *das Brot* is the thing that is cut. The first (or external argument) of the verb, the cutter, is not linked to a syntactic argument. This semantic argument is only implicitly present in the semantic representation of the sentence. In German middle constructions the suppression of the first semantic argument is indicated by the accusative reflexive pronoun. Hence, the accusative reflexive pronoun in (1) can be analyzed as a morphosyntactic middle marker, i.e. an indicator of valency reduction. Note, however, that it is not a verbal affix or clitic but an independent word. In this respect, the German middle marker differs from middle markers in most Indo-European languages. We will discuss this issue in greater detail in section 2.3 below.

German has a second construction beside the middle that also involves suppression of the first semantic argument, the passive. Passives and middle constructions have one thing in common: in both the middle construction in (1) and the passive in (2) the first or external semantic argument of the verb is not linked to the subject.

- (2) Das Brot wird geschnitten  
The bread-NOM is-PAS cut  
'The bread is being cut'

The passive in (2) and the middle construction in (1) correspond to the active counterpart in (3), in which both semantic arguments of the two-place predicate are linked to syntactic argu-

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<sup>8</sup> In the following presentation, most examples have glosses only. These examples are always interpreted like middle constructions in English and other languages. The morphosyntactic realization of the middle construction differs from language to language (cf. 2.3. below), but their semantics is homogeneous across the Indo-European languages. All middle constructions have the thematic interpretation outlined in the brief introduction of this chapter. Throughout this study we use the term reflexive pronoun (which is more specific) instead of anaphor, but nothing hinges on this.

ments. The active voice is the unmarked case of argument linking.<sup>9</sup> In (3) the nominative subject of the middle construction and passive is linked to the accusative object and the suppressed implicit semantic argument of the middle construction and the passive is linked to the nominative subject.<sup>10</sup> The non-argument reflexive is not present in the active counterpart in (3).<sup>11</sup>

- (3) ...dass jemand das Brot (leicht) schneidet  
 ...that someone-NOM the bread-ACC easily cut  
 'that someone (easily) cuts the bread'

By 'active' we mean the grammatical voice and not the morphological form of the verb. Both middle constructions and the corresponding sentence in active voice contain morphologically unmarked 'active' forms of the verb. Moreover, middle constructions, like the corresponding active sentence in (3), are syntactically transitive as opposed to passives. Passives must not have an accusative reflexive pronoun or some other accusative NP in German.<sup>12</sup> In addition to the middle interpretation in (1), transitive reflexive sentences have yet another interpretation. Both the subject and the reflexive pronoun can be linked to the first and second semantic argument respectively, as can be seen in example (4). In this case the reflexive pronoun does not indicate valency reduction. We call this 'active' interpretation of transitive reflexive sentences *reflexive interpretation*.<sup>13</sup>

- (4) Peter wäscht sich schnell  
 Peter-NOM washes RP-ACC (i.e. himself) quickly  
 'Peter is washing (himself) quickly'

A third interpretation for transitive reflexive sentences like (1) and (4) has also been mentioned. The anticausative variant of verbs like *öffnen* ('open') is also reflexive. Hence, in German the accusative reflexive pronoun does not only indicate valency reduction in middle constructions but also in anticausatives like (5). But unlike middle constructions, anticausatives do not include an implicit semantic argument. Sentence (5) does not imply that someone or something is opening the door.

- (5) Die Tür öffnet sich  
 The door-NOM opens RP-ACC  
 'The door opens'

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<sup>9</sup> In most languages the active voice is the morphologically or syntactically unmarked form (cf. Benveniste 1972, Kemmer 1993, Klaiman 1991, or Beekes 1995).

<sup>10</sup> Adjunct middles are the only exception to this correspondence between the subject of middle construction and the object of the active counterpart. Here the middle-subject corresponds to a DP included in a PP. We come back to these examples immediately. They are discussed in more detail in chapter 7.

<sup>11</sup> Note that middle constructions usually induce an additional modality effect, which will be discussed below.

<sup>12</sup> The only exception might be passivized reflexive sentences like (i). In this case the reflexive pronoun cannot be promoted to subject because German does not have nominative reflexive pronouns, cf. chapter 5.

- (i) Jetzt wird sich gewaschen  
 Now is RP-ACC washed  
 'Everybody is going to wash him- and herself now'

<sup>13</sup> The attentive reader may have noticed that example (4) is ambiguous between the (active) reflexive interpretation 'Peter is washing himself quickly' and a middle interpretation 'Peter washes quickly'. Because both the middle interpretation and the reflexive interpretation are two possible readings of transitive sentences with an accusative reflexive pronoun in object position, such sentences are ambiguous if both interpretations make sense.

Many Indo-European and non-Indo-European languages use reflexive elements for more or less identical purposes. In this chapter we present a descriptive survey of reflexive constructions in some Indo-European languages. We are mainly concentrating on reflexive constructions indicating valency reduction like middle constructions in (1) or anticausatives in (5). Moreover, we show that reflexive constructions are always ambiguous between an argument and a non-argument interpretation of the reflexive pronoun. Thus in all languages under discussion they also receive the reflexive interpretation illustrated in (4). That is, reflexive constructions are systematically ambiguous in many languages. We start off small and enlarge the picture of the middle step by step. In section 2.1 we briefly illustrate the syntactic and semantic properties of middle constructions in German. In section 2.2 we discuss anticausatives and inherent reflexives. In section 2.3 we turn to further Indo-European languages and show that the correlation between valency reduction and reflexivity we observe in German is not accidental. We argue that there is good crosslinguistic evidence to subsume the analysis of transitive reflexive sentences in German under the major phenomenon of middle voice.

In this chapter we do not want to make any theoretical claims whether we prefer a lexical, syntactic, or (postsyntactic) semantic analysis of middle and related constructions. Nevertheless, every description of facts partly depends on underlying theoretical concepts and their specific terminology.<sup>14</sup> Therefore, we have to be careful with the terminology we are going to use. In the following presentation we distinguish between syntactic and semantic properties of a sentence. Hence, we must also distinguish between syntactic and semantic terminology. (In-)transitivity, (nominative) subject, accusative object or dative object are used as descriptive syntactic terms.<sup>15</sup> On the semantic side, we use one-place predicate, two-place predicate, semantic argument (variable) and external and internal semantic argument as descriptive semantic terms. The valency (or argument structure) of a predicate is simply represented as an ordered set of one, two, or three arguments. The first semantic argument of two-place predicates is often called the 'logical subject' and the second semantic argument the 'logical object' of the verb. However, we do not use the terms 'logical subject' and 'logical object', because subject and object belong to syntactic terminology. One-place predicates can be subdivided in unergatives and unaccusatives. The only semantic argument of unergatives is external whereas the only semantic argument of unaccusatives is internal. Besides, we avoid the term argument in syntax. Instead of arguments, we talk about subjects and accusative, dative, or prepositional objects.

Finally, a comment on grammaticality judgements seems to be necessary. We already saw that transitive sentences with a reflexive pronoun in the position of the accusative (or direct) object are multiply ambiguous between a middle, anticausative, inherent reflexive or reflexive inter-

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<sup>14</sup> The terminology is mainly influenced by lexical and syntactic theories of middle formation. Lexical theories postulate some lexical manipulation of the argument structure (i.e. a lexical rule of argument suppression or a middle template). Syntactic theories derive middle constructions like passives by case movement: a deep structure object is moved to subject position at surface structure. We discuss these theories and their shortcomings at length in chapter 3. For the time being we want to describe the properties of middle and related constructions as neutral as possible.

<sup>15</sup> We do not talk about direct and indirect objects because German distinguishes objects on the basis of case. For example, the second argument of two-place verbs can be assigned either accusative, dative or genitive case (and it can also be linked to a prepositional phrase). There are good arguments that grammatical functions should not be an essential part of the grammar of German (cf. e.g. Reis 1986 and Sternefeld 1985).

pretation. Note that sometimes the middle reading is hard to get. This might be due to the following two observations which seem to be relevant for the interpretation of semantically ambiguous sentences.

- i. Semantic representations which do not require valency change seem to be the unmarked case. Hence, the preferred interpretation for a transitive reflexive sentence seems to be as follows: the verb is interpreted as a two-place predicate and both the syntactic subject and the syntactic object are linked to one of the verb's semantic arguments. Especially with subjects that refer to animate entities, the reflexive interpretation is preferred, because they are very likely to be interpreted as proto-agents.
- ii. Semantic representations without implicit arguments are the unmarked case. According to (ii), the anticausative interpretation of transitive reflexive sentences is preferred over the middle interpretation.

Besides, reflexives and anticausatives, like passives, usually refer to specific events whereas the middle interpretation involves generic quantification. This might additionally hinder the discourse linking of middle construction. Hence, the middle interpretation is often the least preferred option for a transitive reflexive sentence. Sometimes it takes some time to grasp the middle reading. Furthermore, middle constructions usually require additional adverbial modification (but cf. section 2.1.4 and chapter 7). Therefore, especially middle constructions without any adverbial modification need an appropriate context to be licensed. Last but not least, middle constructions in German are semantically closely related to three further constructions. *Lassen*-middles like (6.a) and tough-movement construction like (6.b) are semantically nearly identical to common middle constructions, cf. e.g. Fagan (1992: 210f.) for *lassen* middles. The 'active' sentence with the indefinite 'generic' subject *man* ('one') and the modal *können* ('can') in (6.c) is also a close paraphrase of the middle construction in (1). Note that (6.c) does not involve valency reduction.

- (6) a. Das Brot läßt sich gut schneiden (lassen-middle)  
The bread lets RP well cut  
'The bread cuts easily'
- b. Das Brot ist gut zu schneiden (tough-movement)  
The bread is good to cut
- c. Man kann das Brot gut schneiden (indefinite pronoun)  
One can the bread easily cut  
'One can cut the bread easily'

## 2.1 The middle construction in German

Before we turn to the plot of the middle-story we must introduce the protagonists. Although a lot has been written about middle constructions in German and related languages (cf above all the detailed overview in Fragan 1992 and Abraham 1995b)<sup>16</sup> the following survey is necessary

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<sup>16</sup> See also Wagner (1977). Some data of the following presentation are from Fagan's book on middle constructions. Most of the other examples are taken from German newspapers or books. It will become clear in chapter 3 that we disagree in several respects with Fagan's description of the relevant properties of middle constructions in German. Furthermore, Fagan does not mention adjunct middles in German. Our disagreement with Fagan and

for four reasons: firstly, many of the restrictions suggested for middle constructions in German turn out to be more complex at second sight; secondly, constructions like adjunct middles have not been noticed for German yet; thirdly, recent analysis do not put middle constructions into the context of transitive reflexive sentences; and fourthly, the argumentation in the following chapters will make use of the examples introduced in this section. In 2.1.1 we focus on verbs in middle constructions. In 2.1.2 we turn to the syntactic subject of middle constructions. Section 2.1.3 deals with the reflexive pronoun, and in 2.1.4 we discuss adverbials and further (semantic) issues.

### 2.1.1 Verbs in the middle construction

(7) are further examples of typical ‘personal’ or ‘transitive’ middle constructions that correspond to transitive sentences in the active voice. All examples contain verbs that select two semantic arguments. In the following we mention the (in-) transitivity of the corresponding active sentences in parenthesis in each case (example (7.a) is taken from Bernhard Schlink, *Der Vorleser*, and (7.c) is from Harry Rowohlt, *Pooh’s Corner*).<sup>17</sup>

- |     |  |               |
|-----|--|---------------|
| (7) | Two-place predicates (transitive):   |               |
| a.  | Aber richtig war, dass [der Bericht] sich anders las<br>But correct was, that the report RP differently read<br>‘However, it was correct that the report read differently’ | Präteritum    |
| b.  | Das Buch wird sich wie ein Kriminalroman lesen<br>The book will RP like a crime story read   | Future Tense  |
| c.  | ... frierend schreibt sich irgendwie besser hin<br>... being-cold writes RP somehow better VERBAL-PARTICLE   | Present Tense |
| d.  | Das Klavier hat sich schlecht gespielt<br>The piano has RP badly played  | Perfekt       |

We already mentioned that middle constructions in German are syntactically transitive themselves, which will be discussed in great detail in chapter 4. Note that the middle construction does not change the morphological form of the verb. Middle constructions are grammatical in present, past (*Präteritum*) or future tense and with perfect aspect (*Perfekt* and *Plusquamperfekt*). In addition to personal middle constructions, German has also so-called impersonal or ‘intransitive’ middle constructions (cf. Fagan 1992: 44).<sup>18</sup> They correspond to intransitive sentences and have a pleonastic nonreferential element (the third person neuter pronoun *es*) in the position of the grammatical subject.<sup>19</sup> The sole argument of the one-place verb is sup-

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other authors concerns among others the constraints on *Aktionsarten*, aspectuality, adverbial modification, the implicit subject, and the so-called ‘static’ interpretation middle constructions are supposed to have. We will discuss these shortcomings in detail in chapter 3 and 7.

<sup>17</sup> The valency of many verbs varies. Extrem examples are polyvalent verbs like e.g. *rollen* (‘roll’) or *schlagen* (‘hit’), cf. Vogel (1998). By two-place predicate, for instance, we mean that the respective verb is interpreted as a two-place predicate in this context. The same holds for many terms used in this chapter like ‘achievement’, ‘accomplishment’ or ‘activity’, cf. also footnote 18 below.

<sup>18</sup> The term ‘intransitive’ middle construction is somewhat misleading, because middle constructions are always transitive. Impersonal or ‘intransitive’ middle constructions only correspond to intransitive active sentences.

<sup>19</sup> Abraham (1995b) mentions another kind of impersonal middle construction. In this case the verb agrees with impersonal subject *es* (third person singular), although the middle construction is derived from a two-place predi-

pressed and there is no argument left that can be linked to the subject position. (8) are a few examples with typical intransitiv unergative verbs like *wohnen* ('live/reside'), *schlafen* ('sleep') or *jodeln* ('yodel'). The first example is taken from Franz Hessel, *Ein Flaneur in Berlin*, (new edition of *Spazieren in Berlin*, Berlin 1927), the second example is from Waltraut Lewin, *Louise, Hinterhof Nord*, the third one is from Fagan (1992: 243), and the last example is from the *Frankfurter Allgemeine Zeitung*, 11.9.2000.

- (8) One-place predicates (intransitive - unergative):
- a. Hier wohnt sich's altertümlicher und heimlicher als in den belebten Straßen am südlichen Tiergartenrand  
Here lives RP it more ancient and homey than in the busy streets at-the southern edge of the Tiergarten
  - b. Nun schläft es sich doch ein bischen besser  
Now sleeps it RP well PARTICLE a littlet better
  - c. Mit der Heimat im Herzen jodelt es sich überall gut  
With home in the heart yodels it RP everywhere well  
'With home in your heart, you can yodel well everywhere'
  - d. Mit blauen Augen flirtet es sich leichter  
With blue eyes flirts it RP more-easily

Besides unergative one-place predicates, unaccusative/ergative predicates are also grammatical in middle constructions. German has two classes of one-place verbs that differ in many respects: unergatives and unaccusatives/ergatives. Among other things, unaccusative/ergative verbs select the auxiliary *sein* ('be')<sup>20</sup> and their subject or first semantic argument can be attributively modified by the past participle and the present participle.<sup>21</sup> Unergatives, on the other hand, select *haben* ('have'), and their subject cannot be modified by the past participle

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cate. The second argument (the plural NP *solche Beamte*) is not linked to the syntactic subject of the sentence but receives accusative case. This construction equals the impersonal *si*-construction in Italian (cf. 3.1.2).

- (i) a. ???...weil es sich solche Autos gut fährt  
... because it (sg.) RP such cars-ACC (pl.) well drives (sg.)
- b. ???... weil es sich diese Bücher gut liest  
... because it RP these books-ACC well reads
- c. ???...weil es sich einen solchen Beamten leicht besticht  
... because it RP such an official-ACC easily bribes

Most native speakers we asked find these impersonal constructions hardly acceptable. Nevertheless, we share Abraham's judgements and think that they are not ungrammatical. Note, however, that all three sentences in (i) sound old-fashioned and stilted, and they are very uncommon in Modern German. This kind of impersonal middle construction lies beyond the scope of all the analyses of middle constructions we discuss in chapter 3. Additional principles seem to be necessary in any case to explain this specific impersonal construction. We neglect it in the following discussion.

<sup>20</sup> German also has few two-place verbs that select *sein* ('be') instead of *haben* ('have').

- (i) Ich bin die ganze Stadt abgelaufen  
I BE the whole city down-walked

Van Riemsdijk (1978) argues that examples like (i) involve postposition-incorporation. The head of the postpositional phrase *die ganze Stadt ab* incorporates into the unaccusative/ergative verb *laufen* and behaves like a separable particle (cf. also Fagan 1992 and Ackema and Schoorlemmer 1995).

<sup>21</sup> Further tests are *-er*-nominalization, VP-topicalization, impersonal passives and stress assignment. Note that these tests do not always give a clear classification and that they do not provide compelling evidence for a syntactic derivation. Besides, further aspects has to be taken into account as, for example, aspectuality in the context of auxiliary selection. We return to unaccusatives in chapter 6.

but only by the present participle, cf. Grewendorf (1989b) and Fagan (1992) for further discussion. According to these two tests, the verbs in (9.a) and (9.b) are clear examples for ergative or unaccusative verbs: they select *sein* and their past participle can modify the subject. One-place verbs of movement like *reisen* ('travel') in (9.c) or *fahren* ('drive') in (9.d) have less proto-patient properties than *sterben* or *einschlafen*, cf. Dowty (1991). Nevertheless, they also select *sein* and modification of the subject by the past participle is also possible if we add an adverbial or a directional PP, e.g. *ein weit gereister Künstler* ('an artist who travelled far') or *der nach Hamburg gefahren Zug* ('the train that goes to Hamburg'). Example (9.a) is from the *Berliner Zeitung*, 22/23.11.97 and example (9.b) is from Fagan (1992: 243).<sup>22</sup>

- (9) One-place predicates (intransitive - unaccusative):
- a. Gesundheitsstudie: In welchem Bezirk stirbt es sich am frühesten  
Study on health: In which district dies it RP at the earliest
  - b. Bei hellem Licht schläft sich's nicht so gut ein  
With bright light fall-asleep RP it not that well
  - c. Dann...reist es sich besser  
Then...travel it RP better
  - d. Es fährt sich gut auf der Autobahn  
It drives RP well on the highway

The analysis of ergativity is an interesting issue of its own, which lies beyond the scope of this study. However, we will argue in chapter 6 that our analysis of middle constructions provides an argument against a syntactic analysis of unaccusative/ergative verbs. From a lexical point of view, middle formation can be described as a function that takes as input a predicate with at least one argument and 'demotes' the first semantic argument of the verb. This argument need

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<sup>22</sup> The examples in (i) illustrate the BE/HAVE selection with perfect tense in German. Unaccusative verbs like *arrive* (i.a) select BE while unergative verbs like *sleep* (i.b) select HAVE.

- (i) a. Peter ist auf der Autobahn gefahren  
Peter BE on the highway driven  
b. Peter hat im Bett geschlafen  
Peter HAVE in the bed slept

Example (ii) illustrates that past participles can be used only to modify the accusative object of a transitive sentence (i.e. the second or internal argument of the verb) (ii.b), whereas present participles modify the subject of the sentence (i.e. the first or external argument) (ii.c).

- (ii) a. Der Mann trinkt ein Bier  
The man-NOM drinks a beer-ACC  
b. das getrunkene/\*trinkende Bier  
The PAST-PART./PRESENT-PART. beer  
c. Der \*getrunkene/trinkende Mann  
The PAST-PART./PRESENT-PART. man

The crucial difference between unaccusatives and unergatives is illustrated in (iii): the subject of unaccusatives can be modified by both the past participle and the present participle. The subject of an unergative, on the other hand, can only be modified by the present participle like the subject of the transitive sentence in (ii).

- (iii) a. Der gestorbene/sterbende Mann  
The PAST-PART./PRESENT-PART. man  
b. Der \*geschlafene/schlafende Mann  
The PAST-PART./PRESENT-PART. man

not be external.<sup>23</sup> Consequently, verbs like *regnen* ('rain') or *tauen* ('thaw'), which do not select a semantic argument, are ungrammatical in middle constructions.<sup>24</sup>

- (10) a. Im Frühjahr taut es in Berlin sehr schnell  
 In spring thaws it in Berlin very quickly  
 b. \*Im Frühjahr taut es sich in Berlin sehr schnell  
 In spring thaws it RP in Berlin very quickly

The middle construction itself is unergative. Personal and impersonal middle constructions select *haben* ('have') as their auxiliary and the past participle cannot attributively modify the subject. Instead, we have to use the present participle, cf. also Ackema and Schoorlemmer (1994:61f.) for Dutch.

- (11) a. Unter den Linden hat es sich schon immer gut flaniert  
 'Unter den Linden' has it RP always well strolled  
 b. Das sich gut lesende Buch vs. \*Das sich gut gelesene Buch  
 The RP well reading book The RP well read book

(12) and (13) are further examples for personal middle constructions. (13.a) – (13.c) are middle constructions derived from three-place predicates. It is again the accusative object of the active counterpart that corresponds to the subject of the middle construction.

- (12) three-place predicates (ditransitive)  
 a. Fahrräder laden sich jetzt leichter in unsere Wagen  
 Bikes load RP now more easily in our carriages  
 b. ... weil sich süßer Hustensaft kleinen Kindern besser einflößt  
 ... because RP sweet cough syrup small children-DATIVE better fills-in-their-mouth  
 c. Dieses Buch verkauft sich (den Nonnen) hervorragend (an Nonnen)  
 This book sells RP (the nons-DATIVE) excellently (to nuns)

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<sup>23</sup> Perlmutter (1978), Burzio (1986), or Grimshaw (1990) among others argue that unaccusative verbs select an internal argument. The syntactic subject of a sentence with an unaccusative verb is linked to the internal argument of this verb. This linking-configuration can also be found in the causative-alternation. It is the syntactic subject of the unaccusative verb *break/zerbrechen* in (i.a) and (ii.a) that is realized as object of the corresponding causative variant in (i.b) and (ii.b). In both examples, the NP *the vase/die Vase* is linked to the same semantic argument (cf. also Levin and Rappaport 1995).

- (i) a. The vase broke  
 b. His mother-in-law broke the vase  
 (ii) a. Die Vase zerbricht  
 b. Seine Schwiegermutter zerbricht die Vase

<sup>24</sup> Most of these zero-place verbs can be also used with a semantic argument.

- (i) a. Es regnet and b. Blätter regnen auf das Dach  
 It rains (it is raining) Leafs are raining on the roof  
 (ii) a. Es taut and b. Der Schnee taut  
 It thaws (it is thawing) the snow is thawing

Under our perspective these verbs can be input to middle formation if they yield the interpretation in (i.b) and (ii.b). In fact, sentence (10.b) can receive a middle interpretation. In this case the verb must be interpreted as an one-place predicate with an implicit argument. This interpretation resembles the interpretation of unaccusatives in middle constructions and is of course absurd. But imagine a fairytale with two snowflakes talking to each other. The topic of the conversation is their experience of thawing in different cities. In this context one of the snowflakes can actually utter sentence (10.b). But for this we must interpret the verb as one-place predicate.

In addition to three-place predicates, we also find resultatives in middle constructions in German. Both, adverbial (13.a) and prepositional (13.b) and (13.c) secondary predicates are grammatical.

- (13) Resultatives:
- a. Warmes Metall hämmert sich einfacher flach  
Warm metal hammers RP more easy flat
  - b. Diese Füllspachtel quetscht sich sehr gut in die Fugen  
This filling compound squeezes RP very well into the joints
  - c. Kleine Menschen trinken sich schnell unter den Tisch  
Small people drink RP quicker under the table

We conclude that all kinds of predicates that select at least one semantic argument (i.e. one-place unergatives and unaccusatives, two-place and three-place predicates and resultatives) are generally perfectly grammatical in middle constructions and that middle constructions are not restricted to present tense. Apart from that, there is a second restriction on middle formation: individual-level predicates like *wissen* ('know'), *können* ('be able', 'know'), *heißen* ('be called') or *abstammen* ('be descended') cannot undergo middle formation at all. We will argue in chapter 7 that middle constructions involve generic quantification over the first semantic argument and the event (or situation) variable. Hence individual-level predicates that do not select an event/situation variable are excluded from middle formation.

- (14) a. \*Diese Antwort weiß sich leicht  
This answer knows RP easily
- b. \*Spanisch kann sich einfach  
Spanish knows RP easily
- c. \*So wie mein Vater heißt es sich nicht so leicht  
Like my father names it RP not that easily
- d. \*Vom Gorilla stammt es sich nicht so leicht ab  
From the Gorilla be-descended it RP not that easily PART

Individual-level predicates can be subsumed under Vendler's (1967) class of states (see Dowty 1979 and Fagan 1992:89f.). Note, however, that only individual-level predicates are excluded from middle formation. (15) would be an example of a middle construction with a stative verb provided that we classify a verb like *sitzen* ('sit') as a state (instead of an activity).

- (15) Auf diesem Stuhl sitzt es sich weitaus bequemer  
On this chair sits it RP far more comfortable

In sum, middle formation is only possible with stage-level predicates. We find all kind of stage-level predicates in middle constructions.<sup>25</sup> A clear example of an achievement is *etwas ausschalten* ('switch something off') in (16.a). (16.b) is an example for a middle construction with an activity verb and (16.c) with an accomplishment.

- (16) a. Der Fernseher schaltet sich schnell aus  
The TV switches RP quickly off

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<sup>25</sup> The so-called aspectual properties of verbs (*Aktionsarten*) are not (necessarily) inherent lexical properties of single verbs but very often result from the interpretation of more complex structures including especially the verb and the direct or accusative object, cf. Dowty (1991) or Tenny (1994), among many others for further discussion of this issue.

- b. In dieser Ecke des Sees schwimmt es sich am besten  
 In this corner of the lake swims it SELF best
- c. Große Wände bemalen sich nicht so leicht  
 Big walls paint RP not that easily

Let us conclude that so far there are only two fundamental restrictions on the predicates that are grammatical in middle constructions: they must provide at least one semantic argument and they must not belong to the class of individual-level predicates.

### 2.1.2 *The subject of middle constructions*

Usually the syntactic subject of the middle construction corresponds to the accusative object of the active counterpart. Impersonal middle constructions are derived from one-place verbs and correspond to intransitive active sentences without an accusative object. They have an pleonastic or impersonal subject that is not linked to a semantic argument of the verb. In this respect impersonal middle constructions differ from impersonal passives, which do not have a subject at all. In impersonal passives the third person neuter pronoun *es* is only grammatical in sentence-initial position of matrix-clauses. The pronoun in (17.a) is called *Vorfeld-es* (cf. Grewendorf 1988).<sup>26</sup> As opposed to the pronoun in impersonal passives, the pronoun in impersonal middle constructions is a genuine (impersonal or pleonastic) subject that also occurs in the middle-field.

- (17) a. Es wird hier getanzt (impersonal passive)  
 It is here danced  
 ‘People are dancing here’
- b. Gestern wurde (\*es) getanzt  
 Yesterday was it danced
- c. ... weil (\*es) hier getanzt wird  
 ...because it here danced is
- (18) a. Es tanzt sich gut hier (impersonal middle construction)  
 It dances RP well here
- b. Hier tanzt \*(es) sich gut  
 Here dances it RP well
- c. ...weil \*(es) sich gut tanzt hier  
 ...because it RP well dances here

<sup>26</sup> The third person neuter pronoun *es* fulfills quite different functions: referential personal pronoun, place-holder for complement-clauses, impersonal subject, and *Vorfeld-es*. An example for the *Vorfeld-es* in a simple active sentence is given in (i):

- (i) a. Es ging ein Mann durch denn Wald und ...  
 It went a man throuh the woods and ...
- b. Durch den Wald ging (\*es) ein Mann und ...
- c. ... weil (\*es) ein Mann durch denn Wald ging und ...

Like the reflexive pronoun in transitive reflexive sentences *es* can but need not be interpreted as an argument of the verb. It need not be referential. Therefore, the third person neuter pronoun, unlike other personal pronouns, can also be used for certain grammatical functions. For further differences between *es* and all the other personal pronouns see Cardinaletti and Starke (1994) and Gärtner and Steinbach (1996 and 2000).

The contrast between impersonal passives and impersonal middle constructions is yet another argument for an analysis that treats middle constructions as simple transitive sentences that are morphosyntactically ‘active’. We will come back to this issue in chapter 3 and 4.

So far, we saw that the syntactic subject in personal middle constructions corresponds to the accusative object of the active counterpart. There is, however, one exception to this correlation between the middle-subject and the accusative object of the active voice. Hoekstra and Roberts (1993) and Ackema and Schoorlemmer (1994) discuss another interesting kind of middle construction in Dutch which they call adjunct middles. The subject of the adjunct middle in (19.a), (20.a), and (21.a) corresponds to the PP-adjunct in the impersonal middle constructions in (19.b), (20.b), and (21.b) or in the active counterparts in (19.c), (20.c), and (21.c). Adjunct middles seem to be quite productive in Dutch. In German they seem to be more restricted.<sup>27</sup> At first glance native speakers of German sometimes judge adjunct middles not to be perfectly grammatical.

- (19) a. ?Diese Schuhe laufen sich aber nicht sehr bequem  
 These shoes walk RP yet not very comfortably  
 b. In diesen Schuhen läuft es sich nicht sehr bequem  
 In these shoes walks it RP not very comfortably  
 c. In diesen Schuhen läuft man nicht sehr bequem  
 In these shoes walks one not very comfortably
- (20) a. ?Mein neuer Füller schreibt sich gut  
 My new pen writes RP well  
 b. Mit meinem neuen Füller schreibt es sich gut  
 With my new pen writes it RP well  
 c. Mit meinem neuen Füller schreibt man gut  
 With my new pencil writes one well
- (21) a. ?Diese Wolle strickt sich sehr angenehm  
 This wool knits RP very comfortably  
 b. Mit dieser Wolle strickt es sich angenehm  
 With this wool knits it RP very comfortably  
 c. Mit dieser Wolle strickt man angenehm  
 With this wool knits one comfortably

Not every adjunct feeds middle formation. Adjunct middles formation is subject to additional constraints, that restrict the kind of adjuncts that can undergo middle formation. (22.a) and (22.b) are two examples for adjunct middles that are not acceptable in German.

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<sup>27</sup> Miller (1993: 183) notes that middle formation from an underlying or corresponding PP is possible in English as well. In this case the preposition seems to incorporate into the verb:

- (i) a. ?That tree climbs up quickly  
 b. \*That tree climbs quickly up
- (ii) That stove melts over quickly

- (22) a. \*Diese Lampe liest sich besser  
This lamp reads RP better  
a'. Mit/unter dieser Lampe liest es sich besser  
With/under this lamp reads it RP better  
b. \*Verstand schreibt sich leichter  
Intellect writes RP more easily  
b'. Mit Verstand schreibt es sich leichter  
With intellect writes it RP more easily

Hence, for some adjuncts German has two alternative middle constructions, the adjunct middle or the impersonal middle construction. The subject NP of the adjunct middle is still contained in the adjunct-PP in the corresponding impersonal middle construction, the subject position of which is again occupied by the impersonal subject *es*. Note, however, that the meaning of the adjunct middles in (19.a), (20.a) and, (21.a) is not totally identical to the meaning of the corresponding impersonal middle construction in (19.b), (20.b) and, (21.b). We will discuss adjunct middles in greater detail in chapter 7.

German middle constructions are subject to another important restriction on their subject. The subject of the middle construction cannot correspond to dative objects in the active counterpart. Hence, dative objects must not be 'promoted' to subject in middle constructions. Middle formation with arguments that are linked to a dative object in the active voice is ungrammatical in general. On the one hand, sentence (23.b) is ungrammatical if the reflexive pronoun is assigned accusative case. On the other hand, (23.b) does not yield a middle interpretation if the reflexive pronoun bears dative case, because dative reflexive pronouns cannot indicate valency reduction in German. (23.b) can only receive a reflexive interpretation. A verb selecting a dative object can, however, occur in impersonal middle constructions, cf. (23.c). In impersonal middle constructions, the dative object preserves its case and the accusative reflexive pronoun indicates again valency reduction. Hence, verbs selecting dative objects are not excluded from middle formation in principle. We conclude that dative reflexive pronouns cannot indicate valency reduction and dative objects cannot be promoted to subject in middle constructions.<sup>28</sup>

- (23) a. Wir helfen einem Obdachlosen  
We-NOM help a homeless-person-DAT  
b. Ein Obdachloser hilft sich leicht  
A homeless-person-NOM helps RP-\*ACC/DAT easily  
'A homeless person is helping himself easily' (reflexive interpretation)  
\*'A homeless person helps easily' (middle interpretation)  
c. Einem Obdachlosen hilft es sich leicht (impersonal middle constr.)  
A homeless-person-ACC helps it-NOM RP-ACC easily

<sup>28</sup> The same holds for the rare cases of genitive objects ((ii) is an impersonal middle construction):

- (i) a. \*Diese Gewohnheit enträt sich leicht  
This habit-GEN do-without RP easily  
b. Dieser Gewohnheit enträt es sich leicht  
This habit-NOM do-without it RP easily

Van Oosten (1977), Fagan (1992: 76f.), and Greenspon (1996) observe a further restriction on the subject of middle constructions, which can be outlined as follows: some property of the subject must be ‘responsible’ for the event described by the verb. This property of the subject is called (primary) responsibility. Fagan’s observation that there exists a contrast between *buy* and *sell* as well as between the corresponding German verbs *kaufen* and *verkaufen* illustrates this condition nicely. While *sell* and *verkaufen* form acceptable middle constructions, *buy* and *kaufen* sound odd.

- (24) a. \*These books buy well / \*Diese Bücher kaufen sich gut  
 b. These books sell well / Diese Bücher verkaufen sich gut

The properties of the object for sale may influence the act of selling. A best-seller can be sold more easily than a shelfwarmer. A parallel situation is hard to imagine for *buy*. However, a person’s selling abilities or the availability of an entity can have a positive or negative effect on the act of buying. In this context sentence (24.a) gets much better.<sup>29</sup>

- (25) a. Bei fachlich geschultem Personal kauft sich die richtige Software letztlich doch schneller als im Discounter  
 With qualified personnel buys RP the right software in the end PARTICLE faster than in a discount store  
 ‘In the end the right software buys faster with qualified personnel than in the d.s.’  
 b. Standardgrößen kaufen sich leichter als Sondergrößen  
 Standard-size buys RP more easily than extra-size

The significance of the promoted second semantic argument (i.e. the subject of the middle construction) for the event described by the verb affects the acceptability of middle constructions. Again, (primary) responsibility seems to be a property of the ‘subjects’ of active sentences. As opposed to subjects in middle constructions, subjects in passives are not subject to this restriction (cf. Lakoff 1977 and Greenspon 1996). Impersonal middle constructions usually contain another constituent (e.g. a prepositional phrase) that is ‘responsible’ for the event. This can be seen in example (26): the quality of a bed can be very important for the way we sleep. In section 7.1 we come back to this issue.

- (26) In diesem Bett schläft es sich hervorragend  
 In this bed sleeps it RP excellently

It has often been claimed that only verbs with ‘affected’ internal arguments may undergo middle formation (cf. Roberts 1987, Hale and Keyser 1987, Hoekstra and Roberts 1993, or Rapoport 1993). This restriction is, however, much too strong. Verbs without ‘affected’ internal arguments are also grammatical in middle constructions. This is illustrated by the following sentences (cf. also section 3.1.1 and 3.2.1). The first two examples are taken from Fagan (1992: 65). The corresponding German examples are also grammatical. Example (27.e) is from the *Schwäbische Tagblatt*, 27.11.1999.

<sup>29</sup> Sentence (25.b) is due to Manfred Bierwisch.

- (27) a. This book reads easily / Dieses Buch liest sich leicht  
 b. She photographs well / Sie fotografiert sich gut  
 c. Diese Geschichte vergißt sich nicht so leicht  
 This story forgets RP not that easily  
 d. Von hier aus sieht sich das gegnerische Tor viel besser  
 From here sees RP the opponent's goal much better  
 e. Im Schaufenster sieht sich Weihnachten noch schöner an als in der Wirklichkeit  
 In the display-window look-at RP christmas even nicer VERB.PART. than in the reality

### 2.1.3 The reflexive pronoun

Unlike middle constructions in English and Dutch, which must not have a reflexive pronoun in object position, personal and impersonal middle constructions in German are ungrammatical without the accusative reflexive pronoun. The reflexive pronoun is always bound in syntax by the subject of the sentence, cf. also Abraham (1995b:14f.) for examples similar to (28). In impersonal middle constructions it is the expletive subject *es* that binds the reflexive pronoun.

- (28) a. Ich<sub>1</sub> schreibe mich<sub>1</sub> mit 'st'  
 I-1.SG write RP-1.SG with 'st' (i.e. 'my name has to be written with 'st')  
 b. Du<sub>1</sub> verkaufst dich<sub>1</sub> gut - ich meine, dein Buch<sub>2</sub> verkauft sich<sub>2</sub> gut (Reis 1981)  
 You-2.SG sell RP-2.SG well - I mean, your book-3.SG sells RP-3.SG well  
 c. Auf dieser Party tanzt es<sub>1</sub> sich<sub>1</sub> prima  
 At this party dances it-3.SG RP-3.SG fantastically

Table (29) illustrates that in the first and second person, reflexive pronouns cannot be distinguished from personal pronouns.

### (29) Accusative and dative personal pronouns and reflexive pronouns in German

	<i>1. person</i>	<i>2. person</i>	<i>3. person</i>	<i>1. person</i>	<i>2. person</i>	<i>3. person</i>
	<b>accusative</b>			<b>dative</b>		
<i>singular</i>						
<b>reflexive pronoun</b>	mich	dich	sich	mir	dir	sich
<b>personal pronoun</b>	mich	dich (Sie)	sie/ihn/es	mir	dir	ihr/ihm
<i>plural</i>						
<b>reflexive pronoun</b>	uns	euch	sich	uns	euch	sich
<b>personal pronoun</b>	uns	euch (Sie)	sie	uns	euch	ihnen

Furthermore, accusative and dative forms can only be distinguished in first and second person singular. Hence, we can tell accusative from dative pronouns in the first and second singular slots and reflexive pronouns from personal pronouns in the third person singular and plural slots. One might either assume that personal pronouns and reflexive pronouns in German are homonymous in the first and second person or that German does not distinguish reflexive pronouns from personal pronouns in the first and second person. The formal identity of first and second person might be due to the fact that the antecedent is always clearly identifiable in the discourse. Hence, it makes no difference whether the pronoun is locally bound (principle A) or locally free (principle B). Burzio (1989) argues that a personal pronoun can be locally bound if the paradigm has no reflexive pronoun (or anaphor) or, to put it the other way round, that it is always the least specified element in that paradigm that can be locally bound. Ac-

ording to Burzio's morphological economy a NP that is bound must be maximally underspecified. Reflexive pronouns (anaphora) have less specified  $\Phi$ -features than personal pronouns. Therefore, locally bound personal pronouns are grammatical only if a language does not distinguish reflexive pronouns from personal pronouns, cf. also the discussion in Gärtner (1991). In section 2.4 we present further evidence for Burzio's theory from Middle High German. His theory will also be relevant for the definition of the middle marker which we develop in chapter 5.<sup>30</sup>

#### 2.1.4 Adverbials, 'genericity', and the implicit argument

It has often been claimed that middle constructions in German and English require some additional adverbial modification, cf. Fagan (1992), Haider (1982), Hoekstra and Roberts (1983), or Bierwisch (1997). However, this seems to be an overgeneralization because we also find middle constructions without any adverbial modification, as can be seen in (30), cf. also Ackema and Schoorlemmer (1994) and Iwata (1999). Example (30.d) is from Fagan (1992: 43), example (30.f) from Theodor Fontane, *Irrungen, Wirrungen*, and example (30.g) from *Der Spiegel* 28/1999.

- (30) a. Welche Tür öffnet sich?  
Which door opens RP  
'Which door can be opened?'
- b. Nimm diese Tür da, die öffnet sich!<sup>31</sup>  
Take that one over there, it opens RP  
'Take that one. It can be opened'
- c. Nur keine Angst. Dein Ohring wird sich finden  
'Anything but fear'. Your earring will RP find
- d. Dieses Kleid hat keinen Reißverschluß. Es knöpft sich zu  
This dress has no zip. It buttons RP PARTICLE
- e. Jetzt ist es schwer, aber es vergißt sich alles.  
Now is it hard, but it forgets RP everything
- f. Die entscheidende Frage nach den Kriterien der Amerikaner [i.e. amerikanischen Lektoren] beim Ankauf eines Manuskripts fand regelmäßig die verblüffend einfache Antwort:  
When asking what Americans [i.e. American editors] consider to be crucial criteria for accepting a manuscript you always get the same answer:  
'Dass es uns gefällt und dass es sich verkauft.'  
That it us pleases and that it RP sells  
'That we like it and that it sells'

<sup>30</sup> Note that the politeness form *Sie* of the second person is morphologically identical with the third person female singular and the third person plural personal pronoun *sie*. The politeness form is totally regular. The corresponding reflexive pronoun is the third person reflexive pronoun *sich*:

(i) Können Sie \*Sie/sich bitte hierhin setzen?  
Could you RP please here sit down

<sup>31</sup> See Fagan (1992:157) for a similar example in English.

We will argue in chapter 7 that the observation that middle constructions usually need some kind of adverbial modification follows from certain conditions on assertions to be pragmatically licensed. Take, for example the middle construction in (30.g), which is not very informative in many situations because a book normally can be sold. Therefore, we are usually interested in whether or not a book sells well. But in some situations (e.g. if we are interested in whether or not a book is a shelf-warmer) the middle construction in (30.g) makes sense. We will argue the adverbial modification is not crucial for the grammaticality of middle constructions, cf. e.g. Ackema and Schoorlemmer (1994) for the same observation with respect to English and Dutch middle constructions. Other examples without adverbial modification are middle constructions with negation and modal auxiliaries in the subjunctive. Example (31.a) is attested by a friend.

- (31) a. ... und Tabellen, die sich nicht drucken  
           ... and tables, that RP not print (i.e. that does not print)  
       b. Diese Tür könnte sich öffnen  
           This door might RP open

Typical adverbials in middle constructions are manner adverbials like *gut* ('well') or *leicht* ('easily')<sup>32</sup> whereas subject-oriented adverbials are ungrammatical, cf. (32.a). In this respect middle constructions differ from passives, cf. (32.b).

- (32) a. \*Das Brot schneidet sich absichtlich  
           The bread cuts RP on purpose  
       b. Das Brot wurde absichtlich geschnitten  
           The bread was-PAS on purpose cut

Furthermore, adverbial phrases like *wie Butter* ('like Butter') or comparative adverbials are also possible in middle constructions. Reference to the suppressed 'logical' subject is again ungrammatical.

- (33) a. Warmes Brot schneidet sich wie Butter  
           Warm bread cuts RP like butter  
       b. Das Buch liest sich besser als du denkst  
           The book reads RP better than you think  
       c. \*Sein Auto fährt sich wie Niki Lauda (cf. Peter fährt sein Auto wie Niki Lauda)  
           His car drives RP like Niki Lauda (cf. Peter drives his car like N. L.)

A further common assumption is either that middle constructions are 'generic sentences' or that 'middle-verbs' are individual-level predicates. According to the first assumption middle constructions are characterizing sentences in the sense of Carlson and Pelletier (1995), which involve 'generic' quantification over the implicit argument and the event/situation variable. A related issue is modality. Middle constructions normally involve some modal interpretation including ability, possibility, and sometimes necessity, cf. Fagan (1992). The middle con-

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<sup>32</sup> Sometimes we also find strange adverbial modifications. In example (i) the adverbials describe a property not of the reading event but of the subject itself (Die Zeit, 22.1.98).

(i) Seine Geschichten aus dem Bürgertum (Süd-) Europas lesen sich gebildet, lebens- und redengewandt, kosmopolitisch  
       His stories situated in the middle class of (Southern) Europe reads RP educated, streetwise and articulated, cosmopolitan

struction in (34) is true if a situation in which someone reads this lovestory is very likely to be a situation in which this lovestory is good to read for this person.

- (34) Diese Liebesgeschichte liest sich gut  
This lovestory RP reads well

We will argue in chapter 3 and 7 that middle constructions, unlike passives, are characterizing sentences. The generic quantifier binds the implicit argument and the situation variable.<sup>33</sup> As a consequence, ‘middle verbs’ are not individual-level predicates. Note that generic quantification in middle constructions can be restricted to specific periods of time, as can be seen in (35). The generic and modal interpretation of middle constructions will be discussed in detail in section 7.1. Thanks to Hans-Martin Gärtner for example (35).

- (35) Der Bach hat sich gestern Abend ausnahmsweise mal ganz gut gespielt  
The Bach has RP yesterday evening exceptionally once quite well played  
‘Exceptionally, this piece by Bach played well yesterday evening’

A third general assumption concerns the suppressed external argument. It is widely accepted that unlike in passives the suppressed argument cannot be realized in overt syntax in middle constructions. In passives the external argument can be syntactically expressed by a *von*- (‘by-’) phrase (36.a). *By*-phrases are ungrammatical in middle constructions, cf. (36.b).

- (36) a. Castorp wurde von der russischen Patientin verführt  
Castorp was-PAS by the russian patient seduced  
b. \*Dieses Buch verkauft sich von Hans ohne Probleme  
This book sells RP by Hans without problems

The preposition *von* (‘by’) cannot be linked to the suppressed argument in middle constructions. But sometimes this job can be done by the preposition *für* (‘for’), cf. also Stroik (1992) for English and Condoravdi (1989) for Greek. In (37) the *small children* are the ones who can read these books well. Note, however, that linking of the implicit argument is highly restricted in middle constructions. This might be due to the generic quantification over the implicit argument. As opposed to middle constructions, passives do not involve generic quantification and their implicit argument can much more easily be linked to syntax (cf. the contrast in example (38) and chapter 7 for further discussion of this issue).

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<sup>33</sup> Fagan (1992: 159) points out that middle constructions in French can be eventive, i.e. sometimes they can receive a passive interpretation. In this sense they resemble our German example in (35). French middle constructions (as well as Italian middle constructions, cf. section 2.3.2 and 3.1.2 below) can, however, refer more freely to particular events. Most of the French (and Italian) examples would be ungrammatical in German. This might be due to the morphosyntactic difference between the German and the French/Italian reflexive element: whereas the reflexive pronoun in German is an independent word in syntax, it is a verbal clitic in French/Italian. There seems to be a correlation between the passive interpretation of reflexive constructions and the degree of ‘grammaticalization’ of the reflexive element.

- (i) La question s’est discutée hier dans la salle du conseil  
‘The issue was discussed yesterday at the council hall’  
(ii) Les vivres se distribueront tout à l’heure au premier étage  
‘The food will be distributed in a while on the first floor’

Furthermore, middle constructions in English can sometimes be used in progressive form to refer to a specific event:

- (iii) Yesterday afternoon your new book was selling like hell

Besides, Fagan (p. 59) observes that French middle constructions - in contrast to English and German middle constructions - are not necessarily associated with the notion of modality.

- (37) Ich finde, dass sich diese Bücher auch für kleine Kinder ganz gut lesen  
I think that RP these books also for small children quite well read
- (38) a. Diese Bücher werden von meinem Kollegen verkauft (passive)  
These books are by my colleague sold  
b. ??Diese Bücher verkaufen sich für meinen Kollegen nicht so gut (middle c.)  
These books sell RP for my colleague not so well

Our final remark concerns the thematic interpretation of the suppressed argument. We already saw that it need not be the external argument. Recall that unaccusative verbs form perfectly grammatical middle constructions. The subject of unaccusative verbs have typical patient properties, cf. Dowty (1991). Hence, the suppressed argument need not be the actor or agent of the verb/event. Other examples that confirm this observation are two-place verbs like *verlieren* ('lose'), *vergessen* ('forget'), or *finden* ('find'). They do not assign the thematic role agent or actor to their external or first argument. Nevertheless, they form perfectly grammatical middle constructions (the second example (39.b) is from Stefan Zweig, *Joseph Fouché*, and the third example (39.c) from the *Frankfurter Rundschau*, 27.9.97).

- (39) a. Diese neuen kleinen Münzen verlieren sich aber sehr einfach  
These new small coins lose RP really very easily  
b. Solche Erinnerungen vergessen sich nicht  
Such reminiscences forget RP not  
c. ... ein Telefonbuch fand sich nicht  
... a phonebook found RP not

The following figure summarizes the presentation of middle constructions in German. The syntactic elements that belong to a middle construction are given in the first column. The corresponding conditions discussed in this section are given in the second and third column.

(40) Middle constructions in German

<b>NP<sub>NOMINATIVE</sub></b>	A. The subject is either (i) es (imp.m.) or (ii) referential NP (pers.m.). B. If (ii), then the corresponding constituent can be: (i) accusative object (standard middle construction) (ii) complement of a preposition (adjunct middle constr.). *Dative objects and *genitive objects are ungrammatical.	C. 'Responsibility' (in case of impersonal middle constructions there must be another element e.g. a prepositional phrase). D. The suppressed argument can sometimes be realized in a für-PP and it does not have to be an external argument, agent, or actor.
<b>Verb</b>	- at least one argument - generic interpretation - *individual-level predicates	
<b>RP<sub>ACCUSATIVE</sub></b>	- bound by the subject - not linked to a semantic argument	
<b>(Adverbial)</b>	- not obligatory	- manner adverbial - comparative adv. - *subject oriented

## 2.2 *Anticausatives and inherent reflexives*

Besides middle constructions, anticausatives also systematically use the accusative reflexive pronoun to indicate valency reduction. The anticausative variant (41.b) of verbs like *biegen* ('bend') that can undergo the causative-anticausative alternation must be formed with a reflexive pronoun similar to the middle construction. In (41.c) we list more verbs that behave the same way.

- (41) a. Hans-Georg biegt den Stock  
Hans-Georg bends the stick  
b. Der Stock biegt \*(sich)  
The stick bends RP-ACC  
c. further examples of class I verbs: öffnen ('open'), schließen ('close'), füllen ('fill'), leeren ('empty'), aufwärmen ('warm up'), aufklären ('solve'), falten ('fold'), glätten ('smooth'), erhellen ('light up'), verdunkeln ('darken'), vergrößern ('enlarge'), verkleinern ('reduce'), stabilisieren ('stabilize'), beruhigen ('calm down'), drehen ('turn'), ...

In addition to this class of 'reflexive-anticausative' verbs, German has yet another class of verbs the anticausative variant of which is formed without an accusative reflexive pronoun. They equal anticausatives in English. As opposed to the reflexive-anticausatives in (41) the non-reflexive-anticausatives in (42) are unaccusative (cf. section 2.1.1 above).

- (42) a. Hans-Georg bricht den Stock  
Hans-Georg breaks the stick  
b. Der Stock bricht \*(sich)  
The stick breaks RP-ACC  
c. further examples of class II verbs: rollen ('roll'), fliegen ('fly'), trocknen ('dry'), zerbrechen ('smash'), zerknittern ('crumple'), abbrechen ('break off'), einfrieren ('freeze'), auftauen ('thaw'), ...

In (41) the reflexive pronoun indicates valency reduction again. The verbs of the first class are two-place predicates, which undergo valency reduction, i.e. the anticausative in (41.b) is derived from the underlying two-place verb in (41.a). As for the second class the situation appears to be the opposite. In this case one could argue that the one-place predicate (42.b) is the underlying form and the causative variant (42.a) is derived from this unaccusative one-place verb by adding a first or external argument, cf. Wunderlich (1993). Both middle formation and anticausative formation with class I verbs involve valency reduction indicated by an accusative reflexive pronoun.

There is, however, one crucial difference between anticausatives and middle constructions: the former, unlike the latter, have no implicit semantic argument at all. The first semantic argument is not only suppressed but also completely removed from the semantic representation. It is part of our knowledge about the world that there must be some cause for events (a human being, a physical force or natural force, ...), but in contrast to middle constructions, the causing entity (which corresponds to the first or external argument) is not implied in anticausatives, possibly because it cannot be observed in the event described by the verb. In sentence (43.a), for example, it is not implied that someone is rolling the ball. It simply describes a situation where a ball is rolling down the hill. The same holds for (43.b). Peter might be the person who opens the door, but this is again not implied. It might also be possible that the

door opens automatically or that it is opened by a servant. Therefore, only anticausatives can be modified by *von selbst* ('all by itself'), cf. example (44) and Fagan (1992: 20).<sup>34</sup>

- (43) a. Der Ball rollt den Berg hinunter  
The ball rolls the hill down (i.e. 'rolls down the hill')
- b. Die Tür öffnete sich und herein kam Peter  
The door opens RP-ACC and in came Peter
- (44) a. Die Tür öffnete sich von selbst (anticausative)  
The door opens RP-ACC all by itself
- b. #Das Brot schneidet sich gut von selbst (middle construction)  
The bread cuts RP-ACC well all by itself

(45.a-c) are further examples that illustrate the deletion of the first or external argument of the causative counterpart in anticausatives. Of course, there are reasons for the global warming, the widening of the fjord, or the filling of the glass. But all three examples only describe a change of state without implying an implicit cause that is responsible for these events.<sup>35</sup>

- (45) a. Die Atmosphäre hat sich in den letzten Jahren etwas aufgewärmt  
The atmosphere has RP-ACC in the last years a little warmed-up
- b. Der Fjord verbreitert sich wieder  
The fjord widens RP-ACC again

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<sup>34</sup> Sometimes middle constructions can be modified by *von selbst*. But these sentences do not literally mean that the described event takes place all by itself. Instead we observe some additional pragmatic effect. Sentence (i) means that it is obvious which representative team must be put together. (ii) means that the answer to this question is so obvious, that everybody must know it or that something happens that answers the question, and in (iii) we are talking about a best seller. A seller need not do very much for the sale of this book, cf. also Greenspon (1996) for similar examples in English.

- (i) Die Auswahl, der Ribbeck seine Premiere als Teamchef anvertraut,  
The representative-team, to-which Ribbeck his premiere as choach entrust,  
hat sich fast von selbst aufgestellt (Berliner Zeitung)  
has RP nearly all by itself nominated
- (ii) Die Frage beantwortet sich von selbst (Alan Isler, Der Prinz der West End Avenue)  
This question answers RP all by itself
- (iii) Dieses Buch verkauft sich ganz von selbst  
This book sells RP all by itself

<sup>35</sup> Because no implicit first argument is present at all, only the syntactic subject, i.e. the only semantic argument of the anticausative, can control the PRO subject of an infinitive clause. However, this would result in nonsense, as can be seen in (i). In contrast to this, the suppressed argument of the passive in (iii) and middle construction in (iv) can control the PRO subject of the infinitive clause (cf. chapter 3 for further discussion of this issue):

- (i) #Das Glas füllt sich [um Maria zu ärgern] (anticausative)  
The glass fills RP in order Maria to annoy The glass annoys Maria
- (ii) Peter füllt das Glas [um Maria zu ärgern] (active/causative)  
Peter fills the glass in order Maria to annoy Peter annoys Maria
- (iii) Das Glas wurde (von Peter) gefüllt [um Maria zu ärgern] (passive)  
The glass was (by Peter) filled in order Maria to annoy 'Impl.arg.'/Peter annoys Maria
- (iv) Das Buch liest sich nur gut [um einzuschlafen] (middle construction)  
The book reads RP only well in order to fall asleep 'Impl.arg.' falls asleep

- c. Das Glas füllt sich mit Wasser  
The glass fills RP-ACC with water

Finally, we want to mention a second class of verbs that is related to the issue under discussion. German has so-called inherent reflexive verbs (*absolut* or *echt reflexive Verben*) that are ungrammatical without an accusative reflexive pronoun in object position, although they do not correspond to a causative counterpart. The verb *schämen* ('be ashamed') is the prototypical example.<sup>36</sup>

- (46) a. Carlo schämt sich  
Carlo is-ashamed RP-ACC  
b. Further examples: *irren* ('be wrong'), *verirren* ('lose one's way'), *sehnen* ('long for'), *gedulden* ('be patient'), *beeilen* ('hurry'), *erholen* ('recover'), *erkälten* ('catch a cold'), *auskennen* ('know all about'), ...

Like middle constructions or anticausatives, inherent reflexives are transitive in syntax. Again the reflexive pronoun is not linked to a semantic argument of the verb. Inherent reflexive verbs seem to be class I anticausatives that have lost their underlying causative form, i.e. the corresponding two-place predicate. Note finally that inherent reflexives can be inserted into impersonal middle constructions.

- (47) a. Im dunklen Wald verirrt sich's schnell  
In the wood loses-the-way RP-ACC it quickly  
b. Nackt im Schnee erkältet es sich leicht  
Naked in the snow catches-a-cold it RP-ACC easily  
c. Großer Geldmengen bemächtigt sich's nicht so einfach  
Big amounts of money take-possession-of RP-ACC it not that easily  
'One cannot take possession of big amounts of money that easily'

So far we have seen that the accusative reflexive pronoun in the position of the direct object has various functions in German. It can either be linked to the internal or second argument of the verb or it is a morphosyntactic 'marker' for valency reduction. The second interpretation, which we called non-argument reflexive, is the one we discussed in this section. Non-argument reflexives can be found in middle constructions, anticausatives, and inherent reflexives. The correlation between reflexivity and valency reduction we observed in German is not unique and can be found crosslinguistically in many languages. In the next section we pre-

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<sup>36</sup> German has a subclass of inherent reflexive verbs that can yield a reciprocal interpretation with plural subjects. They differ from the verbs under (46) in being relational, i.e. they establish a relation between two entities whereas verbs like *schämen* ('be ashamed') express a property of only one entity. One example is the verb *verkrachen* ('fall out') which is inherently reflexive:

- (i) Peter hat sich mit Maria verkracht  
Peter has RP with Maria fall-out

The corresponding sentence with a plural subject can either mean that we fall out with someone else (ii) or that we fall out with each other (iii):

- (ii) Wir haben uns gestern mit Maria verkracht  
We have RP yesterday with Maria fall-out  
(iii) Wir beide haben uns gestern verkracht  
We two have RP yesterday fall-out

Further examples are: *anfreunden* ('become friends'), *einigen* ('agree'), *überwerfen* ('fall out'), *verbrüdern* ('fraternise').

sent examples from further Indo-European languages to illustrate this point. And in the final section of this chapter we argue that middle constructions as well as anticausatives in German are part of a major phenomenon: the diathesis of the middle voice.

### 2.3 *The interpretation of weak reflexive pronouns in Indo-European languages*

In this section we confine ourselves to morphosyntactically and semantically related constructions in other modern Indo-European languages. We will see that the ambiguity of the reflexive pronoun observed in German is a widespread phenomenon that can be found in many Indo-European (as well as non-Indo-European) languages. Crosslinguistically, the ambiguity of transitive reflexive sentences will turn out to be quite regular. We limit the following discussion to Indo-European languages, the family of languages German belongs to.<sup>37</sup> Furthermore, we are exclusively interested in the correlation between reflexivity and valency reduction we found in German. Therefore, we only look at middle constructions, anticausatives, reflexives and passives. Moreover, we ignore further specific properties these constructions have in different languages. Therefore, we only note in passing whether a language has impersonal middle constructions or adjunct middles or whether a middle construction in a certain language can syntactically realize the suppressed argument, must have an adverbial or a ‘generic’ interpretation. Both reflexivity and reduction of the first argument (or logical subject) have been subsumed under the notion middle voice. A discussion of all phenomena that are related to this complex notion is far beyond the scope of the present study, cf. Geniusienne (1987). Our main concern is the systematic ambiguity of (weak) reflexive pronouns in many languages. In the first part we give a brief description of the term middle voice, cf. Abraham (1995b) for further discussion. Data from five modern Indo-European languages are presented in the second part. And in the final section 2.4 we argue that the accusative reflexive pronoun in the position of the direct object is a morphosyntactic ‘middle marker’ in German.

Benveniste (1972) argues that the threefold distinction between active, passive and middle voice can be attributed to the historically basic dichotomy of active voice and middle voice. The passive voice is a variety of and has developed diachronically from the middle voice. Bosch (1983: 52) states, that “reflexive pronouns, just like reciprocals, are relatively new features in Indo-European languages. Both reflexivity and reciprocity used to be expressed by the medium inflection in the finite verb. (reflexive pronoun forms only arise in classical Greek).” In some Indo-European languages middle voice and passive voice are morphosyntactically still indistinguishable.<sup>38</sup> The familiar distinction between active and passive is a result of modern linguistic theory. We already saw in the previous sections that this distinction is not sufficient to describe all the phenomena we illustrated for German.

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<sup>37</sup> For the middle voice in further (non-Indo-European) languages see Geniusienne (1987), Kemmer (1993), Miller (1993) and Klaiman (1991).

<sup>38</sup> These forms are often called mediopassive in the literature. Russian, which we briefly discuss below, is one example. In Old Greek passive and middle voice are also almost identical. They differ only in future tense and aorist (Ars Graeca 1981, cf. also Klaiman 1991: 82f., or Beekes 1995). But a split in passive and middle voice was never carried out in Greek. Modern Greek equals the Russian ‘mediopassive’: middle and passive are formally indistinguishable. In Latin-Romance the weak reflexive pronoun takes over some of the major functions of the ‘old’ Latin middle morphology (a verbal affix). This process leads to a morphosyntactic differentiation of middle and passive voice (for the last two points cf. Miller 1993: 224f.).

According to Benveniste, Indo-European languages are generally subject oriented. They do not have object agreement. The diathesis of the verb (or the *genus verbi*) indicates the attitude of the subject to the event described by the verb. He roughly outlines the opposition active-middle from the perspective of the syntactic subject as follows (see also Lyons 1968, Kemmer 1993, or Klaiman 1991):<sup>39</sup> the active voice describes an action that proceeds from the (syntactic) subject and does not include it, whereas the middle voice describes an action that takes the (syntactic) subject as its centre, i.e. the subject is included in the action. This specification is of course very general.<sup>40</sup> We are mainly interested in the interpretations introduced in the preceding discussion of transitive reflexive sentences in German. In the following we compare five modern Indo-European languages (Modern Greek, Russian, Italian, French, and English), which equal German at least in one respect: middle constructions, anticausatives and reflexives can be expressed by the same morphosyntactic form. Before we turn to the discussion of the relevant examples we would like to mention two general points:

- i. Many languages distinguish weak from strong reflexive forms. Kemmer (1993) calls them *two-form* languages. In Russian, for example, the weak form is a verbal affix (i.e. *-sja*) and the strong form a pronominal NP (i.e. *sebjja*). In Dutch both forms are pronominal NPs but the weak reflexive marker (i.e. *zich*) is a simple and the strong reflexive marker (i.e. *zichzelf*) a complex word.<sup>41</sup> The

<sup>39</sup> Klaiman distinguishes three kinds of applications for the term *grammatical voice*:

(i) alternations in the verb's argument structure

(ii) alternations in the subject's participant status

(iii) alternations in clause-level pragmatic salience

(i) is the most general use of the term *grammatical voice* for all kinds of argument structure/linking alternations. (ii) corresponds to the way we use this term in the following presentation. Pragmatic voice in (iii) is a distinct type of voice which is relevant to languages where verbal morphemes signal a special pragmatic salience of some constituent. This type of voice will be irrelevant for the ongoing discussion of German and further Indo-European data.

<sup>40</sup> The middle voice in Classical Greek is semantically very complex and yields a variety of different interpretations. The following examples illustrate only a few interpretations. The examples are from Benveniste (1972) (m = middle voice, a = active voice).

causative:	ορχεομαι (m) 'I dance'	-	ορχεω (a) 'I make someone else dance'
reflexive:	νομους τιθεναι (a) 'lay down laws'	-	νομους τιθεσθαι (m) 'lay down laws for oneself'
'indirect reflexive'/possessive:	λυει τον ιππον (a) 'untie the horse'	-	λυεται τον ιππον (m) 'untie the horse of one's own'
'exchange':	μισθουν (a) 'let'	-	μισθουσθαι (m) 'rent'

<sup>41</sup> Another example is Modern Greek that has two additional strong forms of reflexive markers: apart from the weak reflexive form, i.e. the middle marker. Modern Greek has (a) a reflexive prefix *afto-* which can occur in addition to the middle marker (cf. Tsimpli 1989) and (b) a reflexive DP of the form *ton eafto + possessive pronoun* which can be translated as: 'the self + possessive pronoun' ('the self mine', 'the self his/her/its', ...). In Modern Greek, like in Classical Greek, the strong reflexive pronoun can occur together with the weak mediopassive affix (cf. Papakyriacou 1997):

- (i) Peripiithike mono ton eafto tis  
care-PA-3s only the self her  
'she cares only for herself'

crucial observation is that the middle marker of a language must always be the weak reflexive form. We will see in chapter 4 and especially in chapter 5 that German is a *one-form* language, which does not distinguish between weak and strong reflexive pronouns. German has only one reflexive marker that is a simple word (recall section 2.1.3). In chapter 5 we discuss this distinction between weak and strong reflexive markers in greater detail.

- ii. Indo-European languages use quite different morphosyntactic strategies to indicate the diathesis of middle voice. Some languages have a special verbal inflection (Classical and Modern Greek) or a verbal affix (Russian), others use clitics as middle markers (Italian or French). German does not have a special verbal morphology for the middle voice but an independent word in a special syntactic position, i.e. the reflexive pronoun in the position of the accusative object, and English has no morphosyntactic middle marker at all, cf. Geniūšienė (1987) and Abraham (1995b). Therefore, we use the term morphosyntactic middle marker in a very liberal way in the following presentation (cf. also Kemmer 1993). A middle marker can be a verbal affix, a verbal clitic, or an independent word. (48) summarizes the different kinds of middle markers and their possible interpretations to which the following discussion is limited.

(48) Middle markers and their interpretation

<u>Possible middle markers</u>	<u>Possible interpretations</u>
- verbal inflection	- passive
- verbal affix	- middle
- verbal clitic	- anticausative
- weak reflexive pronoun	- inherent reflexive
- accusative reflexive pronoun	- reflexive

In Modern Greek the middle marker is a verbal affix that indicates the reflexive, passive, middle and anticausative interpretation among others, as can be seen in (49).<sup>42</sup> Modern Greek has also a ‘strong’ form to indicate the reflexive interpretation (cf. footnote 33 above). The middle

The strong form is usually used in coordination, with focus or modification (see chapter 4 for semantic restrictions on coordination of and focus on reflexive pronouns). Furthermore, in two-form languages the weak reflexive pronoun (i.e. the middle marker) yields a reflexive interpretation only in ‘body part reflexives’, i.e. verbs of personal grooming like *comb, wash, anoint, dress,...* These verbs describe actions that are very likely to be reflexive. In this case one could argue that the reflexive interpretation is salient. With other verbs (e.g. *hear oneself, love oneself, kill oneself, ...*) the strong form is obligatory to express reflexivity (cf. Kemmer 1993, Klaiman 1991:82f., and Miller 1993). One exception seems to be the reciprocal interpretation with an plural subject (like ‘they kiss/hear/embrace each other’). In this case the reciprocal interpretation can also be indicated by the weak form.

A similar difference can be found in English. Some verbs can express reflexivity without a reflexive pronoun. Other verbs must have an overt reflexive pronoun to yield a reflexive interpretation. The respective verbs are very similar to the corresponding verbs with either weak and strong reflexive forms in Greek and Russian. Therefore, one could argue that English is also a two form language. The strong form is the complex word *him-/her-/itself* and the weak form is morphologically empty. We come back to the English and German examples below.

<sup>42</sup> Causativity is another possible interpretation of the mediopassive affix:

- (i) O Markos xirizete sto kurio tis gitonias tu  
 The Markos shave-PA-3S at the hairdresser’s shop the residential quarter his  
 ‘Markos has his hair cut at the hairdresser’s shop in his neighbourhood’

marker is the ‘weak’ reflexive element. The examples (49.a, b and d) are taken from Tsimpli (1989) and example (49.c) from Sioupi (1997).<sup>43</sup> ‘PA’ means passive affix, cf. Tsimpli (1989). Under the perspective outlined above we can also call it mediopassive affix or middle (voice) marker.

- (49) a. Afto to vivlio dhiavas-ti-ke xtes (passive)  
 this book-NOM read-PA-3S yesterday  
 ‘This book was read yesterday’
- b. Afto to vivlio dhiavas-ti-ke epharista (middle construction)  
 this book-NOM read-PA-3S with pleasure  
 ‘This book reads with pleasure’
- c. To plio vithiz-et-e (anticausative)  
 The ship-NOM sink-PA-3S  
 ‘The ship sinks’
- d. I Maria xteniz-et-e kathe mera (reflexive)  
 Maria-NOM comb-PA-3S every day  
 ‘Maria combs herself every day’

Modern Greek has yet another way of middle and anticausative formation. Beside the mediopassive affix there exists an alternative option: some verbs form middle constructions and anticausatives in the active voice, i.e. without the middle marker (Tsimpli’s passive affix ‘PA’), cf. Condoravdi (1989). The verb *anigo* (‘open’) in (50) is one example for verbs that are morphologically marked active in middle constructions and anticausatives. The affiliation of a verb to one of these two classes seems to depend on the lexical meaning of the respective verbs.<sup>44</sup>

- (50) a. Afti i porta anigi  
 this door-NOM opens
- b. Afti i porta den anigi kala  
 this door-NOM does not open well

Russian equals Modern Greek in the middle voice. Russian, like Modern Greek, uses a morphological middle marker, the verbal affix *-sja*<sup>45</sup> (-s’ after a vowel), for the passive and the middle (51.a and b), the reflexive (51.c), reciprocal and anticausative interpretation (cf. Junghanns 1996).<sup>46</sup> Sentence (51.b) is ambiguous between the anticausative and the middle read-

<sup>43</sup> Thanks to Artemis Alexiadou and Androulla Papakyriacou.

<sup>44</sup> Concerning middle formation verbs like *anigo* (‘open’), *girizo* (‘turn’), *ligizo* (‘bend’) are class 1 verbs (active) and verbs like *kovo* (‘cut’), *diashizo* (‘cross’), *gializo* (‘polish, shine’) belong to class 2 (mediopassive).

<sup>45</sup> In the literature the morpheme -SJA has been analysed either as a pronominal clitic or as an affix. Both analysis involve some problems, which do not concern us here. For further discussions see Junghanns (1996) and Schoorlemmer (1996).

The morpheme -SJA seems to be developed from the former accusative singular reflexive pronoun. Klaiman (1991) notes that some modern Indo-European languages have developed a ‘neo-middle construction’, which is derived from an originally reflexive marker (a pronoun or affix). In Russian the middle marker -SJA seems to result from the grammaticalization of a reflexive pronominal clitic that has been added to the verb in active voice. For similar processes in Old Norse see Miller (1993: 205f.). A similar process might take place in Romance languages like Italian and French, cf. below.

<sup>46</sup> The examples are from Junghanns (1996). Special thanks to Assinja Demjjanow for her help with the Russian data. Further interpretations are ‘antipassive’ (i.e. sentences with an implicit internal argument) and causative (like in Modern Greek).

ing. It is quite similar to its German counterpart with the accusative reflexive pronoun, which is in the same way ambiguous as the Russian example.<sup>47</sup>

- (51) a. Dom stroitsja (plotnikami) (passive)  
house build-SJA (by the carpenters)  
'The house is being built (by the carpenters)'
- b. Dver' (legko) otkrylas' (middle constr./anticausative)  
Door-NOM (easily) opened-SJA  
'the door opened (easily)'
- c. Ivan moetsja (reflexive)  
Ivan-NOM washes-SJA  
'Ivan is washing himself'

We already noted in footnote 33 that Russian also has a second way of indicating reflexivity. In addition to the middle marker (i.e. the weak reflexive marker) there is a historically related strong reflexive marker, the reflexive pronoun *sebjja*. Again, these two forms are not always interchangeable.

Italian and French share some properties with both Russian and German. On the one hand, the weak reflexive pronoun in Italian and French is a verbal clitic in syntax and equals the Russian *-sja* that has been analyzed either as verbal affix or as pronominal clitic.<sup>48</sup> As opposed to Russian, the pronominal clitic in Romance maintains the person-bound form and need not be adjacent to the main verb.<sup>49</sup> The Russian middle marker *-sja* has only one form for first, sec-

- (i) Otec rugaetsja or sobaka kusajetsja  
father scold-SJA (the father is scolding) dogs bite-SJA
- (ii) Ja strigus' v parikmayerskoj  
I hair-cut-SJA at hairdresser

<sup>47</sup> With the perfective aspect Russian has a second way of passive formation. This periphrastic form consists of the auxiliary 'be' and the passive participle (*dver' byla zakryta nami*, 'the door was closed by us', cf. Miller 1993: 238).

<sup>48</sup> The French and Italian *se-/si-*construction seems to lie between the Russian *-sja* and the German *sich-*construction with respect to the degree of grammaticalization. There is diachronic evidence that a weak reflexive element that has become a verbal clitic can be further reduced to a verbal affix. Furthermore, there might be a principle 'that it is simpler to have a unified derivation of a given formative' (Miller 1993: 220), i.e. that a formative comes to encode a variety of parallel functions - in this case middle and passive (cf. Miller: 205f. on the process of reflexive incorporation in Scandinavian languages and in Russian). In this respect the French and Italian middle construction differs from the German middle construction. We already mentioned that German, unlike French and Italian, is a one-form language. Furthermore, there is no evidence that the accusative reflexive pronoun in German is a syntactic clitic. In syntax the reflexive pronoun is an independent pronominal object (cf. Fagan 1992, Gärtner and Steinbach 1997 and 2000, and chapter 4).

<sup>49</sup> Cinque notes, however, that middle constructions in Italian are possible only with the third person singular clitic *si*. This does neither hold for unaccusatives/ergatives or inherent reflexives nor for French middle constructions that are possible in the first and second person as well (cf. Grimshaw 1982 and Fagan 1992).

- (i) Io mi avvicino (ergative)  
I RP am going near
- (ii) Io mi ammalo (inherent reflexive)  
I RP get ill
- (iii) \*Io mi trasporto facilmente (middle construction)  
I RP transport easily

ond, and third person singular and plural. On the other hand, a weak reflexive pronoun can only be used in middle constructions, anticausatives and reflexives to indicate valency reduction but not in passives. Both French and Italian have a periphrastic passive form.<sup>50</sup> Additionally, we find both reflexive and non-reflexive anticausatives. In (52) we give some examples from French.<sup>51</sup>

- (52) a. un veston de laine se lave facilement (middle construction)  
 a jacket of wool RP washes easily  
 b. la branche s'est cassé (anticausative)  
 the branch RP has broken  
 c. Pierre se rase (reflexive)  
 Pierre RP shaves

At first glance, a language like English has a quite different way of middle, passive and anticausative formation (note, however, that some verbs in Modern Greek make use of the 'English' way of middle and anticausative formation). English does not mark middle voice morphosyntactically. In contrast to their counterparts in other Indo-European languages, the sentences in (53.a and b) are morphologically active without an overt middle marker. Middle constructions and anticausatives in English do not contain a reflexive marker. Nevertheless we find the same semantic effects of the diathesis of middle voice outlined above. Furthermore, the reflexive interpretation can be expressed with and without a reflexive pronoun (53.c and d).<sup>52</sup> In this respect, English equals two-form languages like Modern Greek, Russian, French or Italian. We find the same distinction between weak and strong reflexive forms.<sup>53</sup> Hence, in

<sup>50</sup> Cinque (1988) notes that middle constructions in Italian and French need not receive a 'generic' interpretation (cf. also footnote 25 above). Middle constructions can describe particular events and they can be modified by e.g. agentive adverbs. With this 'eventive' reading the interpretation of middle constructions in Italian and French is very similar to the interpretation of (periphrastic) passives. Fagan (1992: 58) points out that a *by*-phrase is possible in earlier stages of French with middle constructions describing a particular event and Cinque (1988, footnote 11) notes that 'in more rhetorical styles of Italian, *by*-phrases are found to cooccur with *si*'. In some Italian dialects middle constructions can yield a generic reading only.

<sup>51</sup> The examples are from Miller (1993). For a more detailed survey of French middle constructions see Grimshaw (1982), Fagan (1992), and Dobrovi-Sorin (1998). The corresponding strong forms are 'elle même (herself), lui même (himself), ...'.

<sup>52</sup> German has only few corresponding examples: *duschen* ('take a shower') and *baden* ('take a bath') can be used with or without a reflexive pronoun. The unmarked interpretation of (i) without the reflexive pronoun is: I am taking a shower. The transitive sentence in (ii) means that I give someone (i.e. the dog) a shower. These verbs might be two-place predicates with an implicit second argument.

- (i) Ich dusche (mich)  
 I take-a-shower (RP-ACC)  
 (ii) Ich dusche den Hund  
 I give-a-shower the dog-ACC

<sup>53</sup> We mentioned above that in two-form languages the weak reflexive marker (i.e. the middle marker) yields the reflexive interpretation only with a limited class of verbs usually describing actions that are mainly reflexive (or reciprocal). These verbs are to some extent identical to the English verbs that can express reflexivity without a reflexive pronoun. Hence, English seems to be also a two-form language that distinguishes weak from strong reflexive forms.

Things are completely different in German. While the preferred interpretation for the intransitive English sentence in (iii) is the reflexive interpretation (i.e. coreference of the subject and the implicit object), the corresponding German sentence in (iv) cannot receive a reflexive interpretation. You might utter sentence (iv) without the reflexive pronoun if shaving is your profession.

English simple intransitive sentences can yield various interpretations, some of which can be subsumed under the notion of middle voice. The middle marker or weak reflexive marker is morphologically empty in English. Besides, English, like German, French, and Italian, uses periphrastic passives.

- (53) a. This book reads easily (middle construction)  
 b. The door opens (anticausative)  
 c. Peter is washing himself (reflexive – ‘strong’ form)  
 d. Peter is shaving (reflexive – ‘weak’ form)

Dutch resembles English as well as German. With respect to anticausative formation Dutch equals German.<sup>54</sup> Dutch middle constructions, on the other hand, equal English middle constructions. Unlike their German counterparts, middle constructions in Standard Dutch are not reflexive (cf. Ackema and Schoorlemmer 1994 and 1995 and chapter 3).<sup>55</sup>

The following table summarizes the observations made so far. It gives a brief survey of the correlation between the middle marker and its (potential) interpretations and integrates the observations on German we made above into the larger context of further Indo-European languages. We confine ourselves to passive, middle, anticausative, and reflexive interpretation. Besides, this table is anything but complete. So far we considered only five Indo-European languages and we already mentioned that some of these languages permit exceptions or alternative forms for some of these interpretations, which sometimes depend on the lexical meaning of the verb and sometimes on additional semantic conditions. And last but not least, although the arrangement in table (54) looks quite systematic, we do not want to make any hypothesis about the synchronic and diachronic correlation between reflexivity and middle

- (iii) I am shaving (I am shaving myself)  
 (iv) Ich rasiere (I am shaving someone)

The same contrast between English and German can be found with many verbs, e.g. *hide* or *meet* and their German equivalents *verstecken* or *treffen*. This might be due to the fact that German, as opposed to English, has no weak reflexive pronouns. In German we cannot tell the weak from the strong form of the reflexive pronoun.

However, unexpected differences in the interpretation of intransitive sentences can be found even within one language. Semantically related verbs like *dress* and *cloth* can differ with respect to reflexivity (cf. Jackendoff 1987):

- (v) I dressed  
 (vi) \*I clothed

Furthermore, Miller (1993: 193) notes that the unmarked interpretation of (vii) ‘would involve laundry’, whereas sentence (viii) is ambiguous between the interpretation we get for sentence (vii) and the reflexive interpretation:

- (vii) John washed all day long  
 (viii) John is washing (He is washing himself/his laundry)

The interpretation of reflexive constructions seems to depend at least on the respective pronominal paradigms of languages and possibly on further semantic and contextual/pragmatic factors.

<sup>54</sup> We mentioned above that German has two kinds of anticausatives. Most verbs that undergo in the causative-anticausative alternation belong to one and the same class. As opposed to this, Dutch has some verbs that can be found in both classes simultaneously (cf. Everaert 1986):

- (i) De suiker lost op  
 The sugar dissolves up  
 (ii) De suiker lost zich op in het water  
 The sugar dissolves RP up in the water

<sup>55</sup> Cornips (1996) notes that some southern dialects of Dutch have reflexive middle constructions. Not surprisingly these dialects are spoken in an area close to the German border.

voice. We do not claim that languages like English and Modern Greek are the extremes on a scale of middle marking-languages (we refer the reader to Geniusiene 1987 for a detailed crosslinguistic study of this issue).

(54) Possible interpretations for an overt (weak) reflexive marker

Interpretation	English <sup>56</sup>	Dutch	German	French	Modern Greek	Russian
<b>Passive</b>	-	-	-	-	+	+
<b>Middle</b>	-	-	+	+	+	+
<b>Anticausative</b>	-	+	+	+	+	+
<b>Reflexive</b>	-	+	+	+	+	+

Let us summarize the results of this section. First, we saw that the ambiguity of transitive reflexive sentences in German is not accidental and that it can be subsumed under the notion middle voice. Indo-European languages use the middle voice for quite different (semantic) functions. Reflexivity and valency reduction are main functions, see Geniusiene (1987) for a detailed overview. Second, many Indo-European languages have different kinds of morpho-syntactic middle markers, but there is always a strong correlation between weak reflexive markers and middle markers. Recall that some Indo-European languages like Russian, and Old Norse have developed ‘neo-middle construction’ from weak reflexive pronouns that have been reduced to verbal affixes. Third, German, unlike Modern Greek or Russian, has no verbal middle inflection. Verbs in middle constructions, reflexives, anticausatives and inherent reflexive verbs are always morphologically active. Nevertheless, German has also a morpho-syntactic middle marker, the accusative reflexive pronoun in the position of the direct object. Fourth, German is a one-form language that does not distinguish weak from strong reflexive pronouns/forms. In this respect it differs from most Indo-European languages. We also saw that the passive voice must be distinguished from middle voice in many modern languages like e.g. Italian, French, English, Dutch, and German. Hence, German has a threefold distinction between active, passive and middle voice. And finally, we must also distinguish between reflexivity and middle voice. One possible interpretation for the middle marker is the reflexive interpretation. However, reflexivity cannot be reduced to middle voice as well as middle voice cannot be reduced to reflexivity or, to put it the other way round, not every reflexive marker is also a middle marker (at least in the languages listed in table (54)).

#### 2.4 *The middle voice marker in German*

As opposed to the middle markers in Modern Greek, Russian, Italian and French the middle marker in German has some specific properties. It is not a verbal affix or a verbal clitic but an independent word, a reflexive pronoun in object position, i.e. a free lexical morpheme, cf. Abraham (1995a:5). Moreover, the reflexive pronoun in German can only be called a middle

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<sup>56</sup> English has no morphosyntactic middle marker at all. The reflexive interpretation is expressed either by a (strong) reflexive pronoun or without a pronoun at all (cf. last but one footnote). But we already mentioned that English can also be analyzed as a two-form language, which distinguishes weak from strong reflexive pronouns. The weak form is morphologically empty and the corresponding sentences are simply intransitive in syntax (cf. figure (65) below). According to this assumption, English would equal French and Italian.

marker when it occupies the position of the accusative (or direct) object. This is summarized in (55)

- (55) In German only a reflexive pronoun in the position of the accusative (or direct) object is ambiguous between an argument and a non-argument interpretation

Hence, only transitive reflexive sentences are systematically ambiguous in German. The crucial examples are repeated in (56), cf. chapter 1, example (6).

- (56) a. Herr Rossi rasiert sich (Reflexive interpretation)  
 ‘Mr. Rossi is shaving’  
 b. Das Buch liest sich leicht (Middle interpretation)  
 ‘The book reads easily’  
 c. Die Tür öffnet sich (Anticausative interpretation)  
 ‘The door opens’  
 d. Herr Rossi erkältet sich (Inherent reflexive interpretation)  
 ‘Mr. Rossi is catching a cold’

All four interpretations are indistinguishable in syntax as we will argue in chapter 4. A sentence of the form *subject + verb + accusative reflexive pronoun* is potentially four times ambiguous in German. The first ambiguity is due to the reflexive pronoun, which can either be interpreted as argument or as non-argument reflexive. The second ambiguity results from two different semantic operations on the implicit argument. The implicit argument can either be bound by a generic operator or deleted. The ambiguity of transitive reflexive sentences is systematically illustrated in figure (57).

- (57) The interpretation of the reflexive pronoun and the implicit argument in transitive reflexive sentences

interpretation of the reflexive pronoun	interpretation of the implicit argument	resulting interpretation
argument-reflexive →		a. reflexive interpretation
non-argument reflexive →	saturation →	b. middle interpretation
	reduction (optional) →	c. anticausative interpr.
	reduction (obligatorily) →	d. inherent refl. interpr.

As opposed to the reflexive pronoun in transitive reflexive sentences, the dative reflexive pronoun in (58.a) and the reflexive pronouns contained in PPs in (58.b) and (58.c) cannot indicate valency reduction. They only yield the reflexive interpretation and cannot be called a middle marker. Thus not every reflexive marker is automatically also a middle marker.

- (58) a. Peter widersprach sich  
 Peter contradicts himself-DAT  
 b. Peter ist außer sich gewesen  
 Peter is beside himself-DAT been  
 ‘Peter was beside himself’  
 c. Er achtet sehr auf sich  
 He takes-care of himself-ACC

Middle High German provides further evidence for a distinction between reflexive markers and middle markers and for the very special status of the accusative reflexive pronoun. As opposed to the accusative reflexive pronoun, the dative reflexive pronoun has developed very late. It is not until the beginning of the 18th century that the modern usage of the dative re-

flexive pronoun seems to be established. At earlier stages German does not morphologically distinguish dative personal pronouns from dative reflexive pronouns. This still holds for some dialects in German. The personal pronoun was used for local binding (principle A of Chomsky's (1981) binding theory) and for non-local binding (principle B). This is illustrated in (59.a-c) for Middle High German (MHG). In all three examples it is the dative personal pronoun which is locally bound (principle A), cf. Paul 1988, Moser, Stopp and Besch 1988, Grimm 1905, and Behagel 1923.<sup>57</sup>

- (59) a. (er) machit im selben ein hus (MHG, Grimm 1905)  
 he-NOM makes him-DAT self a house  
 b. so groz manheit her an im hat (MHG, Grimm 1905)  
 so big bravery he-NOM at him-DAT has  
 c. ... weil sie ihr einbildete (Early New High German,  
 ... because she-NOM her-DAT imagined Moser, et al. 1988)

Unlike the dative reflexive pronoun the use of an accusative reflexive pronoun is stated for very early stages of German. (60) and (62.a and b) are three examples from Middle High German. Besides, sentence (60) illustrates that inherent reflexive verbs can already be found in Middle High German. Hence, non-argument reflexives are also stated for early stages.

- (60) do vaffende sich aspiran (MHG, Grimm 1905)  
 The weaponed-NOM RP-ACC came-close

Table (61) is taken from Paul (1988) to exemplify the difference between accusative and dative personal and reflexive pronouns in Middle High German.<sup>58</sup>

(61) accusative and dative personal and reflexive pronouns in Middle High German

<i>third person</i>	<i>accusative</i>			<i>dative</i>		
	<b>fem.</b>	<b>neuter</b>	<b>masc.</b>	<b>fem.</b>	<b>neuter</b>	<b>masc.</b>
<i>singular</i>						
<b>reflexive pronoun</b>	sich	sich	sich	ir(e)	im(e)	im(e)
<b>personal pronoun</b>	sie, sî, si(u)	ëz	in (inen)	ir(e)	im(e)	im(e)
<i>plural</i>						
<b>reflexive pronoun</b>		sich			in	
<b>personal pronoun</b>		sie, sî, si(u)			in	

Furthermore, early stages of German allow embedded accusative reflexive pronouns to be bound only by the syntactic subject of the clause, whereas in Modern German (MG) the reflexive pronoun can also be bound by the syntactic object. Embedded infinitives illustrate this difference in (62) and (63).

<sup>57</sup> Many thanks to Marie-Christine Erb for making me aware of this point (cf. also Andersen 1993 and Hermodsson 1952).

<sup>58</sup> Old English, on the other hand, does not have reflexive pronouns at all. The personal pronouns (*him, her, it, ...*), like the dative pronouns in German, are used for principle A and B. The reflexive pronouns (*himself, herself, itself, ...*) in Modern English have developed from the personal pronouns and the adnominal focus particle *-self*. Therefore, English never had 'pure' reflexive pronouns that unambiguously mark the middle voice. See section 4.2.2 for more details and references.

- (62) a. ir gast<sub>2</sub> si<sub>1</sub> sich<sub>1/\*2</sub> kuessen bat (MHG, Parzival)  
 her guest-ACC she-NOM RP-ACC kiss ask  
 ‘She asked her guest to kiss her’  
 b. bat er<sub>1</sub> sich<sub>1/\*2</sub> ketrencan daz wip<sub>2</sub> (MHG, Behagel 1923)  
 ask he-NOM RP-ACC offer-a-drink the women-ACC  
 ‘He asked the woman to offer him some drink’
- (63) a. Der Herr<sub>1</sub> befahl dem Diener<sub>2</sub>, sich<sub>\*1/2</sub> anzukleiden (MG)  
 The master-NOM ordered the servant-ACC to dress RP-ACC (i.e. the servant)  
 b. Der Herr<sub>1</sub> befahl dem Diener-2, ihn<sub>1/\*2</sub> anzukleiden (MG)  
 The master-NOM ordered the servant-ACC to dress him-ACC (i.e. the master)

These observations (no dative reflexive pronouns and strict subject orientation in MHG) are in line with an analysis that treats only the accusative reflexive pronoun in the position of the direct object as a middle marker in German. Note finally that, as opposed to Italian and French, the reflexive pronoun in Modern German is an independent word/constituent in syntax. Gärtner and Steinbach (1996 and 2000) argue at length that German has no *special* or syntactic clitics.<sup>59</sup>

So far we argued that the accusative reflexive pronoun in Modern German is not a pure middle marker and reflexivity cannot be reduced to middle voice. Nevertheless, we observe a strong correlation between reflexive markers (pronouns or verbal affixes) and middle markers or more general between reflexivity and middle voice. We call the accusative reflexive pronoun a middle marker if it is the accusative (or direct) object of the sentence. In this sense we follow Kemmer (1993) and conclude that German is a middle marking language. In contrast to Modern Greek or Russian, German does not use a verbal affix as middle marker but a syntactically independent word. Furthermore, the accusative reflexive pronoun can be used in further syntactic contexts as reflexive marker only. Dative reflexive pronouns can only be used as reflexive markers. These observations for German are summarized in the following figure.

(64) Middle marker and reflexive marker in German

<b>middle marker</b>		
inherent reflexive anticausative middle construction		
reflexive	reflexive	<b>reflexive marker</b>
acc-RP	p+acc- RP, dat- RP, p+dat- RP	

This present investigation is limited to middle marker in German and its possible interpretations, i.e. the left column in figure (64). Nevertheless, we think that our results might also be relevant for the analysis of corresponding phenomena in other languages. English, for example, differs from German in having no morphosyntactic middle marker. The weak reflexive form is morphologically empty and the middle voice is morphosyntactically unmarked in

<sup>59</sup> Besides, in most German dialect the reflexive pronoun cannot even be prosodically reduced, whereas personal pronouns can phonologically cliticize to an adjacent foot or syllable in phonology (e.g. *ich habe ihn gesehen* vs. *ich hab 'n gesehen*, i.e. ‘I have him seen’), cf. Hall (1998:107) and also section 4.1.

English. We already noted that from a semantic point of view English also distinguishes between active and middle voice. However, because of these morphosyntactic differences, transitive and intransitive sentences in English and German are not equally ambiguous. This is illustrated in table (65). In German transitive reflexive sentences and intransitive sentences are equally ambiguous, whereas in English the intransitive sentence in (65.a) is the most ambiguous construction, cf. also Abraham (1995a) for the differences between English and German. We will come back to intransitive sentences in English in chapter 8. The next five chapters will deal mainly with transitive reflexive sentences in German.

(65) Possible interpretations for intransitive and transitive-reflexive sentences in English and German

<i>Syntax</i>	<i>Semantics</i>		
<b>I. Transitive</b>	<b>English</b>	<b>German</b>	<b>Interpretations</b>
subject + verb + rp <sub>ACC</sub>	1. V < x < x >>	1. V < Ø < y >> 2. V < (x) < y >> 3. V < x < x >>	anticaus./inh.refl. middle constr. reflexive
<b>II. Intransitive</b>			
subject + verb	1. V < x > 2. V << y >> 3. V < x < (y) >> 3. V < Ø < y >> 4. V < (x) < y >> 5. V < x < x >>	1. V < x > 2. V << y >> 3. V < x < (y) >>	unergative unaccusative impl.intern.arg. <sup>60</sup> anticausative <sup>61</sup> middle constr. reflexive

## 2.5 Conclusion

In this chapter we argued that German is a middle marking language. First, we gave a descriptive survey of transitive reflexive sentences in German that involve valency reduction. We started off with the middle construction and the restrictions for each of its individual parts: the verb, the syntactic subject and the reflexive pronoun, the second semantic argument, the implicit first argument, and the adverbial modification. In addition, we discussed further semantic restrictions. Second, we turned to related constructions in German: anticausatives and inherent reflexives. Finally, we argued on the basis of other Indo-European languages that transitive reflexive sentences in German belong to the diathesis of middle voice. We are aware of the fact that broader diachronic and synchronic studies are necessary. These studies lie, however, beyond the scope of this book. We refer the reader again to the detailed studies of Genişliene (1987) Kemmer (1993), and Miller (1993).

<sup>60</sup> This construction is sometimes called ‘antipassive’. In some languages like, for instance, Eskimo the suppression of the internal argument is morphologically marked by an extra anticausative verbal affix (cf. Miller 1993: 150f. for more details). The middle marker in Russian can also receive an antipassive interpretation.

<sup>61</sup> In section 2.2 we illustrated that German has two kinds of anticausative constructions, one of which is transitive and reflexive. The second one is simply intransitive. In chapter 5 we will argue that the second kind is not anticausative but basically unaccusative. In this case, the causative variante is derived from the ‘anticausative’. Hence, intransitive sentences in German do not yield an anticausative reading.

In the following we are mainly concentrating on the middle voice in German. The next chapter discusses several lexical and syntactic analyses of middle constructions and criticizes their shortcomings. We essentially restrict the discussion to middle constructions because they are discussed most controversially. Moreover, middle constructions are more productive than the other two transitive constructions that involve valency reduction, i.e. anticausatives and inherent reflexives. The middle construction turns out to be a good example to illustrate the shortcomings of the lexical and syntactic analysis. In chapter 4, 5 and 6 we develop an alternative proposal for the syntax and semantics of transitive reflexive sentences in German that offers an unified treatment of all four interpretations of these sentences. Hence, we propose an explanation of the middle voice in German - i.e. the left column in figure (64).

### 3 Lexical and Syntactic Approaches to Middle Formation

This chapter is concerned with recent analyses of middle constructions and anticausatives. Almost all theories prefer a syntactic or lexical (presyntactic) solution: middle constructions are derived either in the lexicon or in the syntax. All syntactic or lexical analyses somehow manipulate the selectional properties of the verb or the linking of the verb's arguments. Besides these two analyses, a conceivable third approach, which derives the thematic interpretation of middle constructions at the interface between syntax and semantics, has never been worked out in detail. This postsyntactic analysis takes the surface syntactic structure of middle constructions more seriously and permits a unified analysis of the German middle voice we introduced in section 2.4 (i.e. of transitive sentences with an accusative reflexive pronoun). In a postsyntactic approach no manipulation of the argument structure and no additional linking-principles are necessary. According to this approach, the middle construction is only one possible interpretation of the middle voice in German. The semantic ambiguity of transitive reflexive sentences can be reduced to a semantic ambiguity of the accusative reflexive pronoun or, to be more specific, to the binding relation between the subject and the direct object. Besides, a postsyntactic analysis predicts that the middle construction does not raise any theoretically important issues in terms of syntax or the lexicon. In chapters 4, 5, 6, and 7 we develop a postsyntactic analysis of the middle voice in German. In this chapter we first discuss the shortcomings of traditional lexical and syntactic approaches. The three possible analyses of middle constructions are illustrated in figure (1):

- (1) a. **Lexicon** (argument suppression – section 3.2)
- b. **Syntax** (A movement – section 3.1)
- c. **Semantics** (argument interpretation – chapter 4, 5 and 6)

The first two analyses (i) and (ii) are related to the common perspective on the interface between the lexicon and the syntax. Every analysis that assumes a one-to-one relation between semantic and syntactic arguments of a verb (as is claimed e.g. in the theta-criterion) must manipulate the selectional properties of a verb somehow to make them compatible with the 'argument structure' of the middle construction. Two possibilities immediately come to mind: we can derive middle constructions, like passives, in syntax by means of A-movement of a deep structure object to the subject position or we derive a compatible argument structure presyntactically in the lexicon by means of argument suppression. Discussions of English, Dutch, Italian, and German middle constructions illustrate these two ways of analysing middle formation. Ironically, analyses of reflexive middle constructions in many languages have been influenced by the analysis of their non-reflexive counterparts in English and Dutch. The analysis of Stroik (1992, 1995 and 1999) and Hoekstra and Roberts (1993), for example, are inspired by syntactic analyses of passives. They analyze middle formation as a syntactic process. All semantic arguments of a verb are obligatorily linked to syntax. The external theta-role is assigned to some empty pronominal element (or a *for*-PP) and the internal theta-role is regularly assigned to the deep structure object, which moves to the external subject position for case reasons. Syntactic derivations of middle constructions can mainly be found in the discussion of English and Dutch middle constructions. This is not surprising. We already saw in section 2.3 that English and Dutch middle constructions are morphosyntactically unmarked. In contrast to Italian and German, middle constructions in Dutch and English do not select an additional reflexive pronoun. Hence, middle formation in these two languages could, in principle, be analysed as a kind of morphosyntactically unmarked passive. Hale and Keyser (1987) or Ackema and Schoorlemmer (1994) and (1995), on the other hand, are advocates of a lexical

explanation of middle constructions in English and Dutch. They derive middle constructions on a presyntactic level of semantic representation (the Lexical-Conceptual Structure). Ackema and Schoorlemmer (1994) for example assume a lexical rule of middle formation (MF): *Actor* = *ARB*. Arguments that are ARB must not be projected syntactically. Hence, the second argument on the thematic hierarchy is linked to the subject position.

In the following subsections we discuss the shortcomings of lexical and syntactic analyses of middle constructions. This chapter is organized as follows. In the next section we criticize syntactic analyses of English, Dutch, Italian and German middle constructions. Section 3.2 deals with the shortcomings of lexical or presyntactic approaches to middle constructions in English, Dutch, French, and German. A greater part of the literature deals with English (and Dutch) middle constructions. Therefore, we always start off with a discussion of English and Dutch. Our criticism of these analyses is twofold. First, we discuss the conceptual and empirical shortcomings of analyses of English and Dutch middle constructions. Second, we check whether these analyses can be applied to German middle constructions. In a second step we discuss analyses of Italian *si*- and French *se*-constructions. In contrast to their English and Dutch counterparts, Romance middle constructions are reflexive and resemble the German middle construction, which we are mainly interested in. And finally, we turn to syntactic and lexical analyses that have been proposed for middle constructions and anticausatives in German. We will see that all lexical and syntactic analyses of middle formation make several empirical predictions that turn out to be incorrect at least for German. At best additional stipulations are necessary to explain the data in German. Furthermore, both lexical and syntactic theories cannot state any theoretically relevant generalization about middle constructions in German. Therefore, we argue for an alternative explanation of middle constructions in German, which is illustrated in (iii) in figure (1) above. So far Condoravdi (1989) and partly Zwart (1999)<sup>62</sup>, to our knowledge, seems to be the only advocates of a postsyntactic solution.

### 3.1 *Syntactic theories*

We begin with the discussion of the syntactic derivation of English and Dutch middle constructions (3.1.1), which has influenced the analysis of middle constructions in various languages. Advocates of a syntactic analysis emphasize the similarity between passives and middle constructions with respect to argument linking (cf. chapter 1 and 2). Furthermore, they tacitly start from the assumption that a syntactic analysis of passives is generally accepted. Therefore, their basic assumption is that the semantic interpretation of syntactic arguments in middle constructions can be derived in syntax by means of A-movement. The syntactic subject of a middle construction is base-generated in object position at deep structure (i.e. the complement position of  $V^{\circ}$ ). In this position it receives the theta-role of the internal or second argument (usually theme or patient). For case reasons the deep structure object moves into the subject-position (IP-Spec). Hence, A-movement creates a chain that receives nominative case and the internal theta-role. We discuss the shortcomings of syntactic analyses of English and Dutch middle constructions first. Secondly, we prove whether this idea would work in languages with reflexive middle constructions. We are mainly interested in the licensing of the

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<sup>62</sup> See footnote 8 below for a brief comment on Zwart's analysis.

reflexive pronoun. In subsection 3.1.2 we deal with the syntactic derivation of Italian middle constructions and in 3.1.3 we turn to syntactic analyses of German middle constructions.

### 3.1.1 English and Dutch

Stroik (1992, 1995 and 1998), Hoekstra and Roberts's (1993) – henceforth H&R –, and Den Dikken (1997) analyses middle formation in English and Dutch as a syntactic process. The external theta-role is assigned in syntax to either *pro* in VP-Spec (H&R 1993/cf. 2.a) or *PRO* adjoined to VP (Stroik 1992/cf. 2.b). The subject of the middle construction receives the internal theta-role in the D-structure object position (*ti* in (2)) and moves to the IP-Spec position for reasons of case (cf. Ackema and Schoorlemmer 1995:174). Hence, both Stroik and H&R “assume that the lexicosemantic structure of a middle verb is the same as that of its active counterpart.” (Stroik 1999:120)

- (2) a. [IP walls [I [VP *pro* [V paint *t<sub>i</sub>* easily]]]] (H&R 1993)  
 b. [IP walls [I [VP [VP paint *t<sub>i</sub>* easily]] *PRO<sub>i</sub>* ]]] (Stroik 1992)

Ackema and Schoorlemmer (1995) criticize mainly three shortcomings of Stroik (1992) and H&R (1993), which we briefly discuss.<sup>63</sup> First, none of the arguments in favor of the syntactic presence of an empty pronominal element is convincing. Second, the same is true of the licensing conditions for the implicit argument.<sup>64</sup> Third, a movement analysis of middle constructions overgenerates: middle formation is more restricted than passive formation. Additionally, we discuss the shortcomings of Den Dikken (1997), who proposes a slightly modified version of H&R (1993). And finally, we argue that a movement analysis cannot be applied to middle formation in German.

Consider H&R's analysis first. They argue that middle constructions in English and Dutch have a base-generated *pro* in the position of VP-Spec which receives the external theta-role of the verb. At the same time the D-structure object moves into the subject position at S-structure to receive nominative case.<sup>65</sup> The VP-internal *pro* is licensed by an extra condition H&R call ‘arb licensing’, cf. (H&R 1993: 190):

<sup>63</sup> See also Fagan (1992) for a criticism of Keyser and Roeper's (1984) arguments in favor of a syntactic derivation of English middle constructions.

<sup>64</sup> Stroik claims that his derivation is not in conflict with the PRO-Theorem (cf. p. 135). But he must define dominance based on inclusion and on exclusion at the same time. In the first case INFL governs PRO and in the second case the verb (cf. also Ackema and Schoorlemmer 1995: 174).

<sup>65</sup> H&R claim that only ‘affected’ arguments can be moved in middle constructions. To prevent nonaffected arguments from movement, H&R stipulate a second kind of accusative case. This case-distinction, which is not morphosyntactically but semantically motivated, seems to be only necessary to derive the ‘affectedness constraint’ (AC) within their syntactic framework (cf. also the discussion in 3.1.3 below for a similar problem). Besides, we expect passive to be subject to the AC, too, though NP-movement in passives is not limited to ‘affected’ arguments (cf. H&R 1993: 204).

Another point is that the AC seems to be the wrong generalization (cf. Ackema and Schoorlemmer 1994, Fagan 1992: 64f. and chapter 2). Verbs like *to read* or *to photograph* form perfectly fine middles yet their implicit arguments are not ‘affected’:

- (i) This book reads easily  
 (ii) She photographs well (Fagan 1992)

- (3) A, a lexical head, assigns the index arb to pro in its  $\Theta$  assignment domain (sister of A). This index may be identified by a modifier or by some morphological element.

H&R propose a special licensing condition for *pro* in middle constructions, which is not morphological licensed but only ‘arb licensed’ and, therefore, (by stipulation) syntactically inactive. H&R “introduce a syntactic element that does not manifest itself.” (Ackema and Schoorlemmer 1995:176). It seems to be impossible to find empirical evidence for a syntactic inactive nonovert element. A syntactically inactive *pro* can neither bind a reflexive pronoun nor control PRO in adjunct clauses. However, this contradicts Stroik’s analysis, who considers binding and control data to be clear empirical evidence for the presence of a (syntactically active) implicit external argument (cf. below). As opposed to what is claimed by H&R, anaphor-binding and PRO-control by the implicit first argument is not ungrammatical in middle constructions. Nevertheless, we will see shortly that neither binding nor control provide a compelling arguments for the presence of a *pro/PRO* in syntax.

Although definition (3) states that the ‘arb-index’ *may* be identified by a modifier, H&R assume that the ‘arb-index’ *must* be identified by some adverbial in middle constructions. According to H&R, adverbials like *easily* select an experiencer role, which ‘identifies’ *pro* in middle constructions via ‘theta-identification’ (cf. Higginbotham 1985). The adverb’s experiencer role is identified with the verb’s external theta-role and the resulting ‘complex’ theta-role is assigned to *pro* in VP-Spec to ‘identify’ *pro* somehow. The following illustration, which is taken from den Dikken (1997), illustrates this issue - *i*-subscripting marks binding, *k*-superscripting marks identification, cf. below.<sup>66</sup>

- (4) [<sub>VP</sub> pro [<sub>V</sub> [<sub>V</sub> V <  $\Theta^k$ ,  $\Theta$ , E<sub>i</sub> > NP] Adv <  $\Theta^k$ ,  $\Theta_i$  >]]

As a consequence, all adverbs modifying middle constructions must select an experiencer role. This assumption is ad hoc and semantically unmotivated.<sup>67</sup> Moreover, we saw in chapter

In chapter 2 we mentioned that German middles are not subject to the AC, either (for this issue see also the discussion of the lexical theories below).

<sup>66</sup> It remains also unclear what it means that V ‘assigns the index arb to pro’ and that ‘this index may be identified by a modifier’ (more concrete: by the experiencer role selected by an adverbial). Besides, H&R assume that the agent role is assigned to pro in syntax. Therefore, we expect subject-oriented adverbs to be possible in middle constructions. But they are ungrammatical in English and German, which is illustrated in (i):

- (i) \*New cars clean carefully

According to Roberts (1987), middle verbs are stative predicates. Under the assumption that adverbs like *carefully* are agent-oriented and eventive, these adverbs cannot occur in middle constructions. However, we argue below, that verbs in middle constructions are not stative predicates. They select an event argument, that is bound by a generic operator.

<sup>67</sup> H&R give the following LF-representation (‘G’ is a generic operator) for the middle construction:

- (i) G [e: V (x, NP, e)] (Adv (e, for x))

In the middle construction (ii) the adverb *schnell* (‘quickly’) for example modifies the whole event of grass-cutting. This sentence means that the grass-cutting does not take too much time in general. We are not aware of any independent criterion to decide whether or not *schnell* in (ii) selects an experiencer role. But we do not think that example (ii) can be paraphrased as follows (cf. H&R: 194): ‘In general, events in which some x cuts the grass are quick events for x’.

- (ii) Der Rasen mäht sich schnell  
The grass cuts RP quickly

Furthermore, even whole adverbial phrases like *wie ‘erbleichen’ ohne ‘Leichen’* and *als seien ...* in example (iii) and (iv) must select an experiencer role. This assumption is again counterintuitive to us.

2 that adverbial modification is not obligatory in middle constructions in German. The same holds for English and Dutch (cf. Ackema and Schoorlemmer 1995:179). In the appropriate context middle constructions are grammatical without adverbial modification. For these examples H&R have to assume an empty adverb to provide the decisive experiencer role to identify the *pro*-arb. In addition to theta-identification, the adverbial also ‘binds’ the event-role of the verb. One consequence of this event-binding is that middle constructions are non-eventive sentences. But then, we expect all sentences with adverbial modification to be non-eventive because the adverb always ‘binds’ the verb’s event-role. A prediction that is obviously too strong. Moreover, the verb’s event-role should not be available for event-modifying adverbs like *always* or *usually* although they are grammatical in middle constructions, cf. below.<sup>68</sup> According to H&R’s approach, middle formation is limited to verbs selecting an external theta-role and Stroik (1999) predicts that the implicit argument in middle constructions must receive the theta-role agent.<sup>69</sup> We already mentioned in section 2.1.1 that this restriction does not hold for German. Unaccusative verbs as well as non-agentive verbs like *verlieren* (‘lose’) in (5.a) or *finden* (‘find’) in (5.b) that do not select an agent argument are perfectly grammatical in middle constructions. Middle formation with unaccusative and non-agentive verbs seems to be possible in Dutch as well, cf. (5.c-e) – example (5.b) is taken from Bernhard Schlink, *Der Vorleser*.<sup>70</sup>

- (5) a. Sowas verliert sich schnell  
 Things-like-that loses RP quickly  
 b. Der Abdruck [der Adresse] fand sich lesbar auf [dem] Papiere  
 The impression [of-the address] found RP readable on [the] paper  
 c. ?In je eigen bed sterft het een stuk prettiger dan in een bejaardenhuis  
 In the own bed dies EXPL a bit more agreeable than in the old people’s home  
 d. Op/via de snelweg rijdt het een stuk lekkerder naar Berlijn  
 On/via the highway drives ITa bit more comfortably to Berlin  
 e. Kleinen munten raken gemakkelijk kwijt  
 Small coins lose easily VERBAL-PARTICLE

Den Dikken (1997) proposes a modification of H&R’s analysis. He does not assume that the external theta-role is assigned in syntax but agrees with H&R that the event-role of the middle construction must be bound. According to Den Dikken, the event-role cannot only be bound by an adverbial but also by an operator. Den Dikken argues that ‘base transitive’ verbs have a

- (iii) ‘Erb’ schreibt sich wie ‘erbleichen’ ohne ‘Leichen’  
 ‘Erb’ writes RP like ‘erbleichen’ (i.e. to turn pale) without ‘Leichen’ (i.e. corpses)  
 (iv) [Dieser Bericht] liest sich, als seien die Berliner Lehrer und Polizisten schlimme Fremdenfeinde, ...  
 This report reads RP as if the Berlin teachers and policemen were bad racists  
 ‘This report sounds as if all teachers and policemen in Berlin are racists’  
 (Frankfurter Allgemeine Zeitung, 12.9.2000)

<sup>68</sup> H&R assume that the free argument variables are bound by a generic quantifier. In chapter 7 we develop an analysis of the generic interpretation of middle constructions, which is also based on this assumption.

<sup>69</sup> Stroik (1999) argues that adverbs like *quickly* can only cooccur with predicates that select an agent. He concludes that ‘middle verbs’ also select an agent because they can cooccur with these adverbs. Note, however, that these adverbs can also cooccur with anticausative and unaccusative verbs, which do not have an agent argument.

<sup>70</sup> Thanks to Marcel den Dikken and to my Dutch informants in Berlin and Tilburg for helping me with the Dutch examples (cf. also the discussion of Ackema and Schoorlemmer’s analysis of middle constructions in English and Dutch in section 3.2.1).

dependent event-role that must be bound via theta-binding or (parasitic) operator binding. In transitive sentences the verb's event-role is bound by a second event-role, which is introduced by the light verb *v*. This second event-role  $E^1$  is by stipulation independent and must not be bound (cf. 6.a). Den Dikken assumes, that middle constructions only consist of the basic VP as is illustrated in (6.b).<sup>71</sup> In this case, the event-role of the verb cannot be bound by  $E^1$ . Therefore, it must be bound by an adverb or by some operator.

- (6) a.  $[_{VP} NP [_{v'} [ v < \Theta, E^1_i > ] [_{VP} [_{v'} [ V < \Theta, E^2_i > ] NP ]]]]$   
 b.  $[_{VP} [_{v'} [ V < \Theta, E^2_i > ] NP ]]$

Various operators can bind the event-role of middle constructions in syntax: negation, WH, or focus. We do not want to discuss the syntactic and semantic consequences of 'parasitic' event-binding in questions and sentences with negation. Instead, we confine ourselves to a few remarks on focus. First, recent theories of focus assume that focus is a syntactic feature assigned to a constituent that receives a specific semantic (and phonological) interpretation. Moreover, in semantics the focus is bound by some focus sensitive or illocutionary operator (cf. chapter 4 for more details). We are not clear about the syntactic status of the focus operator and about the syntax and semantics of parasitic focus binding. Second, a syntactic focus operator (or a focus projection/designated focus position) cannot be empirically motivated for languages like Dutch and German (cf. Gärtner and Steinbach 2000). Third, den Dikken assumes that only focus on the verb can bind its event-role because narrow focus on the subject would have no 'access' to the verb's event-role. However, bare middle constructions with focus on the subject are as grammatical as middle constructions with narrow focus on the verb, cf. (7).

- (7) a. Which door opens? Take the second one. THAT door opens  
 b. Die HOSEN verkaufen sich aber die MÄNTEL da drüben sind ein Ladenhüter  
 The pants sell RP but the coats over there are a shelf warmer

Anticausatives pose yet another problem. Den Dikken assumes that anticausatives, like middle constructions, only consist of one VP. The external argument which is introduced by *v* (in *vP-Spec*) is again not present in syntax (and in this case it is also not present in semantics, cf.

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<sup>71</sup> Note that Zwart (1999), unlike Den Dikken, argues that middle constructions project also *vP* in addition to the basic VP. Furthermore, Zwart does not assume A-movement of the subject in middle constructions. Instead, the subject is base generated in the specifier of *vP*. In this position the subject is interpreted as a 'circumstantial agent', and as such it is responsible for the predication expressed in the middle construction (cf. section 2.1.2). We think, that Zwart's analysis is on the right track. However, his analysis also makes wrong predictions: (i) this analysis predicts that middle constructions are ungrammatical without an adverbial; (ii) middle constructions with an unaccusative verb as well as telic middle constructions (e.g. resultatives, achievements and accomplishments) are also predicted to be ungrammatical; (iii) 'effected' arguments should be excluded in *vP-Spec*; (iv) nonargument middles should be ungrammatical in German. Besides, (v) it remains unclear how the subject is linked to the internal argument of the verb (i.e. how it receives its correct thematic interpretation); An additional (lexical) operation seems to be necessary to derive a one-place middle predicate from corresponding 'normal' two-place predicate. We think that (at least for German) the existence of (rare cases of) nonargument (or adjunct) middles should not be taken as evidence for the claim that all middle constructions are nonargument middles (cf. Zwart 1999:18, for a similar claim for Dutch). Especially for German nonargument middles must be explained independently (because nonargument middles are expected to be ungrammatical in German according to Zwart's analysis). Note finally that we share the opinion that the reflexive pronoun in German middle constructions is 'generated in the VP' and 'as a consequence of the binding relation obtaining between the surface subject and the reflexive argument of the lexical root, an interpretation according to which the surface subject *is* an argument of the lexical root becomes inescapable' (Zwart 1999:18). We deal with the interpretation of the surface subject in chapter 5 and 6.

section 2.2 above). Therefore, the dependent event-role of V is not theta-bound by the independent event-role of *v*, and contrary to fact, anticausatives are expected to be non-eventive, too. As we illustrated in section 2.2, anticausatives usually describe particular events. The same problem arises for ergatives/unaccusatives in general.

Let us turn to Stroik's (1992) analysis of middle constructions now. As opposed to H&R (1993), Stroik assumes that the external theta-role, which is assigned to PRO in syntax, is syntactically active. Stroik gives empirical motivation for the syntactic presence of PRO. He shows that the external argument is able to bind a reflexive pronoun and to control the PRO-subject of an embedded infinitival. Furthermore, it can be overtly realized as a *for*-PP.<sup>72</sup> We turn to binding first. Stroik argues that the reflexive pronoun contained in the subject NP in (8) must be bound in its governing category in syntax because of principle A of binding theory. Therefore, *oneself* in (8) must be coindexed with a nonovert NP argument that c-commands it at some syntactic level. (8) illustrates that the empty PRO c-commands the anaphor at D-structure.

(8) [[Books about oneself]<sub>i</sub> ]<sub>j</sub> never read t<sub>j</sub> poorly] PRO<sub>i</sub> ]

Pollard and Sag (1994) and Reinhart and Reuland (1993), however, argue that so-called picture-noun-phrases like *books about oneself* in (8) that contain a reflexive pronouns are best treated as logophors. According to Pollard and Sag (1994) and Reinhart and Reuland (1993) – henceforth R&R –, the application of the binding conditions should be restricted to co-arguments of the same predicate. Therefore, not all occurrences of reflexive pronouns are subject to the binding theory. R&R's reformulation of the binding principles is given in (9). We give only the relevant conditions. In chapter 5 and 6 we come back to R&R's and Pollard and Sag's binding theories.

(9) Binding theory of R&R (1993: 678):

Definitions

...

- c. A predicate is reflexive iff two of its arguments are co-indexed
- d. A predicate (formed of P) is reflexive-marked iff either P is lexically reflexive or one of P's arguments is a SELF anaphor.

Conditions

- A: A reflexive-marked syntactic predicate is reflexive
- B: A reflexive semantic predicate is reflexive-marked

Reflexive pronouns that have no co-argument are exempt from binding condition A and B and are not bound in syntax. The binding conditions as defined in (9) do not say anything about logophors. Reflexive pronouns that are exempt from condition A are subject to non-syntactic binding constraints like e.g. point of view (cf. chapter 5 for more discussion). That logophors need not be bound at all in syntax is independently motivated by the examples in (10). The reflexive pronoun, which is embedded in the subject NP, has either no antecedent at all, as can be seen in (10.a and b), or its antecedent does not c-command the reflexive pronoun, cf.

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<sup>72</sup> A detailed criticism of Stroik's arguments can be found in Ackema and Schoorlemmer (1995). In the following we briefly summarize their main points and add some additional observations.



prove a point. (13.c) is again an example for pragmatic control even in a case where a potential syntactic controller is present.

- (13) a. The ship was sunk by the navy [PRO to prove a point]  
 b. The ship was sunk PRO [PRO to prove a point]  
 c. The ship was sunk by a torpedo [PRO to prove a point] Lasnik (1988)

A third argument that is brought forward in Stroik (1992 and 1999) concerns the overt realization of the external agent-argument. Stroik argues that the prepositional phrase in (14) *can* be linked to PRO. Furthermore, he argues that binding data show that the prepositional phrase and the syntactic subject must be co-arguments (cf. (14.b), cf. Stroik (1999:127). Note that the examples in (14) only show that the first semantic argument of the verb *can* be linked to a syntactic constituent. However, they do not prove that the first semantic argument *must* always be linked. We do not see any reason for the assumption that optional arguments are always linked to some silent syntactic category. Otherwise we would have to introduce nonovert syntactic elements for nearly any kind of implicit argument: optional instrumental PPs, optional directional PPs, optional theme-arguments in locative inversion, optional direct objects, or optional datives in German to mention just a few. But this would lead to an unwarranted increase in nonovert syntactic elements. Besides, although the binding data are less clear in German, reflexive pronoun in (14.c) seems to be less grammatical than the personal pronoun.<sup>74</sup> Furthermore, we mentioned in chapter 2 that in German *for*-PPs in middle constructions are much more restricted than the *by*-phrase in the corresponding passives.<sup>75</sup> We come back to this issue in chapter 7.

- (14) a. Physics books always read slowly for Lou  
 b. Mary<sub>1</sub> photographs well for Max and herself<sub>1</sub>/\*her<sub>1</sub>  
 Also ich finde, der Enzensberger liest sich auch für \*sich/?ihn selbst ganz gut  
 Well I think the Enzensberger reads RP also for RP self/him (him)self very well  
 d. ???Also ich finde, für Maria lesen sich die neuen Physikbücher gut  
 Well I think for Maria read RP the new physics-books well

So far we saw that neither of Stroik's empirical arguments provides convincing evidence for the claim that in middle constructions an implicit external argument is obligatorily present in syntax. The second shortcoming of all syntactic movement-analyses is that middle formation is not subject to the same restrictions as passive formation in many languages, cf. also footnote 4 above.<sup>76</sup> If middle formation was just an application of move- $\alpha$ , we would expect to find middle constructions, like passives, with ECM subjects.<sup>77</sup> 'Promotion of an object' by

<sup>74</sup> Note that in the active counterpart the reflexive pronoun must be used, cf. chapter 4 on the adnominal focus particel *selbst*.

(i) Der Enzensberger liest sich selbst/\*ihn selbst  
 The Enzensberger reads RP (him)self/him (him)self

<sup>75</sup> Ackema and Schoorlemmer (1995) come to the same conclusion for English, but see Stroik (1999) for counterexamples.

<sup>76</sup> Recall that in Modern Greek and Russian passives and middle constructions are morphosyntactically identical, cf. section 2.3. This does not hold for languages that have developed a periphrastic passive form. Nevertheless, in Modern Greek and Russian the middle interpretation is also subject to different restrictions than the passive interpretation.

<sup>77</sup> Passives and middle constructions seem to differ in another respect. Preposition stranding seems to be much better with passives than with middle constructions. We mentioned in chapter 2 that preposition stranding is

middle formation is, however, only possible if the promoted element is somehow thematically related to the verb. ECM subjects cannot undergo middle formation in English (cf. 15.a).<sup>78</sup> Another difference between middle constructions and passives are double object constructions. Double object constructions do not permit middle formation. The first object NP can be moved into the subject position only in passives. The examples in (15.c and d) illustrate this contrast.

- (15) a. \*John believes to be a fool easily  
 b. John was believed to be a fool  
 c. Linguists were sold War and Peace  
 d. \*Linguists don't sell books (Ackema and Schoorlemmer 1994: 80)

In Dutch and German some middle constructions do not have a corresponding passive. We already mentioned that German, like Dutch, has adjunct middles (cf. section 2.1.). However, German does not have adjunct passives as can be seen in (16.c).

- (16) a. Peter schreibt mit meinem neuen Füller  
 Peter writes with my new pencil  
 b. Mein neuer Füller schreibt sich gut  
 My new pencil writes RP well  
 c. \*Mein neuer Füller wird geschrieben  
 My new pencil PASS written

A fourth difference between passivization and middle formation is that they are subject to different semantic constraints. As opposed to the subject of middle constructions, the subject

possible in some middle constructions (cf. i). In many cases the middle construction is, however, more marked than the corresponding passive (cf. ii).

- (i) ?That tree climbs up quickly  
 (ii) a. ??John laughs at easily vs. b. John was laughed at

<sup>78</sup> The situation in German is not that clear. Passivization is not always perfect with so-called A.c.I.-verbs. The best examples involve intransitive complements.

- (i) Peter wurde im Garten liegen gelassen  
 Peter PASS in-the garden lie let  
 (ii) Peter wurde im Garten spielen gesehen  
 Peter PASS in-the garden play let  
 (iii) ?Peter wurde gestern eine junge Frau küssen gesehen  
 Peter PASS yesterday a young lady kiss seen

German has only few verbs selecting A.c.I.-constructions. Besides *lassen* ('let'/'have s.o. do s.th. '), some perception verbs like *hören* ('hear') or *sehen* ('see') select A.c.I.-constructions. These verbs do not form good middles in principle. In chapter 2 we gave an example with *sehen* in a middle construction (here repeated as (iv)). We think that the parallel ECM-construction is also possible (v) and (vi), although slightly degraded. German A.c.I.-constructions do not provide any argument in favor of or against a syntactic analysis of middle constructions. We come back to these constructions in chapter 5.

- (iv) ?Von hier aus sieht sich das gegnerische Tor viel besser  
 From here sees RP the opponent's goal much better  
 (v) ??Von hier aus sieht sich die gegnerische Mannschaft viel besser spielen  
 From here sees RP the opponent's team much better play  
 (vi) ??Von hier aus sieht sich der gegnerische Stürmer viel besser den Elfmeter schießen  
 From here sees RP the opposing forward much better the penalty take

of the passive need not be ‘responsible’ for the event described by the verb (cf. section 2.1.2) and passives need not be ‘generic’ statements.

Further problems arise when we try to apply a syntactic movement analysis to middle constructions in German. Unlike middle constructions in English and Dutch, their German counterparts are transitive reflexive sentences. They optionally select a reflexive pronoun in the position of the direct object.

- (17) a. Die Tür öffnet sich leicht (middle construction)  
           The door opens RP easily  
       b. Die Tür wurde geöffnet (passive)  
           The door was opened

As they stand these movement analyses cannot account for the presence of an overt reflexive pronoun in German middle constructions. A-movement of the deep structure object (the complement of the verb) is motivated by the Case Filter (cf. Chomsky 1981). In German verbs in personal and impersonal middle constructions assign accusative case. Hence, there is no reason for the deep structure object to move into the subject position (cf. also Fagan 1992). A-movement of the internal argument (the D-structure object) and the appearance of the reflexive pronoun in the position of the direct object cannot be easily motivated under common syntactic assumptions. Besides, we already mentioned that impersonal passives must not have an impersonal (or pleonastic) subject (18.b), whereas impersonal middle constructions are ungrammatical without the impersonal subject *es* (18.a).

- (18) a. Es tanzt sich gut hier (impersonal middle construction)  
           It dances RP well here  
       a’ ... weil es sich hier gut tanzt  
       a’’ \*... weil sich hier gut tanzt  
       b. Hier wird gut getanzt (impersonal passive)  
           Here PASS good danced  
       b’ ... weil hier gut getanzt wird  
       b’’ \*... weil es hier gut getanzt wird

We conclude that a syntactic derivation of English and Dutch middle constructions is confronted with various empirical and conceptual shortcomings. Both A-movement and the syntactic presence of the suppressed external argument lack independent evidence. Moreover, the process of passivization, which is similar to middle formation, underlies different restrictions in English, Dutch and German. The application of this approach to German yields further problems. Middle constructions in German are transitive. There is no necessity for A-movement because the verb assign accusative case in middle constructions. Furthermore, a passive-like syntactic analysis of middle constructions cannot account for the presence of the accusative reflexive pronoun without additional assumptions. In the next subsection we turn to analyses of reflexive middle constructions. We take a look at syntactic derivations of middle constructions in Italian and German and are mainly interested in the licensing conditions for the reflexive pronoun.

### 3.1.2 Italian

Like their German counterparts, middle constructions in Italian are reflexive. They are only grammatical with the verbal clitic *si*. Moreover, the (weak) reflexive pronoun, i.e. the middle

marker, is in Italian as ambiguous as in German. Besides these similarities the Italian and German middle marker differ in two respects. The reflexive pronoun is a verbal clitic in Italian but not in German, and Italian *si*-constructions can refer more easily to particular events. The Italian middle construction is more passive-like than their German counterpart. Additionally, the middle voice in Italian (i.e. the *si*-construction) may have an impersonal subject interpretation that is not available in the corresponding German construction (cf. 19).<sup>79</sup> In sentences (19) the verb does not agree with its internal argument *gli spaghetti*. (20) on the other hand equals the German middle construction. In this case, the second or internal semantic argument is linked to the subject. Manzini (1986) and Cinque (1988) argue that in sentence (19) the NP *gli spaghetti* is the accusative or direct object of the sentence and the verbal clitic *si* forms a chain with a morphologically empty expletive subject that is assigned nominative case (note that Italian is a pro-drop language). The verb is specified as third person singular in this case. In (20) the same NP *gli spaghetti* either moves to the subject position or forms a chain with an expletive element in Spec of IP. In any case it receives nominative case. In this case the verb agrees with the plural NP *gli spaghetti*. Both examples are from Cinque (1988: 554).

- (19) Qui, si mangia spesso gli spaghetti  
 Here, RP eats often spaghettis
- (20) Qui, gli spaghetti si mangiano spesso  
 Here, spaghettis RP eat often

Because the *si*-construction in Italian is highly complex and the data are very subtle, we limit the following discussion to middle *si*-constructions. We are mainly interested in whether the analysis of the Italian middle construction can also be applied to German. We have little to say about the impersonal ‘subject’ *si*.<sup>80</sup> Manzini (1986) offers a uniform treatment of all occurrences of *si*. According to Manzini, *si* is a verbal clitic that is always linked to an semantic argument of the verb. She formulates the following basic lexical entry for *si*:

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<sup>79</sup> Abraham (1995) judges the corresponding example in (i) to be grammatical in German as well.

(i) Es besticht sich solche Beamte leicht  
 It bribes RP such officials easily

We have already pointed out in section 2.1 that many native speakers find these sentences ungrammatical in German.

<sup>80</sup> The impersonal *si* is analysed as a nominative reflexive pronoun. The syntactic clitic must form a chain with (and is bound by) an implicit subject by which it receives nominative case (the operation form chain is subsumed under binding in Manzini’s approach). Note, however, that crosslinguistically nominative reflexive pronouns are extremely rare. Even other Romance languages have no nominative reflexive pronouns, cf. Dobrovie-Sorin (1998). Reflexive constructions in other Romance languages seem to be syntactically more closer to the German middle voice. As a consequence of Manzini’s and Cinque’s analysis, the Italian nominative clitic *si* would be a great exception. Anderson (1986) argues that reflexive pronouns in Icelandic can appear in embedded sentences in subject position only if the embedded sentence contains a verb with a non-nominative subject. Nominative reflexives seems to be excluded in principle (see also Everaert 1990). Thanks to Hans-Martin Gärtner for making me aware of this issue. We discuss this observation in chapter 5.

- (21) *si*: - variable  
 - argument  
 - N  
 - third-person, unspecified number and gender  
 - clitic on the verb  
 - bound to its subject  
 - (passivizer)

The first and the last two properties are crucial for her treatment of middle constructions. *Si* is a verbal clitic that must be bound in syntax. Furthermore, it belongs to the category N and is subject to the case filter. How is the middle *si* licensed in syntax? As opposed to impersonal and reflexive *si*, middle *si* is a ‘passivizer’. *Si* receives the external theta role of the verb. Therefore, the verb cannot assign case to its object (Burzio’s Generalization) and the D-structure object moves in syntax into the subject position. Manzini assumes that middle *si* is interpreted in the same way as impersonal *si*: it introduces a free variable into the semantic representation associated with the ‘subject theta-position’, i.e. it is linked to the external argument of the verb. Middle *si* cannot be bound to the grammatical subject of the sentence because it is neither referentially dependent on the subject nor does it form a chain with it. Therefore, one would have to assume an additional ‘deep structure subject’, which binds the clitic reflexive pronoun. However, we saw in 3.1.1 above that it is hard to find empirical evidence for the presence of a VP-internal *PRO*- or *pro*-subject in syntax. Moreover, the clitic cannot be licensed by such an additional deep structure *PRO*- or *pro*-subject because this implicit subject would not be in a case position. But this means that middle *si* violates the case filter. Note finally that the optional property ‘passivizer’ in (20) does not explain why the weak reflexive pronoun, the clitic *si*, like reflexive pronouns in many other languages, is ambiguous between a passive, a middle, a anticausative and a reflexive interpretation.

Cinque (1988) modifies the analysis proposed by Manzini. For various reasons, he distinguishes five different kinds of *si*-clitics in Italian. *Si* is a syntactic clitic to which nominative is assigned. It absorbs or suspends nominative, accusative or VP-internal accusative and dative case. As opposed to Manzini, Cinque assumes that *si* need not be an argument. He argues that Italian distinguishes two distinct nominative clitic reflexive pronouns, which are either specified as [+ argument] or [- argument]. This leads to the following picture.<sup>81</sup>

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<sup>81</sup> We do not want to discuss whether the treatment of the reflexive *si* is conclusive. Note, however, that Cinque proposes a passive-like derivation for weak reflexives: the reflexive clitic *si* is linked to the external argument (or logical subject) of the verb and is bound by the syntactic subject, which is linked to the internal argument. Focus seems to be one problem for Cinque’s treatment of reflexives. If one asks for the external argument (i.e. *who washes himself*), the syntactic subject, which corresponds to the internal argument in Cinque’s account, must be focused in the corresponding answer. But this would yield the wrong semantic representation of the focus-background structure. Furthermore, it seems to be implausible to link the strong reflexive pronoun *se stessi* also to the external argument. But this would result in two totally different syntactic and semantic representations for the weak and strong form of the reflexive pronoun. See also the discussion of Manzini (1986) above, who analyses the reflexive *si* as an accusative or dative verbal clitic.

(22) *si* is always an [NP, IP] clitic

- (i) two different kinds of impersonal *si*:
- |                               |  |
|-------------------------------|--|
| 1. - [+ arg]                  | 2. - [- arg]                                       |
| - absorbs external theta-role | - identifies an arb <i>pro</i> in conjunction with |
| - absorbs nominative          | personal Agr                                       |
- (ii) ‘Passivizer’ (i.e. middle *si*) and Anticausative *si*:
- |                                |
|--------------------------------|
| 3. - [-arg]                    |
| - suspends external theta-role |
| - suspends accusative Case     |
- (iii) Reflexive *si*:
- |                               |
|-------------------------------|
| 4. - [+ arg]                  |
| - absorbs external theta-role |
| - absorbs VP-internal Case    |
- (iv) Inherent Reflexive *si*:
- |  |
|--|
| 5. - [- arg]                               |
| - marks the absence of external theta-role |
| - marks the absence of VP-internal case    |

A discussion of the empirical motivation of this complex lexical entry and its empirical and conceptual consequences would exceed the scope of this subsection. Cinque presents empirical motivation for the distinction between [+/- arg] impersonal *si* (22.1 and 2).<sup>82</sup> [- agr] impersonal *si* can only be licensed in finite sentences. As opposed to [- agr], [+ agr] *si* always receives or absorbs the external theta-role (cf. 22.1 and 5).<sup>83</sup> In the following discussion we are concentrating on middle constructions and passives, i.e. on sentences with ‘object-agreement’ like (19.b). Cinque subdivides sentences with ‘object-agreement’ into passive *si*- and middle *si*-constructions.<sup>84</sup> The [+ arg] *si* in (22.1) is responsible for the passive interpretation and the

<sup>82</sup> But see Dobrovie-Sorin (1998:410f), who argues against Cinque’s [+/- arg]-distinction. She does not assume two types of nominative *si*. The [+ arg] *si* is analyzed as being a middle-passive accusative *si*. Dobrovie-Sorin’s analysis is closer to our own analysis we develop in chapter 5 to 7.

<sup>83</sup> [- agr] *si* always occurs in finite sentences without ‘object agreement’, i.e. the internal argument stays in situ and does not move into the syntactic subject position (cf. (19) above). This is predicted by Burzio’s Generalization (1986): [+ arg] *si* absorbs the external theta-role by definition, so that the verb cannot assign accusative case according to Burzio’s Generalization. The internal argument is left without case. Therefore, [- agr] *si* together with a pleonastic *pro*-subject must be used in *si*-constructions without ‘object-agreement’. In this case the external theta-role is assigned to *pro* in Spec of IP and the verb assigns accusative. Unergatives like (i) might be the only exception.

(i) *Si lavora sempre troppo*  
 RP works always too much (i.e. One always works too much)

These verbs do not select an internal argument. Hence they are not in conflict with Burzio’s Generalization. Furthermore, it is impossible to verify ‘object-agreement’ in this case. But it seems to be plausible to assume [-arg] *si* in this context as well to get a uniform analysis.

<sup>84</sup> In section 2.3.2. we mentioned that middle constructions in Italian and French can be used to describe specific events, where they can be modified by agentive adverbs or the implicit logical subject can control the PRO-subject of a purpose clause (cf. Cinque 1988: 562). This seems to be impossible with the ‘generic’ interpretation

[- arg] *si* in (22.3) for the middle interpretation (and also for the anticausative and inherent reflexive interpretation).<sup>85</sup> We consider passive [+ arg] *si* first. According to Cinque, [+ arg] *si* ‘absorbs’ or ‘withholds’ the external theta-role, “thus preventing it from reaching [NP,IP]” (p. 535) and it is a nominal element that needs case. Therefore, it must be contained in a CHAIN to which case is assigned. Cinque assumes that the [+ arg] reflexive clitic *si* in (22.1) forms a CHAIN with a pleonastic *pro* in IP-Spec, the position to which nominative is assigned (p. 534f.).

(23) [<sub>IP</sub> [**NP pro**leo] [<sub>I</sub> [<sub>I°</sub> (Agr) **si**[+ agr]]] [<sub>VP</sub> ... gli spaghetti]]]

Note, however, that the internal argument *gli spaghetti* must also move to Spec of IP to get nominative case (recall Burzio’s Generalization: no external theta-role is assigned to IP-Spec, therefore, the verb cannot assign accusative to its internal argument). Hence, we have to elements that are assigned nominative case. Therefore, Cinque is forced to assume that nominative is assigned twice in (23): both CHAINS *proi - sii* and *proi - gli spaghetti* receive nominative case.<sup>86</sup> But this stipulation does not seem to be independently motivated and is necessary only to derive passive [+ arg] *si* in this construction. We would expect to find more examples of double nominative assignment within one clause (cf. also footnote 18 above).

What about [- arg] *si* in middle constructions? Unlike passive [+ arg] *si* in (22.b), middle [- arg] *si* in (22.a) can also be licensed in infinitival constructions (p. 560):

- (24) a. (?) Questo vestito ha il vantaggio di lavarsi molto più facilmente di altri  
This suit has the advantage of washing RP more easily than others’  
b. \*Neanche il nemico ha la proprietà di uccidersi senza rimorsi<sup>87</sup>  
Not even the enemy has the property of killing RP without remorse

In this respect middle *si* also differs from impersonal [- arg] *si* in (22.2). For this reason Cinque assumes two different lexical entries for [- arg] *si*: (i) impersonal [- arg] that can be licensed only in finite clauses and ‘identifies’ an *arb pro*, i.e. (22.2), and (ii) middle [- arg] that can also be licensed in infinitive constructions and ‘suspends’ the external theta-role and

of *si*-constructions. Cinque attributes this to the difference between [+/- arg] *si*. With [- arg] middle *si* the external theta-role becomes ‘invisible’ in syntax.

<sup>85</sup> Both Manzini and Cinque derive middle formation in the syntax and anticausative formation in the lexicon. Arguments in favor of this distinction are (i) middle formation is more productive (ii) anticausative formation, unlike middle formation, is possible with and without reflexive pronoun, depending on the verb (cf. section 2.2). Property (i) might be due to the fact that anticausative formation is subject to additional semantic restrictions, so that only certain verbs can undergo anticausative formation. The second property (ii) might be either a lexical idiosyncrasy of certain verbs, that cannot be explained systematically, or it might be attributed to a systematic difference in the selectional properties of the underlying verbs. In chapter 5 and 6 we argue for a unified (syntactic) analysis of middle constructions and anticausatives.

<sup>86</sup> Cinque refers to Chomsky (1986: 131f. and 184f., especially footnote 120). Chomsky assumes that both the reflexive clitic *si* and the VP-internal argument are parts of two different CHAINS which contain a different thematic role each but are assigned the same case.

<sup>87</sup> According to Cinque (24.b) is an impersonal-passive *si* construction that is grammatical only in finite clauses like (i). Verbs like *kill* are “less prone, even in generic contexts, to an interpretation that ‘backgrounds’ the agent to simply predicate a property of the subject” (p. 560). Therefore, *si*-constructions with these verbs receive the impersonal passive reading.

- (i) Neanche il nemico si uccide senza rimorsi  
Not even the enemy RP kills without reason

accusative case, i.e. (22.3). Middle [- arg] *si* is subject to completely different licensing conditions than impersonal [-arg] *si*. Middle *si* “does not need to be associated with nominative” (p. 561) and it renders the external theta-role ‘invisible’ in syntax. This type of [- arg] *si* does not seem to be a pronominal clitic but some kind of functional element. It is, however, not clear to us how middle *si* is syntactically licensed (e.g. what does ‘suspends in syntax’ mean). Stipulating an extra lexical entry for middle *si* is again only a description of the fact that the syntactic subject of the middle construction corresponds to the internal or second semantic argument of the verb. In this respect Cinque’s treatment of middle *si* is similar to Manzini’s. Besides, it remains an open question how the ‘generic time reference’ and the adverbial modification of middle constructions in Italian can be attributed to the [- arg] middle *si*. Moreover, the analysis of anticausatives (ergative reflexives in Cinque’s terminology) relies on [- arg] *si* as well, but anticausatives do not have obligatory ‘generic time reference’ nor do they require any additional adverbial modification. Middle constructions seem to have additional semantic properties that cannot be reduced to [- arg] middle *si*.

Cinque’s distinction between [+ arg] and [- arg] can also be found in German. The (weak) reflexive pronoun in German and Italian can but need not be interpreted as an argument of the verb. However, we also find some decisive differences, besides this similarity. First, the reflexive pronoun in German middle constructions (i.e. the middle marker) does not receive nominative but accusative case. Second, Gärtner and Steinbach (1997 and 2000) argue that German does not have syntactic clitics, i.e. *special clitics* in the sense of Zwicky (1977). The accusative reflexive pronoun is syntactically an independent pronominal NP that need not be cliticized to the verb or to some functional head. We return to this issue in the next chapter. Third, we saw in section 2.1 that middle formation in German, unlike middle formation in Italian, is not limited to verbs that assign an external theta-role. In addition, we saw that the syntax of the Italian [- arg] middle *si* is still unresolved. The analysis of Italian reflexive constructions also do not offer a uniform explanation of the ambiguity of the (weak) reflexive pronoun. In sum, an application of the analysis of Italian to German would require greater modifications. The next subsection discusses two analyses of the German middle construction that are closely related to Cinque’s and Manzini’s analyses of Italian middle *si*.

### 3.1.3 German

Syntactic approaches to the middle construction in German also distinguish different types of reflexive pronouns. Haider, for example, analyses the accusative reflexive pronoun in middle constructions as some kind of A’-element. His proposal resembles Manzini’s or Cinque’s treatment of Italian middle *si* we discussed in the previous section. Haider argues that the reflexive pronoun in German middle constructions, like the reflexive clitic *si* in Italian, absorbs the external theta-role. Unlike its Italian counterpart, the reflexive pronoun in German is not a verbal clitic but an A’-element adjoined to VP that receives accusative case from the verb. According to Haider, the internal argument is directly linked to the (external) subject position of the sentence and binds the non-argument reflexive according to principle A of binding theory. Note that it does not make a difference for our discussion of syntactic analyses whether the internal object is base-generated in the complement position of V or directly linked to the

VP-external subject position. The former analysis requires an additional movement of the D-structure object to the subject position (cf. the derivations of middles in English and Dutch in section 3.1.1 above).<sup>88</sup>

- (25) a. Die Schuhe tragen sich gut  
The shoes wear RP well  
a'. [<sub>CP</sub> Die Schuhe [<sub>C°</sub> tragen<sub>1</sub>] [<sub>VP</sub> sich [<sub>VP</sub> gut [<sub>VP</sub> t<sub>1</sub> ]]]]

In middle constructions and anticausatives<sup>89</sup> the reflexive pronoun is a nonreferential A'-element, as is illustrated in (25), whereas it is a syntactic argument (i.e. an A-element in the position of the direct object) when it is linked to a semantic argument of the verb (i.e. in the reflexive interpretation of transitive reflexive sentences). This is illustrated in (26):

- (26) [<sub>CP</sub> Hans [<sub>C°</sub> wäscht<sub>1</sub>] [<sub>VP</sub> sich t<sub>1</sub> ]]]]

This distinction into two types of accusative reflexive pronouns is motivated by the observation that the reflexive pronoun cannot be focussed, coordinated, modified, fronted, or questioned in anticausatives and middle constructions as opposed to reflexives, as can be seen in (27).

- (27) a. \*Das Buch verkauft nur sich gut (middle construction)  
The book sells only RP well  
b. Hans wäscht nur sich (reflexive)  
Hans washes only RP (i.e. 'only himself')

Haider tries to derive these differences from the syntactic distinction between argument and adjunct reflexive pronouns. Our next chapter deals with this difference in great detail. We will show that the difference in (27) directly follows from the semantic interpretation of the reflexive pronoun, i.e. from the semantic difference between the argument and non-argument reflexive. Haider's stipulation that the reflexive pronoun can be either an A- or an A'-element is neither necessary nor conclusive for the explanation of the ungrammaticality of (27.a). 'Non-referential' A'-elements like adverbs, adjectives or verbs can be focussed, questioned, modified, or fronted in principle (just like 'referential' A-elements). Therefore the specific properties of reflexive pronouns in middle constructions and anticausatives cannot be reduced to this syntactic difference. Moreover, referentiality is a matter of semantics rather than syntax. Word order in German raise additional problems for Haider's treatment of the reflexive pronoun. We show again in chapter 4 that both types of the accusative reflexive pronoun (the adjunct and the argument reflexive) have the same properties with respect to word order in the middle-field.<sup>90</sup> This similarity, which is only surprising if we discriminate between two kinds

<sup>88</sup> This derivation resembles Everaert's (1986) analysis of reflexive anticausatives in Dutch. For Everaert the Dutch reflexive pronoun *zich* is a VP-adjunct, too. He derives its occurrence in this position from the ECP. The reflexive pronoun, which absorbs the accusative case, forms a chain with the syntactic subject and its trace in VP-internal position and mediates the antecedent-binding of the VP-internal trace.

<sup>89</sup> Inherent reflexives equal anticausatives in Haider's analysis. Therefore, we consider only anticausatives in the following discussion.

<sup>90</sup> However, both types of reflexive pronouns differ in the sentence-initial position. Only the argument reflexive can occupy the sentence-initial position. This follows again from the semantic ambiguity (interpretative difference) of the accusative reflexive pronoun (together with semantic restrictions on the sentence-initial position in German) as will be shown in chapter 4.

of accusative reflexive pronouns in syntax (i.e. between an argument and an adjunct) needs additional explanation in his account.

Haider assumes that the external theta-role can be assigned to or ‘absorbed’ by an A’-element. But this is in variance to the theta criterion according to which every theta-role is assigned to a syntactic argument (and vice versa).<sup>91</sup> In addition, this assumption does not explain why only accusative reflexive pronouns are able to receive or ‘absorb’ the external theta-role in A’-position.<sup>92</sup> In this respect this assumption is as descriptive as Manzini’s that *si* is a ‘passivizer’. Furthermore, Haider must stipulate two ways of accusative case assignment. Accusative case can be assigned (i) either to an A-element in the verb’s complement position (standard case assignment, e.g. for the argument reflexive and common direct objects) or (ii) to a reflexive pronoun that is adjoined to VP. This stipulation is again only necessary to derive middle constructions and anticausatives. Moreover, it is not sufficient to derive impersonal middle constructions. One-place predicates do not assign accusative case in active voice. But in middle constructions they must assign accusative to the reflexive pronoun. In addition to these two ways of accusative assignment Haider must also distinguish two kinds of binding relations.<sup>93</sup>

The theta-role of the external argument can be assigned only once. In the case of middle constructions, the external theta-role is assigned to the reflexive pronoun. Therefore, we expect no other constituent than the reflexive pronoun to receive the external theta-role in middle constructions. In section 2.3 and 3.1.1 we saw that the overt realization of the external argument is much more restricted in German than in English. Nevertheless, the external argument can be linked to a *für*-PP, as is illustrated in (28).

- (28) Dieses Spiel lernt sich auch für kleine Kinder schnell  
This game learns RP also for small children quickly

Besides, we mentioned in chapter 2 that middle formation is not limited to verbs selecting an external argument. Unaccusative verbs are grammatical in (unergative) middle constructions although they do not select a designated external argument. Auxiliary-selection poses a related problem. Remember that verbs in middle constructions always select the auxiliary *haben* (‘have’).

- (29) a. Dieses Buch hat / \*ist sich gut gelesen (unergative)  
This book has / is RP well read  
b. Peter \*hat / ist in Hamburg angekommen (unaccusative)  
Peter hat / is in Hamburg arrived

<sup>91</sup> Note that Haider’s explanation relies on the theta criterion (cf. p. 245)

<sup>92</sup> According to Haider the external theta-role can be assigned either to the subject position (Spec of CP or IP) or alternatively to an A’-element (adjoined to VP). However, it does not become clear why dative reflexive pronouns or ‘referential’ NPs cannot receive or ‘absorb’ the external theta-role in VP-adjoined position.

<sup>93</sup> Traditionally reflexive pronouns are bound in syntax (feature-sharing) and semantics (coreference) by the same antecedent. The adjunct reflexive in middle constructions and anticausatives can, however, only be bound in syntax. Semantically the reflexive pronoun is interpreted as an unbound implicit ‘generic’ subject in middle constructions. In this respect Haider’s analysis resembles Manzini’s treatment of Italian middle *si*. The responsibility of the reflexive pronoun for the generic interpretation is neither empirically nor conceptually motivated. We come back to this issue in the chapters 4 and 5.

Haider derives auxiliary-selection from the unergative-unaccusative distinction: unergative verbs on the one hand select *haben* ('have'). Unaccusative verbs on the other hand do not have an external argument. Therefore, they select *sein* ('be') (cf. p. 238f.). Haider's analysis predicts that middle constructions with unaccusative verbs are either ungrammatical or that unaccusatives select *sein* ('be') in middle constructions. Both predictions are incorrect. Furthermore Haider claims that anticausative verbs are 'lexicalized' middle constructions.<sup>94</sup> The reflexive pronoun is lexicalized and occupies the first or external argument position in the lexical entry of the anticausative verb without receiving a theta-role.

- (30) a. causitive:        öffnen<sub>1</sub>                            (Θ<sub>1</sub>, Θ<sub>2</sub>)        e.g. Peter öffnet die Tür  
       b. anticausative: öffnen<sub>2</sub>                    (rp (?), Θ<sub>2</sub>)    e.g. Die Tür öffnet sich

The internal argument Θ<sub>2</sub> is the only thematic argument of the verb in (30.b). Anticausative verbs, unlike 'middle verbs', have no implicit external argument at all (cf. 2.2).<sup>95</sup> Hence, the reflexive pronoun cannot be a thematic argument of the verb. But according to Haider's analysis, the external argument must be present at some level of derivation to control the auxiliary-selection. Otherwise, reflexive anticausatives should select the auxiliary *sein*. Hence the reflexive pronoun (30.b) finds itself in a quandary: it must be an argument and a non-argument at the same time. We conclude that Haider's syntactic derivation of German middle constructions and anticausatives is not convincing. His analysis requires several hoc stipulations that are only necessary to derive the syntactic representation and thematic interpretation of middle constructions. His syntax is not restrictive enough to exclude ungrammatical sentences (we refer the reader again to chapter 4 for a detailed discussion of this issue). Furthermore, Haider cannot derive impersonal middle constructions in general and middle formation with unaccusative verbs in particular. Note finally that he does not offer a uniform explanation of the ambiguity of the accusative reflexive pronoun.

Schachtl (1991) proposes a very similar solution that tries to avoid the problem of accusative case assignment. Following Fanselow (1987), she assumes that German has two different types of accusative case, an abstract and a morphological one. On the one hand, theta-roles must be assigned to NPs with abstract case and only abstract case is subject to Burzio's Generalization. On the other hand, only morphological case is subject to the case filter. As opposed to Haider, Schachtl does not assume that the external theta-role is assigned in middle constructions. It follows from Burzio's Generalization that the verb cannot assign abstract accusative case in middle constructions. The reflexive pronoun, which again adjoins to VP, 'absorbs' the morphological accusative case of the verb and the syntactic subject of the middle construction receives morphological nominative case in its VP-internal base position.<sup>96, 97</sup>

<sup>94</sup> This contradicts the following observation: diachronically, anticausatives and inherent reflexive verbs are attested earlier than middle constructions. Moreover, not every middle construction can be lexicalized. We will see in chapter 5 that the difference between middle constructions and anticausatives is not due to lexicalization but to further semantic restrictions on anticausatives.

<sup>95</sup> Haider claims that the reflexive pronoun represents the theta-role of the external argument. But we saw in section 2.2. that no external theta-role is implicitly present in the anticausative variant of causative verbs. This crucial difference distinguishes middle constructions from anticausatives.

<sup>96</sup> Schachtl's analysis is motivated by word order data. According to Schachtl, in the unmarked word order a subject NP marked with morphological nominative in VP-internal position must follow constituents that are adjoined to VP like dative NPs, adverbs (cf. also next footnote), or the reflexive pronoun in middle constructions.

- (31) ... [CP [C° weil] [VP gut [VP sich [VP [NP das Buch] liest ]]]]  
 because well RP-ACC the book-NOM read

The stipulation of a second type of accusative case that is morphosyntactically indistinguishable does not explain the accusative reflexive pronoun in middle constructions and anticausatives. First of all this derivation is in conflict with Fanselow's (1987) assumption that theta-roles must be connected with structural case. In (31) the internal theta-role is assigned to a NP with morphological nominative. Therefore, it should also be possible for the NP *das Buch* to receive morphological accusative in its base-position. But in this case we would need no reflexive pronoun to absorb the morphological accusative of the verb. Besides, nothing is said about structural nominative in (31). Second, it is anything but clear which case can or must be assigned under which condition. Schachtl must assume that every one-place predicate can assign morphological accusative in principle to account for one-place verbs in middle constructions. But then one is forced to stipulate that the same verb, that must obligatorily assign its morphological accusative in the middle construction in (32.a) must not assign accusative case in the active intransitive counterpart in (32.b).

But there is no evidence that the nominative NP stays in situ in its VP-internal base-position in middle constructions (for example (iii) see Diesing 1988 and 1992 and Jäger 1992):

- (i) \*...weil sich [VP gut ein Buch liest] vs. ...weil sich ein Buch [VP gut liest]  
 (ii) ??...weil sich [VP immer ein Buch gut liest] vs. ...weil sich ein Buch [VP immer gut liest]  
 (iii) ??...weil sich [I<sub>r</sub> ja doch ein Buch gut liest] vs. ...weil sich ein Buch [I<sub>r</sub> ja doch gut liest]  
 because RP a book well read ('immer' always, 'ja doch' indeed)

Moreover, unmarked word order in the German middle field is restricted not only by constraints on morphological and structural case but also by additional constraints: for example (i) a nominative NP precedes accusative NP, (ii) an agent precedes other constituents, (iii) topic precedes focus, (iv) pronouns precede full NPs, or (v) NPs that refer to animate entities precede NPs that refer to unanimate ones. Especially the unmarked position of dative objects varies. A dative NP can precede an accusative NP and a nonagentive nominative NP, provided that the dative NP refers to an animate entity (cf. chapter 4 for more details and references). In middle constructions the nominative NP cannot be an agent. Therefore, it is no surprise that dative NPs can precede the nominative NP in principle, especially if they refer to animate entities.

- (iv) a. ... weil sich ein Porsche einem Zuhälter gut verkauft  
 ... because RP a Porsche-NOM a pimp-DAT (i.e. to a pimp) well sells  
 b. ... weil sich einem Zuhälter ein Porsche gut verkauft

Word order restrictions in the German middle field do not provide any evidence for the claim that the internal argument is case marked with morphological nominative in its VP-internal base-position. We come back to this issue in chapter 4 (cf. also Fagan 1992: 111 for a similar argumentation with respect to the accusative-dative order in passives).

<sup>97</sup> Schachtl adjoins the adverb to V° in middle constructions, but manner adverbials do not only modify the verb but the whole VP in middle constructions. This can be illustrated with adverbials like *schnell* ('quickly') that can modify either the verb itself (cf. i.a) or the whole VP in (i.b). In middle constructions like (ii) the adverbial has only the second (VP-modifying) reading.

- (i) ... weil Peter den Rasen schnell mäht  
 ... because Peter the lawn quickly cuts  
 a. the cutting is quickly but it takes Peter more than 4 hours to cut the whole lawn  
 b. the whole event of the gras-cutting is quickly finished because the lawn is very small. Peter may or may not do this in a quickly manner.

- (ii) ...weil sich der Rasen schnell mäht  
 ... because RP the gras quickly cuts (only interpretation (b.) possible)

The adverbial in middle constructions should be analysed as a VP-adverbial.

- (32) a. Hier schläft es sich gut  
 Here sleeps it RP-ACC well  
 b. Peter schläft (\*sich)  
 Peter sleeps RP-ACC

This solution requires at best some lexical operation to derive a two-place ‘middle verb’ from an underlying one-place active verb. This lexical derivation of middle constructions will be discussed in the next section. And third, we expect that verbs can assign morphological and structural case to different constituents, yet the corresponding sentences are ungrammatical in German.<sup>98</sup> Like Haider, Schachtel must also assume two different kinds of reflexive pronouns as well as two different kinds of binding relations. With the reflexive interpretation the reflexive pronoun is assigned structural accusative and the internal ‘theme’ theta-role in the VP-internal object position and it is syntactically and semantically bound by its subject. In middle constructions and anticausatives the reflexive pronoun absorbs morphological accusative without receiving a theta-role and it is bound only in syntax by its subject. This distinction is again neither empirically nor conceptually motivated (cf. above and chapter 4).

### 3.1.4 Summary

We summarize the outcome of the discussion in a shorthand:

- A syntactic analysis of the middle constructions in English, Dutch, Italian and German is neither empirically nor conceptually motivated. Note that middle constructions and ‘middle verbs’ are morphosyntactically simple active forms.
- All analyses discussed so far always need additional ad hoc assumptions.
- Furthermore, they run into serious empirical and conceptual problems.
- Syntactic analysis cannot account for the accusative reflexive pronoun in German.
- Syntactic analysis do not offer a uniform explanation of the systematic ambiguity of reflexive constructions in many Indo-European languages.
- So far, we do not find any relevant syntactic restriction on middle formation (however, we will see in chapter 6 that one generalization can be stated in syntax: the syntactic status of the reflexive pronoun is relevant for preventing dative objects from middle formation).

We conclude that a convincing syntactic explanation has not been found yet. German middle constructions can not be conclusively derived from the principles of generative syntactic theories. Therefore, many linguists prefer a presyntactic derivation of middle constructions. In the next section we discuss lexical explanations of the middle construction.

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<sup>98</sup> German has only very few cases with two accusative objects. The Duden (1973) cites four verbs: *lehren* (‘teach’), *kosten* (‘cost’), *abfragen* (‘test’), and *abhören* (‘test’). In the first two cases accusative + dative/PP is the preferred option for many speakers. Besides, German has some idioms like (i) with two accusatives. However, the same verb cannot assign two accusatives in nonidiomatic sentences (cf. ii):

- (i) Eins bitt’ ich dich (Duden: 514)  
 One-ACC ask I you-ACC (i.e. I ask you for one thing)
- (ii) Ich bitte dich \*das Auto/um das Auto  
 I ask you-ACC the car-ACC/for the car

According to Schachtel we would expect much more ‘double case’ constructions.

### 3.2 *Lexical theories*

An alternative explanation of middle formation could be found in lexical (or more general presyntactic) theories.<sup>99</sup> Some presyntactic manipulation of the verb's argument structure is a characteristic of all lexical approaches. The first or external semantic argument of the verb is lexically suppressed and not linked to an element in syntax. Instead the second argument is directly linked to the subject position according to linking principles such as the theta hierarchy or the case hierarchy. In the following subsections we discuss two kinds of lexical theories. The first approach proposes a lexical rule of middle formation. This rule derives a middle verb *V'* from a basic verb *V*. The second approach starts out from the assumption that middle constructions (or 'middle verbs') have a lexical entry on their own and postulates two different templates for middle constructions, into which basic verbs can be inserted under certain conditions. Both approaches rely on the assumption that the lexicon determines the adicity (selectional properties) of basic and derived verbs (cf. Ackerman and Webelhuth 1998, chapter 1, for a detailed discussion of lexical theories). The following subsection discusses rule-based approaches and subsection 3.2.2 deals with the template analysis.

#### 3.2.1 *Lexical middle formation: Actor = ARB*

Fagan (1992) and Ackema and Schoorlemmer (1994 and 1995) – henceforth A&S – argue for a rule of middle formation that operates on lexical representations of verbs. The central assumption of both explanations is a lexical rule of middle formation, cf. (33) for A&S's rule of middle formation and (35.1) below for the very similar rule proposed by Fagan.

(33) MF (Middle Formation): Actor = ARB

Rule (33), together with the specific design of lexical entries, should enable the theory to derive the correct restrictions on MF. A&S's theory is based on the framework of conceptual semantics developed by Jackendoff (1990). (34) is a list of additional constraints that are necessary to derive middle formation in Dutch and English.<sup>100, 101, 102</sup>

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<sup>99</sup> Ackema and Schoorlemmer (1994) argue that the term *lexical* is misleading. For them the lexicon is not part of the computational system but a "list mentioning all and only those properties of the elements of a language that are idiosyncratic" (p.60) – but see Ackerman and Webelhuth (1998) for a different point of view. In the following discussion we do not make a terminological distinction between the 'productive' and the 'idiosyncratic' part of the lexicon. For the ongoing discussion it is irrelevant whether middle formation itself and the respective output are part of the lexicon or of some additional presyntactic module. To simplify matters we call these approaches lexical.

<sup>100</sup> A&S postulate an additional rule of 'adjunct incorporation' for adjunct middles in Dutch. We discuss this issue in chapter 6.

<sup>101</sup> The feature [+ext] means that one argument must be external. It is an inherent property of the whole lcs and cannot be deleted in the course of a derivation.

<sup>102</sup> This restriction raises the following problem. Consider a verb like *receive* that might subcategorize for a patient argument that is the most prominent argument on the action tier and, in addition, for a second argument that is more prominent at the thematic tier than its co-argument, the patient. This verb, like double-object verbs in middle constructions, should be prevented from linking their arguments, cf. sentence (i), which can be represented as is illustrated in (ii):

- (34) A&S (1994)
- a. MF only with lcs marked [+ext].
  - b. ARB-arguments cannot project
  - c. Only an argument represented in the action tier can be a nonprojecting ARB
  - d. A-marked elements project according to the following hierarchy:  
[ actor - patient ] - [ agent - theme - goal ] - het
  - e. An A-marked semantic argument can only be linked to the external argument position if it is the most prominent argument at all thematic dimensions
  - f. A verb has a syntactic e-role iff it has a fully specified Action tier

According to (33), MF marks the actor argument on the action tier of a verb's lexical conceptual structure (lcs) as ARB. ARB cannot project into syntax and the next argument on the thematic hierarchy (34.c) is chosen for the external argument. A&S do not discuss German middle constructions. Nevertheless, we are interested in the consequences of this analysis because it is developed from Fagan's analysis of middle constructions in English, German and French. Therefore we discuss both the empirical and conceptual shortcomings of this analysis and its possible application to middle constructions in German. With regard to the second point, it is easy to see that a presyntactic approach along these lines is forced to assume some extra rule or linking principle to handle the reflexive pronoun in object position in German. Fagan (1992) solves this problem by simply stating that middle constructions in German are transitive reflexive sentences (cf. the corresponding subcategorization frame in 35.4). Therefore Fagan's rule of middle formation is more complex for German (and French) than for English:<sup>103</sup> it does not only externalize the direct  $\Theta$ -role or  $\emptyset$ , but it also introduces an accusative reflexive pronoun (and an adverbial). The subrules and conditions that comprise Fagan's complex rule of middle formation are illustrated in (35).

- 
- (i) Sam received a book  
(ii) receive [GO<sub>POSS</sub> ([BOOK], [TO [SAM]])  
AFF<sup>+</sup> ( , [SAM] ) ]

In (ii) neither argument can be linked as the external argument of the verb because of condition (34.d) and we expect sentence (i) to be ungrammatical. One might, however, argue that *receive* does not select an external argument.

<sup>103</sup> The relevant parts of Fagan's definition of middle formation in English and French are as follows:

- (i) English: +[\_\_\_\_\_AdvP]  
(ii) French: [v X] → [v se + [v X]]

Middle formation in English introduces only the adverbial (cf. i), whereas adverbials are not obligatory in French. On the other hand, French middle constructions select a reflexive clitic that is introduced by rule (ii) in French. Note that the reflexive clitic in French agrees in number and person with its subject. For this rule (ii) must be slightly modified.

Grimshaw (1982) offers a similar lexical derivation of middle constructions. Moreover, she proposes two additional rules for anticausatives and reflexives. We give her middle rule in (iii) (Grimshaw 1982: 124):

- (iii) (SUBJ) →  $\emptyset$   
(OBJ) → ((SUBJ)  
( $\uparrow$ REFL) =<sub>C</sub> +

Roughly speaking, the last condition ' $(\uparrow$ REFL) =<sub>C</sub> +' means that an intrinsic clitic (i.e. a clitic that has ' $(\uparrow$ REFL) = +' in its lexical entry) has to be present in the syntactic clitic position CL. Following the general principles of clitic placement in French, it precedes the finite verb.

- (35) (Fagan 1992: 196)
1. Assign arb to the external  $\Theta$ -role
  2. Externalize (direct  $\Theta$ -role) [or]
  3. Externalize ( $\emptyset$ )
  4. +[NP- NP<sub>[+anaphor]</sub>- AdvP\_\_\_\_\_]
  5. Semantics: ‘be able to be Xed’
- Condition:  
 V does not assign lexical case  
 V is not an achievement or state  
 V is not ditransitive

The rules and conditions in (35) are a description of the empirical facts. Fagan stipulates that the reflexivity of middle constructions is an idiosyncratic lexical property of this type of construction.<sup>104</sup> From her point of view middle constructions are transitive reflexive sentences in syntax, because middle constructions select a reflexive pronoun. Transitive reflexive sentences are linked to an intransitivized verb that selects an ‘empty’ reflexive pronoun. Thus, middle constructions have a lexical entry of their own. All three conditions in (35.6) place restrictions on the verb classes that can be inserted into the ‘middle frame’. Rule (35.2) states that the direct theta-role is realized as the external argument (the first NP in (35.4)) and rule (35.3) does the same job for one-place verbs. In this case it can be interpreted as a ‘zero-externalization rule’.<sup>105</sup> According to Fagan’s analysis, the reflexive pronoun indicates some change in argument structure, a property of reflexive pronouns that can be observed in many languages (cf. section 2.3 and Fagan, p. 175). We share this intuition in principle. As opposed to Fagan we do not think that this has to be stipulated in the lexical entry of the middle construction. Condition (35.4) is ad hoc. Although it correctly describes the empirical facts, it does not explain why middle constructions are reflexive in many languages.

Both analyses are confronted with certain empirical and conceptual problems. We start off with a discussion of Fagan’s definition of middle formation. The subcategorization frame (35.4) Fagan gives is too restrictive. We saw in section 2.1. that middle formation in German and in English (cf. A&S) is also grammatical without an additional adverbial, provided that the middle construction is uttered in an appropriate context. We come back to this issue in section 3.2.2. and in chapter 7.

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<sup>104</sup> “In essence, then, the presence of a reflexive in a middle must be stipulated” (Fagan 1992: 171). We argue in chapter 5 that the widespread use of reflexive pronouns to indicate valency-reduction is not accidental.

<sup>105</sup> As opposed to A&S, Fagan does not distinguish unergatives from unaccusatives. All intransitive verbs assign an external theta-role and that is why they can all undergo middle formation in German in principle. This point will be relevant in the discussion below.

We do not want to discuss Fagan’s treatment of intransitive verbs here because it is not relevant for the analysis of German middles we will present in chapter 4 and 5. For further discussion see Grewendorf (1989), cf. also van Riemsdijk (1978) or A&S (1995) among others, who argued at length that there are differences between unergative and unaccusative verbs in German. Fagan, argues, ‘that the diagnostics for ergativity in German are generally unreliable’ (p. 120).

- (36) a. This bureaucrat bribes (A&S 1994: 71)  
 b. Dieses Auto könnte sich fahren  
 This car might RP drive  
 c. Jetzt ist es schwer. Aber es vergißt sich alles.  
 Now it is hard. But it forgets RP everything

Condition (35.6: *V is not an achievement or state*) raises another problem. The so-called aspectual interpretation (*Aktionsarten*) is not always an inherent lexical property of the verb. It often results from the interpretation of more complex structures including especially the verb and the direct object. Moreover, verbs in middle constructions can receive an achievement interpretation. The verbs *treffen* ('meet'), for example, is ambiguous between an activity and an achievement interpretation.<sup>106</sup> But in middle constructions, it receives only the achievement interpretation. Sentence (37.a), for example, does not mean that it is hard to arrange a get-together with Father Christmas but that it is hard to meet him altogether.

- (37) a. Der Weihnachtsmann trifft sich nicht so leicht  
 Father Christmas meets RP not that easily  
 b. Ein hilfsbereiter Mensch trifft sich in dieser Stadt überall  
 A helpful person meets RP in this town everywhere

In section 2.1 we mentioned another example of a verb in a middle construction that yields an achievement interpretation, which is repeated in (38).

- (38) Der Fernseher schaltet sich schnell aus  
 The TV switches RP quickly off

The third condition in (35.6: *V is not ditransitive*) is also too strong. In section 2.1 we already gave some examples for ditransitive verbs in middle constructions. Ditransitive sentences also pose a problem for A&S' analysis. According to their analysis, we expect the third semantic argument on the thematic hierarchy (e.g. goal) to be linked to the direct object position in middle constructions. However, the third argument cannot be 'promoted' at all. It remains in the 'third' position on the thematic hierarchy and is linked to the dative (*to-PP*) position as can be seen in (39), for German see the next subsection. A&S are forced to assume that the categorial realization of these arguments is fixed in the lexicon or they have to add some further linking principle for goal arguments in order to prevent the third argument from being linked to the accusative position, if the patient/theme is linked into the external argument position. In both cases the validity of the linking principle (34.c) is weakened.

- (39) a. These books don't sell to linguists  
 b. \*These books don't sell linguists

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<sup>106</sup> *Treffen* is a two-place predicate that can be inherent reflexive (i), reciprocal (ii), or non-reflexive (iii). The first two examples can describe activities and the last two examples can yield an achievement interpretation. Hence, Sentence (37.b) is ambiguous between a middle interpretation and a reciprocal interpretation. The middle constructions in (37) are derived from the achievement interpretation in (iii).

- (i) Ich habe mich drei Stunden lang mit Helmut getroffen  
 I have RP three hours long with Helmut met (i.e. for three hours)  
 (ii) Wir haben uns gerade auf der Straße/zwei Stunden lang getroffen  
 We have RP just in the street/two hours long met  
 (iii) Ich habe gerade den Peter auf der Straße/??zwei Stunden lang getroffen  
 I have just the Peter in the street/two hours long met

Besides, we already mentioned in section 2.1 that that dative objects cannot undergo middle formation in principle. Fagan assumes condition 1 (*V does not assign lexical case*) account for the ungrammaticality of example (40).

- (40) \*Die Maria hilft sich leicht  
The Maria-NOM helps RP easily

In German dative case differs syntactically and semantically from the so-called structural cases accusative and nominative in many respects. Below we argue for a distinction between structural and oblique case that excludes dative objects from middle formation. The syntactic and morphological properties of dative objects in German will be discussed in chapter 6.<sup>107</sup>

A&S's analysis for Dutch and English middle constructions predicts that only verbs with Actor-arguments and verbs whose lcs is marked for projecting an external argument (i.e. [+ext]) can participate in middle formation. This prediction is not correct for German and neither does it seem to be correct for Dutch.<sup>108</sup> We illustrated in section 2.1 and 3.1 that verbs that do not select an Actor-argument can be found in middle constructions. In (41), for example, ARB is not assigned the actor-role.<sup>109</sup>

- (41) a. Diese neuen kleinen Geldscheine verlieren sich aber sehr einfach  
These new small banknotes lose SELF really very easily  
b. In diesem Bett träumt sich's gut  
In this bed dreams RP it well  
c. In Hamburg lebt sich's gut  
In Hamburg lives RP it well  
d. Kleinen munten raken gemakkelijk kwijt  
Small coins lose easily

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<sup>107</sup> In chapter 2 we mentioned that Fagan observes a contrast between *buy* and *sell*. While *sell* forms acceptable middle constructions, *buy* sounds odd in middle constructions:

- (i) \*These books buy well (from linguists)  
(ii) These books sell well (to linguists)

The properties of the object for sale may influence the act of selling. A parallel situation is hard to imagine for *buy*. Nevertheless, *buy* is possible in middle constructions in certain contexts as well (cf. section 2.1). The acceptability of middle constructions is affected by the 'responsibility' of the promoted second argument for the event described by the verb. Note that all theories have to assume additional conceptual constraints on middle formation. The difference between (i) and (ii) does not follow from A&S's lexical-conceptual approach, for example. Both verbs should be equally acceptable in middle constructions because they both provide the correct input for MF.

<sup>108</sup> A&S (1994) note in footnote 15 on page 73 that in Dutch unaccusatives are marginal grammatical in middle constructions. In the previous subsection we gave two examples for middle constructions in Dutch that contain a unaccusative verbs. See chapter 2 for corresponding German examples.

<sup>109</sup> A&S subsume the so-called 'affectedness constraint' (AC – cf. section 3.1.1) under their rule of MF (cf. 33). They observe that even non-affected objects can undergo MF under the condition that the verb subcategorizes for an actor argument (cf. p. 76). On the one hand, their rule of MF is more liberal than the AC. On the other hand, it also covers all standard cases of the AC, i.e. two-place selecting an actor and a patient argument. The examples in (41), however, show that A&S's rule of MF is also too restrictive.

Besides, this analysis requires that concepts like actor, patient, agent, theme, action tier or thematic tier can be clearly defined. But up till now no clear definition has been proposed (cf. Dowty 1989 and 1991).

(42) are two examples for unaccusative verbs in middle constructions in Dutch and German. As opposed to A&S, Fagan does not distinguish between unaccusative and unergative verbs. She argues that both types of one-place verbs select an external theta-role. Hence, unaccusative verbs do not pose a problem for Fagan's theory.

- (42) a. Es stirbt sich leichter mit guten Freunden im Haus  
It dies RP easily with good friends in-the house  
b. Op/via de snelweg rijdt het een stuk lekkerder naar Berlin  
On/via the highway drives it a bit more comfortably to Berlin

Besides, there is no morphological evidence for a lexical rule of middle formation. Note that 'middle verbs' do not differ from their corresponding active counterparts in their morphological form. Fagan and A&S take the semantics of middle constructions as evidence for their lexical rule of MF. The implicit ARB is responsible for the 'generic' interpretation of middle constructions.<sup>110</sup> Fagan's condition (35.5) states that all middle constructions in German are stative (the same holds for English). That is, they do not generalize over events. Instead they "involve properties (of a patient subject)" (p.156). In addition, Fagan's rule (35.1) is responsible for the fact that the external theta-role receives a generic interpretation, because ARB is specified as [+human, +generic]. Hence, middle constructions generalize over the implicit argument (ARB) and they attribute a specific property to the syntactic subject (which is linked to the second argument of the verb). The resulting interpretation for sentence (43.a) can be paraphrased as in (43.b) (cf. p.155).

- (43) a. This book reads easily  
b. People, in general, can read this book easily

Similarly, A&S (1994) claim that all predicates with either an ARB-Actor or an ARB-Patient are necessarily individual-level predicates, because they do not trigger an e-role.<sup>111</sup> The relevant condition is given in (34.e) above. Besides (34.e), A&S (1994) assume the following two conditions in (45).

- (44) Argument projection from LCS to D-structure is optional  
(45) Recoverability condition  
An A-marked non-projecting semantic argument  $\alpha$  must be  
(a) discourse linked to a semantic argument identical to  $\alpha$   
(b) ARB

Hence, both Fagan and A&S claim that 'middle verbs' are stative or individual-level predicates and that the first argument of these predicates is filled by ARB. We think that the second assumption is correct, although we do not believe that it follows from a lexical rule.<sup>112</sup> However, we do not think that the first assumption is correct.<sup>113</sup> It is not very plausible that a change in reference of one of its arguments turns the verb into an individual-level predicate,

<sup>110</sup> This argument cannot be applied to middle constructions in French, which need not be 'generic', although they are lexically derived, too.

<sup>111</sup> A&S claim that only verbs with a fully specified action tier (i.e. without ARB-arguments at the action tier) can have a syntactic e-role (cf. 34.e). Therefore, middle constructions do not trigger an e-role. An ARB-Actor induces a generic reading and an ARB-Patient a habitual reading.

<sup>112</sup> Recall that sometimes the implicit argument of middle constructions can also be linked to a *für/for*-phrase. This contradicts A&S's rule of middle formation MF = ARB (cf. chapter 2 and section 3.1.1 above).

<sup>113</sup> Note that Fagan (1992:78) herself describes middle constructions as actions.

i.e. changes its basic semantic properties. Besides, this assumption raises several empirical problems. Note first that not every non-projecting implicit argument that is not discourse linked leads to a generic or habitual interpretation. Both examples in (46) contain an implicit object, which need not induce a habitual interpretation, although it is not discourse linked. Contrary to condition (45), the implicit arguments of *trinken* ('drink') and *schreiben* ('write') can be bound by an existential quantifier without being discourse linked. Besides, it can also get an arbitrary interpretation. (46.b) means either that our neighbour is writing something now (but we do not know what) or that he is writing in general, i.e. he is a writer.<sup>114</sup> In (46.a) the arbitrary interpretation of the implicit object of drinking usually involves alcohol. But sentence (46.a) is unlikely to mean that the small child usually drinks alcohol. This (habitual) interpretation becomes the preferred option if we substitute an adult person for the small child. Hence, sentence (46.a) can only mean that the child is drinking something. Besides, argument projection is not always optional, as can be seen in sentence (46.c). Note finally that discourse linked arguments can only be 'dropped' in sentence-initial position, cf. (46.d) and (46.e). Condition (45.a) incorrectly predicts that sentence (46.e) including a discourse linked object/second argument should be grammatical. Hence, in German discourse linking of an implicit object/second argument seems to be impossible in general, cf. Jacobs (1994) and Rapp (1999) for an analysis of implicit arguments.

- (46) a. Das kleine Kind trinkt  
The little child drinks (i.e. is drinking)  
b. Unser Nachbar schreibt wieder  
Our neighbour is writing again  
c. Peter unterstützt \*(seine Nachbarn)  
Peter supports (his neighbours)  
d. Was ist mit dem Bier?  $\emptyset$  <sub>THE BEER</sub> trinkt der Peter  
What is the matter with the Bier? drinks the Peter  
e. Was ist mit dem Bier? \*Der Peter trinkt  $\emptyset$  <sub>THE BEER</sub>

A second objection concerns passives. A&S assume that in passives a syntactically active implicit argument is present.<sup>115</sup> Hence, in passives the implicit argument projects from LCS to D-structure. (47) shows that the implicit argument can also be a semantically arbitrary element. As a consequence of condition (45) the actor argument of *trinken* ('drink') in (47) does not project to syntax and passive formation with ARB becomes indistinguishable from middle formation. Rule (33) as it stands is not sufficient to derive middle formation. We conclude that genericity or habituality cannot simply be reduced to implicit (ARB-) arguments. Implicit arguments are neither a necessary nor a sufficient condition for 'generic' statements. This is also illustrated in (47.b) and (47.c). Both sentences do not include an implicit argument. Nevertheless, (47.b) is a generic sentence that report general property and sentence (47.c) is ambiguous between a generic and an episodic interpretation (cf. e.g. Krifka et.al. 1995).

<sup>114</sup> In contrast to English, German does not distinguish simple present from progressive form. The simple present form is ambiguous between a progressive and a 'habitual' interpretation.

<sup>115</sup> The actor role is not assigned to the subject position but to the passive morphology.

- (47) a. In Deutschland wird viel Bier getrunken  
 In Germany was much beer drunk  
 b. Mary smokes a cigar after dinner  
 c. Hans-Heinrich trinkt Wein  
 Hans-Heinrich drinks/is-drinking wine

Turning to middle constructions in German now. We already mentioned that middle constructions can also receive an episodic interpretation. Example (28) from section 2.1, repeated as (48), shows that middle constructions can be used to describe particular events. (48) does not mean that yesterday evening this piece by Bach exceptionally had the property that it can be played well. Instead this sentence reports a particular situation in which this piece of music was played well, although it might be a very difficult piece of music.<sup>116</sup>

- (48) Der Bach hat sich gestern Abend ausnahmsweise mal ganz gut gespielt  
 The Bach has RP yesterday evening exceptionally once quite well played  
 ‘Exceptionally, this piece by Bach played well yesterday evening’

Fagan and A&S argue that ‘middle verbs’ are always individual-level predicates. But verbs in middle constructions differ from typical individual-level predicates in several respects. Middle constructions, like stage-level predicates, can be modified by temporal adverbials, as can be seen in (49.a’) and (49.a’”). As opposed to this, temporal modification is impossible in (49.a), because the individual-level predicate *intelligent sein* (‘be intelligent’) describes a permanent property of its subject. (49.b) illustrate a second difference. The prepositional phrase *in diesem Laden* (‘in this shop’) is only ambiguous in sentence in (49.b’) and (49.b’”) that include stage-level predicates. Sentence (49.a’), for example, has the following two readings: (i) the salespersons, that are working in this shop, usually wear green caps and they (also) wear their green caps outside the shop; (ii) the salespersons must wear green caps whenever they are working in the shop. The same ambiguity can be found in the middle construction (49.b’”): (i) the books that are sold in this shop are best sellers in every shop (ii) the books are best sellers (at least/only) in this shop. As opposed to (49.b’) and (49.b’”), the first sentence in (49.a) including the individual-level predicate is not ambiguous. The prepositional phrase can only modify the NP (i.e. all the salespersons that work in this shop are called Müller). The second interpretation (VP-modification) is impossible in this case.

- |         |  |                    |
|---------|--|--------------------|
| (49) a. | *Heute Abend sind Feuerwehrmänner intelligent  | (individual-level) |
|         | This evening are firemen intelligent           |                    |
| a’.     | Heute Abend sind Feuerwehrmänner verfügbar     | (stage-level)      |
|         | This evening are firemen available             |                    |
|         | ‘This evening firemen are available’           |                    |
| a’”.    | Heute Abend verkaufen sich die Bücher ganz gut | (middle c.)        |
|         | This evening sell RP the books quite well      |                    |

<sup>116</sup> In some contexts English middles can be used in progressive.

(i) Yesterday afternoon this book was selling like hell

- b. ... weil alle Verkäufer in diesem Laden Müller heißen (individual-level)  
 ... because all salespersons in this shop Müller are-called
- b'. ... weil alle Verkäufer in diesem Laden grüne Mützen tragen (stage-level)  
 ... because all salespersons in this shop green caps wear  
 '... because all salespersons (in this shop) wear green caps  
 (in this shop)'
- b''. ... weil sich die Bücher in diesem Laden super verkaufen (middle c.)  
 ... because RP the books in this shop well sell

Additionally, 'middle verbs', unlike individual-level predicates, can be modified by adverbs of quantification, as is illustrated in (50). Following Krifka et.al. (1995:7) these expressions typically mark a characterizing (or habitual) reading. They quantify over the event variable that is selected by the verb. Accordingly middle constructions are not individual-level predicates but *characterizing sentences* in the terminology of Krifka et.al.

- (50) a. Dieses Buch liest sich immer wieder gut  
 This book reads RP always well
- b. In billigen Hotels schläft es sich selten gut  
 In cheap hotels sleeps it RP rarely well
- c. Dieser Wagen hat sich nie gut verkauft  
 This car has RP never well sold

Note finally that middle constructions usually require some adverbial modification, which typically modify the way in which an action is performed. Consider the adverbial *schnell* ('quickly') in (51). In the active sentence (51.a) *schnell* can either modify the verb, i.e. the way in which the event is carried out, or the whole VP, i.e. the duration of the event. In the corresponding middle construction in (51.b) only the second interpretation is available (i.e. the whole event of cutting the lawn usually does not take much time). Although *schnell* ('quickly') is not ambiguous in middle constructions, its interpretation clearly involves modification of events.

- (51) a. ... weil Peter den Rasen schnell mäht  
 ... because Peter the lawn quickly cuts
- b. ... weil sich der Rasen schnell mäht  
 ... because RP the lawn quicky cuts

In chapter 7 we come back to the problem of the generic interpretation of middle constructions. We argue that both the implicit argument and the event variable are bound by a generic operator. Furthermore, we show that Fagan's semantic condition (35.5) ('be able to be Xed') can be derived from this assumption. We conclude that Fagan's and A&S' analyses have various conceptual shortcomings and some of the empirical predictions turned out to be incorrect. Furthermore, the status of the implicit argument is not clear. We argued that there is no simple correlation between a uniform lexical representation of middle constructions and the 'generic' interpretation they typically receive. An implicit argument does not obligatorily trigger a generic interpretation. Moreover, 'middle verbs' or middle constructions are not individual-level predicates. Middle constructions clearly involve generalizations over events. And last but not least Fagan's approach does not offer a conclusive explanation for the accusative reflexive pronoun in German middle constructions. In the following subsection we therefore look at an alternative lexical theory.

3.2.2 *The middle template analysis*

Bierwisch (1996) offers an explanation for the reflexive pronoun in anticausatives that can also be applied to reflexive pronouns in middle constructions. In Bierwisch's analysis a general grammatical principle accounts for the reflexive pronoun. In a sense the reflexive pronoun absorbs the accusative object case of the two-place verb, cf. also Abraham (1995a) for a similar idea. We believe that this approach is on the right track, although it is faced with various shortcomings. Let us take a closer look on Bierwisch's analysis of anticausatives first.<sup>117</sup>

- (52) Whenever an argument position is dominated by a nongenuine argument position the lower one is assigned the feature [+ refl]

A non-genuine argument position does not bind a variable in the semantic form (SF) of the predicate, i.e. this is an example of vacuous quantification. The reflexive pronoun in anticausatives can be derived from principle (52). Consider the following lexical entry for the verb *öffnen* ('open').

- (53) *öffnen*:  $\lambda x \lambda y \lambda e [e \text{ INST } [(y \text{ CAUSE}) [\text{BECOME } [\text{OPEN } x]]]]$

In the anticausative variant of *öffnen* the argument position  $\lambda y$  does not bind a variable, because the one-place SF-predicate CAUSE together with its argument  $y$  is removed from the SF of the anticausative verb (indicated by parentheses). According to (52), the object position  $\lambda x$  receives the feature [+Refl] and it is (referentially) bound by the argument position  $\lambda y$  dominating  $\lambda x$ . The reflexive pronoun results from a valency-reduction operation that only affects the SF of the verb. *Öffnen* still subcategorizes two (syntactic) argument positions in (54), although it has only one semantic argument. The lexical entry for the anticausative variant of *öffnen* is given in (54):

- (54) *öffnen*:  $\lambda x \lambda y \lambda e [e \text{ INST } [\text{BECOME } [\text{OPEN } x]]] \quad \lambda x = [+ \text{Refl}]$

Note that the argument structure of a predicate does not simply result from  $\lambda$ -abstraction over SF-variables but is partly independent of the semantic representation (SF) of a predicate. Although this analysis can easily be applied to personal middle constructions it cannot explain why impersonal middle constructions are also transitive reflexive sentences. The underlying lexical entry of impersonal middle constructions contains only one argument position as can be seen e.g. in (55).

- (55) *lachen*:  $\lambda x \lambda e [e \text{ INST } [\text{LAUGH } x]]$

(55) does not contain a second argument position that is dominated by another non-genuine argument position. Therefore the reflexive pronoun in impersonal middle constructions cannot be derived from (55). In order to apply (52) to impersonal middle constructions we first have to add an additional non-genuine argument position to the argument structure of one-place predicates. Bierwisch (1997) assumes two different middle templates, which are necessary to derive the core cases of middle construction in his approach. (56.a) is the relevant middle

<sup>117</sup> The feature [+ Refl] is itself part of the lexical entry of every reflexive pronoun. Bierwisch proposes the following lexical entry for *sich* (him-/her-/itself and themselves):

- (i) /sich/ [+D, +Refl, +3Pers, +Obj] [ $x_k$ ]  
condition:  $x_k$  is the variable of the argument position occupied by the antecedent

template  $MT_1$  for personal middle construction. One-place predicates have to be inserted in  $MT_2$  in (56.b).<sup>118</sup> The feature [+M] is added to the lexical entry of a verb that undergoes middle formation to distinguish ‘middle verbs’ from their corresponding basic verbs in the lexicon.

- (56) a.  $MT_1$ : Two-place verbs: [+M]  $\lambda V \lambda y \lambda z$  [PS [V N y]]  
 b.  $MT_2$ : One-place verbs: [+M]  $\lambda V \lambda y \lambda z$  [PS [V N]]

These two templates enables us to derive both impersonal and personal middle constructions from underlying one- or two-place verbs. The derivation of personal middle constructions is illustrated in (57.a) and the derivation of impersonal middle constructions is given in (57.b).

- (57) a. personal middle construction
1. V [+V, -N]:  $\lambda a \lambda b$  [b P a] (two-place verb)
  2. [+M]:  $\lambda V \lambda y \lambda z$  [PS [V N y]]
  3. V [+V, -N, +M]:  $\lambda y \lambda z$  [PS [( $\lambda a \lambda b$  [b P a]) N y]]
  4. V [+V, -N, +M]:  $\lambda y \lambda z$  [PS [N P y]]
- b. impersonal middle construction
1. V [+V, -N]:  $\lambda a$  [a P] (one-place verb)
  2. [+M]:  $\lambda V \lambda y \lambda z$  [PS [V N]]
  3. V [+V, -N, +M]:  $\lambda y \lambda z$  [PS [( $\lambda a$  [a P]) N]]
  4. V [+V, -N, +M]:  $\lambda y \lambda z$  [PS [N P]]

The free argument variable  $N$ , that is substituted for the first or highest argument of the verb, is crucial for this analysis of middle formation.  $N$  is an intrinsic part of both MTs. This step of the derivation is illustrated in (58). It corresponds to Fagan’s externalization rule or A&S’s basic rule MF: Actor = ARB.

$$(58) \lambda x [P x] N = [P N]$$

In a second step principle (52) can now be applied to personal and to impersonal ‘middle verbs’ and the output is a transitive reflexive sentence. (59) illustrates the derivation of the personal ‘middle verb’ *schneiden* (we use the simplified SF [x CUT y]).

- (59) 1. /schneid/ [+V, -N]:  $\lambda a \lambda b$  [b CUT a]  
 2. /Ø/ [+M]:  $\lambda V \lambda y \lambda z$  [PS [V N y]]  
 3. /schneid/ [+V, -N, +M]:  $\lambda y \lambda z$  [PS [( $\lambda a \lambda b$  [b CUT a]) N y]]  
 4. /schneid/ [+V, -N, +M]:  $\lambda y \lambda z$  [PS [N CUT y]]  
 5.  $\lambda y = [+ \text{Refl}]$

Note that Bierwisch tacitly assumes an additional condition like (60):

- (60)  $N$  must occupy the highest argument position of the verb

<sup>118</sup> The operator  $PS$  is assumed to be responsible for the adverbial modification in middle constructions (and possibly for the ‘modal’ interpretation most middle constructions get, cf. 2.1.4).  $N$  stands for the generic interpretation of the implicit argument ( $N$  is an implicit argument that is ‘preferably generic’) and equals Fagan’s and A&S’ ARB. We do not discuss  $PS$  and  $N$ , because we already saw in the section that these issues are more complex.

Otherwise he cannot prevent two-place predicates from being inserted in the ‘impersonal’  $MT_2$  in (56.b), which would result in the lexical representation given in the third line (61.3). In semantics (61.3) is a two-place verb with an implicit ‘generic’ object. But in syntax (61.3) projects two reflexive pronouns, because principle (52) can be applied twice. However, a sentence like (63.4) with two reflexive pronouns does not yield the interpretation in (61.3). Hence (61.3) cannot be linked to (61.4). The same problem arises for one-place predicates that are inserted into the personal middle template  $MT_1$

- (61)
- |    |   |   |
|----|---|---|
| 1. | V [+V, -N, +M]:                                       | $\lambda y \lambda z$ [PS [( $\lambda a \lambda b$ [b P a]) N]] |
| 2. | V [+V, -N, +M]:                                       | $\lambda y \lambda z$ [PS [ $\lambda b$ [b P N]]]               |
| 3. | V [+V, -N, +M]:                                       | $\lambda b \lambda y \lambda z$ [PS [b P N]]                    |
| 4. | $\lambda b$ = [+ Refl] & $\lambda y$ = [+ Refl]       |   |
| 5. | Peter zeigt sich sich (im Spiegel) ( $\neq$ 61.3)     |   |
|    | Peter shows RP-DAT RP-ACC (in the mirror)             |   |
|    | ‘Peter is showing himself to himself (in the mirror)’ |   |

Three-place verbs pose yet another serious problem.<sup>119</sup> Insertion of a three-place predicate into  $MT_1$  would again contradict condition (60). The ‘generic’ argument  $N$  does not occupy the position of the first argument in the resulting ‘middle verb’ (62.5). The output in (62.5), which contains an implicit dative argument, is not the correct SF for a three-place ‘middle verb’.

- (62)
- |    |                 |   |
|----|-----------------|---|
| 1. | V [+V, -N]:     | $\lambda c \lambda b \lambda a$ [CAUSE [a BECOME [POSS (b,c)]]]                                   |
| 2. | [+M]:           | $\lambda V \lambda y \lambda z$ [PS [V N y]]  |
| 3. | V [+V, -N, +M]: | $\lambda y \lambda z$ [PS [ $\lambda c \lambda b \lambda a$ [CAUSE [a BECOME [POSS (b,c)]]] N y]] |
| 4. | V [+V, -N, +M]: | $\lambda y \lambda z$ [PS [ $\lambda a$ [CAUSE [a BECOME [POSS (N,y)]]]]]                         |
| 5. | V [+V, -N, +M]: | $\lambda a \lambda y \lambda z$ [PS [CAUSE [a BECOME [POSS (N,y)]]]]]                             |

Even a third middle template  $MT_3$  for three-place verbs cannot derive the correct lexical representation for these verbs. Let us assume the following middle template  $MT_3$  for three-place verbs which contains three semantic argument variables.

- (63)  $MT_3$ : Three-place verbs: [+ M]  $\lambda V \lambda x \lambda y \lambda z$  [PS [V N y x ]]

After insertion of a three-place verb we derive the lexical representation in (64). This time the free ‘generic’ variable  $N$  is substituted for the correct argument variable (i.e.  $a$ ).

- (64)
- |    |                 |  |
|----|-----------------|--|
| 1. | V [+V, -N]:     | $\lambda c \lambda b \lambda a$ [CAUSE [a BECOME [POSS (b,c)]]]  |
| 2. | [+M]:           | $\lambda V \lambda x \lambda y \lambda z$ [PS [V N y x ]]  |
| 3. | V [+V, -N, +M]: | $\lambda x \lambda y \lambda z$ [PS [ $\lambda c \lambda b \lambda a$ [CAUSE [N BECOME [POSS (y,x)]]] N y x ]] |
| 4. | V [+V, -N, +M]: | $\lambda x \lambda y \lambda z$ [PS [ $\lambda a$ [CAUSE [N BECOME [POSS (y,x)]]]]]                            |
| 5. | V [+V, -N, +M]: | $\lambda x \lambda y \lambda z$ [PS [CAUSE [N BECOME [POSS (y,x)]]]]]  |

<sup>119</sup> We take (62.1) to be a possible representation of a three-place predicate. The following argumentation does not depend on this specific representation. The same problem arises for all lexical entries with three argument positions.

The corresponding syntactic representation can be derived by means of linking principles as proposed e.g. in Wunderlich (1992).<sup>120</sup> These principles together with (52) yield the following syntactic realization of the arguments, which is again inconsistent with middle constructions derived from three-place verbs (cf. section 2.1.1). In (65) the non-argument reflexive is incorrectly assigned dative case and the accusative object of the corresponding active sentence is not promoted to subject.

- (65) a. V [+V, -N, +M]:  $\lambda x \lambda y \lambda z$  [PS [CAUSE [N BECOME [POSS (y,x)]]]]  
 b.  $\lambda x = [\text{acc}]$  &  $\lambda y = [\text{dat}]$  &  $\lambda z = [\text{nom}]$   
 c.  $\lambda y = [+ \text{Refl}]$

A similar problem arises for two-place verbs that assign dative case to their second argument. We mentioned in section 2.1.1 that dative objects cannot undergo middle formation at all. They can only occur in impersonal middle constructions.

- (66) a. \*Der Rektor widerspricht sich leicht  
 The rector-NOM contradicts RP easily  
 b. Dem Rektor widerspricht sich's leicht  
 The rector-DAT contradicts RP it easily

One could somehow restrict principle (52) to accusative objects only. But this restriction is again not sufficient to derive middle constructions with three-place verbs. In this case we cannot make use of principle (52) because it is always the dative object that is dominated by the empty (or nongenuine) argument position  $\lambda z$ . As matters stand, the template analysis cannot derive MF with three-place verbs and it cannot exclude middle constructions derived from underlying two-place verbs that assign dative case to their object. We complete the discussion with some more basic remarks. We think that this analysis is basically on the right track. The reflexive pronoun in middle constructions and anticausatives is not an inherent property of these constructions but follows from some general grammatical principle. However, the template analysis is forced to assume (at least) two different lexical entries to offer a unified account of personal and impersonal middle constructions and anticausatives.<sup>121</sup> Unlike anticausatives and two-place predicates, one-place predicates only select one argument. Therefore, one-place basic verbs must first be changed into two-place middle verbs. But this assumption is clearly ad hoc. Hence the template analysis does not offer a uniform explanation of personal and impersonal middle constructions. Moreover, although the middle templates in

<sup>120</sup> Case assignment for (structural) dative, accusative and nominative can be defined in the following way - [+HR] means 'there is a higher role' and [+LR] means 'there is a lower role' (cf. Wunderlich 1992:21). Note that not all instances of dative are structural, cf. chapter 6.

accusative: [+HR]  
 dative: [+HR, +LR]  
 nominative: [-HR] or default case

<sup>121</sup> Both lexical entries in (57) can be combined to the following unified entry:

(i)  $\lambda V \lambda y \lambda z$  [PS [V N (y)]]

Note however that one-place basic predicates can only be inserted into one-place middle templates. The same holds for two-place basic predicates (cf. above). Otherwise, middle formation would add not only an argument position but also an argument variable. Hence, we need again an additional principle to account for this. The relevant restriction can be stated as follows:

(ii) A [+M] verb must not select more argument variables than the corresponding [-M] verb

Note that a middle verb can select more argument positions but not more arguments.

(57) and principle (52) correctly describe the fact that middle constructions are always transitive reflexive sentences, they do not explain this fact. Besides, we cannot see how this analysis derives the fact that the non-argument reflexive cannot be focussed (cf. 67.b) as opposed to the argument reflexive in (67.a).

- (67) a. Peter hat SICH gewaschen  
Peter has RP washed  
b. \*Das Brot schneidet SICH gut  
The bread cuts RP easily

The corresponding SF-representations in (67.a' and b') show that the corresponding argument position  $\lambda y$  binds a variable at SF in both examples. The template analysis does not distinguish two different interpretations of the reflexive pronoun. In both cases the reflexive pronoun is linked to an argument position (i.e. to a semantic variable). Following standard theories of focus we expect (narrow) focus to be grammatical in both cases (cf. next chapter for a detailed discussion of this issue).

- (68) a'.  $\lambda y \lambda x [x \text{ WASH } y]$   
 $\lambda y = [+ \text{ Refl}]$   
b'.  $\lambda y \lambda z [PS [N P y]]$   
 $\lambda y = [+ \text{ Refl}]$

Furthermore we expect 'middle verbs' to be input to further lexical rules like e.g. nominalization.<sup>122</sup> But it seems to be impossible to apply further lexical rules to middle constructions or 'middle verbs'. This restriction would follow without additional assumptions from syntactic and presyntactic analyses. Besides, we already mentioned that there is no morphological evidence for 'middle verbs' or lexical 'middle templates'. Verbs in middle constructions do not morphologically differ from their 'active' counterparts.

Finally we briefly turn to adverbial modification. According to Bierwisch, middle constructions obligatorily select an adverbial (via the *PS*-operator). Note that the question whether or not adverbial modification is (more or less) obligatory in middle constructions does not necessarily depend on the approach we choose. H&R (1993), for example, try to reduce adverbial

<sup>122</sup> We mentioned in section 2.1.1 that resultatives can undergo middle formation.

- (i) Solche Schuhe laufen sich gewiß schnell kaputt  
Such shoes walk RP certainly quickly broken

As far as we can see middle constructions must be derived from resultatives and not the other way round. A resultative can be input to  $MT_1$  as is illustrated in (ii). *RF* means 'resultative formation' and *MF* 'middle formation'. (ii.2) is a simplified lexical representation of the resultative construction corresponding to (i):

- (ii) 1.  $V [+V, -N]: \lambda b [WALK(b)]$   
2.  $V [+V, -N]: \lambda P \lambda a \lambda b [WALK(b) \& CAUSE [BECOME [P(a)]]]$  RF  
3.  $[+M]: \lambda V \lambda y \lambda z [PS [V N y]]$   
4.  $V [+V, -N, +M]: \lambda P \lambda y \lambda z [PS [WALK(N) \& CAUSE [BECOME P(y)]]]$  MF

If we 'medialize' the verb *laufen* ('walk') first it seems impossible to derive the corresponding resultative construction. The output of this derivation is a three-place 'middle verb', which cannot be linked to (i).

- (iii) 1.  $V [+V, -N]: \lambda b [WALK(b)]$   
2.  $[+M]: \lambda V \lambda y \lambda z [PS [V N]]$   
3.  $V [+V, -N, +M]: \lambda y \lambda z [PS [WALK(N)]]$  MF  
4.  $V [+V, -N, +M]: \lambda P \lambda x \lambda y \lambda z [PS [WALK(N) \& CAUSE [BECOME P(x)]]]$  RF

modification to some syntactic licensing condition whereas some lexical approaches do not assume that adverbial modification is an inherent property of middle constructions that must be stipulated in the lexicon (cf. e.g. A&S 1994 and 1995 above). A postsyntactic approach must offer some semantic or pragmatic explanation for the fact that most middle constructions sound odd without adverbial modification. We already saw that sometimes middle constructions are also grammatical without adverbial modification (cf. the examples in section 2.1.4). Although most middle constructions involve some adverbial modification, this does not necessarily mean that middle constructions without adverbials are simply exceptions to the core or canonical case of a middle construction.<sup>123</sup> Moreover, stipulating that adverbial modification is an intrinsic lexical property of middle constructions or 'middle verbs' is not yet an explanation of the fact that most middle constructions require some adverbial modification. Even under this assumption the reasons why adverbial modification is obligatory in many cases are still unclear. In addition, we do not see any independent criterion to decide whether or not adverbial modification is a necessary condition for the grammaticality of middle constructions. Traditionally, verbs c-select optional or obligatory arguments (and possibly directional or locative PPs). An approach that claims that verbs (e.g. 'middle verbs') also select adverbials, loses an important criterion that distinguishes adverbials from arguments, i.e. the property to be selected (or subcategorized) by the verb. Hence one advantage of an alternative (non-syntactic) explanation is that we need not extend the selectional properties of verbs.<sup>124</sup> On the one hand, a theory assuming subcategorization of an adverbial has to explain the (admittedly) rare cases of middle constructions that are grammatical without adverbial modification. And a theory that does not assume adverbial selection in middle constructions must explain why most middle constructions require some adverbial modification. In chapter 7 we discuss this issue in greater detail.

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<sup>123</sup> A similar example might be the verb *wohnen* ('live'), cf. Höhle (1987). One could argue that *wohnen* also requires (context-dependent) adverbial modification because the intransitive sentence in (68.c) without an adverbial sounds odd. Sentence (i) shows, that *wohnen* selects either a manner adverbial or a locative PP.

- (i) Ich wohne gut/in Hamburg  
I live (well) in Hamburg (i.e. I am living (well) in Hamburg)
- (ii) Ralf wohnt mit Hans-Martin zusammen  
Ralf lives with Hans-Martin together
- (iii) Sie wohnt gut  
She lives well
- (iv) %Er wohnt  
He lives
- (v) Ich wohne jetzt unter der Brücke/im Obdachlosenasyl  
I live now under the bridge/in-the shelter for the homeless

Usually, everybody has a place to live (*zum Wohnen*), at least in western cultures. The property *wohnen* can even be extended to cases like (v). Therefore, one might argue that sentence (iv) is not very informative, and it is very hard to imagine a situation in which this sentence can be uttered. We think that this sentence is grammatical. It is, however, not pragmatically licensed (cf. chapter 7 for further discussion).

<sup>124</sup> Otherwise this must be done to explain only a few cases like *wohnen* or middle constructions.

### 3.2.3 *Summary*

We summarize the main results of the discussion again in a shorthand.

- lexical theories do not offer a conclusive explanation for the reflexive pronoun in middle constructions.
- personal and impersonal middle constructions cannot be derived in a uniform way.
- middle constructions with three-place predicates cannot be derived at all.
- so far, middle formation with dative objects cannot be excluded.
- the correlation between the implicit argument ARB or *N* and the generic interpretation of middle constructions (or the change from stage-level to individual-level predicates) is unclear. No conclusive lexical explanation has been offered so far.
- ‘Middle verbs’ are not individual-level predicates.
- lexical theories cannot explain why most middle constructions require some adverbial modification.
- no relevant prediction follows from a lexical derivation of middle constructions.
- there is no morphological evidence for a lexical rule of middle formation or a lexical middle template.

### 3.3 *Conclusion*

We saw that neither a syntactic nor a lexical approach offers a conclusive derivation of middle constructions in English, Dutch or Italian (and French) so far. An application of these analyses to German middle constructions raises additional problems. The analyses of German middle constructions that we discussed in 2.1.3 and 2.2 are not conclusive either. They need all additional ad hoc stipulations and cannot account for all kinds of middle constructions that can be found in German. In particular impersonal middle constructions, middle constructions with three-place verbs and impersonal middle constructions with an dative object still pose serious problems. Besides, they do not offer a uniform analysis of transitive reflexive sentences (i.e. of the semantic ambiguity of the accusative reflexive pronoun). We think that further investigation into the semantics of middle constructions can help to answer some of the questions raised above. Up to now a postsyntactic approach has generally been neglected. In the following we develop a postsyntactic analysis of middle constructions, anticausatives and reflexives. Above all, this analysis has to account for the ambiguity of the accusative reflexive pronoun. Furthermore, it must exclude dative objects from middle formation. In chapter 4 we show that all transitive sentences with a accusative reflexive pronoun in the position of the direct object do not differ in syntax no matter whether they are interpreted as reflexives, anticausatives or middles. In chapter 5 we deal with the semantic ambiguity of transitive reflexive sentences. We argue that all interpretations of transitive reflexive sentences can be derived from the same underlying syntactic representation. Chapter 6 deals with anticausatives and dative case. In chapter 7 we briefly turn to the problem of adverbial modification and genericity and we finally discuss adjunct-middle constructions.

## 4 The Syntax of Transitive Reflexive Sentences: Word Order, Coordination, Focus, and Fronting

In the previous chapter we criticized lexical and syntactic analysis of middle formation. We saw that they offer neither a conclusive explanation of the specific properties of middle constructions in German nor a unified account of the ambiguity of the reflexive pronoun in transitive reflexive sentences. Therefore we argue for a postsyntactic analysis of transitive reflexive sentences in the remainder of this book. Middle constructions and anticausatives are syntactically analysed as simple transitive clauses with an accusative reflexive pronoun in the position of the accusative (or direct) object. Hence, they do not differ from sentences like (1) that receive a reflexive interpretation. Of course, the crucial element for every syntactic analysis of transitive reflexive sentences is the reflexive pronoun in object position, which can either be linked to a semantic argument of the verb, as can be seen in (1), or it can be an indicator of valency reduction, cf. (2). Therefore, large part of this chapter deals with the syntactic properties of argument and non-argument reflexives.

- (1) Der Kanzler liebt sich mehr als alles andere in der Welt  
the chancellor loves RP more than everything else in the world
- (2) a. Dieser Käse schneidet sich sehr gut (middle construction)  
this cheese cuts RP very good  
b. Die Tür öffnete sich ein bißchen (anticausative)  
the door opened RP a bit  
c. Hans schämt sich fürchterlich (inherently reflexive verb)  
Hans is-ashamed RP awfully

The syntactic parallelism between the argument and non-argument reflexive is, however, not immediately obvious. On the one hand, both kinds of reflexive pronouns - the argument reflexive and the non-argument reflexive – turn out to be subject to the same constraints on word order in the middle-field. This is discussed in section 4.1. Furthermore, they are both bound by the subject. These are good arguments to treat them the same in syntax. On the other hand, there are some crucial differences between argument and non-argument reflexives which we discuss in section 4.2. These data seem to provide empirical evidence for the claim that non-argument reflexives differ in syntax from argument reflexives, thus supporting a syntactic analysis of middle formation (cf. chapter 3.1.3. and Haider 1982, Grewendorf 1984, and Pitz 1988 and Everaert 1986 for reflexive anticausatives in Dutch). However, all differences will turn out to be due to the semantic interpretation of non-argument reflexives. They should be explained by semantic theories of focus, coordination and fronting rather than by an (additional) ad hoc distinction between two different types of reflexive pronouns in syntax. This line of argumentation can already be found in Fagan (1992) and Erb and Steinbach (1997). In this chapter we show in detail how the distribution of argument and non-argument reflexives can be derived from recent theories on focus, coordination and fronting.

### 4.1 *Similarities between argument and non-argument reflexives*

First we discuss word order phenomena that give direct evidence for an analysis that does not draw a distinction between argument and the non-argument reflexives in syntax. Both the argument and the non-argument reflexive are subject to the same restrictions on word order in

the middle-field (for the sentence initial position see 4.2.3). It is a well-known fact that in German reduced and full pronouns tend to be located in the so-called Wackernagel position, the second position of a clause. This is shown in (3) and (4) for main clauses. The first sentence of each pair is always a middle construction, which contains a non-argument reflexive. The second sentence always contains an argument reflexive and receives a reflexive interpretation. Anticausatives and inherent reflexives equal middle constructions in this respect.

- (3) a. Dieser Käse schneidet sich gut  
       this cheese-NOM cuts RP well  
       b. Der Kanzler liebt sich sehr  
       the chancellor-NOM loves RP much
- (4) a. \*Dieser Käse schneidet gut sich  
       b. \*Der Kanzler liebt sehr sich

The examples in (5) show the same for embedded clauses. In (5.a-f) the subject is a definite DP, while it is a pronoun in (5.g-j).

- (5) a. ... weil dieser Käse sich gut schneidet  
       ... because this cheese-NOM RP good cuts  
       b. ... weil der Kanzler sich sehr liebt  
       ... because the chancellor-NOM RP much loves  
       c. ... weil sich dieser Käse gut schneidet  
       d. ... weil sich der Kanzler sehr liebt  
       e. ??... weil dieser Käse gut sich schneidet (stilted)  
       f. ??... weil der Kanzler sehr sich liebt (stilted)  
       g. ... weil er sich gut schneidet (er = dieser Käse)  
       ... because he (= cheese) RP good cuts  
       h. ... weil er sich sehr liebt  
       ... because he RP much loves  
       i. \*... weil sich er gut schneidet  
       j. \*... weil sich er sehr liebt

The unmarked word order in the German middle-field is restricted by various ‘weak’ constraints. The relevant constraints on the positioning of reflexive pronouns are listed in (i) – (iv), for further discussion see Lenerz (1977), Uszkoreit (1987), Cooper (1994), Vogel and Steinbach (1997), Haider and Rosengren (1998), Müller (1998), and Gärtner and Steinbach (2000).

- i. Thematic (or backgrounded) elements precede rhematic (or focused) ones.<sup>125</sup>  
 ii. pronominal elements precede full NPs.<sup>126</sup>  
 iii. Linearization of arguments directly mirrors the GF/case-hierarchy: nominative precedes accusative in the unmarked case.

The examples (5.a-d) can be described by constraint (ii) and (iii), which are equally ‘strong’. Constraint (ii) claims that *sich* is the first element of the middle-field, whereas constraint (iii)

<sup>125</sup> There are various ways to state this constraint. Another possibility would rely on Jäger’s (1995) definition of topics, i.e. the topic precedes the comment in the unmarked case.

<sup>126</sup> This constraint might be subsumed under the following more general one: “heavy” elements follow “light” ones.

claims the opposite: The nominative NP *dieser Käse/der Kanzler* precedes the accusative NP *sich*. Therefore, both sequences are equally possible (and unmarked). Both sentence (5.e) and (5.f) sound stilted, because the reflexive pronoun does not only follow the subject but also the adverbial (cf. footnote 2 above).<sup>127</sup> The sentences in (5.g-j) are subject to all three constraints. Accusative objects can only precede (nominative) subjects if the former are thematic (or backgrounded) and the latter rhematic (or focused). In (5.g.-j) the subject and the object are pronominal and most likely thematic. Therefore, (5.i) and (5.j) violate the third constraint that states that nominative precedes accusative in the unmarked word order. Both sentences are much better if we put contrastive focus on the personal pronoun. We slightly modify example (5.i) by replacing the verb *schneiden* ('cut') by *küssen* ('kiss'), because the second argument of *küssen* usually refers to human entities. Reference to human entities simplifies discourse linking of pronouns.

- (6) a. ?? ... weil sich sogar ER gut küßt  
           because RP even he well kisses  
       b. ?? ... weil sich sogar ER sehr liebt  
           because RP even he much loves

Two additional constraints are relevant for the linearization of dative objects in the middle-field.<sup>128</sup>

- iv. The NP that refers to an agent precedes other constituents.  
 v. NPs that refer to animate entities precede NPs that refer to inanimate entities.

Constraint (v) is rather weak. Usually the subject of the middle construction (the nominative NP) is not an agent. Hence, we expect that dative NPs referring to animate entities can precede the subject in middle constructions. This can be seen in the following examples.

- (7) a. ... weil sich einer Nonne ein Gesangsbuch schnell verkauft  
           because RP a nun-DAT a hymnbook-NOM quickly sells  
       b. ... weil einer Nonne sich ein Gesangsbuch schnell verkauft  
       c. ... weil sich ein Gesangsbuch einer Nonne schnell verkauft  
       d. ... weil ein Gesangsbuch sich einer Nonne schnell verkauft

All these examples show that the non-argument reflexives do not differ from non-argument reflexives with respect to unmarked word order in the middle-field. The non-argument reflexive is neither a clitic nor in some sense syntactically incorporated into the verb. In section 2.1.2 we already mentioned that German has no syntactic (or *special*) clitics. Even (phonologically) reduced pronouns are not syntactic but only phonological clitics, that must be adjoined to an adjacent foot, syllable or (under certain circumstances) prosodic word in phonology (for further discussion see Gärtner and Steinbach 1997 and 2000). Note that phonologic reduction is impossible for the third person reflexive pronoun in Standard German and in most

<sup>127</sup> That these constraints are 'weak' can be demonstrated by the following example from an anecdote by Eckhart Henscheid: "[...] Derjenige sollte Sieger und der beste Kritische Theoretiker sein, der das Reflexivum 'sich' am weitesten postponieren (nachstellen) konnte [...] Sieger wurde und sein Meisterstück machte nämlich Adorno mit dem seither geflügelten Satz: 'Das unpersönliche Reflexivum erweist in der Tat noch zu Zeiten der Ohnmacht wie der Barbarei als Kulmination und integrales Kriterium Kritischer Theorie *sich*'" (Henscheid 1993: 56-57). Note that *sich erweisen* ('prove to be') is an inherently reflexive verb.

<sup>128</sup> The same constraints are also relevant for the linearization of the arguments of verbs that do not select an agent like e.g. *interessieren* ('to be interested in').

German dialects.<sup>129</sup> This difference between most personal pronouns and the third person reflexive pronoun is illustrated in (8).

- (8) a. Personal pronoun: Sie hat ihn/'n gestern erst gewaschen  
 She has him yesterday just washed  
 b. Reflexive pronoun: Er hat sich/\*'s/\*'ch/\*'si/... gestern erst gewaschen  
 He has RP yesterday just washed

Reflexive pronouns also differ from elements that must be adjacent to the main verb in embedded V-final clauses. The examples in (5) above illustrate that reflexive pronouns need not be adjacent to the main verb, as opposed to verb-object-combinations like *Ball spielen* ('play with a ball') or the separable prefix in *davonschleichen* ('sneak off/away'):

- (9) a. ... weil Peter gestern Ball gespielt hat  
 ... because Peter yesterday ball played has  
 '... because Peter played ball yesterday'  
 b. ... \*weil Peter Ball gestern gespielt hat  
 c. ... weil Heidi sich gestern morgen davongeschlichen hat  
 because Heidi RP yesterday morning sneaked off has  
 '... because Heidi sneaked off yesterday morning'  
 d. ... \*weil Heidi sich davon gestern morgen geschlichen hat

In chapter 2 we saw that both the argument reflexive and the non-argument reflexive are always bound by the subject NP in syntax. This is illustrated in (10) for middle constructions.<sup>130</sup> We do not find any evidence that an implicit actor or agent binds the anaphor at some level of derivation as e.g. proposed by Pitz (1988).<sup>131</sup>

- (10) a. Ich<sub>1</sub> wasche mich<sub>1</sub> schneller als alle anderen  
 I wash RP-1.s. faster than all the others  
 b. Du<sub>1</sub> hörst dich<sub>1</sub> heute nicht gut an  
 You hear RP-2.s. today not good PARTICLE (You don't sound good today)  
 c. Du<sub>1</sub> verkaufst dich<sub>1</sub> gut - ich meine, dein Buch verkauft sich gut  
 You sell RP-2.s. well - I mean, your book sells RP-3.s. well

So far, we did not find empirical evidence for two syntactically different types of reflexive pronouns in German. The following analysis of transitive reflexive sentences in German is based on Chomsky's analysis of (structural) case checking (cf. Chomsky 1993 and 1995, chapter 3). The syntactic structure for transitive reflexive sentences with personal and impersonal subjects is given in (11.1) and (11.2) below.<sup>132, 133</sup>

<sup>129</sup> Hessian and Saxonian seems to be exceptions that allows phonological reduction of the third person reflexive pronoun. Hall (1998:107) argues that a vowel preceding the [ç] cannot be reduced to schwa in German.

<sup>130</sup> We mentioned in section 3.1.1 that not all reflexive pronouns are bound in syntax. Reflexive pronouns that are used as logophors are not subject to the binding conditions. In chapter 5 we take a closer look at binding.

<sup>131</sup> This example is from Reis (1981) and also mentioned in Haider (1987).

<sup>132</sup> There is a long discussion in the literature how to analyze the relatively free constituent order of languages like German. Essentially, three approaches can be distinguished. (i) Word order is derived via movement (scrambling, extraposition and fronting) from an underlying structure. (ii) Word order is base generated (possibly in compliance with linearization principles). (iii) Word order is derived by an extra modul for linearization. For movement theories cf. Müller and Sternefeld (1993), Müller (1993) or Grewendorf and Sabel (1994) among others. Supporters of a base generation theory are Haider (1993), Cooper (1994), Fanselow (1995 & 1997) and

- (11.1) The syntactic structure of transitive reflexive sentences with a ‘personal’ subject
- a. ... weil die Tür sich öffnet  
... because the door RP opens
- b. [CP [C' weil [AgrSP die Tür<sub>S</sub> [AgrS' [AgrOP sich<sub>O</sub> [AgrO' [VP t<sub>S</sub> [V' t<sub>O</sub> t<sub>V</sub> ] ] t<sub>V</sub> ] ] ] ] öffnet<sub>V</sub> ] ] ] ]

Note that the reflexive pronoun overtly moves to AgrOP,Spec if we assume that the adverbial is adjoined to VP in middle constructions (cf. 11.2 below). In a second step it possibly adjoins to AgrSP. Scrambling of the reflexive pronoun is supported by the observation we discussed above that pronouns tend to be adjacent to C°, the Wackernagel position. Impersonal middle constructions can be analysed in the same way. The corresponding structure is given in (11.2) below. The examples in (12.a-c) show that the impersonal subject *es* has the same syntactic distribution like referential subjects. It can occur in sentence-initial position, after the finite verb in main clauses (cf. 12.a-b'), or after the complementizer in embedded clauses (cf. 12.c and c'). Besides, the reduced form of impersonal subject can cliticize to another constituent in phonology (cf. 12.d). Note finally that the impersonal subject, like non-argument reflexives, cannot be focused and coordinated. As opposed to non-argument reflexives, impersonal subjects can be fronted because subjects can occur in sentence-initial position in unmarked word order. The next section discusses focus, coordination and fronting.

- (12) a. Es schläft sich gut in diesem Bett                      a'. Er schläft gut in diesem Bett  
It sleeps RP well in this bed                                      He sleeps well in this bed
- b. In diesem Bett schläft es sich gut                              b'. In diesem Bett schläft er gut
- c. ...weil es sich in diesem Bett gut schläft                      c'. ...weil er in diesem Bett gut schläft
- d. In diesem Bett schläft sich's (=es) gut
- e. Peter sieht \*(es) regnen  
Peter sees it-ACC rain

Impersonal subjects need not check nominative case, as can be seen in (12). The embedded impersonal subject cannot check nominative case in so-called A.c.I.-constructions. Nevertheless, sentence (12.e) is ungrammatical without an impersonal subject. Note that German is no pro-drop language. Impersonal subjects may be licensed by either of the following three conditions: (i) German has strong a [EPP]-feature that must be checked in Spec IP. In this case, the impersonal subject in (12.e) is inserted in IP-Spec of the embedded infinitive to check the [EPP]-feature. After that it moves to AgrOP-Spec of the matrix clause to check accusative case. (ii) A VP obligatorily requires an [+R]-expression. We will argue in chapter 5 that personal pronouns are specified as [+R] as opposed to non-argument reflexives that are specified

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Uszkoreit (1987) within the framework of GPSG-theory. Vogel and Steinbach (1997) argue for a mixed approach which assumes that accusative and nominative DPs are subject to A- and A'-movement, whereas dative DPs can be inserted directly. Advocates of a linearization grammar are Kathol (1995), Reape (1994) and (1995) or Richter (1997).

Another long standing problem is verb-placement in V2-languages like Dutch and German. Discussions can be found in Vikner and Schwartz (1991), Zwart (1993) and (1998) and Gärtner and Steinbach (1994). Further theories on V2 by Bobaljik (1995) and Rohrbacher (1994) are discussed in Stanek (1995) - cf. also the references in the next footnote.

<sup>133</sup> In (11) we base generated the external argument in VP and split IP into AgrSP, TP, and AgrOP. Furthermore, we omit TP. For the discussion pro and contra the presence of IP in German see Grewendorf (1989a), Haider (1993) and Sabel (1995). A summary of the arguments is given in Erb (1995). See als Haider and Rosengren (1998).

as [-R]. Hence, the impersonal subject (i.e. the personal pronoun *es* ('it')) is the only expression that fulfills condition (ii) in impersonal middle constructions and sentences containing weather-verbs. (iii) The impersonal subject in middle construction is necessary to bind the non-argument reflexive. According to this assumption, the impersonal subject in middle constructions is subject to different licensing conditions than the impersonal subject of weather-verbs. Our analyses of impersonal middle constructions is compatible with all three conditions. In the following analysis we refer to condition (ii) but further research on impersonal subjects and impersonal passives<sup>134</sup> will be necessary to decide this issue. Impersonal subjects, like non-argument reflexives, are only syntactic arguments. Both elements fulfill a grammatical function. The non-argument reflexive indicates valency reduction whereas the impersonal subject fulfills some subject-related function in active sentences. We argue in chapter 5 that these different functions follow from the morphological specification of the impersonal subject on the one hand and the reflexive pronoun on the other. In the following discussion we assume that the impersonal subject *es* is inserted directly into Spec-VP. The resulting structure for an impersonal middle construction is given below.

- (11.2) The syntactic structure of transitive refl. sentences with an 'impersonal' subject
- a. ... weil es sich hier gut schläft  
... because it RP here well sleeps
- b. [CP [C' weil [AgrSP e<sub>SS</sub> [AgrS' [AgrOP sich<sub>O</sub> [AgrO' [VP gut  
[VP t<sub>S</sub> [V' t<sub>O</sub> t<sub>V</sub> ] ] t<sub>V</sub> ] ] schläft<sub>V</sub> ]]]]]

We conclude this section with three general remarks on the syntax of transitive reflexive sentences. Firstly, Gärtner and Steinbach (1994, 1997 and 2000) argue that there is no empirical and conceptual evidence for a so-called asymmetry analysis that assumes different sentence-initial positions for subjects on the one hand and fronted objects, fronted VPs, or fronted adverbials on the other. We uniformly analyze all main clauses as CPs, no matter which constituent occupies the sentence-initial position (this can either be the subject, an object, the VP, or an adverbial, cf. also 4.2.3 for more discussion).<sup>135</sup> Secondly, note that in our framework accusative assignment is not a specific lexical property of a verb. In addition to middle constructions and anticausatives, resultatives or ECM-constructions are further examples where accusative object is not only licensed by the verb itself but by the whole construction. Besides, most verbs that are typically one-place predicates can also assign accusative case (these objects are, however, semantically restricted):

- (13) a. Es regnet dicke Tropfen/Konfetti  
It rains big drops/confetti

<sup>134</sup> Recall from section 2.1.2 and 3.1.1 that impersonal passives do not have an impersonal subject at all.

<sup>135</sup> Wilder (1993), like Zwart (1993), wants to avoid vacuous movement in case of subject-initial clauses. He assumes a 'mixed projection' instead. Hence, the sentence-initial position is both CP and AgrSP. As opposed to Zwart's analysis, Wilder's analysis is no asymmetry-analysis in the strict sense because subject-initial sentences are hybrid CP/AgrSP-structures. Therefore, subject-initial sentences as well as object- or adverbial-initial sentences are always CPs.

Besides, Wilder's and Zwart's analyses are motivated by the assumption that sentence-initial objects but not sentence-initial subjects are 'topics'. We refer the reader again to Gärtner and Steinbach (1994 and 1997) who show in detail that this assumption cannot be maintained. So far no definition of the term (syntactic) topic and the corresponding topic-feature has been given that includes sentence-initial adverbials and accusative objects and excludes nominative subjects. See also section 4.2.3 for a discussion of the restrictions on the sentence-initial position in German.

- b. Er schlief den furchtbarsten Schlaf seines Lebens  
He slept the most terrible sleep of his life

We assume that structural (accusative and nominative) case is ‘assigned’ by morphological feature checking in syntax, cf. Chomsky (1995).<sup>136</sup> We argue in chapter 5 and 6 that accusative and nominative are structural case forms. Accusative and nominative NPs move to AgrO,Spec and AgrS,Spec respectively (i.e. the extended projections of the verb) to check their structural case-feature. In their VP-internal base positions both NPs bear a specific relation to the arguments of the verb which restricts their semantic interpretation. The nominative NP is always linked to the first (external or internal) argument of the verb and the accusative NP to the second one. We come back to this issue in chapter 5.

Thirdly, we do not assume that all semantic arguments are obligatorily linked to syntax as is, for example, claimed in the theta-criterion. Implicit arguments need not project to syntax. On the other hand, all syntactic arguments are linked to a semantic argument except for non-argument reflexives and impersonal subjects. We will argue below that non-argument reflexives and impersonal subjects are two well defined exceptions. Their morphosyntactic specification enables them to fulfill specific grammatical functions. Hence, both elements are licensed by the grammatical functions they fulfill. Note that some lexical approaches also assume that non-argument reflexives and impersonal subjects must not be linked to (i.e. do not bind) a semantic argument variable (cf. e.g. Bierwisch 1997). Otherwise the occurrence of these elements must simply be stipulated in the lexical entries of zero-place verbs, and personal and impersonal ‘middle verbs’.

#### 4.2 *Focus, coordination, and fronting: explaining the difference*

So far we only told half of the story since we did not discuss the differences between argument and non-argument reflexives. Non-argument reflexives are in fact not completely identical to argument reflexives. Haider (1982) cites Reis (1981), who observes that only argument reflexives can be coordinated. In addition, only argument reflexives can be focused and occur in the scope of a focus operator and the contrastive negation. Moreover, only argument reflexives can be replaced by another (non-reflexive) DP and they can be questioned and moved into the sentence initial position. These differences are illustrated in (14), (15) and (16). (14)

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<sup>136</sup> Dative case might be an exception. In section 3.2.2 we saw that dative case poses a serious problem for a lexical analysis of middle constructions. Moreover, dative objects differ in syntax from accusative objects in many respects (cf. chapter 6 below). Besides, two-place verbs like *helfen* (‘help’) or *folgen* (‘follow’) can appear only with dative objects - cf. the minimal pair *begegnen* and *treffen* (both: ‘meet’) in (i). Hence, not all instances of dative case can be analysed as a structural case that is assigned to the third argument of the verb.

- (i) a. Maria traf den Bundeskanzler  
Maria met the-ACC chancellor  
b. Maria begegnete dem Bundeskanzler  
Maria met the-DAT chancellor

Dative assignment might either be a lexical property - especially in the case of two-place verbs with dative objects - or it can be reduced to semantic differences between dative and accusative case. It is well known that dative case is semantically more specific than accusative (cf. e.g. Wegener 1985). But as it stands this issue is still an unsolved problem that requires further research. We come back to dative case in chapter 6.

illustrates that argument reflexives are grammatical in coordination and sentence-initial position and that they can be focused and replaced, cf. Hermodsson (1957) and Duden (1973:75f.).

- (14)
- |    |   |                        |
|----|---|------------------------|
| a. | Otto wäscht sich und seine Freunde                  | (coordination)         |
|    | Otto washes RP and his friends                      |                        |
| b. | Otto wäscht [SICH/sich selbst]                      | (narrow focus)         |
| c. | Otto wäscht nur/sogar sich                          | (focus particles)      |
|    | Otto washes only/even RP                            |                        |
| d. | Otto wäscht freitags nicht SICH (sondern HANS)      | (contrastive negation) |
|    | Otto washes on Friday not RP (but Maria)            |                        |
| e. | Otto wäscht sich/Maria                              | (substitution)         |
|    | Otto washes RP/Maria                                |                        |
| f. | Wen wäscht Otto? sich!                              | (questioning)          |
|    | Who washes Otto? RP! (Who is Otto washing? Himself) |                        |
| g. | Sich hat Otto gestern nachmittag gewaschen          | (fronting)             |
|    | RP has Otto yesterday afternoon washed              |                        |

This is all impossible for non-argument reflexives as can be seen in (15) for middle constructions and in (16) for anticausatives. The same holds for inherent reflexive verbs. The ‘\*’ indicates that all sentences in (15) and (16) cannot receive a middle interpretation and an anticausative interpretation respectively. The only reading that is available for (15) and (16) is the reflexive interpretation which would involve linking of both the subject and the reflexive pronoun. But in this case the reflexive pronoun would be an argument reflexive and the meaning of both sentences would be nonsens (books usually do not sell themselves and doors do not open themselves or windows). In the following we argue that the sentences in (15) and (16) are in fact syntactically wellformed. However, the semantics of focus, coordination and fronting forces the reflexive pronoun to be linked to a semantic argument, i.e. to be interpreted as an argument reflexive.

- (15) Middle construction
- |    |  |                        |
|----|--|------------------------|
| a. | *Das Buch verkauft sich und seinen Autor gut   | (coordination)         |
|    | The book sells RP and his author well          |                        |
| b. | *Das Buch verkauft [SICH/sich selbst] gut      | (narrow focus)         |
| c. | *Das Buch verkauft nur/sogar sich gut          | (focus particles)      |
|    | The book sells only/even RP well               |                        |
| d. | *Das Buch verkauft nicht SICH gut (sondern...) | (contrastive negation) |
|    | The book sells not RP well (but...)            |                        |
| e. | Das Buch verkauft sich/*seinen Autor gut       | (substitution)         |
| f. | *Wen hat das Buch gut verkauft? sich!          | (questioning)          |
| g. | *Sich hat das Buch gut verkauft                | (fronting)             |

- (16) Anticausative
- a. \*Die Tür öffnet sich und das Fenster (coordination)  
The door opens RP and the window
  - b. \*Die Tür öffnet [SICH/sich selbst] (narrow focus)
  - c. \*Die Tür öffnet nur/sogar sich (focus particles)  
The door opens only/even RP
  - d. \*Die Tür öffnet nicht SICH (sondern...) (contrastive negation)  
The door opens not RP (but...)
  - e. Die Tür öffnet sich/\*das Fenster (substitution)
  - f. \*Wen öffnet die Tür? sich! (questioning)
  - g. \*Sich öffnet die Tür (fronting)

According to Haider, these data in (14), (15), and (16) can be explained by a syntactic analysis that distinguishes argument reflexives from non-argument reflexives (cf. chapter 3). He argues that the non-argument reflexive is an A'-element only bound in syntax by the subject of the sentence. It is adjoined to VP and receives the theta-role of the implicit first argument of the verb. As opposed to the non-argument reflexive, the argument reflexive is syntactically and semantically bound by the same antecedent, the subject of the sentence. Since non-argument reflexives are A'-elements, they cannot be coordinated with A-elements or, to put it the other way round, if they are coordinated with A-elements, they are interpreted as A-elements themselves. However, we expect that coordination of the non-argument reflexive and another A'-elements should be grammatical. But non-argument reflexives cannot be coordinated at all. Hence, additional constraints on coordination of A'-elements are necessary to exclude non-argument reflexives. In 4.2.1 we give a semantic explanation that does not rely on further constraints on coordination of A'-constituents. Besides, Haider claims that focusing and fronting of non-argument reflexives is impossible because they are not referential (as opposed to argument reflexives that are referential because they are bound by a 'referential' antecedent). However, non-referential pronouns can appear in sentence-initial position, as can be seen in (17). *Regnen* ('rain') in (17.a) does not select a referential argument. Nevertheless, the impersonal subject is grammatical in sentence-initial position because a nominative pronoun is usually the first element in unmarked word order. We come back to this issue in section 4.2.3. below.

- (17) a. Es regnet  
It rains
- b. Es tanzt sich sehr gut hier (vs. Hier tanzt es sehr sich gut)  
It dances RP well here (i.e. You can dance very well here)

As a consequence, fronting is not a matter of referentiality. Moreover, it is not clear what Haider means by 'referential'. Verbs and modifiers might not be referential either, but they can be focused and they can occupy the sentence-initial position. Hence, focus is not a matter of referentiality either.

- (18) a. Peter hat das Buch [sogar gelesen]  
Peter has the book even read
- b. [Selten] sind so viele Leute gekommen  
Seldom are so many people come
- c. Der Atomphysiker hat das Buch wieder mal [nicht aufmerksam] gelesen  
The nuclear physicist has the book once again not attentively read

Note finally that referentiality is a semantic and not a syntactic notion. Therefore, the central part of Haider's argumentation concerns semantics. It is the semantic status of the reflexive

that is responsible for the differences mentioned above. So far we saw that a syntactic distinction between argument and adjunct reflexives is not sufficient to explain the differences between (14) on the one hand and (15) and (16) on the other. In the remainder of this chapter we argue that it is also not necessary. We follow Fagan's (1992) idea that the difference between these two types of the accusative reflexive pronoun must be explained in semantics rather than in syntax. This issue will be investigated in the following subsections in more detail. We illustrated how the differences between the argument and non-argument reflexive can be derived from independently motivated theories of coordination, focus, and fronting. The following table, which is partly taken from Haider (1982), summarizes the empirical facts and gives an overview of the structure of the following discussion.

example	discussion/topic	argument reflexive	non-argument reflexive
coordination (a)	4.2.1 coordination	yes	no
narrow focus (b)	4.2.2 focus	yes	no
focus particles (c)		yes	no
contrastive negation (d)		yes	no
substitution (e)		yes	no
questionability (f)		yes	no
fronting ('topicalization') (g)	4.2.3 fronting	yes	no

#### 4.2.1 Coordination

We repeat the relevant examples from (14), (15) and (16) that illustrate the contrast between the argument and the non-argument reflexive at the beginning of each subsection. (14.a) and (15.a), repeated as (19.a and b), show that only the argument reflexive can be coordinated.

- (19) a. Otto wäscht sich und seine Freunde (argument-reflexive)  
 Otto washes RP and his friends
- b. \*Das Buch verkauft sich und seinen Autor gut (non-argument reflexive)  
 The book sells RP and his author well
- c. \*Die Tür öffnet sich und das Fenster (non-argument reflexive)  
 The door opens RP and the window

The intuition behind Haider's explanation of the ungrammaticality of (19.b) and (19.c) seems to be the following: only syntactically and semantically identical constituents can be coordinated. At first sight one could argue that a reflexive pronoun that is conjoined with another ('referential') NP must also receive a 'referential' interpretation, because both parts of the conjunction are interpreted alike. In (19.b) and (19.c) the second part of the coordination is a referential NP that must be linked to the second argument of the verb (i.e. must be assigned a theta-role). Therefore the first part of the conjunction (i.e. the reflexive pronoun) must also be linked to the second argument variable. But this is only possible for argument reflexives. Therefore the second and the third sentence in (19) are only grammatical if they contain an argument reflexive. Note, however, that in this case the interpretation is nonsense. This analysis is in principle correct but it does not explain why sentence (20.a) below is also ungrammatical. As opposed to the corresponding sentence in (19.c), sentence (20.a) does not involve coordination of two NPs but of two sentences one of which contains a gap in the position of the verb. (20.b) is a similar example and the ungrammaticality of both examples might be re-

lated to a zeugma-effect, which is illustrated in example (20.c) (cf. Bierwisch 1983: 92f.). Hence, we are first have to answer the question what semantically ‘identical’ exactly mean?  
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- (20) a. \*Hans öffnet das Fenster und die Tür sich  
Hans opens the window and the door RP  
b. \*Maria trinkt ein großes Bier und Peter den Hans unter den Tisch  
Maria drinks a big beer and Peter the Hans under the table  
c. ???Die Schule bekam einen neuen Lehrer und ein Flachdach  
The school got a new teacher and a flat roof

Consider example (20.b) first. *Trinken* (‘drink’) is interpreted differently in each conjunct. In the second conjunct *trinken* does not mean that Peter is drinking something, i.e. *Hans*, (this might only be possible if *Hans* is a liquid). The resultative construction in the second conjunct means that Peter and Hans are drinking alcohol and as a result Hans ends up under the table. In the first conjunct *trinken* is interpreted as a simple two-place verb, i.e. it means that Maria is drinking a big beer. Similarly, (20.c) involves two different specifications of the concept *Schule* (‘school’). In the first conjunct the word *Schule* means an ‘institution’, whereas in the second conjunct it means a ‘building’ (cf. Nunberg 1979, Bierwisch 1983 and Dölling 1992a/b on the concept of polysemy and lexical underspecification).

In the following discussion we refer to Wilder (1994 and 1995), who offers a unified analysis of coordination and ellipsis. He argues that many restrictions on coordination are syntactic. We choose this analysis for two reasons: first, it allows a unified analysis of (19.c) and (20.a); second, we want to illustrate that our main proposal can also be integrated in syntactic oriented approaches to coordination. Wilder analyses coordination as an application of forward and/or backward deletion. This is illustrated in (21) for forward (*he*) and backward (*the newspaper*) deletion (the examples in (21) and (22) are from Wilder 1995).

- (21) a. He bought and read the newspaper  
b. [He bought ~~the newspaper~~] and [~~he~~ read the newspaper]

According to Wilder, forward and backward deletion are subject to different restrictions in English. Whereas backward deletion (BWD) affects only right-peripheral material and is licensed at PF, forward deletion (FWD) dependencies are licensed at LF and the deleted material must occur left-peripheral in the conjuncts. Therefore, only backward deleted material must satisfy a condition on form-identity at PF:<sup>138</sup>

- (22) a. I am drinking beer and John \_\_\_ wine (FWD: am>is)  
b. \*John said that I \_\_\_\_\_ and  
Mary said that she is the best swimmer (\*BWD: am>is)  
c. John said that I \_\_\_\_\_ and  
Mary said that she was the best swimmer (BWD: was>was)

<sup>137</sup> Sentences like (i) might be an example for syntactically asymmetric coordination. In the following discussion we are mainly dealing with symmetric coordination and the problem of semantic ‘identity’.

(i) Gestern ging der Jäger in den Wald und schoß den Hasen  
Yesterday went a hunter in the forest and shot a hare

<sup>138</sup> For details see Wilder (1995: 287f.).

These constraints postulate a certain asymmetry between BWD and FWD. In FWD we expect strict LF identity, i.e. both the deleted element and its antecedent receive exactly the same interpretation. As opposed to FWD, BWD should allow the gap and its antecedent to receive different interpretations at LF. The following (weak) contrast seems to confirm this for English.<sup>139</sup>

- (23) a. ??At the present the project managers, but in the past the executive directors, set the research priorities  
 a.' \* (as for our research properties...) project managers set them in the past and executive directors at the present

The situation is less clear in German. For most native speakers, the BWD in (24.a) is as ungrammatical as the corresponding FWD in (24.b). There is, however, a clear contrast between (24.a) and (24.b) on the one hand and (24.c) on the other. Although the first two examples might not be totally ungrammatical, they are both much worse than the third one, which is perfectly grammatical. Only in (24.c) the antecedent and the gap receive exactly the same interpretation.

- (24) a. \*?Für diese Spedition fahren viele \_\_\_ und Maria plagen einige Laster  
 For this forwarding agency drive many trucks and Maria is-troubled-by some vices  
 b. \*?Viele Laster fahren für die Spedition und \_\_\_ plagen Maria  
Many trucks drive for this forwarding agency and many vices worry Maria  
 c. Peter plagen viele \_\_\_ und Maria wenige Laster  
 Peter is-troubled-by many vices and Mary is-troubled-by few vices

Speakers have a clear preference to give *Laster* (either 'truck' or 'vice') the same interpretation in both conjuncts. The situation is similar in (20.a) and (20.b). We try to interpret the verb *drink* in the second conjunct also as an action of putting some liquid in one's mouth and swallowing this liquid because this is the interpretation the verb receives in the first conjunct. But this interpretation does not make sense in the second conjunct.<sup>140</sup> In German LF-identity

<sup>139</sup> Thanks to Chris Wilder for drawing my attention to this point. Example (23.a) is from Pullum and Zwicky (1986), the *Laster*-example in (24) is due to Hans-Martin Gärtner. This subtle contrast might be related to processing: in FWD, the interpretation of the deleted element is perhaps fixed as soon as the parser processes the antecedent. But this is just speculation, so we leave this point open.

<sup>140</sup> Reinterpretation seems possible to a certain degree which depends on various additional conditions. Various factors influence this.

a) syntactic parallelism facilitates reinterpretation:

- (i) ??Peter setzt sich auf \_\_\_ und Hans geht in die Bank  
 Peter sits down on the bench and the Hans goes into the bank  
 (ii) \*Peter setzt sich auf \_\_\_ und Hans beauftragt mit dieser Angelegenheit eine Bank  
 Peter sits down on the bench and Hans instruct with this affair a bank

b) reinterpretation seems to be more difficult, if the homonymous elements cannot be reduced to the same underspecified lexical entry.

c) reinterpretation is easier if both elements (nouns or verbs) belong to the same semantic class. Coordination of a two-place predicates with e.g. an homonymous one-place predicate is much worse than coordination of two homonymous two-place predicates:

- (iii) ??Ich weiß nicht, ob ich zu \_\_\_ oder aufhören soll (Chris Wilder, p.c.)  
 I don't know, if I should listen-to (hören-zu) or stop (hören-auf)  
 (iv) \*Er hat das Buch \_\_\_ und die ganze Nacht gelesen  
He read the book and he read the whole night

is at least the highly preferred option for the interpretation of the deleted material and its antecedent in both FWD and BWD.<sup>141</sup> With this in mind we come back to the problem under discussion. In (25) we give further examples parallel to (20.a). In all examples the interpretation of the gap and its antecedent differ.<sup>142</sup>

- (25) a. \*Peter loaded sand on the wagon and \_\_\_\_ the truck (with hay)  
 b. \*Der Wagen brummt und \_\_\_\_ um die Ecke  
     The car growl and the car growl around the corner

In (25.a) the second part of the coordination can only mean that Peter loaded sand on the truck, too. It cannot mean that Peter loaded the truck. It is impossible to take a different variant of the locative alternation verb *load* for each conjunct. The same effect can be observed in (25.b). The verb *brummen* ('growl') is either a one-place predicate with the meaning 'to produce a sound' or a verb of motion selecting a directional PP.<sup>143</sup> The one-place predicate is unergative and the two-place predicate is unaccusative. Hence, not only the verb but also the subject receives a different interpretation (or theta-role) in each conjunct. (25.b) is in conflict with the condition that the deleted copy and its antecedent must receive exactly the same interpretation in both conjuncts. The interpretations of the verb are illustrated in (26.I) for the first and (26.II) for the second conjunct.

- (26) a. [<sub>CP</sub> Der Wagen [<sub>C°</sub> brummt] [<sub>VP</sub> ]] und  
       [<sub>CP</sub> ~~Der Wagen~~ [<sub>C°</sub> ~~brummt~~] [<sub>VP</sub> die Straße runter]]  
 I. B<sub>1</sub> < w > (unergative)  
 II. B<sub>2</sub> << w >> & around-the-corner < w > (unaccusative)

Coordination of a non-argument reflexive with some other DP leads to the same conflict. In (27) we repeat the corresponding examples from (15) and (16). (27.a') and (27.b') is a simplified semantic representation ('b', 'a', and 't' stand for *Buch*, *Autor*, and *Tür*; 'Op' stands for the semantic operator that binds the implicit argument in middle constructions, cf. chapter 7.)

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d) Likewise the copy-antecedent relation can be more easily established when the two homonymous nouns belong to the same semantic sort. Compare (24) above with (i). *Bank* refers to bench and bank (building) respectively in the first and second conjunct. In both interpretations it refers to a physical object. On the other hand, *Laster* in (24) refers to a physical object in the first conjunct (truck) and to a moral idea in the second one.

The problem of reinterpretation requires, of course, further research.

<sup>141</sup> The following example might be evidence for LF-identity of the copy and its antecedent. Although (i) does not involve PF-deletion, the same kind of zeugma-effect can be still observed. Therefore, this effect might be a matter of further conceptual inference.

- (i) <sup>??</sup>Der Krug und der Jüngling, die brechen nach dem Trunke  
 The mug and the youth, they break/vomit after the drink

<sup>142</sup> Sentence (25.b) gets grammatical if we use *und zwar* (namely) instead of *und*. In this case, the second conjunct does not describe an independent event but restricts the meaning of the first conjunct. We ignore *und zwar* in the following discussion.

<sup>143</sup> Cf. Jackendoff (1990), Levin (1991) and Levin and Rappaport Hovav (1991) on this issue. We do not want to discuss whether this kind of verbal polysemy must be represented in the lexicon (e.g. by so-called 'lexical extension' or 'lexical subordination') or whether it is another case of underspecification.

- (27) a. \*Das Buch verkauft sich und ~~das Buch verkauft~~ seinen Autor gut  
 I. V <(Op x)< b >>  
 II. V < b < a >>  
 b. \*Die Tür öffnet sich und ~~die Tür öffnet~~ das Fenster  
 I. O << t >>  
 II. O < t < f >>

We argue in the next chapter that the non-argument reflexive is not linked to an argument variable of the verb. But a verb that does not link its first argument to syntax cannot be the antecedent of a verb that links both the first and the second argument. Moreover, the subjects in (27.a) and (27.b) are linked to different arguments of the verb in each conjunct. In the first conjunct the subject is linked to the second argument of the verb, whereas it is linked to first argument in the second conjunct. Hence, the coordination in (27) does not only involve two different interpretations for the verb but also for the subject. LF-identity between the deleted material and its antecedent is impossible in both sentences in (27). We could either choose the anticausative or middle interpretation (first conjunct) or the reflexive interpretation (second conjunct). If we chose the former, the accusative object in the second conjunct could not be linked to a semantic argument.<sup>144</sup> But if we chose the latter, both the subject and the reflexive pronoun must also be linked to the first and second argument position in the first conjunct. In this case the first conjunct would mean that the book is selling itself and that the door is opening itself. These interpretations are, of course, nonsense. Even if we permit two different interpretations of the verb in both conjuncts (i.e. the middle or anticausative interpretation in the first and the reflexive interpretation in the second conjunct) the meaning of the second conjunct would still be nonsense since the subjects *das Buch* ('the book') and *die Tür* ('the door') are linked to the first argument of the verb. Note that coordination of an active with a passive verb also leads to ungrammaticality.<sup>145</sup>

- (28) a. \*Das Buch wurde \_\_\_\_ und Hans hat gelesen  
 The book was read and Hans has read  
 b. \*Die Nachrichten wurden \_\_\_\_ und Hans hat die Zeitung gelesen  
 The news were read and Hans has the book read

Coordination of the argument reflexive with another argument DP is perfectly grammatical (cf. 14.a repeated below as 29). In (29) the verb *waschen* ('wash') receives identical interpretations in both conjuncts, as can be seen in (29.I) and (29.II).

- (29) a. Otto wäscht sich und \_\_\_\_ seine Freunde  
Otto washes RP (i.e. himself) and Otto washes his friends  
 I. V < o < o >>  
 II. V < o < f >>

According to Wilder's analysis, the traditional NP-coordination in (27) involves deletion of the verb and the subject. We argued that the interpretation of both the verb and the subject is

<sup>144</sup> We argue below that all syntactic arguments that are specified as [+R] must be linked to a semantic argument. The only element that is not inherently specified as [+R] is the reflexive pronoun. The impersonal subject must also not be linked to a semantic argument, although it is specified as [+R], cf. chapter 5 for the principles of argument linking in German.

<sup>145</sup> Examples like (28) become slightly better with narrow focus on the auxiliary.  
 (i) ??Das Buch WURDE und Hans HAT gelesen

different in each conjunct. Now we can come back to sentence (20.a), repeated as (30). Again the deleted material (the verb *öffnen* ('open')) and its antecedent are not LF-identical. Only in the first conjunct both semantic arguments are linked to syntax. *Öffnen* in the second conjunct is again anticausative and the subject is linked to its internal argument position. The non-argument reflexive is not linked to an argument of the verb.

- (30) \*Hans öffnet das Fenster und die Tür \_\_\_\_\_ sich  
Hans opens the window the door and opens RP

The same difference can be found in sentence (31), which corresponds to (27.a). The second conjunct is a middle construction, the subject of which is again linked to the second argument of the verb *verkaufen* ('sell').<sup>146</sup>

- (31) \*Der Autor hat seinen Namen \_\_\_\_\_ und das Buch sich gut verkauft  
His name has the author well sold and the book RP well sold

We conclude that the ungrammaticality of example (19.b) and (19.c) can be derived from the semantics of the non-argument reflexive (to which we turn in chapter 5).

#### 4.2.2 Focus

We subsume the examples in (14.-16.b) to (14.-16.f) under the term focus because they are all more or less connected to this phenomenon, as will be illustrated in this subsection. Recent theories of focus divide the semantic representation of a sentence into two parts. The first part corresponds to the focus of the sentence, the second part to the background. The focus-background structure of a sentence can be represented as an ordered pair in semantics (for the structured meaning approach see von Stechow 1991, Jacobs 1991, or Krifka 1992; for alternative semantics see Rooth 1985 and 1992 or Büring 1995; cf. also Schwarzschild 1999). We introduce the main concepts of this theory of focus in a nutshell before we apply it to the interpretation of argument and non-argument reflexives.

Consider first the following example in (32), which is taken from Büring (1995). The DP *the baseball* is the focus of the sentence. It is dominated by the syntactic feature [F] for focus. The head-noun *baseball* receives a pitch accent at PF and the whole DP is translated as focus at LF.<sup>147, 148</sup>

<sup>146</sup> The examples in (30) and (31) seem to be slightly better than the corresponding examples in (27). As opposed to (27), the sentences in (30) and (31) contain two different subjects, one for each conjunct. Therefore reinterpretation is only possible in (30) and (31). Neither conjunct in (27.a) and (27.b) can receive a meaningful interpretation under reinterpretation. A similar effect can be observed if we coordinate two reflexive verbs, one with an argument reflexive (*rasieren* – 'shave') and one with a non-argument reflexive (*schämen* – 'be ashamed').

(i) <sup>???</sup>Peter schämt und rasiert sich  
Peter is-ashamed and shaves RP

<sup>147</sup> On the assignment of focus accents see Jacobs 1992 and 1993 or Féry 1993, on focus projection see Büring 1995 or Jacobs 1993.

<sup>148</sup> Büring translates the NP *the baseball* as an iota expression (i.e. an individual type variable) instead of a generalized quantifier to simplify the illustration.

- (32) a. John throw [the BASEball]<sub>F</sub>  
 b. [ $\lambda x$ . threw (John, x)] ( $\iota z$ . baseball (z))  
 c. Background:  $\lambda x$ . threw (John, x)  
 d.  $\iota z$ . baseball (z)

The background (32.c) results from lambda abstraction. The focus of a clause is replaced by a variable bound by a lambda-operator. The semantic background (or according to Rooth (1992) the focus semantic value of a sentence or constituent) is a set of alternatives to the ordinary semantic value of the sentence. (32.c) ( $\lambda x$ . threw (John, x)') is the set of worlds where John threw some x and x is an alternative to the focus (32.d).

- (33) {John threw the baseball, John threw the football, John threw his pencil, ...}

Applying the focus to the background will give us the ordinary meaning of the sentence: the set of worlds where John threw the baseball. The focus in (32) is called free focus, i.e. it is not bound by a focus sensitive operator. Jacobs (1984 and 1988) assumes that free focus is bound by an operator as well, namely the illocutionary operator of the clause, which is the assertion operator ASSERT in (32.b). This is illustrated in (34).

- (34) ASSERT ( $\langle \lambda x$ . threw (John, x), ( $\iota z$ . baseball (z)))

What is the meaning of the ASSERT-operator? Assertion can be seen as a modification of the 'shared knowledge' of the participants in the conversation, i.e. the common ground CG (cf. Stalnaker 1978). ASSERT( $\langle \alpha(\beta) \rangle$ ) maps a common ground CG to a common ground CG'. In a simplistic version the CG is a set of possible worlds.<sup>149</sup> Adding a new proposition (which is also as a set of possible worlds) to CG changes CG into CG'. CG' is the intersection of CG and our actual proposition (32) (i.e. the possible worlds that make this proposition true).

- (35)  $CG' = CG \cap \lambda x$ . threw (John, x), ( $\iota z$ . baseball (z))

We can state the felicity conditions for the ASSERT-operator now (cf. Krifka 1992: 20 and Büring 1995: 23f.)  $\langle \alpha(\beta) \rangle$  is the focus-background structure with  $\alpha$  the background and  $\beta$  the focus.<sup>150</sup>

- (36) a.  $CG' \neq CG$  (informativity)  
 b.  $CG' \neq \emptyset$  (compatibility)  
 c. There are X, with  $X \approx \beta$  and  $X \neq \beta$ , such that  $\alpha(X)$  could have been asserted with respect to CG: i.e. this assertion would be informative (36.a.) and compatible (36.b) and would have yielded a different output context CG'' with  $CG' \neq CG''$ .

According to (36.a), the assertion of a new proposition with respect to CG must provide new information. (36.b) means that the truth of  $\alpha(\beta)$  must not be excluded by CG, i.e. that there is at least one possible world that makes  $\alpha(\beta)$  true and is part of CG or, to put it the other way round, CG', the intersection of CG and the proposition asserted by the speaker must not be

<sup>149</sup> In fact, the situation is more complex. Among other things we need a representation of the hearer's assumptions of the speaker's knowledge and vice versa. But these refinements are irrelevant for the following discussion. On the term common ground see e.g. Stalnaker (1978) and especially Zeevat (1997) or Kruijff-Korbayová and Hajicová (1997) for the similar term *stock of shared knowledge*.

<sup>150</sup> If we assume that the semantic background (or semantic focus value) corresponds to the actual common ground CG, then condition (36.c) can be derived from (36.a). There must be at least one alternative X to the focus that fulfills (36.c), otherwise  $CG' = CG$  (cf. Büring 1995: 32).

empty. The last condition (36.c) states that there are pragmatically plausible and contextually salient alternatives to the interpretation of the focus. Moreover, these alternatives must be of the same logical type and sort as the focus. This brief outline of focus theory has prepared the ground for the analysis of the interaction of argument and non-argument reflexives and focus. In the following we show that the ungrammaticality of focus on non-argument reflexives can be derived from this theory of focus. We start off with narrow focus.

#### 4.2.2.1 Narrow focus

Consider first the sentences in (14.b), (15.b) and (16.b), repeated below as (37.a-c). In all examples *sich* is the focus of the sentence (indicated by the labelled brackets  $[ ]_F$ ):

- (37) a. Otto wäscht [*SICH/sich SELBST*]<sub>F</sub>  
 b. \*Das Buch verkauft [*SICH/sich SELBST*]<sub>F</sub> gut  
 c. \*Die Tür öffnet [*SICH/sich SELBST*]<sub>F</sub>

We put *sich selbst* aside for the moment and only consider the stressed reflexive pronoun *SICH*.<sup>151</sup> Why can the non-argument reflexive not be the focus of a sentence. Recall that the non-argument reflexive does not introduce an argument variable into the semantic representation of the sentence (as opposed to argument reflexives and other nominal expressions, cf. chapter 5). Therefore, replacement of and lambda-abstraction over an argument variable are impossible and no focus-background-structure can be generated for the sentences in (37.b) and (37.c). Both sentences fail to meet condition (36.c). The argument reflexive in (37.a), on the other hand, is linked to the second argument variable. Hence, this expression can be replaced by a variable and lambda-abstraction over this variable is possible. Plausible alternatives are also at hand as can be seen in (38).<sup>152</sup>

- (38) a. Wen hat Otto gewaschen?  
 b. Otto hat [*SICH*]<sub>F</sub> gewaschen (... und nicht Maria)  
 Otto has RP (i.e. himself) washed (... and not Maria)  
 c. ASSERT ( $\langle \lambda x. \text{wash}(o, x), o \rangle$ )

Syntactic expletives, which are also not linked to a semantic argument, equal non-argument reflexives, cf. (39.a) Narrow focus is again impossible. Furthermore, narrow focus on constituents that do not have plausible type-equivalent alternatives (condition 36.c) is excluded as well (cf. 39.b). Note that every element that is (i) represented in the semantic form and (ii) has at least one plausible alternative can be the focus of the clause, no matter whether it is an A- or A'-element in syntax, cf. e.g. (39.c). It must only fulfill condition 36.c.

<sup>151</sup> It is not important for the ongoing presentation whether this focus is presentational or contrastive. Note that weak pronouns like *sich* can be stressed in German. An alternative to focus on the reflexive pronoun itself (with nuclear stress on *sich*) is the complex form *sich SELBST* with stress on the adnominal particle *selbst* (we discuss *sich SELBST* right away).

<sup>152</sup> The semantic representation in (38.c) is an oversimplification. Actually, possible alternatives to *sich* (*Otto*) are not only elements of type  $\langle e \rangle$  but also generalized quantifiers of type  $\langle \langle e, t \rangle t \rangle$ . If the alternatives are required to be type-equivalent, pronouns and argument reflexives must be translated as generalized quantifiers, too.

- (39) a. \*Bei dieser Sache handelt [ES]<sub>F</sub> sich um eine ernste Angelegenheit  
 In this case concerns it (i.e. it concerns) RP a serious matter  
 b. ??Ich habe den Brief [AN]<sub>F</sub> den Vermieter geschickt  
 I have the letter at (i.e. to) the landlord sent  
 c. Ich lege das Buch [UNTER]<sub>F</sub> den Tisch und nicht [AUF, NEBEN, ...]<sub>F</sub> den Tisch  
 I put the book under the table and not (on, next to, ...) the table

Unlike (39.c), sentence (39.b) contains no alternatives to the focused preposition. The only plausible alternative is *zu* ('to'). This preposition, though, selects a dative DP (*dem Vermieter*), so that it is ungrammatical in this syntactic context.

#### 4.2.2.2 Focus particles

The analysis of narrow focus can also be applied to the examples with focus particles (14.c, 15.c and 16.c). The relevant examples are repeated in (40.a-c).

- (40) a. Otto wäscht nur/sogar sich  
 b. \*Das Buch kauft nur/sogar sich gut  
 c. \*Die Tür öffnet nur/sogar sich

Jackendoff (1972), Jacobs (1983), or Krifka (1992) among many others analyze focus particles like *nur* ('only') or *sogar* ('even') as focus sensitive operators. Focus sensitive operators, like the ASSERT operator mentioned above, bind the focus of a sentence/constituent. Example (41) illustrates this for *nur* ('only').

- (41) a. Maria hat nur [HANS]<sub>F</sub> geliebt  
 b. ONLY ( $\langle \lambda x. \text{love}(m, x), h \rangle$ )

The meaning of ONLY can be outlined as follows:<sup>153</sup> the background is applied to the focus *Hans* and to no other *X*, with  $X \approx \text{Hans}$  and  $X \neq \text{Hans}$ . The scalar focus operator *sogar* ('even') means that the focus  $\beta$  is ranked lower than every alternative *X*, with  $X \approx \beta$  and  $X \neq \beta$  on a scale of probability determined by the background. Furthermore, *sogar* implies that the respective focus alternatives make the preposition also true. We do not want to go into detail here. The crucial point has already been mentioned. Focus particles are focus sensitive operators that bind the focus. But as we have seen above binding of a focused non-argument reflexive is impossible because no focus-background structure can be generated in this case.

#### 4.2.2.3 Contrastive negation and substitution

The relevant examples for contrastive negation (14.d, 15.d and 16.d) and substitution (14.e, 15.e and 16.e) are repeated in (42.a-c) and (43.a-c) respectively. Both require a semantic representation of the negated or replaced element, too.

- (42) a. Otto wäscht freitags nicht SICH (sondern HANS)  
 b. \*Das Buch verkauft nicht SICH gut (sondern...)  
 c. \*Die Tür öffnet nicht SICH (sondern...)

<sup>153</sup> There is a wide range of investigations in the semantics of particles like *only* (cf. Horn 1996 for *only* and the references cited there).

- (43) a. Otto wäscht sich/Maria  
 b. Das Buch verkauft sich/\*seinen Autor gut  
 c. Die Tür öffnet sich/\*das Fenster

If we replace the non-argument reflexive by some other accusative DP, nothing happens in syntax. We have yet another transitive sentence:

- (44) Die Tür öffnet sich    Die Tür öffnet Peter

But in semantics things change. We can substitute one element for another element of the same logical type only if this element is present in the semantic representation. In the semantic representation of (44) we cannot replace *sich* by the DP *Peter* because *sich* is not present there at all whereas the DP *Peter* is translated as a generalized quantifier or an individual constant. This explanation is parallel to the impossibility of non-argument reflexives to be focus discussed above. The background results from replacement of the actual focus by a variable bound by a lambda-operator. Substitution of a variable (or of a constant) for another type-equivalent element in the semantic representation is only possible if the element to be replaced is present.

According to Jacobs (1982/1991), contrastive negation ('fokussierende Negation') in German can be analysed parallel to focus particles. The negation attracts the focus  $\beta$ . Furthermore, there is an implication that an alternative  $X$  exists, with  $X$  subject to the condition in (36.c) that requires: (i)  $X \approx \beta$ , (ii)  $X \neq \beta$ , and (iii)  $X$  makes the proposition  $\alpha(X)$  true. We need again a partition of the semantic representation into focus and background which is again impossible with focussed non-argument reflexives.

#### 4.2.2.4 Questioning

So far two examples related to focus are still unexplained: questions and *selbst*. We will turn to questions first. Consider the examples (14.f, 15.f and 16.f), which we repeat in (45.a-c):

- (45) a. Wen wäscht Otto? sich!  
 b. \*Wen hat das Buch gut verkauft? sich!  
 c. \*Wen öffnet die Tür? sich!

Semantically questions can be analysed as a set of possible answers (cf. e.g. Karttunen 1977).

- (46) a. Wen hat Hans gewaschen?  
 b.  $\lambda p. \exists x [\text{person}(x) \wedge p = \text{wash}(h, x)]$   
 c. {Hans hat Peter gewaschen, Hans hat Maria gewaschen, Hans hat ihn gewaschen, Hans hat sich gewaschen, ...}

Hence, the meaning of a question corresponds to the background of the respective answer and the *wh*-word corresponds to the focus of this answer.<sup>154</sup> Both, the meaning of a question and the background of the answer can be analyzed as a set of propositions (or possible worlds, compare (33) with (46.c)). A question characterizes the actual common ground ( $\lambda p. \exists x [\text{person}(x) \wedge p = \text{wash}(h, x)] \cap \text{CG} = \text{CG}$ ). Every possible answer  $p$  to a question  $Q$  must be informative ( $p \cap \text{CG} \neq \text{CG}$ ) and compatible ( $p \cap \text{CG} \neq \emptyset$ ), for details see Büring (1995: 32f.).

<sup>154</sup> We omit presuppositions and further semantic issues related to questions.

According to Büring (p. 35), a sentence S can be uttered as an answer to a question Q given a common ground CG if the focus semantic value (or background) of S is identical to the meaning of the question Q. Hence, the ungrammaticality of (45.b) and (45.c) follows. We have already seen that non-argument reflexives cannot be focused because no corresponding focus-background structure (or focus semantic value) can be generated. But the focus semantic value involves a second argument. This is, however, only possible if the reflexive pronoun is linked to the second argument (47.b), which is only possible for argument reflexives. The argument reflexive interpretation in (47) is, of course, nonsense, because doors usually do not open something else.

- (47) a. Wen/was hat die Tür geöffnet?  
 b.  $\lambda p. \exists x [\text{person/thing } (x) \wedge p = \text{open } (t, x)]$   
 c. {Die Tür hat X geöffnet, die Tür hat Y geöffnet, ...}  
 d. Background:  $\lambda y (\text{open } (t, y))$

#### 4.2.2.5 Selbst

Finally we turn to the analysis of *selbst*. We already saw that the non-argument reflexive cannot be focused and/or modified by *selbst*.

- (48) a. Otto wäscht [SICH/sich SELBST]<sub>F</sub>  
 b. \*Das Buch verkauft [SICH/sich SELBST]<sub>F</sub> gut  
 c. \*Die Tür öffnet [SICH/sich SELBST]<sub>F</sub>

German does not distinguish between weak and strong reflexive pronouns. *Sich selbst* is not the strong counterpart of a weak form *sich*. The simple form *sich* with a pitch accent and the complex form *sich selbst* are almost identical in German and can be used in the same contexts. In this respect German differs from so-called two-form languages (cf. section 2.3 and chapter 5). The reflexive pronouns *zich* and *zichzelf* Dutch, for example, have different syntactic distribution. Only the strong form *zichzelf* can be focused (i.e. assigned a pitch accent) whereas the weak form *zich* can only be used with inherent reflexives, anticausatives and verbs that are likely to be reflexive as, for example, *wash*. König and Siemund (1997: 4) argue that the complex form *sich selbst* in German consists of two independent parts: the reflexive pronoun *sich* and the adnominal focus particle *selbst*. They distinguish between four different types of the particle *selbst*:

- (49) a. Selbst RIEsen haben einmal klein angefangen (scalar focus particle)  
 RP (i.e. even) giants have once small begun  
 b. Der Minister SELBST war in den Skandal verwickelt (adnominal, centering)  
 The minister RP (i.e. himself) was in the scandal mixed  
 up  
 c. Der Minister war SELBST in den Skandal verwickelt (adverbial, inclusive)  
 The minister was RP (i.e. also) in the scandal mixed up  
 d. Der Minister löste den Skandal SELBST aus (adverbial, exclusive)  
 The minister caused the scandal RP (personally) VERBAL-  
 PARTICLE

In (49.a) *selbst* is a scalar focus particle, whose meaning is very similar to that of the focus particle *sogar* ('even'). Like all scalar focus particles, *selbst* bears no accent, precedes its fo-

cus, and is preferably adjacent to it. As opposed to the focus particle *selbst* in (49.b), adnominal and adverbial *selbst* in (49.b), (49.c), and (49.d) must be stressed.<sup>155</sup> Adnominal *selbst* always adjoins to the right of the NP it modifies, cf. (49.b). This NP is the focus bound by the adnominal modifier. It is interpreted as the center with respect to the focus alternatives. In (49.c) and (49.d) *selbst* is an adverbial. These two uses of *selbst* are closely related but differ in their syntactic distribution and their semantics. The so-called inclusive *selbst* tends to precede the object in the middle field, whereas exclusive *selbst* preferably follows the object.<sup>156</sup> Both types of adverbial *selbst* are usually subject-oriented. However, inclusive *selbst* can also modify dative or an accusative objects that precede the subject in unmarked word order (or on the thematic hierarchy) and exclusive *selbst* can modify a *by*-phrase in the passive.<sup>157</sup> Semantically the inclusive adverbial can be compared to the scalar focus particle and the exclusive adverbial to the adnominal *selbst* (although the exclusive *selbst* does not presuppose that the focus is the center with respect to the focus alternatives).<sup>158</sup> The following table summarizes the relevant properties of the four different types of *selbst* ('among others' stands for the presupposition that is triggered by *selbst*).

<sup>155</sup> Focus particles seem to receive the pitch accent when they follow their focus. This correlation between the syntactic position and stress assignment also applies to the focus particle *allein* (cf. Primus 1992:70 and König and Siemund 1997:8).

- (i) In Hamburg **alLEIN** gibt es riesige ProBLEme
- (ii) **Allein** in HAMburg gibt es riesige ProBLEme

<sup>156</sup> In the following transitive clause, there is a strong preference that the first *selbst* that precedes the indefinite object is exclusive and the second one is inclusive.

- (i) Ich habe (selbst) einen Aufsatz (selbst) gelesen  
I have (SELBST) a paper (SELBST) gelesen

<sup>157</sup> Experiencer verbs are typical examples for dative and accusative objects that can precede the subject. In this case inclusive *selbst* does not modify the subject but the object, example (i) is from König and Siemund (1996:11). For unmarked word order see also section 4.1. above and the references cited there.

- (i) Mir ist dieser Kerl selbst nicht geheuer  
Me-DAT is this guy SELBST not sympathetic  
'Even to me this guy is eerie'
- (ii) Mich interessiert diese Frage selbst  
Me-ACC interests this question SELBST  
'I am interested in this question myself'

<sup>158</sup> The interpretations of inclusive and exclusive *selbst* are highly context dependent. The inclusive interpretation requires events that are repeatable (like e.g. *read a book* vs. *write the book*) or states that are not exclusive (like e.g. *speak a language*). The exclusive reading only makes sense if something cannot only be done on one's own but also with other people's help. Furthermore, minimal pairs like (i) show that there is a certain interaction between topic/focus and the inclusive/exclusive reading: the exclusive reading is preferred if the NP is topic (cf. Jäger 1995), and the inclusive one is favored if the NP is focused.

- (i) Peter hat selbst ein Buch gelesen (inclusive)  
Peter has himself a book read
- (ii) Peter hat ein Buch selbst gelesen (exclusive)  
Peter has a book himself read

Syntactically, both the inclusive and the exclusive *selbst* can be analysed as VP-adverbials. The semantic analysis seems to be much more complicated. It is not clear yet whether both readings can possibly be reduced to one basic (possibly underspecified) lexical entry (cf. Primus 1992 and especially König and Siemund 1997:18f. for more details).

(50) (Ad)nominal and adverbial *selbst*

	scalar f.p.	adnominal	inclusive	exclusive
accent	no	yes	yes	yes
post XP	yes	no	no	no
adverbial	yes <sup>159</sup>	no	yes	yes
‘among others’	yes	no	yes	no

It is an interesting issue whether all occurrences of *selbst* can be reduced to one underlying lexical entry and whether they all belong to the same syntactic category (as e.g. proposed in Primus 1992). However, our main interest is the interaction of *selbst* with non-argument reflexives. Both the scalar focus particle and the adnominal *selbst* cannot modify the non-argument reflexive. Although inclusive and exclusive adverbial *selbst* is grammatical in sentences that contain a non-argument reflexive it does not interact with the non-argument reflexive but with the subject of the sentence. We underline the constituent, inclusive and exclusive *selbst* modifies in these examples. In (59.f) the exclusive *selbst* applies to the implicit argument.

- (51) a. \*Die Tür hat [selbst SICH] geöffnet (scalar f.p.)  
 b. \*Die Tür hat [sich SELBST] geöffnet (adnominal)  
 The door opens even itself (a)/ITSELF (b)  
 c. Peter schämt sich doch SELBST (inclusive)  
 Peter is-ashamed PARTICLE himself  
 d. (I do not need your modern off-road vehicles for this journey to the North Cape...)  
Mein Auto fährt sich auf solchen Straßen SELBST sehr gut (inclusive)  
 My car drives RP on that kind of street also very well  
 ‘My car drives on that kind of street very well, too’  
 e. ?Die Tür hat sich gerade eben SELBST geöffnet (exclusive)  
 The door has RP just now by itself opened  
 f. Schwierige Aufgaben lösen sich doch meistens SELBST am besten (exclusive)  
 Difficult exercises solve RP PARTICLE usually by oneself best

The explanation for (51.a) is straightforward. The semantic representation of the scalar focus particle is basically identical to that of other focus sensitive operators like *nur* (‘only’) or *even* (‘sogar’). The meaning of the focus operator *selbst* is almost equivalent to *even* (for differences in syntax and semantics see Primus 1992). Therefore, the explanation for the incompatibility between focus sensitive operators and non-argument reflexives can also be applied to this type of *selbst*. The explanation of (51.b) is also based on the theory of focus outlined above. Primus (1992) and König and Siemund (1997) argue that the adnominal *selbst* is a focus sensitive operator, too. According to Primus, adnominal *selbst* has also a scalar implication: the adjacent NP is ranked lower on a scale of likelihood determined by the rest of the sentence. Unlike the scalar focus particle, the adnominal *selbst* does not presuppose that (all/some/no) focus alternatives make the proposition also true. König and Siemund’s analysis

<sup>159</sup> Alternatively, focus particles can be analysed as cross-categorial operators (which might be subject to language-specific constraints), cf. König (1993) for an overview.

of adnominal *selbst* slightly diverge from that proposed by Primus. The focus is the centre and the alternatives make up the *periphery* or *entourage*.<sup>160</sup>

- (52) Peter hat [den Chef SELBST] gesprochen  
Peter has the boss RP (i.e. himself) talked

In (52) the likelihood for Peter to speak to the boss is ranked lower than the likelihood to speak to other contextually salient persons (e.g. the assistant, the secretary, ...). (52) implies that Peter was not expected to talk to the boss directly. This line of argumentation can be applied to reflexive pronouns, as can be seen in the following two examples.

- (53) a. Peter hat den [Präsidenten SELBST] im Fernsehen gesehen  
Peter has the president himself in the TV seen  
b. Peter hat [sich SELBST] im Fernsehen gesehen  
Peter has RP himself in the TV seen

The adnominal focus sensitive operator indicates in (53) that it is remarkable for Peter to see the president or his own self in the TV. This implication is also nicely illustrated by the following minimal pair that is taken from König and Siemund (1997: 28).

- (54) a. [Der Anführer SELBST] hat sich verraten  
The leader himself has RP (i.e. himself) betrayed  
b. Der Anführer hat [sich SELBST] verraten  
The leader has RP himself betrayed

By means of his function the leader is the centre of his gang. (54.a) implies that the most important or most clever and cautious person of the gang betrayed him- or herself. (54.b), on the other hand, sets the actual victim (the leader him- or herself) in contrast to other potential victims (the rest of the gang). (54.b) implies that it is noteworthy that the leader has betrayed him- or herself and not the rest of the gang, i.e. that it was a self-betrayal. The scalar implication of adnominal *selbst* is not always easy to make out, especially if it modifies a reflexive pronoun. In some of these examples *selbst* does not necessarily imply a ranking between the centre on the one hand and the alternatives on the other. In these cases reflexive + *selbst* is equivalent to a reflexive with narrow focus (example (55) is from Primus: 75):

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<sup>160</sup> Note that the following examples are sometimes ambiguous between the adnominal and the adverbial exclusive reading. We indicate the adnominal interpretation with brackets.

Adnominal *selbst* is restricted to persons that are in some sense central or important. The following examples show that modifying non-central persons with adnominal *selbst* does not make sense. It is difficult to establish a meaningful centre in (i) and (ii.a):

- (i) <sup>??</sup>Die Putzfrau SELBST hat unsere Wohnung geputzt  
The cleaning lady herself has our flat cleaned  
(ii) The bus had a bad accident ...  
a. <sup>??</sup>Die Fahrgäste SELBST ist ums Leben gekommen  
The passengers himself died  
b. Der Fahrer SELBST ist ums Leben gekommen  
The driver himself died

- (55) Maria kauft für die ganze Familie etwas Schönes, für Mutter und Brüderchen  
 Maria buys for the whole family something beautiful, for mother and brother  
 Pralinen, für Vater und [sich SELBST] Schnaps  
 chocolate, for father and herself liquor

Buying liquor for herself need not be more remarkable for Maria than buying liquor for her father, mother, or brother. This might be due to the fact that the reflexive pronoun and *selbst*, unlike some NP and *selbst*, seem to form an idiomatic unit. The fusion of (reflexive) pronouns and adnominal focus sensitive operators like *selbst* can be observed in the history of many languages.<sup>161</sup> The use of German *sich SELBST* as the focused counterpart of bare *sich* might be supported by the fact that reflexive pronouns tend to avoid heavy stress. Note finally that indefinites cannot be modified by adnominal *selbst*. It is impossible for indefinites to establish a centre and a periphery because they do not refer to an unique and specific individual.

- (56) a. \*[Wer SELBST] entging dem Gefängnis  
 Who -self escaped the prison  
 b. \*[Jemand SELBST] zeigte der Polizei ein Bild von Anna (Primus: 72)  
 Someone -self showed the police a picture of Anna  
 c. \*Mir hat gestern [einer SELBST] das Geld geklaut  
 Me has yesterday one -self the money stolen  
 d. \*Maria hat [einen Präsidenten SELBST] auf der Wahlveranstaltung gesehen  
 Maria has a president himself on the election rally seen

We conclude that both the adnominal and the prenominal focus particle *selbst* establish a set of semantic alternatives to the denotation of the focus, i.e. the NP they are adjoined to. This is again only possible for argument reflexives. Non-argument reflexives are correctly excluded in the middle construction (48.b) and the anticausative (48.c), (51.a), and (51.b) above. Many issues have been touched only in passing, but we hope that we convincingly argued that a (focus) semantic analysis of the examples discussed in this subsection is on the right track.

#### 4.2.3 Fronting

One issue is still unexplained. Besides their inability to be coordinated and focused, non-argument reflexives cannot be fronted either. The sentence-initial position is not simply a mirror image of the initial position of the middle field. In German various elements can occupy the sentence-initial position (CP, Spec in GB terminology). It is neither a pure topic- nor a pure focus position and neither topic nor focus must occupy this position. Elements that move to CP, Spec are subject to various conditions, that are necessary but not sufficient. These conditions mainly relate to information structuring and discourse semantics (cf. Gärtner and

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<sup>161</sup> Many languages have reflexive pronouns that incorporate a *selbst*-like element (e.g. English *him-/her-/itself* -pronoun and scalar expression -, Dutch *zichzelf* - anaphor and scalar expression - or Hungarian *maga*). These reflexive pronouns seem to have developed from a pronoun or anaphor and an adnominal scalar expression. The basis for this might have been predicates that favor a disjoint reference interpretation of the arguments over a coreference reading (i.e. the reflexive use is more remarkable than the non-reflexive use). In these contexts, scalar expressions seem to occur regularly together with pronouns or anaphora. In addition to this, this fusion leads to the disambiguation of the binding domains in languages like English. The pronoun *him* is subject only to Principle B while the reflexive pronoun *him-/her-/itself* takes on the work of Principle A. For more details see Primus (1992) and König and Siemund (1997) and the references cited there.

Steinbach 1997 and 2000). (57) lists the the most relevant restrictions for the sentence-initial position.<sup>162</sup>

- (57) a) the first argument of the unmarked word order (in the middle field) can appear sentence-initially in the specifier of CP  
 b) the focus can appear in CP,Spec  
 c) the ‘topic’ can appear in CP,Spec  
 d) further conditions may depend on the structuring of the text or discourse

We will not be concerned with condition (57.d). Reflexive pronouns cannot refer to discourse referents directly because they are usually bound within the sentence they are included (condition A of binding theory). We will see in the next section that non-argument reflexives must be bound by the subject of the same sentence. Therefore, we only discuss condition (57.a), (57.b) and (57.c).

ad a) To be the first element of the unmarked word order is always a good reason for a constituent to appear in sentence-initial position. We already saw that reflexive pronouns can precede the subject (i.e. their antecedent) in the unmarked order in the middle-field only if the subject is not a pronoun itself (the relevant examples are repeated in (58)).

- (58) a. ... weil der Kanzler sich sehr liebt  
 ... because the chancellor-NOM RP much loves  
 b. ... weil sich der Kanzler sehr liebt  
 c. ... weil er sich sehr liebt  
 ... because he RP much loves  
 d. \*... weil sich er sehr liebt

Pronominal elements tend to be right-adjacent to  $C^\circ$ , the Wackernagel position (cf. Anderson 1993 for a crosslinguistic study of the so-called *Wackernagel-Effekt*). Therefore pronominal elements precede full NPs. This constraint overrides the constraint which states that nominative precedes accusative. However, the Wackernagel-effect can only be observed in the middle-field, because  $C^\circ$  is the left border (*Linke Satzklammer*) of the middle-field. Hence this constraint does not help us on the sentence initial position.<sup>163</sup> We already saw in section 4.1 nominative NPs precede accusative and dative NPs. Thus nominative NPs are always good candidates for the sentence-initial position, as can be seen in (59.a). With some verbs dative NPs can precede the nominative NP. These objects also appear unmarked in sentence-initial position, cf. (59.b). In addition, some verbs permit the accusative to precede the nominative. However, such verbs are rare and the reverse word order (nom precedes acc) is always also unmarked. Verbs in middle constructions as well as anticausatives, and inherent reflexives do not belong to this very small class.<sup>164</sup>

<sup>162</sup> We correlate unmarked word order with focus projection. Only unmarked word order allows for maximal focus spreading (cf. Höhle 1982, Jacobs 1992 and 1993 and Vogel and Steinbach 1998).

<sup>163</sup> Besides these rare cases, German has some idiomatic expressions that permit accusative-nominative order (e.g. *ihn hat der Schlag getroffen* - ‘he was floored’).

<sup>164</sup> Note that the experiencer verb *interessieren* (‘be interested in’) in (59.c) becomes inherent reflexive when we substitute a reflexive pronoun for the accusative NP *ein Mädchen* (‘a girl’).

- (i) Sie interessierte sich für ein Buch  
 She is-interested-in RP a book

- (59) a. Ein Junge hat einem Mädchen ein Buch gegeben (unmarked)  
 A boy-NOM has a girl-DAT a book-ACC given  
 b. Einem Kind ist ein Stein aufgefallen (unmarked)  
 A child-DAT is a stone-NOM attracted attention  
 i.e. ‘A stone attracted a child’s attention’  
 c. Ein Mädchen hat ein Buch interessiert (unmarked)  
 A girl-ACC has a book-NOM interested  
 ‘A girl was interested in a book’

Besides, ‘stage-setting’ adverbials like *gestern* (‘yesterday’) can also appear unmarked sentence initially (i.e. they need not be focus or topic).

- (60) Gestern hat der Gärtner die Gitarre aus dem Schrank geholt  
 Yesterday has the gardener the guitar out of the closet taken

ad b) Focused constituents can also occur in sentence-initial position.

- (61) a. Who did Hans wash?  
 b. [SICH/sich SELBST]<sub>F</sub> hat Hans gewaschen  
 RP (i.e. himself) has Hans washed  
 c. \*[SICH]<sub>F</sub> hat die Tür geöffnet  
 RP has the door opened

(61.a) illustrates that a reflexive pronoun can be moved to CP-Spec, if it is the focus of the sentence. We saw in section 4.2.2. above that non-argument reflexives cannot be focused at all because they are not linked to a semantic argument variable of the verb. Hence this difference between argument and non-argument reflexives is again due to the (semantic) inability of non-argument reflexives to be focused.<sup>165</sup>

ad c) Besides focus, there is an additional condition that can be subsumed under the notion of topic. Recall that the semantic representation of a sentence is divided into two parts, the focus and the background. Vallduví (1992) argues that the background (GROUND in his terminology) is further subdivided into topic and comment (LINK and the TAIL). The LINK (or topic) is a designated element, i.e. ‘an address pointer in the sense that it directs the hearer to a given address [...] in the hearer’s knowledge store, under which the information carried by the sentence is entered’ (p. 47).<sup>166</sup> Based on this assumption, Büring (1995) investigates the syntax, phonology and semantics of topics in German in detail. He gives a well defined notion of sentence-internal topics (S-topics). S-topics share some semantic properties with focus. Both have a similar accent (topics have a rising pitch L\*H, focus has a falling one H\*L) and the

<sup>165</sup> Similarly, all fronted constituents that have to be focus because they cannot appear unmarked in sentence initial position (i.a) need some semantic content. We explained in 4.2.2, example (39.b), why focus on the preposition is ungrammatical in (ib), which is only grammatical with narrow focus on the pronoun *sie* (i.c).

- (i) a. \*[An sie] habe ich einen Brief geschrieben  
 b. \*[AN sie] habe ich einen Brief geschrieben  
 c. [An SIE] habe ich einen Brief geschrieben  
 to her have I a letter written

<sup>166</sup> This partition might be too static. At a certain stage of a discourse different expressions can be equally salient or ‘designated’, so that it is sometimes not clear which element of the background is the actual address pointer for the ongoing discourse. See Kruijff-Korbyová and Hajicová (1997) for a dynamic approach.

semantics of S-topics is very similar to the semantics of focus. We briefly illustrate this semantic similarity with an example taken from Büring (1995: 49) - ‘/’ and ‘\’ indicate the rising and falling accents respectively:

- (62) a. What did the popstars wear?  
 b. Die [/weiblichen]<sub>T</sub> Popstars trugen [Kaftane\<sub>F</sub>]  
 The female pop stars wore caftans  
 c. And what about the male pop stars?

S-topics can be used to pick up entities mentioned in the preceding discourse, to narrow down a given discourse topic (partial topic), to indicate that there are some alternatives to talk about (implicational topic) or ‘to move the conversation away from an entity given in the previous discourse’ (p. 49) (contrastive topic). Sentence (62.b) is an example for a partial topic and sentence (63.b) for an implicational topic:

- (63) a. Did your wife kiss other men?  
 b. [/Meine]<sub>T</sub> Frau hat [keine\<sub>F</sub>] fremden Männer geküßt  
 My wife has no other men kissed  
 c. But what about YOUR wife?

We do not want to go into detail here. The reader is referred to the detailed presentation in Büring (1995). Two points are of interest here. Firstly, S-topic can appear in sentence initial position.<sup>167</sup> Secondly, the semantics of S-topics is a ‘typed-up’ focus semantics. The second point is illustrated in the following. S-topics induce alternatives similar to the focus. We already know that the focus value (or background) of e.g. example (62.b) is a set like (62.b’):

- (62) b’. {the female pop stars wore caftans, the female pop stars wore dresses, the female pop stars wore overalls, ....}

According to Büring (p. 56f.), the topic value is computed by replacing the S-topic in (62.b’) with type-equivalent salient alternatives. Thus the topic value of a sentence is a set of such sets:

- (62) b’’. { {the female pop stars wore caftans, the female pop stars wore dresses, the female pop stars wore overalls, ....}  
 {the male pop stars wore caftans, the male pop stars wore dresses, the male pop stars wore overalls, ....}  
 {the female or male pop stars wore caftans, the female or male pop stars wore dresses, the female or male pop stars wore overalls, ....}  
 {the italian pop stars wore caftans, the italian pop stars wore dresses, the italian pop stars wore overalls, ....}  
 ... }

Furthermore, S-topics have an implication that can be informally outlined as follows: The use of a S-topic in a sentence A implies that there is an element Q from the topic value (62.b’’), such that Q is still under consideration after uttering A (i.e. some elements in one of these sets in (62.b’’) must be non-absurd and informative with respect to CG). After uttering (62.b), we know that there must be some element from (62.b’’) that is still under consideration. The most

<sup>167</sup> S-topics have to precede the focus at surface structure. Therefore, CP-Spec is one (maybe the preferred) option for S-topics. They can also appear on the left periphery of the middle-field.

salient element in (62.b'') seems to be the following set: {the male pop stars wore caftans, the male pop stars wore dresses, the male pop stars wore overalls, ...}. This means that this set of propositions (i.e. the question: What did the male pop stars wear?) serves as the residual topic in (62). The residual topic of (63.b) (YOUR wife as opposed to MINE) can be derived in the same way. Before we look at an example with argument reflexives we want to capture the fact that non-argument reflexives cannot be S-topics. S-topics induce focus alternatives similar to the focus. But we already saw in section 4.2.2 that non-argument reflexives cannot be the focus and they cannot be S-topic either. A topic value cannot be generated for non-argument reflexives. As opposed to non-argument reflexives argument-reflexives are expected to be S-topics. In addition, they are also expected to occur in sentence-initial position. This is confirmed by example (64).

- (64) a. Where did Peter take a picture of himself (and his friends)?  
 b. [/SICH]<sub>T</sub> hat er [vor dem Matterhorn]<sub>F</sub> fotografiert  
 Himself has he in front of the Matterhorn photographed

The focus alternatives are salient type-identical elements as we saw in section 4.2.2 above. The topic value (of the reflexive pronoun) results from a second substitution: in all focus alternatives the S-topic (the argument reflexive) is replaced by type-equivalent salient alternatives (cf. 64.d).

- (64) c. {Er hat sich vor dem Matterhorn fotografiert, er hat sich vor dem Montblanc fotografiert, er hat sich vor der Eiger Nordwand fotografiert, ...}  
 d. {{Er hat sich vor dem Matterhorn fotografiert, er hat sich vor dem Montblanc fotografiert, er hat sich vor der Eiger Nordwand fotografiert, ...}  
 {Er hat seine Freunde vor dem Matterhorn fotografiert, er hat seine Freunde vor dem Montblanc fotografiert, er hat seine Freunde vor der Eiger Nordwand fotografiert, ...}  
 {Er hat sich und seine Freunde vor dem Matterhorn fotografiert, er hat sich und seine Freunde vor dem Montblanc fotografiert, er hat sich und seine Freunde vor der Eiger Nordwand fotografiert, ...}  
 ...}

According to the implication of topics, the residual topic must be informative. The second element of the topic value is a good candidate for the residual topic: 'and where did he photograph his friends?'<sup>168</sup>

We conclude that the accusative reflexive pronoun cannot occur in the sentence-initial position in unmarked word order. Therefore, it must either be focus or S-topic to occupy CP,Spec. Neither of these options is available for non-argument reflexives, because they are not linked to an argument variable of the verb. And finally, non-argument reflexives must be bound by

<sup>168</sup> Sentence (64.b) gets worse if we ask for the subject, i.e. the antecedent of the reflexive pronoun:

- (i) a. Who photographed himself in front of the Matterhorn?  
 b. ?[/Sich] hat [der Peter\] vor dem Matterhorn fotografiert

The residual topic is something like: and who photographed not himself but something else (X photographed Y with  $X \neq Y$ ). In this case we contrast a reflexive action with a non-reflexive action. The only thing that is under discussion here is the intrinsic meaning of the reflexive pronoun, its reflexive function. But for that we need a very special context.

Note that we can replace *sich* in sentence initial position by *sich selbst* without change of meaning (cf. 4.2.2).

the subject within their sentence. Therefore they cannot be subject to further conditions which may depend on the structuring of the text or discourse. In sum, non-argument reflexives do not meet the conditions on fronting in German.

1. unmarked word order:	nominative precedes accusative (the ‘Wackernagel-effect’ is limited to the middle-field)
2. focus:	* non-argument reflexives (cf. 4.2.2.)
3. S-topic:	* non-argument reflexives (parallel to 2.)
4. further conditions on the structuring of texts/discourses:	reflexive pronouns cannot pick up discourse referents from outside their sentence

### 4.3 *Conclusion*

We can summarize that non-argument reflexives do not differ from argument reflexives in syntax. They are subject to the same restrictions on word order in the middle-field on the one hand and on binding on the other. The differences between argument and non-argument reflexives are due to the different interpretations of these elements. As far as we see, these differences do not follow from any approach that draws a syntactic distinction between argument and non-argument reflexives. Furthermore, syntactic theories would have to explain the strict correspondence between two syntactically different kinds of reflexive pronouns with respect to word order. And last but not least, a semantic approach can abandon the unnecessary stipulation that accusative reflexive pronouns can be either arguments or adjuncts. The ungrammaticality of coordination, focus and fronting results from a linking-mismatch: a syntactic argument (the accusative reflexive pronoun in the position of the direct object) is not linked to a semantic argument of the verb. In the next chapter we will have a closer look at this important issue.

## 5 The Interpretation of Reflexive Pronouns in German

So far, we argued that the different interpretations of transitive reflexive sentences are not related to different syntactic representation. Both the argument and the non-argument reflexive are analyzed as a direct (or accusative) object. In this chapter we will show that the ambiguity of transitive reflexive sentences can be derived at the interface between syntax and semantics. The accusative reflexive pronoun need not be linked to a semantic argument of the verb. This very specific property of the ‘middle marker’ in German results from the interaction between a universal property of (weak) reflexive pronouns and a language specific distinction between structural and oblique case forms. We will argue below that (weak) reflexive pronouns are ‘referentially’ underspecified. As a consequence, (weak) reflexive pronouns can either be linked to a semantic argument themselves or they mediate the linking of another syntactic argument (usually the subject). We called the former argument reflexive and the latter non-argument reflexive. In German, the latter interpretation is only available for reflexive pronouns that are assigned structural case. Argument reflexives receive a reflexive interpretation whereas non-argument reflexives are indicators of valency-reduction that receive a middle, anticausative or an inherent reflexive interpretation. The non-argument reflexive indicates that the first argument of the verb is not linked to syntax. It can either be implicitly present in the semantic representation of the sentence (*argument saturation*) or deleted (*argument reduction*). Figure (1) illustrates this ambiguity of transitive reflexive sentences in German.

(1)	Syntax:	[NP <sub>NOM</sub> V REFL <sub>ACC</sub> ]
I.	Interpretation of the reflexive pronoun:	
	1. <i>argument reflexive</i>	<b>reflexive</b>
	2. <i>non-argument reflexive</i>	valency reduction (cf. II)
II.	Interpretation of the implicit argument	
	1. <i>argument reduction</i>	<b>anticausative &amp; inherent reflexive</b>
	2. <i>argument saturation</i>	<b>middle</b>

In the previous chapter we argued that all transitive sentences with an accusative object that is a reflexive pronoun are syntactically identical. It turned out that certain differences between argument and non-argument reflexives concerning coordination, focus, and fronting are semantic rather than syntactic. In this chapter we investigate the first ambiguity of the accusative reflexive pronoun in transitive sentences. We turn to the second ambiguity in chapter 6. We argue that the morphosyntactic features of reflexive pronouns are maximally underspecified. Thus they can either head their own A-chain or they can be included in a complex A-chain, which is headed by another syntactic argument that c-commands the accusative reflexive pronoun (i.e. the subject). Besides, we argue that A-chains are subject to the following linking-principles: (i) VP,Spec is linked to the first argument position of the verb and (ii) the complement position of V° is linked to the second argument position of the verb. According to (i) and (ii), the complex A-chain that includes the subject and the reflexive pronoun is linked to the second argument position via its base, the complement position of V°. Hence, the non-argument reflexive mediates the linking of the subject to the second argument position. As opposed to the non-argument reflexive, the argument reflexive heads its own chain and is thus linked to a semantic argument itself. We will see that this approach offers a uniform analysis of the reflexive, middle, anticausative and inherent reflexive interpretation.

Before we turn to reflexive pronouns in transitive reflexive sentences, we must introduce the basic notions of binding theory first. Of course the crucial element for the interpretation of

transitive reflexive sentences is the reflexive pronoun in the position of the accusative object, which we call a morphosyntactic ‘middle marker’.<sup>169</sup> In most Indo-European languages (weak) reflexive pronouns are ambiguous between the argument and the non-argument interpretation. The latter interpretation of reflexive pronouns (i.e. its function as an indicator of valency reduction) has been strongly neglected in the discussion of binding, which was mainly dealing with argument reflexives. Thus a modification of the existing theories of binding will be necessary. We limit the discussion to reflexive pronouns. Otherwise we would lose sight of our topic.<sup>170</sup> A theory of binding must consider at least morphological, syntactic, semantic and discourse-theoretical aspects, which cannot be discussed in detail here. The following points will be relevant to the discussion of transitive reflexive sentences (cf. also the brief outline of the discussion at the end of the next section).

- i. German does not always draw a morphological distinction between personal pronouns and reflexive pronouns
- ii. Unlike most Indo-European languages, German is a one-form language that does not distinguish weak from strong reflexive pronouns
- iii. structural binding of reflexive pronouns differs from logophoric binding
- iv. the distinction between structural and oblique case forms turns out to be relevant for binding theory

We will be concentrating on the interpretation of locally bound pronoun, irrespective of whether the paradigm has always two morphologically different forms for reflexive and personal pronoun. Furthermore, German has only one kind of reflexive pronoun, as opposed to many other languages. German is a so-called *one-form language* (Kemmer 1993), that does not morphologically distinguish weak from strong reflexive pronouns. We will put the first two issues (i) and (ii) aside for the present, but we come back to the morphology of reflexive pronouns in the course of the this chapter. In the next subsection we turn to (iii) first and in the following sections we are dealing with point (iv).

### 5.1 *Logophoric or exempt anaphors*

Reflexive pronouns in German are subject to principle A of Chomsky’s (1981) binding theory.<sup>171</sup> In the last years Chomsky’s theory of binding based on the notion of c-command has

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<sup>169</sup> In the following presentation, we mostly use only the third person singular form.

<sup>170</sup> We are not interested in personal pronouns, possessive pronouns and R-expressions. In languages like German or English, personal possessive pronouns are ambiguous between a bound variable interpretation and pragmatic coreference (cf. e.g. Reinhart 1983 and 1991) whereas other languages have also reflexive possessive pronouns. In the following presentation, we ignore this issue as well as the status of Chomsky’s binding principle C. Additional issues of binding theory that are irrelevant for the problem under discussion are long distance anaphors, reciprocal pronouns, distributive vs. collective interpretations of plural antecedents, or different kinds of conceptualization of binding relations - e.g. the body or body parts, personality, pictures, reflections, images or statues.

<sup>171</sup> In Chomsky (1981:188) binding theory is defined as follows:

- (A) An anaphor is bound in its governing category
- (B) A pronominal is free in its governing category
- (C) A R-expression is free

given rise to criticism. Reinhart and Reuland (1993) as well as Pollard and Sag (1994) - henceforth R&R and P&S - discuss various shortcomings of Chomsky's version of binding theory that lead them to develop their own proposals. Both theories share essential features. Structural binding of reflexive pronouns is restricted to coreference of arguments of the same predicate. Therefore, reflexive pronouns are not always subject to the principles of binding theory. P&S (1994) and R&R (1993) give a sample of sentences that are grammatical although they violate principle A of Chomsky's binding theory.<sup>172</sup> In all examples in (2) the reflexive pronoun is not bound within its governing category (cf. also Ross 1970 and Jackendoff 1972):

- (2) a. [John and Mary]<sub>1</sub> knew that [the journal had rejected [each other's]<sub>1</sub> paper]  
 b. John suggested that [tiny gilt-framed portraits of [each other]<sub>1</sub>] would make ideal gifts for [the twins]<sub>1</sub>  
 c. John<sub>1</sub> told Mary<sub>2</sub> that there were some pictures of themselves<sub>1+2</sub> inside  
 d. [A picture of myself] would be nice on the wall  
 e. [The picture of himself<sub>1</sub>] that John<sub>1</sub> saw in the post office was ugly

In each case, the reflexive pronoun and its antecedent are not (co-)arguments of the same predicate. Furthermore the reflexive pronoun cannot be bound by a co-argument of the same predicate (the noun), because it is its sole argument. In addition, Chomsky's principles of binding predict strict complementary distribution of personal pronouns and reflexive pronouns. But this contradicts the observation that in certain contexts the reflexive pronoun can be replaced by a personal pronoun as can be seen in (3.a) and (3.b) for German.<sup>173</sup> Similar examples can be found in Dutch (cf. 3.c) and English (cf. 3.d).<sup>174</sup>

- (3) a. [Bilder von sich<sub>1</sub>/ihn<sub>1</sub>] machen Peter<sub>1</sub> glücklich  
 Pictures-NOM of himself/him make Peter-ACC happy  
 b. Den Hans ängstigen [nur Geschichten über sich<sub>1</sub>/ihn<sub>1</sub>]  
 The H.-ACC frighten only the stories-NOM about himself/him  
 c. Der Chef<sub>1</sub> läßt die Leute<sub>2</sub> für sich<sub>1</sub>/ihn<sub>1</sub> arbeiten (Grewendorf 1983)  
 The chief let the people for RP/him work  
 d. Max<sub>1</sub> legt het boek achter zich<sub>1</sub>/hem<sub>1</sub> (R&R 1995: 243)  
 Max puts the book behind himself/him  
 e. Max<sub>1</sub> saw a ghost next to him<sub>1</sub>/himself<sub>1</sub>

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The governing category, i.e. the local domain for binding, is defined on the base of a governor and a subject available for the pronominal element. Chomsky (1986) replaces this term by the term *complete functional complex* (see Haegeman 1992 or Gärtner 1991 among others).

<sup>172</sup> For further empirical and conceptual arguments against Chomsky's theory of binding cf. P&S (1994) and R&R (1993).

<sup>173</sup> Grewendorf (1983) suggests that non-configurational aspects may play a role in these cases. Under his analysis two different governing categories are available in certain examples and hence each pronominal element is grammatical relevant to one of these two governing categories.

<sup>174</sup> Examples like (3.b) have been taken as empirical evidence that the subject of so-called *psych-verbs* must base-generated somewhere below the object to account for the binding of the reflexive pronoun in line with Chomsky's principle A (cf. Belletti and Rizzi 1988 or Stroik 1994). However, this kind of analysis predicts that the reflexive pronoun cannot be replaced by a personal pronoun. Additionally, it cannot be applied to sentence (2.b) because *make* is certainly not a *psych-verb* and the object *ideal gifts for the twins* is not an experiencer argument. Under R&R's and P&S's theory of binding these anaphors are exempt from the binding conditions in both cases.

The interpretation of reflexive pronouns in ellipses provide another argument for this distinction. A reflexive pronoun that is not bound by a co-argument is ambiguous between a strict and a sloppy interpretation, whereas a bound reflexive pronoun permits only the interpretation as bound variable, i.e. strict identity. This contrast is illustrated in (4.a) and (4.b) on the one hand and (4.c) on the other.

- (4) a. Peter hat [das Bild von sich] in der Zeitung gesehen und Maria auch  
Peter has the picture of RP in the newspaper seen and Maria too  
b. Den Kanzler ärgert [die neue Karikatur von sich] und den Oppositionsführer auch  
The chancellor annoys the new caricature of RP and the opposition leader too  
c. Maria wäscht sich und Peter auch  
Maria shaves RP and Peter too

R&R call reflexive pronouns that are *exempt* from the (structural) conditions on binding *logophoric anaphors*, P&S call them *exempt anaphors*.<sup>175</sup> The antecedents of *logophoric* or *exempt anaphors* are not determined by binding theory but by other, non-syntactic factors as, for example, processing and discourse constraints. Intervening constituents or point of view might influence the grammaticality of certain coindexations.<sup>176</sup> We briefly illustrate this point in (5). In the first two sentences (5.a) and (5.b) the reflexive pronoun in the embedded clause is obligatorily coindexed with and bound by the closest subject. The second two examples (4.c) and

<sup>175</sup> Crosslinguistically, different types of reflexive pronouns are used as logophoric anaphors. Consider three closely related languages (cf. Reinhart and Reuland 1995). Dutch, for example, distinguishes weak from strong reflexive pronouns which both are independent words (*zich* vs. *zichzelf*). The weak form *zich* is used logophorically in Dutch. As opposed to Dutch, English uses the strong form *him-/her-/itself* as logophoric anaphor because the weak form of the reflexive pronoun is morphologically empty (cf. section 2.3). In Frisian the weak form of the reflexive pronoun is identical to the personal pronoun (in both cases *him/har*) - note that the third person feminine has an additional pronominal form *se* that can only be used as a personal pronoun, i.e. it cannot be locally bound as opposed to *him/har*. In Frisian we cannot morphologically distinguish logophoric anaphors from personal pronouns. The following table summarizes this (the logophoric anaphor is underlined):

(i)	Logophoric anaphors	
	<b>weak form</b>	<b>strong form</b>
Dutch	<u>zich</u>	<i>zichzelf</i>
Frisian	<u>him/har</u> (≈ pronoun)	<i>him-/harsels</i>
English	∅	<u>him-/her-/itself</u>

The conditions for logophoric anaphors vary from language to language as well. On the one hand, it seems to be easier to use English reflexive pronouns logophorically than e.g. German reflexive pronouns (cf. (i) with (ii)). On the other hand, in German a reflexive pronoun is obligatory in contexts that allow also the personal pronoun in Dutch.

- (i) Max<sub>1</sub> said that the queen invited both Lucie and himself<sub>1</sub> for tea  
(ii) Max<sub>1</sub> sagte dass die Königin Lucie und \*sich<sub>1</sub>/ihn<sub>1</sub> zum Tee eingeladen hat  
Max said that the queen Lucie and RP/him for tea invited has

<sup>176</sup> Note that a NP-internal subject (agent or possessor) like in (i)-(iii) blocks the coindexation between a NP-internal reflexive pronoun and a NP-external antecedent in *picture-noun-phrases*:

- (i) \*/? Lucie<sub>1</sub> liked [your picture of herself<sub>1</sub>]  
(ii) \*/? [Your picture of myself] would be nice on the wall  
(iii) \*/? [Deine Bilder von sich<sub>1</sub>] gefallen dem Hans<sub>1</sub> (i.e. Your pictures of RP like the Hans-DAT)

One could argue that in (i)-(iii) the head noun *picture* or *Bilder* selects two arguments, which must be coindexed, because they are subject to R&R's condition A or P&S's principle A (cf. next section). In this case, local coindexation is obligatory and prevents the logophorical use of the reflexive pronoun. Alternatively, one could argue that the reflexive pronoun is still exempt from the conditions on binding, but the intervening NP-internal subject blocks the coindexation with an antecedent outside the DP similar to the examples in (5) below (cf. R&R 1993: 681f.).

(4.d) show that additional binding relations are also grammatical. When the first subject refers to an inanimate entity the reflexive pronoun can also be the matrix subject. In (4.c) and (4.d) the reflexive pronoun is clearly not locally bound.

- (5)
- a. John<sub>1</sub> found [a picture of himself<sub>1</sub>]
  - b. Bill<sub>2</sub> remembered that Tom<sub>1</sub> saw [a picture of himself<sub>1/\*2</sub>] in the post office
  - c. <sup>??</sup>Bill<sub>1</sub> remembered that the Times had printed [a picture of himself<sub>1</sub>] in the Sunday edition
  - d. Bill<sub>1</sub> thought that nothing could make [a picture of himself<sub>1</sub> in the Times] acceptable to Sandy

So far, we separate logophoric from structural binding relations as stated in (iii) above. Logophoric or exempt anaphors provide arguments for a reformulation of binding theory. In the following we ignore logophoric or exempt anaphors and concentrate on structural binding, because only the structural restrictions on reflexive pronouns will be relevant for the analysis of argument and non-argument reflexives. Logophoric anaphors are always argument reflexives, whereas the accusative reflexive pronoun in transitive sentences (i.e. the middle marker in German) is always (structurally) bound by the subject of its sentence. We discuss R&R's binding theory first because it is based on a distinction between syntactic and semantic arguments that turns out to be very fruitful for our explanation of the ambiguity of accusative reflexive pronouns. In the next section we give an outline of R&R's theory, which will be necessarily incomplete. In section 5.3 we modify the *syntactic part* of R&R's binding theory. Besides, R&R's (1993) analysis is based mainly on Dutch, which is a two-form language. Therefore, a modification of the *semantic part* of their binding theory will also be necessary in order to apply it to German. This will be done in section 5.4 and 5.5. In this connection we also refer to P&S's binding theory. P&S do not distinguish between syntactic and semantic arguments but they assume a hierarchy of grammatical relations, which also turns out to be fundamental for the interpretation of reflexive pronouns in German. In sum, the theory we develop in this chapter is based on the assumption that only co-arguments of the same predicate are subject to principle A of Chomsky's binding theory. Reflexive pronouns that cannot be bound by a co-argument are exempt from (structural) binding. In addition, we postulate that accusative reflexive pronouns are also 'bound' in syntax, because arguments that check structural case are subject to the general condition on A-chains. This syntactic 'binding' relation, that results from chain formation, is responsible for the ambiguity of the accusative reflexive pronoun. The following discussion can be outlined as follows:

- i. We introduce the binding theory of Reinhart and Reuland. Their distinction between syntactic and semantic binding and the *General Condition on A-chains* will be important in the discussion (section 5.2).
- ii. The syntactic part of R&R's binding theory can be reduced to *General Condition on A-chains*, as is argued in Fox (1993). This condition will be relevant to the analysis of argument and non-argument reflexives in German. Besides, we argue that in German the definition of *syntactic argument* is based on structural case (also section 5.2).
- iii. R&R distinguish between two types of reflexive pronouns. This distinction is irrelevant to the analysis of reflexive pronouns in German, because German is a one-form language (section 5.3).
- iv. As a consequence of (iii), the semantic part of R&R's binding theory is replaced by principle A of Pollard and Sag's binding theory (section 5.4).

Section 5.6 deals with the semantic ambiguity of reflexive pronouns in German and the final section 5.6 checks whether the binding theory developed for German in this chapter can also be applied to two-form languages as, for example, Dutch.

## 5.2 Syntactic and semantic predicates and A-chains

Recall that R&R's binding theory is based on Dutch, which is a two-form language. As opposed to German, Dutch has two kinds of reflexive pronouns.<sup>177</sup> The third person form of the weak reflexive pronoun is the simple word *zich* and the strong counterpart of *zich* is the complex word *zichzelf*. According to R&R's theory, two properties are relevant for the specification of reflexive pronouns in Dutch. The feature [+/-R] (for *referential independence*) distinguishes reflexive pronouns from R-expressions and personal pronouns.<sup>178</sup> Both weak and strong reflexive pronouns are referentially deficient and therefore specified as [-R]. A second feature, [+/-REFL], distinguishes strong from weak reflexive pronouns. [+REFL] stands for a reflexivizing function that operates on predicates and their arguments. Roughly speaking the feature [+REFL] requires two arguments of the predicate to be coindexed. Only strong reflexive pronouns are specified for [+REFL], whereas weak reflexive pronouns and personal pronouns are specified as [-REFL]. R&R call the weak reflexive pronoun *zich* 'SE anaphor' and its strong counterpart *zichzelf* 'SELF anaphor'.

### (6) reflexive and personal pronouns in Dutch

	<b>SELF (strong)</b>	<b>SE (weak)</b>	<b>Pronoun</b>
<b>Reflexivising function</b>	[+ REFL]	[- REFL]	[- REFL]
<b>Referential independence</b>	[- R]	[- R]	[+ R]

SE anaphors are the less specified elements of the pronominal paradigm, because they are neither reflexivizers nor referentially independent elements. The distribution of pronominal elements in Dutch is illustrated in (7).

<sup>177</sup> In the following presentation of R&R's theory we use the term reflexive pronoun, although R&R use the term anaphor. According to their theory, both kinds of reflexive pronouns have less specified  $\Phi$ -features than personal pronouns but only the strong reflexive pronoun is a reflexivizer, i.e. only the strong form is specified as [+REFL]. Thus the weak reflexive pronoun is the pronominal element that is less specified. It is neither specified with [+REFL] nor with [+R] (= referential independence), cf. table (6) below. Therefore, it does not make sense to call the weak reflexive pronoun a *reflexive* pronoun in R&R's theory. As opposed to R&R, we do not distinguish between [+REFL] and [-REFL]. We will keep on using the term reflexive pronoun in order to avoid confusion. Besides, the notion 'reflexive pronoun' is more specific than 'anaphor'.

<sup>178</sup> In R&R's framework, [R] is a purely morphosyntactic feature: 'Having this property is a necessary condition for an expression to function as an independent argument, but R itself does not have anything to do with reference' (R&R 1993: 697). The property [R] depends on the internal specification of an NP:

(i) An NP is +R iff it carries a full specification for  $\Phi$ -features and structural Case

This issue will be discussed in greater detail below.

- (7) a. Max<sub>1</sub> gedraagt zich<sub>1</sub> / \*zichzelf<sub>1</sub> / \*hem<sub>1</sub> (inherent reflexive)  
 Max behaves SE/SELF/him  
 b. Max<sub>1</sub> hoorde zichzelf<sub>1</sub> / \*zich<sub>1</sub> / \*hem<sub>1</sub> ('strong' reflexive)  
 Max heard SELF/SE/him  
 c. Max<sub>1</sub> wast zich<sub>1</sub>/zichzelf<sub>1</sub>/\*hem<sub>1</sub> ('weak' reflexive)  
 Max washes SE/SELF/him  
 d. Henk<sub>1</sub> hoorde [zich<sub>1</sub>/zichzelf<sub>1</sub>/\*hem<sub>1</sub> zingen] (ECM)  
 Henk heard SE/SELF/him sing

The first example (7.a) contains the inherent reflexive verb *gedragen* ('behave'), the object of which must be the weak form of the reflexive pronoun, i.e. the *SE* anaphor.<sup>179</sup> In contrast, the *SE* anaphor cannot be the object of verbs like *horen* ('hear') in (7.b). In this case the strong form, i.e. the *SELF* anaphor, must be used. Verbs like *wassen* ('wash') permit both the weak and the strong form of the reflexive pronoun, cf. (7.c). Thus *SE* anaphors are only grammatical with verbs that are inherent reflexive like *gedragen* in (7.a.) or verbs like *wassen* in (7.c) describing events that are very likely to be reflexive. The crucial difference between the English and Dutch pronominal system shows up in ECM-constructions like (7.d). As opposed to (7.b), *SE* anaphors are not excluded in this construction, even if the matrix verb is *horen*. This difference between (7.b) and (7.d) can be attributed to the status of the direct object. In (7.d), on the one hand, the reflexive pronoun is only a *syntactic* co-argument of its antecedent. Both the antecedent and the anaphor are assigned case by the same predicate, the matrix verb *horen*. Semantically, the anaphor is an argument of the embedded verb *zingen* ('sing'). The reflexive pronoun is linked to its first semantic argument. On the other hand, in (7.b) the anaphor is both a syntactic and semantic argument of the same verb. Note finally that personal pronouns are ruled out in all four sentences. The following table summarizes the observations made so far.<sup>180</sup>

- (8) The distribution of pronominal forms with the verb *horen* ('hear')

	SELF (strong)	SE (weak)	Pronoun
<b>pro-form is only syntactic co-argument (7.d)</b>	+	+	-
<b>pro-form is also semantic co-argument (7.b)</b>	+	-	-

R&R formulate a theory of binding that accounts for the different distribution of weak and strong reflexive pronouns in Dutch. Their binding theory is based on the following two conditions. The relevant definitions of the notions *reflexive*, *reflexive marked*, *syntactic* and *semantic predicate* and *syntactic argument* are given in (10) - cf. R&R (1993: 678):<sup>181</sup>

<sup>179</sup> The same holds for reflexive anticausatives in Dutch. Dutch, like German, has inherent reflexive verbs and also some reflexive anticausatives, whereas middle constructions are formed without a reflexive pronoun like middle constructions in English, cf. section 2.3.

<sup>180</sup> This table is taken from the discussion of R&R's theory in Vogel and Steinbach (1995).

<sup>181</sup> (9) and (10) are abbreviated versions of R&R's binding theory. R&R relativize their binding conditions to an index *i*. This is necessary to exclude the licensing of a coindexation *i* by an *SELF* anaphor bearing the index *j*. The following example illustrates this:

(i) \*Max<sub>1</sub> showed myself<sub>2</sub> to him<sub>1</sub>

The predicate is reflexive marked by the anaphor *myself* and it is reflexive because two of its arguments are coindexed. Nevertheless, sentence (i) is ungrammatical. This restriction of the conditions to a certain index correctly excludes sentences like (i), because the index of the anaphor differs from the index of the coindexed arguments. In (9) and (10) the terms *reflexivity* and *coindexation* must be replaced by *i-reflexivity* and *i-coindexation* (cf.

- (9) Conditions
- A: A reflexive-marked syntactic predicate is reflexive.  
 B: A reflexive semantic predicate is reflexive-marked.
- (10) Definitions
- a. The syntactic predicate formed of (a head) P is P, all its syntactic arguments, and an external argument of P (subject).  
 b. The syntactic arguments of P are the projections assigned a  $\Theta$ -role or case by P.  
 c. The semantic predicate formed of P is P and all its arguments at the relevant semantic level.  
 d. A predicate is reflexive iff two of its arguments are coindexed.  
 e. A predicate is reflexive-marked iff either P is lexically reflexive or one of P's arguments is a SELF anaphor.

Condition A and B correctly explain the distribution of the *SE* and *SELF* anaphors in Dutch. Condition B says that, whenever a semantic predicate is reflexive, it must be reflexive-marked. A predicate is reflexive-marked either if it is lexically reflexive or if one of its arguments is a *SELF* anaphor. *Gedragen* in (7.a) is an inherent reflexive verb that is lexically reflexive,<sup>182</sup> hence no *SELF* anaphor is required.<sup>183</sup> *Horen* in (7.b) is not lexically reflexive. Thus the predicate *horen* can only be reflexive-marked by a *SELF* anaphor. A verb like *wassen* in (7.c) shares features with both *gedragen* and *horen*. It permits *SE* and *SELF* anaphors (i.e. weak and strong reflexive pronouns). According to R&R, verbs like *wassen* can but need not be lexically reflexive.<sup>184</sup> Therefore, weak and strong forms are grammatical. And finally, both forms are also licensed in the position of the ECM-subject, cf (7.d), because it is only a syntactic argument of the matrix predicate to which condition A applies: the syntactic (matrix) predicate is reflexive-marked by the *SELF* anaphor in object position and it is reflexive because two of its arguments are coindexed. Condition B is also fulfilled: the embedded (semantic) predicate is not reflexive, hence no reflexive-marking is required and both the *SE* and the *SELF* anaphor are grammatical. Only if the embedded predicate is reflexive, a *SELF* anaphor is obligatorily required, because the reflexive (semantic) predicate must be reflexive-marked (but it does not matter which of the two arguments is the *SELF* anaphor).

- (11) a. Jan hoorde [zich zichzelf/\*zich critiseren]  
 b. Jan hoorde [zichzelf/\*zich zich critiseren]  
 Jan heard himself himself criticize

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also Fox 1993). We continue referring to the simplified versions in (9) and (10) because the restriction to an index is not relevant for the problem under discussion.

<sup>182</sup> We do not think that inherent reflexive verbs are two-place predicates with both arguments obligatorily coindexed. Unlike two-place verbs like *wassen*, that are optionally reflexive, inherent reflexive verbs equal anticausatives. Both inherent reflexives and anticausatives do not select an external argument (cf. section 2.2). R&R's theory cannot account for the fact that weak reflexive pronouns (i.e. [-REFL] anaphors) indicate valency reduction. We come back to this issue in section 5.6 and in chapter 6.

<sup>183</sup> The *SELF* anaphor is ungrammatical for matters of economy. The *SELF* anaphor would reflexive-mark the predicate once again but binding condition B requires only one reflexive marking, cf. also below.

<sup>184</sup> R&R assume two different lexical entries for verbs of *grooming* like *wassen*. We already saw in section 2.3 that identical cases can be observed in many Indo-European languages. We come back to this issue in section 5.4 below.

So far R&R correctly derive the distribution of *SE* and *SELF* anaphors. Recall that personal pronouns are also excluded in all examples in (7), although *SE* anaphors, which are also [-REFL], are grammatical in (7.a), (7.c) and (7.d). Personal pronouns are ruled out by an additional condition, that unifies the treatment of binding and A-movement. This condition will be central to the analysis of reflexive pronouns in German we propose below.<sup>185</sup>

(12) General Condition on A-chains (GCC)

A maximal A-chain ( $\alpha_1, \dots, \alpha_n$ ) contains exactly one link -  $\alpha_1$  - that is both +R and case-marked.

The crucial difference between *SE* anaphors and personal pronouns is the feature [R]. Only personal pronouns (and R-expressions) are referentially independent, i.e. [+R], cf. table (6) above. As a consequence of (12), personal pronouns can only be the head of an A-chain. Hence they are excluded in all positions  $\alpha_j$  with  $j > 1$ . The GCC correctly predicts that personal pronouns are ungrammatical in all examples in (7).

Fox (1993) goes even further than R&R and argues that condition A of R&R's binding theory can be completely reduced to the GCC in (12). As opposed to R&R,<sup>186</sup> Fox assumes singleton chains.<sup>187</sup> He proposes that *any* sequence of coindexation that is headed by an A-element forms a maximal A-chain. As a consequence, every syntactic argument forms an A-chain of its own.<sup>188</sup> Moreover, every [-R] A-element must always be contained in a A-chain that is headed by a [+R] A-element. This modification will also be relevant for the derivation of the ambiguity of transitive reflexive sentences, as we argue below. Besides, it simplifies the binding theory as well as the analysis of ECM-constructions and *SE* anaphors. Recall that *SE* anaphors are only grammatical in ECM-constructions like (13.a) if the embedded (semantic) predicate is not reflexive (cf. condition B). Condition A is met, because the *SE* anaphor does not reflexive-mark the matrix predicate. Unlike *SELF* anaphors, *SE* anaphors are [-REFL]. Condition A does not apply to *SE* anaphors in ECM constructions and the syntactic arguments of the matrix predicate need not be coindexed. Thus we expect *SE* anaphors to behave more like pronouns or like logophoric anaphors, which is obviously not true.<sup>189</sup>

<sup>185</sup> R&R give the following definition of chain, following Chomsky (1986a, b):

(i) Generalized Chain definition

C ( $\alpha_1, \dots, \alpha_n$ ) is a chain iff C is the maximal sequence such that

a. there is an index  $j$  such that for all  $j$ ,  $1 \leq j \leq n$ ,  $\alpha_j$  carries that index, and

b. for all  $j$ ,  $1 \leq j \leq n$ ,  $\alpha_j$  governs  $\alpha_{j+1}$ .

For the term government see example (33) below.

<sup>186</sup> In R&R's version only two-member chains are relevant: "Either we define [the general condition on A-chains, i.e. (13)] as a condition on chains with more than one link, or we define an A-chain as consisting of at least two coindexed links" (R&R 1993: 702).

<sup>187</sup> The predicate *coindexed* is reflexive: every element X bearing an index  $i$  is coindexed with itself (cf. also Chomsky 1995, chapter 3 on one-member chains).

<sup>188</sup> This condition is trivially met if every syntactic argument is forced to move to some Agr-position to check its case feature. As a consequence of obligatory A-movement, every element heads its own chain, which is of course only possible for [+R]-expressions.

<sup>189</sup> Note that indices are assigned to all DPs in syntax and must not change at the interface to semantics. Otherwise, R&R (as well as Fox) cannot exclude personal pronouns on the basis of the general condition on A-chains either. A predicate is not reflexive-marked by a personal pronoun, hence no coindexation of the syntactic arguments is required by condition A (cf. Chomsky 1980, Fiengo and May 1994 for assignment of indices).

- (13) a. Henk<sub>1</sub> hoorde [zich<sub>1</sub>/zichzelf<sub>1</sub>/\*hem<sub>1</sub> zingen]  
 Henk heard SE/SELF/him sing  
 b. Henk<sub>1</sub> hoorde [zichzelf<sub>1</sub> Max critiseren]  
 Henk heard SELF Max criticize

A theory that reduces condition A to the modified version of the GCC predicts that the *SE* anaphor *zich* in (13) must be bound by the subject, because it is [-R] and cannot head its own A-chain. Therefore, it is forced to form a chain with a [+R] A-element c-commanding it, i.e. the subject of the matrix clause.<sup>190</sup>

Finally we follow Vogel and Steinbach (1995 and 1998), who argue that in German the term *syntactic argument* should be defined on the basis of structural case. In German, only NPs that are marked with structural case (or have a structural case-feature to check) are syntactic arguments. In chapter 6 we give empirical evidence in support of a distinction between structural and oblique case. We will see that nominative and accusative are structural. As opposed to nominative and accusative, dative is oblique. Hence, A-chain formation is restricted to subjects and accusative objects. The relevant modification of R&R's definition (10.b) is given in (14).

- (14) Definition of syntactic arguments in German  
 ...  
 b. The syntactic arguments of P are the chains that are assigned structural case in the extended projection of P.  
 ...

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Chomsky (1995: 215, footnote 53) claims that “a theoretical apparatus that takes indices seriously as entities, allowing them to figure in operations (percolation, matching, etc.), is questionable on more general grounds. Indices are basically the expression of a relationship, not entities in their own right. They should be replaceable without loss by a structural account of the relation they annotate.”

<sup>190</sup> Besides, this modification of R&R's binding theory renders movement of the embedded verb in ECM superfluous. On the one hand, R&R assume that the embedded verb must not stay in situ in (13.b) (cf. also footnote 17 above). Otherwise it would be reflexive marked without being reflexive, because the ECM-subject is a syntactic argument not only of the matrix predicate but also of the embedded predicate, which assigns a theta-role to the *SELF* anaphor, cf. (10.b) above. R&R claim that raising of the verb prevents it from being reflexive marked (R&R 1993:708f.). According to R&R, LF-raising and LF-lowering is always optionally permitted. They propose that in Dutch the embedded verb raises at S-structure and adjoins to the matrix predicate. An examples like (i) has the S-structure representation in (ii).

(i) ... dat Max zichzelf Lucie hoorde critiseren

(ii) ... dat [<sub>IP</sub> Max [<sub>IP</sub> zichzelf Lucie t<sub>i</sub>] [<sub>V</sub> hoorde<sub>j</sub> critiseren<sub>i</sub> ]<sub>j</sub>] (i.e. ... that Max SELF Lucie heard criticize)

On the other hand the embedded predicate must stay in situ in (iii) - alternatively it could be lowered at LF -, because it is reflexive marked by its second argument.

(iii) Peter hoorde [Maria<sub>1</sub> zichzelf<sub>1</sub> critiseren] (reflexive-marked by zichzelf)

Peter heard Maria SELF criticize

The verb stays in situ, if two syntactic arguments must be coindexed, and it is forced to raise, if the syntactic arguments must not be coindexed. raising and lowering of the embedded verb in ECM-constructions becomes superfluous in the modified version of R&R's theory, because it no longer relies on the term *syntactic predicate*. This revised version only requires grammatical A-chains and does not depend on additional verb-movement at LF.

Besides, after raising the direct object of the embedded clause, i.e. *Lucie*, is still a syntactic argument of the head *critiseren*, because it receives accusative case via the trace *t<sub>i</sub>* of the verb (cf. R&R 1993: 708, footnote 49). Hence, the head P (i.e. *critiseren*) is available at S-structure for case-marking its arguments (cf. definition 10.b) and it is not clear why P is not available for predicate formation as well (cf. definition 10.a).

So far we argued that R&R's binding condition A should be reduced to a slightly modified version of the GCC. In addition, their definition of syntactic arguments was modified for German. In German only NPs that are assigned structural case are subject to 'syntactic binding', i.e. A-chain formation. In the following two sections we turn to the distinction between [+REFL] and [-REFL] expressions and R&R's binding condition B that is responsible for 'semantic binding'.

### 5.3 *Weak and strong reflexive pronouns and the [+/-R]-distinction*

As we mentioned in chapter 2, German is a so-called one-form language. Unlike Dutch and many other Indo-European languages, German does not distinguish weak from strong reflexive pronouns, or in R&R's terminology *SE* from *SELF* anaphors. The sole reflexive pronoun in German morphologically correspond to the *SE* anaphor in Dutch (cf. the diagram (8) above and section 2.1.3).<sup>191</sup> Nevertheless, one might argue that the German pronominal system also draws a distinction between weak and strong reflexive pronouns. Under this assumption, the weak reflexive pronoun *zich* in Dutch would correspond to unstressed *sich* in German and the strong form *zichzelf* in Dutch would correspond to stressed (and thereby focussed) *sich*. However, the distribution of the weak and strong forms in Dutch does not match with the distribution of unstressed and stressed *sich* in German. While stressed *sich* always correspond to *zichzelf* in Dutch, unstressed *sich* differs from *zich*. Recall from section 4 that the reflexive pronoun in German cannot be focussed, fronted, or coordinated when it is interpreted as a non-argument reflexive, i.e. in middle constructions, anticausatives and inherent reflexives. In this respect the unstressed non-argument reflexive *sich* corresponds to the weak form in Dutch (*zich*), that cannot be stressed (i.e. focussed) and fronted either and that must also be used with anticausatives and inherent reflexives, that require a non-argument reflexive. The strong form *zichzelf* and *sich* are ungrammatical in these contexts in both languages. In addition, (7.b) above shows that *zich* must not be the object of verbs like *horen* ('hear'), that are not lexically reflexive. This generalization seems to hold for all languages that distinguish weak from strong reflexive forms (cf. Kemmer 1993 and section 2.3). In contrast, German unstressed *sich* is grammatical with verbs like *hören*, the German counterpart of *horen*, as is illustrated in (15). The examples in (16) illustrate the same point: verbs that are unlikely to be (lexically) reflexive take unstressed *sich* as direct object. In all examples we put the focus on some other constituent to exclude a 'strong' interpretation of *sich*.

(15) Hat sich der Peter nur gehört oder auch gesehen? Der Peter hat sich nur [<sub>F</sub> GEHÖRT]  
Has RP the Peter only heard or also seen? The Peter has RP only heard

(16) a. ... weil sogar [<sub>F</sub> HANS] sich nun nicht mehr belügt  
because even Hans RP now no more tells a lie  
b. ... weil sie sich nur [<sub>F</sub> GESTern] im Fernsehen gesehen hat  
because she RP only yesterday in-the TV seen has

<sup>191</sup> We argued in chapter 4 that *sich selbst* in German is formed by adjunction of the adnominal focus particle *selbst* to the NP *sich*. In German, the expression *sich selbst* is not grammaticalized as opposed to Dutch *zichzelf* or English *him-/her-/itself*. Note that it can always be replaced by the stressed simplex anaphor *sich*, although some speakers seem to prefer *sich selbst* in some contexts. The Dutch simplex anaphor *zich* cannot be stressed at all. It is the intrinsically weak counterpart to the strong anaphor *zichzelf*.

In sum, although the distribution of the weak and strong forms in Dutch largely overlaps with the distribution of unstressed vs. stressed reflexive pronouns in German, the pronominal system of both languages are not completely identical. As opposed to two form languages like Dutch (and English) the reflexive pronoun in German is not sensitive to whether a predicate is likely to be reflexive or not. This difference is illustrated in the following picture for Dutch and German.

(17) Dutch and German reflexive pronouns

<i>Language/Example</i>	<i>gedragen/benehmen</i>	<i>wassen/waschen</i>	<i>horen/hören</i>
Dutch:	zich	zich & zichzelf	zichzelf
German:	sich (- focus)	sich (± focus)	sich (± focus)

We conclude that German does not distinguish between weak and strong reflexive pronouns or *SE* and *SELF* anaphors.<sup>192</sup> One morphological form corresponds to both weak and the strong forms in Dutch.<sup>193</sup> The distribution of stressed and unstressed reflexive pronouns in German depends solely on the interpretation of the reflexive pronoun itself (i.e. whether it is an argument or a non-argument reflexive). Besides, a subdivision of reflexive pronouns into [+REFL] and [-REFL] would lead to the situation that nearly every verb in most languages must be listed in the lexicon twice, which is an unnecessary enlargement of the lexicon.<sup>194</sup>

<sup>192</sup> R&R (1993 and 1995) argue that an intrinsic/nonintrinsic contrast shows up at least on the dative argument of three-place predicates in German. They give the following examples to illustrate this.

- (i) a. Peter stellte sich/<sup>??</sup>sich selbst die Statue vor ([+R] verb)  
 Peter imagined RP-DAT a statue PARTICLE  
 b. <sup>??</sup>Peter vertraute sich seine Tochter an ([-R] verb)  
 Peter entrusted RP-DAT his daughter PARTICLE  
 c. Peter vertraute seine Tochter nur sich selbst an  
 Peter entrusted his daughter only RP himself (i.e. ... place her only in his hands)

However, example (i.b) seems to be odd for pragmatic reasons. If we replace *vertrauen* by another [-R] verb, sentence (i.b) gets perfectly grammatical (cf. (ii.a)). Moreover, two-place predicates that require a dative object allow a simple reflexive as well, as can be seen in (iii). There is no evidence that German distinguishes between [+/- REFL]-elements.

- (ii) a. Peter hat sich wieder die besten Karten (selbst) gegeben  
 Peter has RP-DAT again the best cards (himself) given  
 b. Maria hat sich den Rest gegeben  
 Maria has RP-DAT rest given (i.e. Maria has finished herself off)  
 c. Udo gestattet sich wieder einmal gar nichts  
 Udo allows RP-DAT once again absolutely nothing

- (iii) Helmut hat immer nur sich geholfen  
 Helmut has always only RP-DAT helped

<sup>193</sup> Additionally, middle constructions in German are also reflexive, whereas Dutch middle constructions are formed without a (weak) reflexive pronoun.

<sup>194</sup> Note that the non-argument reflexive must be the weak [-REFL] form. Hence, every verb that can undergo middle formation must also be lexically specified for [-REFL] because its direct object is a *SE* anaphor that is specified as [-REFL]. In most Indo-European languages ‘middle verbs’ are lexically reflexive, cf. section 5.6 for more details.

- (i) Peter liest das Buch  
 Peter reads the book  
 (ii) Das Buch liest sich gut  
 The book reads SE-[-REFL] well

Therefore, we can ignore the distinction between weak and strong or *SE* and *SELF* anaphors in the following discussion. The feature [REFL] is needless in German. We come back to two-form languages in section 5.6.

But how can we account for the difference between argument and non-argument reflexives in German. We think that another feature, that is also discussed in R&R, is relevant to the ambiguity of reflexive pronouns in German (and any other Indo-European languages). According to R&R, the feature [R] is a morphosyntactic feature, that depends on the inherent specification of a lexical item, cf. footnote 10 above. All nominal expressions are intrinsically specified for  $\Phi$ -features. Moreover, only elements that are not least specified for these features (i.e. not maximally underspecified) are [+R]. (18) and (19) illustrate the specification of the  $\Phi$ -features *number*, *person*, *gender*, and *case* of personal and reflexive pronouns (homonymous forms within one paradigm are written in italics and homonymous forms in both paradigms are underlined).

(18) Personal pronouns in German

	<b>person</b>	<b>gender</b>	<b>nominative</b>	<b>accusative</b>	<b>dative</b>
<b>singular</b>	<b>1. p</b>	∅	ich	mich	mir
	<b>2. p</b>	∅	du	dich	dir
	<b>3. p</b>	<b>masc.</b>	er	ihn	ihm
		<b>fem.</b>	sie	sie	ihr
	<b>neuter</b>	es	es	ihm	
<b>plural</b>	<b>1. p</b>	∅	wir	uns	uns
	<b>2. p</b>	∅	ihr	euch	euch
	<b>3. p</b>	∅	sie	sie	ihnen

(19) Reflexive pronouns in German

	<b>person</b>	<b>nominative</b>	<b>accusative</b>	<b>dative</b>
<b>singular</b>	<b>1. p</b>		mich	mir
	<b>2. p</b>		dich	dir
	<b>3. p</b>		sich	sich
<b>plural</b>	<b>1. p</b>		uns	uns
	<b>2. p</b>		euch	euch
	<b>3. p</b>		sich	sich

Reflexive pronouns in Modern German differ from personal pronouns at least in two dimensions: they are not specified for gender and they lack nominative case.<sup>195</sup> Furthermore, a mor-

<sup>195</sup> In German the lack of nominative reflexive pronouns can be derived from the obliqueness hierarchy we propose below. Nominative NPs are always the least oblique elements. Therefore they cannot be bound by any other co-argument of the same predicate. Things might differ for a language like Icelandic. Everaert (1990) argues that in Icelandic a nominative reflexive pronoun in VP-internal position is expected to be bound by a dative subject. The relevant example is given in (i). The dative personal pronoun *honum* locally binds the nominative NP. Instead of a potential (but nonexistent) reflexive pronoun REFL, the personal pronoun *hann* must be used.

(i) *Honum*<sub>1</sub> finnst \*REFL<sub>1</sub>/hann (sjalfur)(vera) skrytinn  
Him-DAT finds REFL/he-NOM (self) (be) strange

phological distinction between accusative and dative case can be found only in first and second person singular whereas personal pronouns also distinguish third person accusative forms from third person dative forms. The personal pronoun *ih*r, for example, is specified as  $\langle [+ \text{sing}, - \text{plur}], [- 1.\text{p}, - 2.\text{p}, + 3.\text{p}], [- \text{masc}, + \text{fem}, - \text{neuter}], [- \text{nom}, - \text{acc}, + \text{dat}] \rangle$ . The corresponding third person singular reflexive pronoun *sich* is not specified for number, gender, and a specific object case:  $\langle [\emptyset], [- 1.\text{p}, - 2.\text{p}, + 3.\text{p}], [\emptyset], [+ \text{acc}, + \text{dat}] \rangle$ . A discussion of the correct morphological specification of individual forms within this paradigm would lead us beyond our topic.<sup>196</sup> The two tables in (18) and (19) are only meant to illustrate that reflexive pronouns are the pronominal items that are least specified. Therefore, they are not lexically specified for the feature [R]. The specification of this feature depends on the lexical properties of an element and the pronominal paradigm of a language. Pronominal elements with similar feature specification are compared to each other and only the element, that is maximally underspecified, is not inherently specified for [R]. We will argue in section 5.5 that the feature [R] is relevant for A-chain formation (i.e. ‘syntactic binding’) and thereby for the interpretation of non-argument reflexives. Consider, for example, the subject of impersonal middle constructions and of weather verbs, the personal pronoun *es* (‘it’), carries a full specification for  $\Phi$ -features. It is specified as  $\langle [+ \text{sing}, - \text{plur}], [- 1.\text{p}, - 2.\text{p}, + 3.\text{p}], [- \text{masc}, - \text{fem}, + \text{neuter}], [+ \text{nom}, + \text{acc}, - \text{dat}] \rangle$  and hence [+R]. Therefore, *es* can be the head of an A-chain and bind another pronominal element that is not specified for [R] (we come back to impersonal subjects in section 5.6).

- (20) a. ... weil  $es_1$   $sich_1$  einregnet  
           ... because it RP PART-rains (i.e. The rain is settling in)  
       b.  $Es_1$  schläft  $sich_1$  gut in diesem Bett  
           It sleeps RP well in this bett

As can be seen in (18) and (19) Modern German, like many other languages, does not morphologically distinguish reflexive from personal pronouns in the first and second person. Although Modern German does not always have two morphologically distinct forms, it discriminates between reflexive pronouns and personal pronouns in principle. Besides, we saw in section 2.3 that Middle High German has no dative reflexive pronouns, using personal pronouns for local binding relations, too. In addition, some languages distinguish reflexive possessive pronouns from personal possessive pronouns whereas others have only personal possessive pronouns that are used in every context - i.e. locally bound (bound variable) and locally free (pragmatic coreference).<sup>197</sup> Burzio (1989) connects this observation to his principle of morphological economy: a NP that is locally bound must be maximally underspecified. Reflexive pronouns are less specified than personal pronouns (and personal pronouns are less

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Anderson (1986:69) shows that possessive pronouns have reflexive forms for both dative and nominative. they are licensed in the subject position of embedded sentences. Nominative reflexive pronouns are excluded in these cases although they seem to be structurally licensed as well. One might argue that languages generally lack nominative forms for reflexive pronouns (cf. also Pollard and Sag 1993 and R&R 1995 on this issue).

<sup>196</sup> There are at least three issues that need further discussion.

(i) homonymous forms within one paradigm (e.g. the personal pronoun *sie*).

(ii) homonymous forms in two paradigms (e.g. the 2. person reflexive and personal pronouns *dich* and *dir*), cf. below.

(iii) two-form languages that have two kinds of reflexive pronouns, cf. section 5.6.

<sup>197</sup> Cf. Reinhart (1991) on possessive pronouns that are interpreted either as bound variables or via pragmatic coreference.

specified than R-expressions). Whenever a language discriminates between reflexive and personal pronouns they must be used in different (syntactic) contexts. On the other hand, if there is only one pronominal form, it can be used in every context a pronominal form can occur in, cf. e.g. the first and second person object pronouns in Modern German. The logic of this argument can be illustrated as follows.

(21)  $X$  is locally bound  $\rightarrow$   $X$  is maximally underspecified (i.e. there is no  $Y$  that is less specified than  $X$  than  $X$ )

(21) does not imply that every maximally underspecified element must be locally bound. In Modern German the first and second person pronominal forms are maximally underspecified (there is no comparable pronominal form that is even less specified), but they need not be locally bound (cf. also dative pronouns in Middle High German, and logophoric or exempt anaphors). The following definition accounts for this.

- (22) a. A pronominal element  $X$  is not lexically specified for  $[R]$  iff
- (i) it is equally specified for the features  $\langle F_1, \dots, F_n \rangle$  like another pronominal element  $Y$  and
  - (ii) only  $Y$  is additionally specified for a feature  $\langle F_{n+1} \rangle$ .
- b. A pronominal element  $Y$  is lexically specified as  $[+R]$  iff
- (i) it is equally specified for the features  $\langle F_1, \dots, F_n \rangle$  like another pronominal element  $X$  and
  - (ii) only  $Y$  is additionally specified for a feature  $\langle F_{n+1} \rangle$ .

Hence, a maximally underspecified pronominal element is not lexically specified for  $[R]$ . A pronominal element that is not maximally underspecified is  $[+R]$ . If we compare, for example, the third person singular personal pronoun *ihr* ('her') in (23.a) with a third person singular reflexive pronoun *sich* in (23.b) it becomes clear that the reflexive pronoun in (23.b) is less specified than the personal pronoun in (23.a). Thus only the personal pronoun is  $[+R]$ .

- (23) a. *ihr*  $\langle [+s, -p], [-1.p, -2.p, +3.p], [-m, +f, -n.], [-nom, -acc, +dat] \rangle$   
 b. *sich*  $\langle [\emptyset], [-1.p, -2.p, +3.p], [\emptyset], [+acc, +dat] \rangle$

We conclude that the semantic ambiguity of (weak) reflexive pronouns – or more general of the elements that are least specified for  $\Phi$ -features – results from the intrinsic lexical specification of these elements and the pronominal systems of a language. Expressions that are not specified for  $[R]$  can be either  $[+R]$  or  $[-R]$ . This ambiguity seems to be a universal property of (weak) reflexive pronouns, which can also be observed in German. All reflexive pronouns in German are inherently underspecified for the feature  $[R]$ . As a consequence, they are ambiguous and can be used as  $[+R]$  and as  $[-R]$ -expressions. The GCC discussed in the previous section requires that reflexive pronouns that are  $[+R]$  must head a chain of their own, which is linked to a semantic argument. Thus  $[+R]$  reflexive pronouns yield the argument reflexive interpretation. In contrast,  $[-R]$  reflexive pronouns cannot head their own chain. Instead they must be included in another A-chain, which is headed by a  $[+R]$ -expression. The  $[-R]$  reflexive pronoun yields the non-argument reflexive interpretation. The derivation of this ambiguity will be discussed in section 5.5 in greater detail. Recall that our approach differs from R&R's binding theory on two points. First, (weak) reflexive pronouns (or *SE* anaphors in R&R's terms) can but need not be  $[-R]$  expressions. Second, German does not discriminate between  $[+REFL]$  and  $[-REFL]$  expressions. Because of this second difference, R&R's condition B cannot be applied to German, cf. (9) above. The next section deals with the final modification of the semantic part of R&R's binding theory.

#### 5.4 *O-command and o-binding in German*

This final modification follows P&S (1994), who argue that the definition of binding should be based on the relative obliqueness of arguments. In the previous section we saw that in German the feature [REFL] is needless. Therefore, we cannot apply R&R's binding condition B, repeated here as (24), to German.

(24) B: A reflexive semantic predicate is reflexive-marked

We replace binding condition B by P&S's condition on reflexive pronouns, which will be needed anyway to account for certain binding asymmetries in German. Let us first introduce P&S's binding principle A and B:<sup>198</sup>

- (25) Principle A: A locally o-commanded anaphor must be locally o-bound  
Principle B: A personal pronoun must be locally o-free

*Local o-command* and *local o-binding* are defined in the following way.

- (26) Definitions
- a. Let Y and Z be *synsem* objects with distinct LOCAL values, Y referential. Then Y locally o-commands Z just in case Y is less oblique than Z.
  - b. Y locally o-binds Z just in case Y and Z are coindexed and Y locally o-commands Z. If Z is not locally o-bound, then it is said to be locally o-free.

In P&S the relative obliqueness of grammatical functions is reflected by the order of the syntactic arguments on the SUBCAT list: a *synsem* object Y is less oblique than a *synsem* object Z iff Y precedes Z on the SUBCAT list of the same lexical head. Consider, for example, the following SUBCAT-list in (27). The first *synsem* value can bind the second and the third one, because NP [NOM] is less oblique than NP [ACC] and NP [DAT], and the second *synsem* value can bind the third one, but not vice versa. Hence, a dative NP (or indirect object) can be bound by an accusative NP (or direct object) and a nominative NP (or subject) whereas an accusative NP can be bound only by a nominative NP. These asymmetries will be illustrated immediately.

(27) [SUBCAT < NP [NOM], NP [ACC], NP [DAT] >]

As opposed to P&S, we do not think that the obliqueness of arguments has to be fixed in each lexical entry separately. Instead we assume the general obliqueness hierarchy for German.<sup>199</sup> This asymmetry between nominative, accusative, and dative is manifested in various phenomena, which will be discussed in the next chapter.

- (28) Obliqueness hierarchy  
nominative (subject) > accusative object > dative object > other oblique objects

Besides, P&S lexical definition of obliqueness is incompatible with our analysis of non-argument reflexives. Their theory requires a lexical derivation of non-argument reflexives, because the relative obliqueness is defined on the basis of *subcat* lists. However, we argued at

<sup>198</sup> Note that P&S use the term anaphor instead of reflexive pronouns. We can replace P&S's original principle A in (21) by (21')

(21') Principle A: A locally o-commanded reflexive pronoun must be locally o-bound

<sup>199</sup> This might be connected to processing asymmetries between different kinds of syntactic constituents. We will see in section 6.1.6 that the parser prefers structural case to oblique case and nominative to accusative.

length in chapter 3 that a lexical approach fails to account for non-argument reflexives. Especially impersonal middle constructions as (29), can be hardly derived in the lexicon. Recall that middle constructions in German always select two syntactic arguments (a nominative subject and an accusative object) even if the basic verb subcategorizes only for one syntactic and semantic argument.

- (29) a. In diesem Bett schläft es sich gut  
 In this bed sleeps it RP well  
 b. schlafen <1>

A similar issue might be free dative objects in German. They are unlikely to be subcategorized for by the verb. They can be inserted rather freely and they are very often ambiguous between various interpretations as, for example, possessor or beneficiary. Besides, German has multiple occurrences of dative objects, cf. chapter 6.

- (30) a. Ich backe meiner Mutter einen Kuchen  
 I bake my mother-DAT a cake-ACC  
 b. Du legst deinem Vater das Buch auf den Tisch  
 You put your father-DAT the book-ACC on the table

Free datives show the same syntactic behaviour and the same binding properties as ‘subcategorized’ dative objects. They can be asymmetrically bound by the nominative subject or accusative object of the same sentence, cf. (31.a) and (31.b) and they asymmetrically bind more oblique objects, cf. (31.c) and (31.d). Again, a lexical binding theory based on the selectional properties of predicates fails to account for free dative objects.<sup>200</sup>

- (31) a. Hans erzählte dass Peter<sub>1</sub>-NOM sich<sub>1</sub>-DAT einen Kaffee machte  
 a'. \*Hans erzählte dass dem Peter<sub>1</sub>-DAT sich<sub>1</sub>-NOM einen Kaffee machte  
 Hans told that the Peter RP a cup of coffee-ACC made  
 b. Maria setzte die Kinder<sub>1</sub>-ACC einander<sub>1</sub>-DAT auf den Schoß  
 b'. \*Maria setzte den Kindern<sub>1</sub>-DAT einander<sub>1</sub>-ACC auf den Schoß  
 Maria sat the children each other on the lap  
 c. Ich öffne ihr<sub>1</sub>-DAT [über sich<sub>1</sub>] die Augen  
 c'. \*Ich öffne [über sie<sub>1</sub>] sich<sub>1</sub>-DAT die Augen  
 I open on her herself the eyes  
 ‘I open her eyes to the truth’

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<sup>200</sup> A lexical theory could introduce a lexical rule of ‘free dative insertion’ that adds a free dative object to the SUBCAT-list of a basic verb. However, a lexical rule of dative insertion does not provide an argument against the general obliqueness hierarchy we proposed for German, because all datives (no matter whether they are subcategorized or free, i.e. introduced by a lexical rule) share the same syntactic properties.

Note that free dative objects also pose a problem for configurational binding theories that define the binding conditions on the basis of c-command and VP-internal A-positions. They are forced to base-generate free datives along with subcategorized dative objects in a position c-commanded by nominative subjects and accusative objects. However, this base position is motivated mainly by the selectional properties of a verb (the verb assigns a theta-role to this position). Below we give further arguments that dative objects cannot be analyzed parallel to accusative objects, cf. Müller (1993) and Vogel and Steinbach (1995 and 1998) and chapter 6.

- d. Ich habe ihr<sub>1</sub>-DAT gestern die Wohnzimmerwand [mit sich<sub>1</sub> selbst] bemalt  
 d'. \*Ich habe [mit ihr<sub>1</sub>] sich<sub>1</sub>-DAT gestern die Wohnzimmerwand bemalt  
 I have with her herself yesterday the living room-wall painted  
 ‘Yesterday, I painted her (picture) on the wall of the living room for herself’

To summarize, the binding conditions for German should not be defined relative to lexical *synsem* objects but to semantic arguments of a predicates. In addition, the obliqueness hierarchy as stated in (28) does not depend on individual lexical entries but is a general property of German. Before we formulate the final version of our binding theory we briefly discuss the relevant German examples, that illustrate the asymmetry in binding relations in German. Consider first simple two-place predicates. The examples show that a nominative subject can bind less oblique objects as, for example, the accusative object in (32.a) or the dative objects in (32.b). Both examples include an argument reflexive. Besides, accusative reflexive pronouns need not be linked to a semantic argument of the verb, cf. the anticausative in (32.c). In addition, the accusative object can also be bound in resultative constructions by the subject, cf. (32.d). In resultatives, the accusative object is linked to a semantic argument of the complex resultative predicate.

- (32) a. Hannelore<sub>1</sub> wäscht sich<sub>1</sub> nie  
 Hannelore-NOM washes RP-ACC never  
 b. Helmut<sub>1</sub> widerspricht sich<sub>1</sub>  
 Helmut-NOM contradicts RP-DAT  
 c. Das Fenster öffnet sich  
 The window opens RP-ACC  
 d. Peter trinkt sich unter den Tisch  
 Peter drinks RP-ACC under the table

Besides, the nominative subject can also bind a dative object in ditransitive clauses like (33). In this case binding across a less oblique accusative object is possible because the relation ‘x is less oblique than y’ is transitive.

- (33) Der Manager<sub>1</sub> überwies sich<sub>1</sub> das ganze Geld auf sein Konto  
 The manager transferred RP-DAT the whole money to his account

It is a well known fact that in German accusative objects can bind dative objects but not vice versa as can be seen in (34), cf. Grewendorf (1988), Müller (1993) and Vogel and Steinbach (1998). This is correctly predicted by the obliqueness hierarchy in (28).

- (34) a. Gestern hat man die Gäste<sub>1</sub> einander<sub>1</sub> vorgestellt  
 Yesterday has one the guests-ACC each other-DAT introduced  
 b. \*Gestern hat man den Gästen<sub>1</sub> einander<sub>1</sub> vorgestellt  
 Yesterday has one the guests-DAT each other-ACC introduced

The examples in (35) illustrate that accusative and dative objects can asymmetrically bind other more oblique objects. We already saw in (31) that free datives equal subcategorized datives in this respect.

- (35) a. Ich bringe den Jungen<sub>1</sub> zu sich<sub>1</sub>  
I take the boy-ACC to RP  
b. \*Ich bringe zu dem Jungen<sub>1</sub> sich<sub>1</sub>  
I take to the boy RP-ACC  
c. ... weil (es) den beiden Henkern<sub>1</sub> vor einander<sub>1</sub> graute  
... because (it) the two executioners-DAT of each other dreaded  
d. \*... weil (es) vor den beiden Henkern<sub>1</sub> einander<sub>1</sub> graute  
... because (it) of the two executioners each other-DAT dreaded

Note that an explanation that relies on R&R's (1993) binding condition B (*a reflexive semantic predicate is reflexive-marked*) would incorrectly predict that both sentences should be grammatical, because condition B does not refer to an order of obliqueness. Thus even if we would relate our explanation to R&R's original version of the binding theory, that we discussed in section 5.2, some additional condition on the obliqueness of arguments would be necessary. The next kind of example can be already found in P&S (1994: 275f.). In German, like in English, a reflexive pronoun included in a *by*-phrase can be bound by the subject of the sentence – 'PASS' is the passive auxiliary.

- (36) a. The only barber who was shaved by himself was Figaro  
b. Kater Karlo und Zwerg Zwetschge waren die einzigen Ganoven, die<sub>1</sub> jemals von Kater Karlo and Zwerg Zwetschge were the only crooks that ever by sich<sub>1</sub> (selbst)/\*ihnen<sub>1</sub> ausgeraubt wurden  
RP (self)/them robbed PASS  
c. Helmut<sub>1</sub> wurde wieder nur von sich<sub>1</sub> (selbst)/\*ihm<sub>1</sub> gewählt  
Helmut PASS again only by RP (self)/him voted-for  
d. Die BRD<sub>1</sub> sieht sich<sub>1</sub>/\*<sub>2</sub> von der DDR<sub>2</sub> betrogen (cf. Grewendorf 1983)  
The BRD sees RP/her by the DDR cheated

These examples clearly show that o-command must be defined relative to case (or grammatical relations) instead of thematic roles. A binding theory based on a thematic hierarchy cannot account for the reflexive pronoun in (34).<sup>201</sup> A similar situation can be found in embedded passives in ECM-constructions as (34.d). Again, the agent of the embedded clause (*von der DDR* 'by the DDR') cannot bind the theme/patient although the reflexive pronoun receives accusative instead of nominative case and is thus not excluded for case reasons. Finally we come to ECM- (or A.c.I.-) constructions. German has only a few ECM (or A.c.I.) verbs as, for example, some verbs of perception like *sehen* ('see') or *hören* ('hear') and the verb *lassen* ('let'/'have s.o. do s.th.'). which assign accusative case to the embedded subject. The following brief discussion will be limited to verbs of perception.<sup>202</sup> ECM constructions are a par-

<sup>201</sup> Note that under this theory, reflexive pronouns should be ungrammatical in passives at all. This theory incorrectly predicts that the reflexive pronouns cannot bear the agent-role because this would violate the thematic hierarchy. On the other hand, if the reflexive pronouns would correspond to the theme or patient of the verb, they are ungrammatical either because English and German lack a nominative form for reflexive pronouns..

<sup>202</sup> *Lassen* differs from verbs of perception in certain respects (cf. e.g. Grewendorf 1983). Firstly, *lassen*, unlike *sehen* and *hören*, does not select a corresponding finite complementizer-initial embedded clause.

- (i) a. \*Peter ließ dass der Mechaniker das Auto reparierte  
Peter lets that the mechanic the car repaired  
b. Peter sah dass der Mechaniker das Auto reparierte

Secondly, as opposed to *sehen* and *hören*, *lassen* selects embedded passives without passive morphology.

ticular interesting case for two reasons. Firstly, the ECM-subject can be bound by the matrix subject. Secondly, the embedded object can only be bound by the ECM-subject, although the latter is not less oblique. Both the binder and the reflexive pronoun are assigned accusative case.<sup>203</sup>

- (37) a. Im Traum sah die Frau<sub>1</sub> sich<sub>1</sub> den Geliebten waschen  
 In-the dream saw the woman-NOM RP-ACC the sweetheart-ACC wash  
 b. Im Traum sah die Frau<sub>1</sub> den Geliebten<sub>2</sub> sich\*<sub>1/2</sub> waschen  
 In-the dream saw the woman-NOM the sweetheart-ACC RP-ACC wash  
 c. Im Traum sah der Mann<sub>1</sub> die Politiker<sub>2</sub> wieder mal nur sich\*<sub>1/2</sub> helfen  
 In-the dream saw the man-NOM the politicians-ACC again only RP-DAT help

We turn to the the matrix clause first. Recall that R&R argue that the ECM-subject (the reflexive pronoun in (37.a) is a syntactic argument of the matrix verb, because it assigns accusative case to the ECM-subject. However, the ECM-subject is not only a syntactic but also a semantic argument of the matrix verb.<sup>204</sup> Consider the following contrast. The ECM-construction in (38.a) implies that Peter sees Maria. In contrast, the complementizer-initial embedded clause in (38.b) does not trigger this implication. (37.b) can also mean that Peter realizes, that Maria took the baby for a walk, because Maria and the baby carriage are gone. The same contrast can also be found in (38.c) and (38.d) for the verb *hören* ('hear').

- 
- (ii) a. Peter ließ das Auto (von einem Mechaniker) reparieren  
 Peter lets the car (by the mechanic) repair  
 b. Peter sah das Auto (von einem Mechaniker) repariert werden

Thirdly, only *lassen* selects bare infinitives (iii), resultative constructions (iv), and so-called *lassen*-middles (v).

- (iii) a. Der Chef läßt arbeiten  
 The boss lets work  
 b. \*Der Chef sieht arbeiten  
 (iv) a. Der Pfarrer läßt die Kinder in Ruhe  
 The minister lets the children quiet  
 'The minister leaves the children alone'  
 b. \*Der Pfarrer sieht die Kinder in Ruhe  
 (v) a. Das Buch läßt sich leicht lesen  
 The book lets RP easily read  
 'The book is easy to read'  
 b. \*Das Buch sieht sich gut lesen

Wunderlich (1985) argues that the ECM-subject is also a semantic argument of *lassen*. We will argue below that the same is true for perception verbs. Therefore, the ECM-subject can be bound by a less oblique co-argument, i.e. the subject of the matrix clause.

- (vi) Peter läßt sich waschen  
 Peter lets RP wash

<sup>203</sup> This issue is rather more complex. Some data are very subtle and require more discussion (cf. for example Reis 1976 and Grewendorf 1983 for detailed analyses). In the following we present only the core cases..

<sup>204</sup> See also Pollard and Sag (1994:132), who argue that equi verbs select an embedded VP, the unexpressed subject of which is also a semantic argument of equi verb itself.

- (38) a. Peter sah Maria mit dem Kind spazieren gehen → Peter sieht Maria  
 P. saw M.-ACC with the child stroll went  
 ‘Maria saw Maria taking the baby for a walk’
- b. Peter sah, dass Maria mit dem Kind spazieren ging - / → Peter sieht Maria  
 P. saw that M.-NOM with the child stroll went  
 ‘P. saw that M. took the baby for a walk’
- c. Peter hörte den Präsidenten singen → Peter hört den Präsidenten  
 Peter hears the president-ACC sing
- d. Peter hörte, dass der Präsident singt - / → Peter hört den Präsidenten  
 Peter hears that the president-NOM sings

Likewise negation in the ECM-construction implies that subject of the matrix clause does not see or hear the ECM-subject at all. As opposed to (39.a), (39.b) does not imply that Hans did not see Hans. Only the latter sentence can be uttered in a situation, where Peter is sitting next to Hans in the living room.<sup>205</sup>

- (39) a. Peter sah Hans nicht im Garten spielen → Peter sieht Hans nicht  
 Peter saw Hans-ACC not in-the garden play  
 ‘Peter did not see Hans playing in the garden’
- b. Peter sah, dass Hans nicht im Garten spielte - / → Peter sieht Hans nicht  
 Peter saw that Hans-ACC not in-the garden play  
 ‘Peter saw that Hans did not play in the garden’

We conclude that in ECM-constructions the matrix object is not only a syntactic but also a semantic argument of the matrix verb. The ECM-subject can be bound by the matrix subject, because they are co-arguments of the matrix predicate (*sehen* or *hören*) and the matrix subject is less oblique than the ECM-subject. Hence, the binding relations in the matrix clause follow from the obliqueness hierarchy proposed in (28) above. We complete the discussion with the embedded clause of ECM-constructions. (37.b) above and the similar example in (40) illustrate that the embedded object can only be bound by the ECM-subject. Recall that the ECM-subject is also a semantic argument of the embedded predicate. Hence, binding should be possible. However, the antecedent is not less oblique than the reflexive pronoun, because both arguments are assigned accusative case. These examples demonstrate that o-command must not be defined relative to less oblique constituents. Instead a constituent X o-commands a constituent Y iff X is not more oblique than Y. Thus the antecedent must not be more oblique than the reflexive pronoun. This modification would also be necessary for the original version of P&S’s binding theory.<sup>206</sup>

<sup>205</sup> In addition, both sentences permit a narrow scope reading of the negation. In this case only the constituent *im Garten* (‘in the garden’) is in the scope of the negation and the sentences mean that it is not in the garden but somewhere else where Peter saw Hans playing.

<sup>206</sup> Alternatively, one could exempt the reflexive pronoun in (40) from binding, because it is not locally o-bound by a less oblique co-argument. This proposal would predict that *sich* in (40) is a logophoric reflexive pronoun that should be subject to processing and discourse constraints (cf. P&S 1994:266f.). However, binding of the embedded reflexive pronoun by the matrix subject seems to be only marginally possible even if the intervening ECM-subject is excluded from binding (‘PP’ stands for personal pronoun).

- (40) Peter sah den Barbier sich rasieren  
 Peter saw the barber RP-ACC shave  
 ‘Peter saw the barber (himself) shaving’

We are now in the position to define the final version of our binding theory for German. The following table illustrates the different kinds of arguments and the relevant binding relations we defined for German. The structural (or configurational) binding in (i) and (42.1) below will be relevant for the analysis of non-argument reflexives in the following section.

- (41) Syntactic, semantic and logophoric binding in German

	<b>Reflexive pronoun</b>	<b>Binding condition</b>	<b>Interpretation</b>
(i)	syntactic argument	GCC, cf. (42.1)	non-argument
(ii)	semantic argument	Principle A, cf. (42.2) and (42.2)	argument
(iii)	non-argument	exempt from Principle A, cf. (42.2)	argument

Note that (ii) deals with to the standard examples of binding, argument reflexives that are coreferent to another argument of the same predicate, whereas (iii) accounts for the examples we discussed in section 5.1. The only pure syntactic condition in (i) explains the distribution of non-argument reflexives in German. The distinction between (i) and (ii) is based on the observation that (weak) reflexive pronouns are lexically underspecified for the feature [R]. Syntactic arguments are defined on the basis of structural case: only NPs that are structurally case-marked (or that check a structural case-feature) count as A-elements. Hence, not all semantic arguments of a verb are also syntactic arguments: *dative objects*, *mit*-phrases, *für*-phrases, or *von*-phrases are A'-elements in syntax, that can be arguments of the verb in semantics. [-R] reflexive pronouns that check structural case must be included in an A-chain headed by a [+R]-expression, because they are subject to the GCC. The distribution of [+R] reflexive pronouns is generally controlled by principle A. Either they are locally commanded or they are logophorical. Our binding theory is summarized in (42).

- (42) 1. General Condition on A-Chains (GCC)

A maximal A-chain contains exactly one link -  $\alpha_1$  - that is both +R and case-marked.

A maximal A-chain is any sequence of coindexation of syntactic arguments that satisfies antecedent government.

The syntactic arguments of P are the chains that are assigned structural case in the extended projections of P.

- 
- (i) a. Die Königin läßt nur mich ??sich/sie waschen  
 The queen lets only me RP/PP wash  
 b. Die Katzen lassen mich immer wieder ??sich/sie waschen  
 The cats let me again and-again RP/PP wash

Note that the binding relation between the ECM-subject and the embedded object cannot be reversed, because a reflexive ECM-subject must also be bound by the matrix subject.

## 2. Binding principles

Principle A: A locally o-commanded reflexive pronoun must be locally o-bound

Principle B: A personal pronoun must be locally o-free

Let Y and Z be different semantic arguments of the same predicate, Y referential. Then Y locally o-commands Z just in case the syntactic constituent Y is linked to is not more oblique than the syntactic constituent Z is linked to.

Y locally o-binds Z just in case Y and Z are coindexed and Y locally o-commands Z. If Z is not locally o-bound, then it is said to be locally o-free.

## 3. Obliqueness hierarchy in German

nominative (subject) > accusative (direct) object > dative (indirect) object > other oblique objects

### 5.5 *The interpretation of accusative reflexive pronouns*

Having defined the conditions on o-binding and A-chain formation, we can now turn to the interpretation of accusative reflexive pronouns in the position of the direct object. In the final part of this chapter we turn to the first ambiguity of accusative reflexive pronouns illustrated in figure (1) above. The accusative reflexive pronoun in the position of the direct object can but need not be linked to a semantic argument of the verb. The examples are repeated in (43) on the one hand and (44) on the other. We will argue that this ambiguity can be derived from the binding theory defined in (42) above. The ambiguity between (44.a) and (44.b), which results from the interpretation of the implicit argument, will be discussed in the next chapter. This second ambiguity is not directly related to the interpretation of the accusative reflexive pronoun.

- (43) a. Peter wäscht sich (argument-reflexive)  
Peter-NOM washes RP-ACC
- (44) a. Das Buch liest sich gut (non-argument reflexive, argument-saturation)  
The book-NOM reads RP-ACC well
- b. Die Tür öffnet sich (non-argument reflexive, argument-reduction)  
The door-NOM opens RP-ACC

Following Chomsky (1995:chapter 3) a DP must check its (structural) case feature in the extended projection of V (cf. also chapter 4 above). In German, only nominative and accusative case is structural.<sup>207</sup> An accusative object moves to AgrOP,Spec and a nominative subject moves to AgrSP,Spec.<sup>208</sup> Hence, A-movement creates two A-chains in a transitive sentence, as is illustrated in corresponding structure (45).

<sup>207</sup> In chapter 4 we argued that our approach to reflexivity does not depend on a special analysis of structural case. All we need is a (syntactic) distinction between structural and oblique case. We follow Chomsky (1995: chapter 3) because this approach enables us to account for the differences between structural and oblique case straightforwardly (we turn to the syntactic analysis of oblique case forms in the next section).

<sup>208</sup> A-movement can take place either before or after Spell-Out depending on the case feature: strong features must be checked before Spell-Out, weak features need not be checked before Spell-Out (and according to Procrastinate must not be checked before Spell-Out), cf. Chomsky 1995.

- (45)  $[_{AgrSP} NP_1 (\text{Subject}) [_{AgrOP} NP_2 (\text{Object}) [_{VP} t_1 [_{V'} t_2 V ]]]]$   
 chain 1 =  $NP_1 - t_1$  ; chain 2 =  $NP_2 - t_2$

In (45) both A-chains check their case-feature in the head-position and they are interpreted in the tail- (or base-) position. Both chains are headed by a [+R]-expression, which is linked via the base position to a semantic argument of the verb. Chain number 1 is interpreted in its VP-internal position  $t_1$ , i.e. VP,Spec. This position is always linked to the first argument of the verb.<sup>209</sup> Chain number 2 is interpreted in  $t_2$ , the complement-position of  $V^\circ$ . This position is linked to the second argument of the verb. Consider the following simple transitive sentence without a reflexive pronoun (in the following presentation all NPs are interpreted as individual type variables for the sake of simplicity):

- (46) a. Peter read 'War and Peace'  
 b.  $[_{AgrSP} Peter_1 [_{AgrOP} \text{'War and Peace'}_2 [_{VP} t_1 [_{V'} t_2 \text{read} ]]]]$   
 chain 1 =  $Peter_1 - t_1$  ; chain 2 =  $\text{'War and Peace'}_2 - t_2$   
 c.  $R < x, y >$   
 d.  $\lambda y (R < x, y >) (w \& p)$   $\rightarrow R < x, w \& p >$   
 e.  $\lambda x (R < x, s >) (p)$   $\rightarrow R < p, w \& p >$

Note that in German the linking-principles for syntactic argument are very simple: (i) Spec of VP is linked to the first argument variable  $x$  and (ii) the complement position of  $V^\circ$  is linked to the second argument variable  $y$ . In the next chapter we come back to these two principles. Let us now turn to reflexive pronouns in AgrOP,Spec. Reflexive pronouns are not lexically specified for the feature [R]. Therefore, they can be either [+R] or [-R]. According to the *General Condition on A-Chains* (GCC), only the latter must be a proper part of a maximal A-chain that is headed by another A-element that is specified as [+R]. The [-R] reflexive pronoun is forced to form a chain with the nominative subject, otherwise the resulting syntactic structure would be ungrammatical. Thus whenever the second A-chain in (46) is headed by a [-R]-expression, it must be coindexed with the first chain, which results in the complex A-chain 3. The complex chain meets the GCC, because it is headed by the [+R]-expression in AgrSP,Spec. On the other hand, chain 2 in (46) must not be coindexed with chain 1 if the former is headed by a [+R] reflexive pronoun. Otherwise this would lead to a violation of the GCC, which excludes A-chains that contain two [+R]-expressions.<sup>210</sup>

- (47)  $[_{AgrSP} NP-[+R]_1 [_{AgrOP} RP-[+/-R]_2 [_{VP} t_1 [_{V'} t_2 V ]]]]$   
 chain 1 =  $NP-[+R]_1 - t_1$  ; chain 2 =  $NP-[+R]_2 - t_2$   
 chain 3 =  $NP-[+R]_1 - NP-[-R]_2 - t_1 - t_2$

As a consequence, the [-R] reflexive pronoun must be included in a complex A-chain, the head of which is linked via the chain's VP-internal base position  $t_1$  (i.e. the complement position of  $V^\circ$ ). Thus a complex A-chain is always linked to the second argument of the verb,

<sup>209</sup> We assume that the arguments of a two-place predicate are ordered pairs.

<sup>210</sup> Condition (42.1) states that a maximal A-chain is any sequence of coindexation of syntactic arguments that satisfies antecedent government. The syntactic arguments are chains themselves. In (38) they consist of two members, that are coindexed. In case two syntactic arguments (i.e. chains) are coindexed, all four members bear the same index. Alternatively, one can define maximal A-chains in the following way: A maximal A-chain is any sequence of coindexation of A-positions that satisfies antecedent government. An A-position is any position/link of a chain to which structural case is assigned. This slightly revised definition yields the same result: a [-R]-expression in an A-position must not be the head of the A-chain it is part of.

whereas the verb's first argument cannot be linked to syntax. Unlike [-R] reflexive pronouns, [+R] reflexive pronouns head an A-chain of their own and both A-chains are linked to the first and second argument position respectively. To summarize, a accusative reflexive pronoun in object position can either head its own chain or it is included in another (complex) A-chain, which is headed by a [+R]-expression. The former option is only available for [+R] reflexive pronouns and the latter one for [-R] reflexive pronouns. Thus the reflexive pronoun can be linked to a semantic argument only if it heads its own chain. According to the GCC, this is only possible for reflexive pronouns that are specified as [+R]. The ambiguity of accusative reflexive pronouns is illustrated in the second and third line of table (48).

(48) A-chains and [+/-R]-expressions in German

	<b>syntax</b>	<b>semantics</b>
<b>a. simple chain</b>	[+R, NP] — [-R, TRACE]	1 argument
<b>b. complex chain</b>	[+R, NP] — [-R, RP] — [-R, TRACE] — [-R, TRACE]	1 argument
<b>c. two chain</b>	[+R, NP] — [-R, TRACE]; [+R, RP] — [-R, TRACE]	2 arguments
<b>d. two chains</b>	[+R, NP] — [+R, TRACE]; [+R, NP] — [-R, TRACE]	2 arguments

Let us take a closer look at [+R] reflexive pronouns first. The lexically underspecified reflexive pronoun can only be the head of an A-chain if it is specified as [+R]. The resulting syntactic representation in (49) equals the one in (46) above. Both structures contain two A-chains that are linked to a semantic argument each. The reflexive pronoun is linked to the second semantic argument of the two-place verb and the subject to the first one.

- (49) a. Peter wäscht sich  
Peter washes RP-ACC
- b.  $[\text{AgrSP Peter}_1 [\text{AgrOP RP-}[\text{+R}]_2 [\text{VP } t_1 [\text{v}' t_2 \text{ wäscht } ]]]]$   
chain 1 =  $\text{Peter}_1 - t_1$ ; chain 2 =  $\text{RP-}[\text{+R}]_2 - t_2$
- c.  $W < x, y >$
- d.  $\lambda y (W < x, y >) (\text{RP}) \rightarrow W < x, \text{RP} >$
- e.  $\lambda x (W < x, s >) (\text{p}) \rightarrow W < \text{p}, \text{RP} >$

Hence, the [+R] reflexive pronoun is linked to a semantic argument itself and it must be bound by another argument of the same predicate. Recall the binding principles from the previous section, which are defined relative to semantic arguments. Principle A states that a locally o-commanded reflexive pronoun must be locally o-bound bound, i.e. it must be bound by a co-argument that is not more oblique than the reflexive pronoun itself. In (49) the subject is less oblique than the reflexive pronoun. Thus it locally o-commands and locally o-binds the reflexive pronoun. Thus both arguments are coindexed.

(50)  $W < p_i, \text{RP}_i >$

Reinhart (1983) defines a translation mechanism for bound reflexive pronouns.<sup>211</sup> Unlike Reinhart (1983), our approach relates binding to semantic co-arguments. Therefore, we assume that  $\Phi$  in (51) is a semantic predicate. Thus rule (51) operates on a semantic predicate  $\Phi$ ,  $\lambda$ -abstracts on the antecedent (a referential expression) and converts all arguments that are

<sup>211</sup> Reinhart's (1983: 160) original version is limited to S'-expressions:  $[_S' \Phi] \rightarrow [_S' \beta (\lambda x (\Phi^{\beta/x}))]$ . This definition follows the binding theory in Chomsky's (1981) which is defined on the basis of (syntactic) governing categories. Our theory of binding is, however, defined on semantic predicates. Therefore, we omit this restriction.

coindexed with the antecedent into variables bound by the  $\lambda$ -operator. The final semantic representation of sentence (49) is given in (52).

(51) Interpretation of bound variables (following Reinhart 1983)

$[\Phi] \quad [ \beta ( \lambda x ( \Phi^{\beta/x} )) ]$

(52)  $(\lambda x W < x, x >) (p)$

So far our theory predict the correct semantic representation for argument reflexives. In the next step we derive the interpretation of non-argument reflexives. We already saw that [-R] reflexive pronouns, unlike their [+R] counterparts, must be included in another A-chain that is headed by a [+R]-expression. This complex A-chain is again interpreted in its base-position, the complement of  $V^{\circ}$ , which corresponds to the second argument position of the verb. Note that in (53) VP,Spec cannot be linked to a semantic argument, because it is not the base position of the chain. Therefore the first argument position of the verb is not linked to syntax. The only [+R]-expression is linked to the second argument. We will argue in the next chapter that the implicit argument can either be reduced or saturated. Argument reduction removes the free argument variable from the semantic representation, whereas argument saturation binds the argument variable ('OP' stands for operator and ' $\emptyset$ ' for the deleted first argument).

(53) a. Die Tür öffnet sich

The door opens RP-ACC

b.  $[_{AgrSP} \text{Die Tür}_1 [_{AgrOP} \text{RP-}[-R]_2 [_{VP} t_1 [_{V'} t_2 \text{ öffnet } ]]]]$

chain = Peter<sub>1</sub> - RP-[-R]<sub>2</sub> - t<sub>1</sub> - t<sub>2</sub>

c.  $O < x, y >$

d.  $\lambda y (O < x, y >) (t)$

$\rightarrow O < x, t >$

e.  $Op x (O < x, t >) \text{ or } O < \emptyset, t >$

Impersonal middles can be derived in the same way. In (54) the reflexive pronoun is bound by a [+R]-element, the impersonal subject *es* ('it') in Spec of AgrSP. We mentioned in chapter 4 that this [+R]-element might base-generated in the VP-internal subject-position, because a VP must contain at least one [+R]-expression. Structure (54) contains one complex A-chain, which must be linked again to the second argument of the verb. However, the impersonal subject *es* cannot be linked to a semantic argument. Although it is not maximally underspecified, it is only a quasi-argument that is not interpreted in semantics. Note that the impersonal subject, which bears the default values *third person singular neuter* is the nominative counterpart of the non-argument reflexive. Within the nominative paradigm, the third person singular personal pronoun *es* is the 'weakest' element. Thus it can be used as a pleonastic element or dummy that only fulfills a syntactic function.<sup>212</sup> As a consequence, the A-chain is not

<sup>212</sup> *Es* ('it') can fulfill rather different functions in German. It is used as impersonal subject in impersonal middle constructions, with weather verbs (i.a), and in active sentences that do not select a subject (i.b), cf. also Bierwisch (1996).

(i) a. ... weil es regnet

... because it rains

b. ... weil es in dieser Stadt viele Autos gibt

... because it in this town many cars gave

'... because there are many cars in this town'

Besides, it is an expletive element, that can optionally occur in the middle field if the corresponding clausal complement is extraposed.

linked to the second argument of the verb. Note, however, that the A-chain is not superfluous in impersonal middle constructions. Its purpose is to prevent the first and sole argument of the one-place predicate from linking to syntax, which must be bound by a semantic operator (argument saturation). Argument reduction is impossible because the sole argument of a one-place predicate cannot be deleted, cf. chapter 6 for further discussion.

- (54) a. Es schläft sich (gut in diesem Bett)  
It sleeps RP-ACC  
b. [<sub>AgSP</sub> ES<sub>1</sub> [<sub>AgOP</sub> RP-[-R]<sub>2</sub> [<sub>VP</sub> t<sub>1</sub> [<sub>V'</sub> t<sub>2</sub> schläft ]]]]  
chain = ES<sub>1</sub> - RP-[-R]<sub>2</sub> - t<sub>1</sub> - t<sub>2</sub>  
c. S < x >  
d. Op x (S < x >)

We conclude this section with a final remark about ECM-constructions. Our analysis predicts that the non-argument reflexive can also occur in ECM-constructions. This seems to be correct. Reflexive pronouns in ECM-constructions show the same ambiguity between an argument and a non-argument interpretation. An embedded [-R] reflexive pronoun can form an A-chain with the ECM-subject and a [-R] reflexive pronoun in the position of the ECM-subject (i.e. accusative object of the matrix clause) is governed by the matrix subject. Thus the reflexive pronoun in both positions can be included in a maximal A-chain that is headed by a [+R]-expression. The examples in (55) illustrate the ambiguity between argument- and non-argument reflexives for accusative reflexive pronouns in the embedded clause.

- (55) [<sub>CP</sub> NP-NOM V [ [+R]-NP-ACC<sub>1</sub> [-R]-RP-ACC<sub>1</sub> V]]  
a. Der Engel sah Maria<sub>1</sub> sich<sub>1</sub> kämmen (argument reflexive)  
The angel sees Maria-ACC RP-ACC comb  
b. Peter hörte die Tür<sub>1</sub> sich<sub>1</sub> öffnen (non-argument reflexive)  
Peter hears the door-ACC RP-ACC open  
c. Hans sah den Fjord<sub>1</sub> sich<sub>1</sub> verengen (non-argument reflexive)  
Hans sees the fiord-ACC RP-ACC narrow

In the position of the ECM-subject non-argument reflexives are harder to find. The reason for this is that ECM- (or A.c.I.-) verbs in general do not form perfect in middle constructions. Besides, they are ungrammatical in anticausatives (cf. next chapter for a brief discussion of the semantics of anticausatives). The ECM-middle construction in (56.b) seems to be as acceptable as the corresponding simple middle construction (56.b'). One exception are so-called *let-middle* like (56.c).<sup>213</sup>

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- (ii) a. ... weil es<sub>1</sub> mir sehr gut gefallen hat, [dass ihr gekommen seid]<sub>1</sub>  
... because it to-me very much pleased has that you come have  
b. ... weil der Hans es allen erzählt hat, dass die Ökosteuer nicht ausgesetzt wird  
... it seems that Hans contented with himself is

And thirdly, *es* can also be used as so-called 'Vorfeld-*es*' in sentence-initial position.

- (iii) Es steht ein Männlein im Walde  
It stands a little-man in-the forest

Note finally, that *es*, unlike other personal pronouns, cannot be stressed and coordinated. It seems to be intrinsically 'weak'. For further discussion see Hall (1998) and Cardinaletti and Starke (1994).

<sup>213</sup> The embedded predicate *lesen* ('read') is interpreted as passive in this case, although it has no passive morphology. Recall from footnote 33 above that embedded passives of *lassen* A.c.I.-constructions must not be marked for passive.

- (56) [<sub>CP</sub> DP-NOM<sub>1</sub> V [ RP-ACC<sub>1</sub> DP-ACC V]]
- a. Im Spiegel sieht der Engel sich Maria waschen (argument reflexive)  
In-the mirror sees the angel RP Maria wash
- b. ??Von hier aus sieht sich der gegnerische Stürmer viel (non-argument reflexive)  
besser den Elfmeter schießen  
From here sees RP the opposing forward much better  
the penalty take
- b'. ??Von hier aus sieht sich das gegnerische Tor viel  
besser  
From here sees RP the opponent's team much better
- c. Das Buch läßt sich einfach lesen (non-argument reflexive)  
The book lets RP easily read  
'The book is easy to read'

In this section we argued that the non-argument interpretation of the accusative reflexive pronoun in the position of the accusative object depends solely on A-chain formation. According to the GCC, an A-chain must be headed by an [+R]-expression. Therefore, [-R]-expression must not be the head of an A-chain. A non-argument reflexive, which are [-R]-expressions, in the position of the accusative object is forced to form an A-chain with the nominative subject. Argument reflexives on the other hand are [+R]-expressions, which must be the head of their own chain. In addition, we saw that A-chains are linked to semantic arguments of the verb. Therefore, both the subject and the direct object can only be linked a semantic argument if transitive reflexive sentences contain an argument reflexive. (57) summarizes the possible interpretations of one- and two-place predicates in transitive, intransitive and transitive reflexive sentences in German ('OP' stands again for semantic operator).

- (57) a. Transitive active sentences in German

subject <sub>NOM</sub> XP <sub>(1)</sub>	verb V	object <sub>ACC</sub> YP/rp <sub>1</sub>	argument linking	semantics
<i>Peter</i>	<i>wäscht</i>	<i>Hans</i>	subject → 1. argument object → 2. argument	
<i>Peter</i>	<i>wäscht</i>	<i>sich</i>	reflexive	V < x, y >
YP <sub>1</sub>	V	rp <sub>1</sub>	subject → 2. argument object → ∅	
<i>Die Tür</i>	<i>öffnet</i>	<i>sich</i>	anticausative	V < OP x, y >
<i>Das Buch</i>	<i>liest</i>	<i>sich</i>	pres. middle constr.	V < ∅, y >
YP <sub>1</sub>	V	rp <sub>1</sub>	subject → ∅ object → ∅	
<i>Es</i>	<i>tanzt</i>	<i>sich</i>	imp. middle constr.	V < OP x >

## b. Intransitive active sentences in German

subject <sub>NOM</sub>	verb	object <sub>ACC</sub>	argument linking	semantics
XP	V		subject → 1. argument	
<i>Peter</i>	<i>trinkt</i>		impl. second argument	V < x, OP y >
XP	V		subject → 1. argument	
<i>Peter</i>	<i>schläft</i>		unergative	V < x >
<i>Peter</i>	<i>erwacht</i>		unaccusative	V << x >>
XP <sub>it</sub>	V		subject → ∅	
<i>Es</i>	<i>regnet</i>		weather verb	V < ∅ >

## 5.6 Weak and strong pronouns

Recall from section 2.3 and 5.3 that, as opposed to German, most Indo-European languages distinguish not only personal pronouns from reflexive pronouns but also weak from strong reflexive pronouns. Weak reflexive forms are generally less specified than their strong counterparts. They are the morphologically ‘weaker’ expressions. Consider table (58) for this distinction.

## (58) Weak and strong reflexive pronouns

language	weak form		strong form	
English:	zero	(∅)	complex word	(him-/her-/itself)
Russian:	verbal affix	(-sja)	word	(sebjja)
French:	verbal clitic	(se)	complex word	(lui-/elle-/soi-même)
Dutch:	simple word	(zich)	complex word	(zichzelf)

Only the weak reflexive form is ambiguous between an argument and a non-argument reading (cf. the examples in section 2.3 above). Besides, the weak form permits a reflexive interpretation only with certain verbs that describe actions of *grooming or body care* or *change in body posture*, cf. Kemmer 1993, chapter 3. The relevant examples from Dutch are repeated in (59).

- (59) a. Max<sub>1</sub> gedraagt zich<sub>1</sub>/\*zichzelf<sub>1</sub>  
 Max behaves SE/SELF
- b. Max<sub>1</sub> wast zich<sub>1</sub>/zichzelf<sub>1</sub>  
 Max washes SE/SELF
- c. Max<sub>1</sub> hoorde \*zich<sub>1</sub>/zichzelf<sub>1</sub>  
 Max heard SE/SELF

The binding theory we defined in section 5.4 for German, a one-form language, does not refer the feature [+/- REFL], that is responsible for the distinction between weak and strong reflexive pronouns in R&R’s theory. Therefore we are finally interested in whether we can build a bridge between one-form languages and two-form languages that accounts for the different distribution of weak and strong reflexive pronouns within our framework? In a one-form language like German a reflexive pronoun (in an A-position) can but need not be linked to a semantic argument of the verb. The restrictions on focus, fronting, and coordinate of the reflexive pronoun can be derived from the its semantic ambiguity. Things are slightly different in two-form languages. Consider first that strong reflexive pronouns are always linked to an argument of the verb. Strong reflexive pronouns are lexically specified as [+R]. As opposed to this, weak reflexive pronouns can but need not be linked. The Φ-features of weak forms are maximally underspecified. Like the reflexive pronoun in German, weak forms can be [+R]

and [-R]. Therefore they must be used in contexts that require a non-argument reflexive, i.e. inherent reflexive verbs, anticausatives, middle constructions, and passives (cf. section 2.3). Hence, the strong form is excluded in example (60.a). We turn now to example (59.b), (59.c), and (59.d). R&R assume that verbs like *wassen* ('wash') have two distinct lexical entries: *wassen1* is specified as [-REFL] and *wassen2* is specified as [+REFL] whereas *horen* ('hear') is only specified as [-REFL]. We want to argue that the difference between verbs like *wassen*, on the one hand, and *horen*, on the other hand, need not be stipulated in the lexicon. It can be derived from our conceptual knowledge about events of washing and events of hearing. The weak form of the reflexive pronoun can only be used if the verb describes an action or event that is very likely to be reflexive, i.e. if both the hearer and the speaker expect only one participant. Whenever two (different) participants are expected, the strong form must be used. Unlike the weak form, the strong form seems to be intrinsically contrastive (and because of it must always be linked to an argument variable).<sup>214</sup> The strong reflexive pronoun must be used in (59.c), because *horen* is not expected to be reflexive.<sup>215</sup> We conclude this discussion with a final remark on the feature [REFL], although much more should be said about the morphological properties of weak and strong reflexive pronouns and their distribution in different languages. Let us assume that we made a distinction between [+REFL] and [-REFL] reflexive pronouns/anaphors in German as well, contrary to what we said in section 5.3. In German the weak and the strong form would be homophones. In addition, it is the [-REFL] form that must be used in inherent reflexives, anticausatives, middle constructions, and with verbs like *waschen*, that are likely to be reflexive (cf. section 5.2 above). Hence, all verb that occur in middle constructions and anticausatives must be lexically reflexive in order to license the weak [-REFL] form. As a consequence, nearly every verb in German would have to be lexically specified for both features [+REFL] and [-REFL].<sup>216</sup> The same is true for two-from languages like Russian.<sup>217</sup> Nearly every verb would have to be listed in the lexicon twice as [-REFL] and [+REFL] in order to meet condition A of R&R's binding theory. But this kind of specification is redundant. Recall that we argued against a lexical derivation of middle constructions in German. Hence, there is no lexical rule that turns non-reflexive verbs into lexically reflexive 'middle verbs'. Note finally that this version of the binding theory does not account for the fact, that weak reflexive pronouns or *SE* anaphors in R&R's terminology are ambiguous between an argument and a non-argument interpretation. According to condition B in (9) above and definition (10.d), two arguments of a reflexive semantic predicate are coindexed. But we saw in this chapter that non-argument reflexives are not linked to a semantic

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<sup>214</sup> Note that the strong forms in Dutch and English consist of a pronominal part (*zich* or *him/her/it/...*) and the adnominal intensifier *self*. Historically, the adnominal intensifier has been a focus particle. This can be still seen in German, which has not incorporated the intensifier in the pronominal element (cf. chapter 4). Hence, it is very likely that the strong form of the reflexive pronoun intrinsically forms a contrast to other type-identical salient alternatives. The minimal alternative to the reflexive interpretation would be the non-reflexive interpretation, which is only expected with verbs like *horen*.

<sup>215</sup> Recall that the weak reflexive pronoun can also be used in the position of the ECM-subject in ECM-constructions. As opposed to (59.c) ECM-constructions describe complex events in which someone sees/hears someone doing something. One could argue that ECM-constructions are not in a strict sense reflexive, because the the ECM-subject is a semantic argument of both the matrix and the embedded verb as we argued above. However, this issue requires further research.

<sup>216</sup> The only exception might be inherent reflexive verbs, which are always specified for [+REFL].

<sup>217</sup> Note that in Russian passives, anticausatives, and middle constructions are formed with the weak form *-sja* (which must also be specified as [-REFL]).

predicate of the verb. This excludes coindexation in anticausatives, inherent reflexives and middle constructions.

### 5.7 Conclusion

In the first part of this chapter we argued that binding theory should be defined relative to syntactic and semantic arguments of a verb. Only NPs that are assigned nominative and accusative case are syntactic arguments (A-expressions) in German. In addition, reflexive pronouns are not lexically specified for the feature [R]. Therefore, they can be either bound in syntax (i.e. [-R]-reflexives) or in semantics (i.e. [+R]-reflexives). And finally, reflexive pronouns that cannot be bound by a co-argument of the same predicate are exempt from binding. This leads to the following threefold picture of binding.

- i. syntactic binding (A-chain formation, restricted to accusative [-R]-RP)
- ii. semantic binding (o-binding, restricted to [+R]-RPs and co-arguments of a predicate)
- iii. logophoric binding (restricted to reflexive pronouns that are exempt from (i) and (ii))

In the second part of this chapter we argued that a theory that is based on A-chain formation and the distinction between [+/-R] reflexive pronouns correctly predicts the ambiguity of accusative reflexive pronouns in the position of the direct object. Furthermore, our analysis correctly accounts for the two essential features of middle markers in German. A middle marker must be assigned structural case and it must be a reflexive pronoun. Thus we are now in the position to derive the observation we made in chapter 2:

- (60) Only a reflexive pronoun in the position of the accusative (or direct) object is a middle marker in German

Recall that it is only the accusative reflexive pronouns in the position of the direct object that can be both a syntactic argument and a [-R]-expression which must be bound by another syntactic argument in syntax. Besides, we postulated the following two simple linking-principles for syntactic arguments in German.

- (61) a. VP,Spec is linked to the first argument of the verb  
 b. The complement of V<sup>o</sup> is linked to the second argument of the verb

In the next chapter we turn first to the difference between middle constructions and anticausatives. In addition, we briefly discuss some consequences of the linking-principles in (65). In the second part we give empirical evidence for a distinction into structural and oblique case in German. We argue that dative case is not structural but oblique. As a consequence, dative objects cannot undergo middle formation in German. Dative reflexive pronouns are always interpreted as a semantic argument of the verb and they must be bound by a another co-argument which must not be more oblique.

## 6 Suppressed Arguments and Dative Objects

In the previous chapter we argued that the first ambiguity of transitive reflexive sentences results from the underspecification of reflexive pronouns and A-chain formation. An accusative reflexive pronoun in the position of the direct object can but need not be linked to a semantic argument itself. On the one hand middle constructions, anticausatives, and inherent reflexives involve the non-argument reflexive, which is a [-R]-expression. [+R] reflexive pronouns on the other hand yield the reflexive interpretation. In the first part of this chapter we turn to the difference between middle constructions and anticausatives. We will argue that in each construction a different semantic operation applies to the unbound argument variable, i.e. the implicit first argument. The second part deals with dative objects. A-chain formation is a necessary prerequisite for the non-argument interpretation of reflexive pronouns. A-chain formation itself is limited to A-elements, i.e. NPs that are assigned structural cases. We mentioned already that only nominative and accusative case are structural in German. Therefore, oblique case forms like dative objects are excluded from middle formation. We provide empirical evidence to support this distinction. We will see that dative objects differ from accusative objects in various respects. All of the evidence indicates that structural case differs (not only syntactically) from oblique case. Since dative case in German is oblique, dative reflexive pronouns cannot be included in a complex A-chain and thus no ambiguity can arise. They are always linked to an argument variable of the verb.

### 6.1 Middle constructions, anticausatives and unaccusatives

Recall from chapter 5 that the semantic interpretation of an anticausative like (1.a), which contains a non-argument reflexive, is (1.b). According to the linking-principles for syntactic arguments, the head of the complex A-chain, the subject *Tür* ('door'), is linked to the second argument of the verb *öffnen* ('open') via the base position of the complex A-chain. The first argument of the predicate is not linked to syntax because VP,Spec is occupied by an intermediate link of the complex A-chain. As a consequence, the semantic representation in (1.b) contains an unbound argument variable. Middle constructions equal unaccusatives in this respect.

- (1) a. Die Tür öffnet sich  
The door opens RP  
b.  $O < x, t >$

But what can we do with an unbound semantic argument variable? The next subsection investigates this issue and subsection 6.1.2 discusses some consequences of the linking-principles we proposed in chapter 5.

#### 6.1.1 Argument saturation and argument reduction

We follow Chierchia (1989) and Reinhart (1996) in assuming that two operations on unbound semantic argument variables are available. They can either be bound by a semantic operator (OP) or can be completely removed from the semantic representation. The former operation is called argument saturation, the latter argument reduction, cf. Chierchia (1989). Both operations are illustrated in (2).

- (2) a.  $(\lambda y P \langle x, y \rangle) (a) \rightarrow (\lambda y OP x P \langle x, y \rangle) (a)$  (Saturation)  
 b.  $(\lambda y P \langle x, y \rangle) (a) \rightarrow (\lambda y P \langle y \rangle) (a)$  (Reduction)

Argument reduction is much more restricted than argument saturation and depends on the lexical meaning of the verb. The class of verbs that permit reduction is a subclass of the verbs that permit saturation. Reduction changes a two-place predicate (a relation between two arguments) into a one-place predicate (a property of one argument). Saturation, on the other hand, introduces a semantic operator that binds the free argument variable.<sup>218</sup> Argument reduction is responsible for the anticausative and inherently reflexive interpretations, whereas argument saturation yields the middle interpretation.<sup>219</sup> We will argue in chapter 7 that in middle constructions the free argument variable is bound by a generic operator. In this section we are concentrating on argument reduction. Note that only some two-place verbs permit the anticausative interpretation. For example, the first argument of *zeichnen* ('draw') in (3.a) can only be saturated but not reduced, whereas *öffnen* ('open') in (3.b) forms a perfectly grammatical anticausative. *Öffnen* permits both saturation and reduction.

- (3) a. Das Bild zeichnet sich (leicht) (middle interpretation only)  
 The picture draws RP (easily/\*a little)  
 b. Die Tür öffnet sich (leicht) (anticausative and middle interpretation)  
 The door opens RP (easily/a little)

Reinhart (1996) argues that these verbs differ in one respect. The subject of both verbs is lexically specified for the basic semantic feature [+ causing-change]. But only the subject of *zeichnen* in (3.a) is additionally specified for [+ mental state involved]. Therefore, *öffnen* permits all kinds of [+ causing-change] subjects, e.g. agents, instruments, or other causing entities, because the verb does not obligatorily select the feature [+ mental state involved]. As opposed to *öffnen*, the very similar verb *zeichnen* only selects agents, which fulfill both specifications, [+ causing-change] and [+ mental state involved]. Note that Reinhart's specification corresponds to Dowty's (1991) contributing properties for the agent proto-role. *Zeichnen* has the following two entailments for its subject: a. *volitional involved in the event or state* and b. *causing an event or change of state in another participant* (cf. Dowty 1991:572). *Öffnen*, on the other hand, has only the second entailment for its subject.

- (4) a. Peter/dieser Schlüssel/der Sturm hat die Tür geöffnet  
 Peter/this key/the storm has the door opened  
 b. Peter/\*dieser Stift/\*der Wind hat dieses Bild gezeichnet  
 Peter/this pencil/the wind has this picture drawn

The basic intuition is that the anticausative interpretation of a basically two-place predicate requires that the event described by the verb can be conceptualized as taking place without an explicitly mentioned cause. The opening of a door, for example, can be perceived as taking

<sup>218</sup> Argument saturation does also apply to implicit objects/second arguments. In German implicit objects are not morphosyntactically marked, because they do not change the linking principles, as opposed to implicit subjects (the subject is linked to the first semantic argument of the predicate):

(i) Peter trinkt  $D \langle p, y \rangle \rightarrow OP y D \langle p, y \rangle$   
 Peter drinks/is drinking

The implicit argument is bound either by the existential quantifier or by a generic operator. We come back to argument saturation immediately, cf. also section 3.2.

<sup>219</sup> Argument saturation also yields the passive interpretation in languages that have reflexive passives, cf. section 2.3 and chapter 7.

place all by itself. This does not hold for the drawing of a picture. (5) illustrates this difference with additional examples.<sup>220</sup>

- (5) a. Die Straße verengt sich (anticausative)  
The street narrows RP  
b. Der See wärmt sich auf (anticausative)  
The lake warms RP up  
c. Das Bier trinkt sich (schnell) (\*anticausative/ middle interpretation only)  
The beer drinks RP quickly  
d. Das Buch liest sich (schnell) (\*anticausative/ middle interpretation only)  
The book reads RP quickly

This restriction on the anticausative interpretation of two-place predicates is part of the lexical meaning of a verb. The anticausative interpretation of *trinken*, *zeichnen* or *lesen* contradicts our knowledge about *drinking*, *drawing*, or *reading* events. Thus *mental state* verbs (or verbs that entail *volitional involvement in the event or state* of their first argument) are excluded from the semantic operation of argument reduction that applies to two-place predicates. Reduction of the first argument is only possible if it is not specified as [+ mental state involved] (if the verb does not entail *volitional involvement* for this argument). This can be stated in the following way (cf. Reinhart 1996: 19).

(6) Argument reduction

$P < x, y > \ \& \ \neg (x = [+ \text{ mental state involved}]) \ \rightarrow P < y >$

Like anticausatives, inherent reflexive verbs can be derived from an underlying two-place representation. The reflexive pronoun indicates that the syntactic subject is linked to the second argument of the verb. They differ, however, from the former in one crucial respect. Inherent reflexives only permit the anticausative interpretation. Their first argument must obligatorily be reduced. Inherent reflexive verbs are inherent anticausative verbs. The first argument (the cause of the event) of these basically two-place verbs can neither be linked to syntax nor can it be bound by a semantic operator.

- (7) a. Peter erkältet sich  
Peter-NOM catches-a-cold RP-ACC  
b. \*Peter erkältet Maria  
Peter-NOM catches-a-cold Maria-ACC

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<sup>220</sup> The German verb *schneiden* ('cut') is an interesting example.

- (i) Peter hat das Brot geschnitten  
Peter has the bread cut

The German verb *schneiden* refers to an event that need not be volitional. You can cut yourself by accident. Reinhart's analysis predicts that the first argument of *schneiden* is not intrinsically specified as [+ mental state involved]. Hence, we expect instrument subjects (cf. ii) as well as argument reduction (cf. iii) to be grammatical with *schneiden*:

- (ii) Das Messer schnitt tief ins Fleisch  
The knife cut deep in-the meat  
(iii) Peter hat sich gestern (an einem spitzen Stein) geschnitten  
Peter has RP yesterday (at a sharp stone) cut  
'Peter was cut by a sharp stone'

This very special property of inherent reflexive verbs may either follow from their meaning or it must be stipulated in the lexicon. Under the assumption that first-language acquisition takes place without negative evidence, this restriction must follow from the meaning of inherent reflexive verbs. Imagine that children have only the input in (7.a). How can they learn that the German verb *erkälten* ('catch a cold') must be used inherently reflexive? Children do not have access to the information that sentences like (7.b) are ungrammatical. What they can conclude from (7.a) is that the verb *erkälten* basically selects two arguments. This follows from every theory that treats the reflexive pronoun either as an indicator of valency reduction or as a semantic argument of the verb. Together with the meaning of the verb children must learn that it is impossible to express the first argument of the verb, which must obligatorily be reduced. Alternatively, one could, of course, argue that all inherent reflexive verbs are idiomatic expressions (or frozen forms) that must be learned as a whole. More research on inherent reflexive verbs in German and other Indo-European languages and their semantics, historical development and acquisition is necessary in order to decide this issue with a clear conscience.

### 6.1.2 Anticausatives and unaccusatives

The analysis of non-argument reflexives in chapter 5 is based on two linking-principles for syntactic arguments which are repeated here in (8).<sup>221</sup> (9) illustrates the linking of the first and the second argument to the VP,Spec and the V-complement position, respectively.

- (8) a. VP,Spec is linked to the first argument of the verb  
 b. The complement of V° is linked to the second argument of the verb  
 $[_{VP} NP_1 [_{V^{\circ}} V^{\circ} NP_2 ]]$ ;  $V < x, y >$ ;  $NP_1 \infty x$  and  $NP_2 \infty y$

Our analysis predicts that unaccusatives and unergatives share the same VP-structure. The linking-principles in (8) contradict a theory, which reflects the lexical distinction between unergatives and unaccusatives in syntax. Let us assume that the lexical representation of unaccusatives like *ankommen* ('arrive') differs from that of unergatives like *lachen* ('laugh'). We call the sole argument of unergative predicates external and the that of the unaccusative predicates internal. The external argument has typical proto-agent properties, whereas the internal argument has typical proto-patient properties.<sup>222</sup>

- (10) a.  $P < x >$  (unergative)  
 b.  $P << x >>$  (unaccusative)

For the unaccusative in (10.b) two different VP-structures are at hand. Either we analyze unaccusatives parallel to unergatives in syntax, as is illustrated in (11.a), or the sole argument of unaccusatives corresponds to the complement-position of V° and VP,Spec is empty or does not project, cf. (11.b).<sup>223</sup>

<sup>221</sup> In a case-based linking theory, we can state the following linking-principles for active sentences:

- (i) a nominative subject is linked to the first argument of the verb  
 (ii) an accusative object is linked to the second argument of the verb

We refer the reader to Vogel (1998) for a more detailed discussion of this issue.

<sup>222</sup> No problem arises in case both kinds of one-place predicates have the underlying representation (45.a).

<sup>223</sup> For a purely lexical analysis of unaccusatives, cf. e.g. Haider (1985) or Wunderlich (1985). In contrast to these two authors, Grewendorf (1983 and 1989) argues that unaccusatives and unergatives also differ in syntax.

- (11) a. [<sub>VP</sub> DP V° ]  
 b. [<sub>VP</sub> [<sub>V'</sub> DP V° ]

Structure (11.a) is in line with our derivation of non-argument reflexives. The sole syntactic argument contained in the VP, the nominative NP, must always be linked to the sole (and hence *first*) argument of the one-place predicate, regardless of whether this argument is external or internal in the lexical representation. Matters are a little more complicated if we choose structure (11.b). We might slightly modify the linking-principles in (8). According to this modification, the complement position of V° would be linked to the internal argument of the predicate whereas the specifier-position is linked to the external argument. As a consequence, unaccusative predicates are expected to have two grammatical syntactic realizations. The internal argument can be linked either to a NP in the complement position or to a complex A-chain. Hence, unaccusatives should be syntactically intransitive or transitive reflexive. This issue is illustrated in (12) and (13).

- (12) a. \*Peter erwacht sich  
 Peter awakes RP  
 b. [<sub>AgrSP</sub> Peter<sub>1</sub> [<sub>AgrOP</sub> RP-[-R]<sub>2</sub> [<sub>VP</sub> t<sub>1</sub> [<sub>V'</sub> t<sub>2</sub> erwacht ]]]]  
 chain = Peter<sub>1</sub> - RP-[-R]<sub>2</sub> - t<sub>1</sub> - t<sub>2</sub>  
 c. E << x >>  
 d. λy (E << x >>) (p) → E << p >>

The structure in (12) contains a complex A-chain. Like subjects in middle constructions and anticausatives, the subject in (12) can in principle be interpreted in the complement position. Therefore the derivation in (12.b) should be grammatical, contrary to facts. If we accept structure (11.b) above and the modified linking principles, we expect sentence (12.a) to yield the same interpretation as the unaccusative in (13), which is derived in syntax by A-movement of the complement of the verb to AgrS,Spec, cf. (11.b).

- (13) a. Peter erwacht  
 Peter awakes  
 b. [<sub>AgrSP</sub> Peter<sub>1</sub> [<sub>VP</sub> ∅ [<sub>V'</sub> t<sub>1</sub> erwacht ]]]]  
 chain = Peter<sub>1</sub> - t<sub>1</sub>  
 c. E << x >>  
 d. λy (E << x >>) (p) → E << p >>

This may be seen as evidence that German does not distinguish between unaccusatives and unergatives in syntax. All intransitive sentences have the same underlying VP-structure in (11.a) This VP contains only one NP, which is always linked to the first semantic argument of the one-place verb. In addition, our analysis predicts that non-reflexive anticausatives as, for example, *rollen* ('roll') in (14) are basically unaccusative one-place predicates. In this case the causative variant is derived from an underlying anticausative/unaccusative verb by causativization, i.e. by addition of an external argument. In this respect verbs like *rollen* are the mirror

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Fagan (1992) argues against a syntactic and a lexical distinction between these two types of one-place predicates. Recall from section 2.1 that unaccusatives differ in certain respects from unergatives, although the diagnostics do not always yield a clear classification. Unaccusatives typically have proto-patient entailments for their subjects. Unergatives have more proto-agent entailments for their subjects. These differences are semantic and at least for German there is no clear evidence for an additional syntactic distinction between unergative and unaccusative one-place predicates.

image of reflexive anticausatives such as *öffnen* ('open') in (15). The latter are basically two-place predicates and the (one-place) anticausative variant is derived from the underlying two-place representation. Of course, further research on the semantic differences between these two kinds of predicates is necessary (cf. also Wunderlich 1993).

- (14) a. Peter rollt den Ball (non-reflexive anticausative)  
Peter rolls the ball  
b. Der Ball rollt  
The ball rolls
- (15) a. Peter öffnet die Tür (reflexive anticausative)  
Peter opens the door  
b. Die Tür öffnet sich  
The door opens RP

## 6.2 *Dative objects in German*

The binding theory we defined in chapter 6 predicts that the non-argument interpretation of reflexive pronouns is restricted to syntactic arguments that can be included in a complex A-chain, which is headed by another syntactic argument. Thus only reflexive pronouns that are assigned (or check) structural case are able undergo middle formation. Recall the definition of the notion syntactic argument in (42.1), chapter 6, here repeated as (16).

- (16) The syntactic arguments of P are the chains that are assigned structural case in the extended projection of P

In this section, we give empirical evidence for the distinction between structural and oblique case in German. We argue that only nominative and accusative are structural in German, whereas dative case is oblique. As a consequence, dative objects cannot undergo middle formation. They are only grammatical in impersonal middle constructions like (17.c). In impersonal middle constructions the dative object preserves its case and the accusative reflexive pronoun indicates valency reduction as usual.<sup>224</sup>

- (17) a. Ich widerspreche dem neuen Lehrer  
I contradict the new teacher-DAT  
b. \*Der neue Lehrer widerspricht sich leicht  
The new teacher-NOM contradicts RP easily  
c. Dem neuen Lehrer widerspricht es sich leicht  
The new teacher-DAT contradicts it RP easily

We combine the differences between nominative and accusative case on the one hand and dative case on the other in two groups. The first group subsumes differences related to morphology. Syntactic differences are subsumed under the second group. Essential parts of this section relate to joint work with Ralf Vogel and the analysis proposed in Vogel and Steinbach (1995 and 1998). We are concentrating on accusative and dative object case and exclude case-

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<sup>224</sup> Additionally, dative and accusative reflexive pronouns are assigned case by a preposition are excluded from middle formation, because prepositional objects are also oblique in German, cf. also section 2.4.

assignment by prepositions and nominals. Table (18) summarizes these differences, which will be discussed in the following two subsections.

(18) Morphological and syntactic differences between accusative and dative object case

Morphology (section 6.2.1)	Syntax (section 6.2.2)
morphological marking	word order
uninflectable indefinite NPs	binding
sentential complements	middle constructions
free relatives	tough movement
nominalization	passive
idioms	extraction
reflexive pronouns	free datives
	coherent infinitives
	processing

6.2.1 *Morphological differences between structural and oblique case*

This subsection deals with several phenomena that can be related to differences in the morphological specification of accusative/nominative case on the one hand and dative case on the other, cf. the left column in table (18) above. First we briefly discuss case morphology in German, before we turn to several examples that can be related to the morphological distinction between marked and unmarked case.

(i) *Marked and unmarked case forms*: German draws a clear distinction between unmarked structural case and marked oblique case. Consider the following table, which illustrates the case pattern of definite NPs (first line) and pronouns (second line). Except for the masculine singular form, accusative case is always morphologically identical to nominative case. Thus nominative and accusative are equally unmarked on the assumption that nominative case is the unmarked form in a language like German (cf. e.g. Bittner and Hale 1996 and Weerman 1996). Dative case does not pattern with the unmarked structural case forms. Only the feminine singular form of the article is identical to the genitive, which is also an oblique case. Besides, only the oblique forms contain nominal affixes, which are written in bold face. Homonymous forms are written in italics in (19).<sup>225, 226</sup>

<sup>225</sup> Many German dialects have an even more restricted pattern. They distinguish only between unmarked (structural) and marked (oblique) forms. The following paradigm of Zurich German, a German dialect spoken in Switzerland, is from Cooper (1994:15). Swabian is almost identical to Zurich German in this respect.

(i)

	masculine	singular		plural
		feminine	neuter	
<b>nom./acc.</b>	de	d	s	d
<b>dative</b>	em	de	em	de

<sup>226</sup> Some nouns additionally distinguish between weak and strong forms. In this case, the masculine singular nominative form of the noun differs from the the corresponding accusative and dative forms. The noun *Beamte* ('civil servant') is one example. The nominative singular form is *der Beamte/ein Beamter*, whereas the accusative

## (19) Structural and oblique case pattern in German: definite NPs and pronouns

	<b>masculine</b>	<b>singular feminine</b>	<b>neuter</b>	<b>plural</b>
<b>nominative</b>	der Mann er	die Frau sie	das Kind es	die Männer/Frauen/Kinder sie
<b>accusative</b>	den Mann ihn	die Frau sie	das Kind es	die Männer/Frauen/Kinder sie
<b>dative</b>	dem Mann ihm	der Frau ihr	dem Kind ihm	den Männern/Frauen/Kindern ihnen
<b>genitive</b>	des Mannes seiner	der Frau ihrer	des Kindes seiner	der Männer/Frauen/Kinder ihrer

The difference between morphologically marked and unmarked case may be reflected in the phrase structure of the respective nominal constituents. According to Bittner and Hale (1996) and Bader et al. (1996) unmarked (i.e. structural) case forms project simply DPs, whereas marked (i.e. oblique) case forms are KPs. We return to this issue below.

- (20) a. [<sub>DP</sub> D° [<sub>NP</sub> N° ]] unmarked case (nominative and accusative)  
 b. [<sub>KP</sub> K° [<sub>DP</sub> D° [<sub>NP</sub> N° ]]] marked case (dative and genitive)

(ii) ‘*nichts*’ and ‘*genug*’: German has a small class of uninflectable indefinite NPs as, for example, *genug* (‘enough’) and *nichts* (‘nothing’). Gallmann (1995) points out that these indefinite expressions can only be used as accusative but not as dative objects, cf. (21) and (22).

- (21) a. Sie hat genug verkauft  
 She has enough-ACC sold  
 b. \*Feuchtigkeit schadet genug  
 Humidity harms enough-DAT

- (22) a. Ich koche heute nichts  
 I cook today nothing-ACC  
 b. \*Dieser Unmensch hat das Kind nichts ausgesetzt  
 This monster has the child nothing-DAT exposed-to

(iii) *Sentential complements*: A similar contrast is reported in Fanselow and Felix (1987b: 85f). They observe that complement clauses can only be assigned nominative or accusative case. Most verbs that select propositional complements assign nominative or accusative case to them, but some verbs assign dative or genitive case to their propositional complement (we illustrate this issue only for dative case; for examples with genitive case see Fanselow and Felix 1987b and Vogel and Steinbach 1995).

- (23) a. Hans leugnete den Diebstahl des Autos  
 Hans denied the theft-ACC of-the car  
 b. Die Darstellung entspricht nicht den Tatsachen  
 The presentation fits not the facts-DAT

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and dative form is *den Beamten/einen Beamten* and *dem Beamten/einem Beamten*. Besides, the old dative form of masculine and neuter singular contains the nominal affix *-e*, i.e. *dem Manne* and *dem Kinde*.

Fanselow and Felix observe that only verbs assigning (nominative and) accusative case to their propositional object can realize this object as a CP. Dative objects cannot be sentential. They draw the conclusion that complement clauses can only be assigned structural case. Oblique case must not be assigned to clauses.

- (24) a. Hans leugnete, dass er das Auto gestohlen hat  
Hans denied that he the car stolen has  
b. \*Die Darstellung entspricht nicht, dass dieser Verlust uns so schwer traf  
The presentation fits not that this loss us so heavily hit

We already saw that structural case is morphologically unmarked. Hence, complement clauses, which do not inflect for case in German, are compatible with the zero morphology of the structural cases. Therefore accusative clauses, cf. (24.a), as well as nominative clauses, cf. (25.c), are grammatical in German. As opposed to structural case, dative and genitive are morphologically marked. This is what rules out dative and genitive complement clauses. A sentential complement that is assigned dative case usually requires an additional expletive pronominal that inflects for dative case and is coindexed with the extraposed clause as in (22.a). Alternatively, these sentential complements can also be realized as nominative subjects of the so-called *kriegen*-‘passive’ (or dative-passive) as in (25.c). Thus the sentential complement has two ways of avoiding dative case. The latter example is from Webelhuth (1990).

- (25) a. Die Darstellung entspricht dem nicht, dass dieser Verlust uns schwer traf  
The presentation fits that-DAT not that this loss us heavily hit  
b. \*Wir messen große Bedeutung bei, dass Reagan wiedergewählt wird  
We measure great significance to [that Reagan re-elected is]-DAT  
i.e. ‘We attribute great significance to that Reagan is re-elected’  
c. Dass Reagan wiedergewählt wird, bekam eine große Bedeutung beigemessen  
[That Reagan re-elected was]-NOM got a great significance attributed

(iv) *Free relatives*: Relative pronouns in free relatives may come into a case conflict, because they receive case twice. Case assignment in the matrix clause may differ from case assignment in the embedded relative clause as is illustrated in (26).<sup>227</sup> In (26.a) the matrix verb assigns nominative, whereas the embedded verb assigns accusatives. According to Vogel (2000), such case conflicts are resolved by two constraints in German.<sup>228</sup> (i) The relative pronoun receives the case that is assigned in the embedded relative clause if the matrix case is structural. Thus structural case can be overwritten. This is illustrated in (26.a), (26.b), and (26.c). In (26.c) the matrix accusative is ‘outranked’ by the embedded dative. (ii) The relative pronoun does not receive case if the matrix case is oblique, because oblique case cannot be overwritten and accusative does not outrank dative, cf. (26.d). Free relatives that are assigned

<sup>227</sup> Free relatives are always grammatical when both the matrix and the embedded case are identical.

- (i) a. Auf dieser Liege schläft, wer müde ist (M: NOM & E: NOM; RP: NOM)  
On this couch sleeps who-NOM tired is  
b. Ich sehe, wen du siehst (M: ACC & E: ACC; RP: ACC)  
I see who-ACC you see  
c. Ich helfe, wem du hilfst (M: DAT & E: DAT; RP: DAT)  
I help whom-DAT you help

<sup>228</sup> Such case conflicts are resolved quite differently in different languages. For detailed discussion see Vogel (2000).

oblique case in the matrix clause are only grammatical if the relative pronoun is assigned the same oblique case in the relative clause, as is illustrated in (26.e) – ‘M’ does not stand for murder but for ‘matrix clause’, ‘E’ for ‘embedded clause’, and ‘RP’ for ‘relative pronoun’).

- (26) a. Hier sitzt, \*wer/wen das Gericht verurteilt hat (M: NOM & E: ACC; RP: ACC)  
Here sits who-NOM/whom-ACC the court convicted has
- b. Ich sehe, \*wen/wer kommt (M: ACC & E: NOM; RP: NOM)  
I see whom-ACC/who-NOM comes
- c. Ich weiß, \*wen/wem ich geholfen habe (M: ACC & E: DAT; RP: DAT)  
I know whom-ACC/whom-DAT I helped have
- d. Ich helfe, \*wem/\*wen du eingeladen hast (M: DAT & E: ACC; RP: –)  
I help whom-DAT/who-ACC you invited have
- e. Ich helfe, wem du widersprichst (M: DAT & E: DAT; RP: DAT)  
I help whom-DAT you contradict

Once again, structural case differs from oblique case. Only the former can be overwritten, whereas the latter does everything to preserve its case.

(v) *Nominalization*: This point includes three related observations. First, verb-object-compounds are only grammatical if the object receives accusative but not if it receives dative.<sup>229</sup> Dative objects are excluded in principle, no matter whether they are the second or third semantic argument of the verb. Sentence (27.e), for example, contains a two-place predicate, which assigns dative case to its object *Kinder* (‘children’). Nevertheless, nominalization is ungrammatical with the object.

- (27) a. Das Bücher-Schenken macht Spaß  
The books-ACC-presenting makes fun
- b. Kuchen-Backen ist lustig  
Cake-ACC-baking is funny
- c. \*Das Kindern-Schenken macht Spaß  
The children-DAT-presenting makes fun
- d. \*Gästen-Backen ist lustig  
Guests-DAT-baking is funny
- e. \*Beim Kindern-Helfen wurde Lady Di entdeckt  
At-the children-DAT-helping was Lady Di discovered

One might argue that nominalization is a lexical process, cf. e.g. Chomsky (1970) that excludes morphologically marked constituents. Recall that Bittner and Hale (1996) assume that datives project a KP. Alternatively, one might argue that dative objects, unlike accusative objects, are not licensed in a syntactic position adjacent to the verb (i.e. the complement of  $V^\circ$ ). We come back to these two proposals in section 6.2.3 below.

Second, Bader et.al. (1996) mention yet another difference between structural and oblique case. Nominative and accusative, unlike dative, alternate with a postnominal genitive in

<sup>229</sup> Note that the complex nominal is one phonological word, which only receives one primary accent.

nominalizations. Again, only structural case permits conversion into any other case (cf. also Maling 1999:19f.).<sup>230</sup>

- |      |    |   |     |  |
|------|----|---|-----|--|
| (28) | a. | Das Publikum applaudiert<br>the audience-NOM applauds | a'. | das Applaudieren des Publikums<br>the applauding of-the audience |
|      | b. | die Sänger umjubeln<br>the singers-ACC cheer          | b'. | das Umjubeln der Sänger<br>the cheering of-the singers           |
|      | c. | den Sängern applaudieren<br>the singers-DAT applaud   | c'. | *das Applaudieren der Sänger<br>the applauding of-the singers    |

Third, so-called 'Rektionskomposita' as (29.a) are less productive with objects assigned dative case than with objects assigned accusative case, cf. Rivet (1999) for discussion. Although incorporation of dative objects is not completely impossible, as is illustrated in (29.d), it is much more restricted than incorporation of accusative objects. Again this difference between accusative and dative objects might be related to morphological and/or syntactic differences between structural and oblique case forms.

- |      |    |  |
|------|----|--|
| (29) | a. | Wetterbeobachter, Biertrinker, Altenpfleger, Geldgeber, Briefeschreiber    |
|      | b. | *Armenspender, *Kindernhelfer, *Altengeber, *Freundenschreiber             |
|      | c. | Weintrinker, Biertrinker, Milchtrinker, Schnapstrinker, Wassertrinker, ... |
|      | d. | Arzthelfer, *Krankenhelfer, *Altenhelfer, *Kindernhelfer, ...              |

(vi) *Idioms*: Vogel and Steinbach (1995: 114) mention that a certain kind of idioms which can be compared to *take care of* or *take advantage of* in English, can only be formed with accusative objects. Examples with dative which are expected to be grammatical are, however, ungrammatical.

- |      |    |                     |   |
|------|----|---------------------|---|
| (30) | a. | Abstand halten:     | Maria hielt Abstand von Peter<br>Maria kept distance-ACC of Peter                     |
|      | b. | Rücksicht nehmen:   | Maria nahm Rücksicht auf Peter<br>Maria took consideration-ACC on Peter               |
|      | c. | *Wohlfahrt spenden: | Maria hat ihr Geld Wohlfahrt gespendet<br>Maria has her money-ACC charity-DAT donated |
|      | d. | *Pfad folgen:       | Maria folgte Pfad zu Peter<br>Maria follows path-DAT to Peter                         |

The direct object in (30.a) and (30.b) seems to be (prosodically) incorporated into the verb, which is only possible if the incorporated NP is not marked for case and/or adjacent to the verb. Dative case, unlike accusative case, is morphologically marked and tends to preserve its case morphology. Besides, we argued that accusative objects are base generated in the complement position of  $V^\circ$ , which is adjacent to the verb. Steinbach and Vogel (1998) argue that dative objects are adjuncts in syntax. Hence, dative objects never occur in a base position that is structurally adjacent to the verb, cf. also (v) above.

(vii) *Reflexive pronouns*: In section 2.3 we mentioned dative reflexive pronouns developed very late in German. Until the end of the 17th century German had only one pronominal form for dative case. This still holds for some German dialects. As opposed to dative reflexive pronouns, accusative reflexive pronouns are attested for earlier stages of German.

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<sup>230</sup> Note that the postnominal genitive can also realize the agent role in (28.b') and (28.c').

6.2.2 *Syntactic differences between structural and oblique case*

This subsection discusses further differences between structural accusative objects and oblique dative objects, which relate to syntax. These differences concern word order, binding, valency change, and sentence processing.

(i) *Word order*: Recall from chapter 4 that the linearization of arguments in the middle field depends on various constraints on unmarked word order.<sup>231</sup> Dative NPs can precede nominative and accusative NPs in the unmarked word order in certain contexts because the unmarked position of dative objects is sensitive to animacy: a NP that refers to an animate entity precedes a NP that refers to an inanimate entity.<sup>232</sup> As opposed to dative objects the unmarked position of accusative objects is ‘structurally’ fixed. The following example illustrates this difference between dative and accusative objects. *Begegnen* (‘meet’) in (31.a) assigns dative and *treffen* (‘meet’) in (31.b) accusative. Note that the meaning of these two verbs is almost identical.<sup>233</sup>

- (31) DAT > NOM and NOM > DAT
- c. Auf dem Markt ist ein Nomade einem Römer begegnet (unmarked order)  
At the market is a Nomad-NOM a Roman-DAT met
- d. Auf dem Markt ist einem Römer ein Nomade begegnet (unmarked order)  
At the market is a Roman-DAT a Nomad-NOM met
- NOM > ACC
- c. Auf dem Markt hat ein Römer einen Nomaden getroffen (unmarked order)  
At the market has a Roman-NOM a Nomad-ACC met
- d. Auf dem Markt hat einen Nomaden ein Römer getroffen  
At the market has a Nomad -ACC a Roman -NOM met

As opposed to dative objects, accusative objects usually follow the subject. However, a small class of accusative verbs also permit the unmarked order accusative > nominative. But unlike dative objects, the accusative object can also follow the subject in unmarked order.

- (32) DAT > NOM
- a. Es ist einem Jungen ein Stein aufgefallen (unmarked order)  
It is a boy-DAT a stone-NOM attracted attention
- b. Es ist ein Stein einem Jungen aufgefallen  
It is a stone-NOM a boy-DAT attracted attention
- NOM > ACC
- a. Es hat ein Lied einen Jungen begeistert (unmarked order)  
It has a song-NOM a boy-ACC carried away
- b. Es hat einen Jungen ein Lied begeistert (unmarked order)  
It has a boy-ACC a song-NOM carried away

<sup>231</sup> Only the unmarked word order permits maximal focus spreading/projection, cf. e.g. Höhle (1982:126).

<sup>232</sup> This constraint is rather weak. Therefore, all of the other intervening constraints must be neutralized. This holds especially for the constraint based on agentivity: the NP that refer to an agent precedes other constituents.

<sup>233</sup> For a more detailed discussion cf. Reis (1987), Vogel and Steinbach (1998), Haider and Rosengren (1999), and Gärtner and Steinbach (2000).

Gärtner and Steinbach (1997) observe a similar contrast between dative and accusative objects. In sentence-initial position dative objects can refer to inanimate entities more easily than accusative objects. Note that discourse linking of personal pronouns becomes easier if they refer to animate entities, which seem to be more salient. This holds especially for sentences with marked word order. Unlike dative objects, accusative objects are usually marked in sentence-initial position, cf. section 4.2 and Cardinaletti and Starke (1994).<sup>234</sup>

- (33) a. Er steht seit Stunden an der Bushaltestelle (er = the bus/Peter)  
He-NOM stands for hours at the bus stop  
b. Ihn hat Hans an der Bushaltestelle gesehen (ihn = \*the bus/Peter)  
Her-ACC Hans at the bus stop seen  
c. Ihr fehlt eine Zinke/ein Schuh (ihr = the fork/Maria)  
Her-DAT lacks a prong/a shoe

(ii) *Binding*: In the previous chapter we argued that binding is subject to an obliqueness hierarchy. More oblique arguments cannot bind less oblique arguments. Therefore, dative objects are asymmetrically bound by accusative objects (and subjects) and they asymmetrically bind more oblique objects. We repeat the relevant examples in (34) and (35).

- (34) a. Gestern hat man die Gäste<sub>1</sub> einander<sub>1</sub> vorgestellt  
Yesterday has one the guests-ACC each other-DAT introduced  
b. \*Gestern hat man den Gästen<sub>1</sub> einander<sub>1</sub> vorgestellt  
Yesterday has one the guests-DAT each other-ACC introduced  
c. Der Arzt hat den Patienten<sub>1</sub> sich<sub>1</sub> im Spiegel gezeigt  
The doctor has the patient-ACC RP-DAT in the mirror shown  
d. \*/? Der Arzt hat dem Patienten<sub>1</sub> sich<sub>1</sub> im Spiegel gezeigt  
The doctor has the patient-DAT RP-ACC in the mirror shown

- (35) a. ... weil den beiden Henkern<sub>1</sub> vor einander<sub>1</sub> graute  
... because the two executioners-DAT of each other dreaded  
b. \*... weil vor den beiden Henkern<sub>1</sub> einander<sub>1</sub> graute  
... because of the two executioners each other-DAT dreaded

Besides, dative objects can serve as A'-binders. And in this case, they are able to (A'-) bind an accusative object provided that they c-command it. This is illustrated by the following examples from Vogel and Steinbach (1995:107). These examples include quantifier-pronoun relations, *each...other* constructions and negative polarity items.

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<sup>234</sup> Accusative pronouns in clause-initial position may refer also to inanimate entities provided the sentence is embedded in an appropriate context. Dative pronouns do not require this additional context, cf. Gärtner and Steinbach (1997) for further discussion.

- (i) a. Ihr Geld ist ja nicht weg, meine Damen und Herren. Es haben jetzt nur andere  
Your money is indeed not away my ladies and gentlemen. It have now only others  
'Indeed, your money isn't gone, ladies and gentleman. It's only that others have it now'  
b. Das wissen nicht nur die Experten, es wissen auch die Laien  
That know not only the experts, it know even the laymen  
'Not only the experts know that, even the laymen do'

- (36) QNP ... Pronoun
- a. Ich verweigerte jedem<sub>1</sub> Arbeiter seinen<sub>1</sub> Gehaltsscheck  
I denied each worker-DAT his paycheck-ACC
  - b. \*/? Ich verweigerte seinen<sub>1</sub> Gehaltsscheck jedem<sub>1</sub> Arbeiter  
I denied his paycheck-ACC each worker-DAT  
each ... other
  - c. Ich gab jedem Arbeiter des anderen Uhr  
I gave each worker-DAT the other's watch-ACC
  - d. Ich gab dem Trainer des anderen jeden Löwen  
I gave [the trainer of the other]-DAT each lion-ACC  
negative polarity
  - e. Ich gab niemandem/\*jemandem auch nur ein Buch  
I gave no one/someone-DAT even only one book-ACC
  - f. \*Ich gab auch nur ein Buch niemandem  
I gave even only one book-ACC no one-DAT

(iii) *Middle constructions*: It goes without saying that dative objects are excluded from middle formation. Dative reflexive pronouns cannot indicate valency reduction. It is only the accusative reflexive pronoun in the position of the direct object that can be called a middle marker in German.

(iv) *Tough-movement*: The picture is the same with tough-movement constructions. Again only accusative objects must be promoted to subject, as can be seen in (37.a) and (37.b). The dative NP of a corresponding active sentence must not be substituted by a nominative NP in the tough-movement construction. (37.d) equals an impersonal middle construction.<sup>235</sup>

- (37) a. Der Roman ist leicht zu lesen  
The novel-NOM is easy to read
- a. \*Den Roman ist leicht zu lesen  
The novel-ACC is easy to read
  - c. \*Der Peter ist nicht zu helfen  
The Peter-NOM is not to help
  - d. Dem Peter ist nicht zu helfen  
The Peter-DAT is not to help

(v) *Passive and 'D.c.I.'*: The third difference related to valency reduction concerns passive. It is a wellknown fact that dative objects, unlike accusative objects, cannot be passivized. They cannot be promoted to subject again and thus it is not surprising that they are only grammatical in the impersonal passive in (38.c) - 'PASS' stands for the passive auxiliary.

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<sup>235</sup> Unlike impersonal middle constructions, 'impersonal' tough-movement constructions must not have an impersonal subject. In this respect they are like impersonal passives in German, cf. section 2.1.2.

- (38) a. Der Mann wurde gewaschen  
The man-NOM PASS washed  
b. \*Der Mann wurde geholfen  
The man-NOM PASS helped  
c. Dem Mann wurde geholfen  
The man-DAT PASS helped

Note, however, that some authors claim that dative objects can also be structurally passivized. As opposed to accusative objects, dative objects require the passive auxiliary *kriegen* or *bekommen* instead of *werden*:

- (39) Der Vermieter kriegt einen Brief geschickt  
The landlord gets a letter sent  
'The landlord is given a letter' or  
'A letter is sent for the landlord' or  
'The landlord manages to send a letter'

Besides, free datives can be 'passivized' as well, although they are not selected by the verb.

- (40) Maria kriegt das Zimmer geputzt  
Maria gets the room cleaned  
'The room is cleaned for Maria'

*Kriegen*-passive is debated controversially. So far it has not become clear whether sentences like (39) and (40) should be analyzed as a passive (either in syntax or in the lexicon) or as a predicative construction, cf. for example Höhle (1978), Haider (1984), Reis (1985), Wunderlich (1985), or Kathol (1995). Apart from that Vogel and Steinbach (1998) argue that (39) and (40) may provide evidence that dative case can be absorbed in *kriegen*-passives. But case absorption may not be an exclusive property of structural case. In contrast, case movement (i.e. movement into a case position) seems to be an exclusive property of structural case. German has only movement into a structural nominative position (passive and raising) and into a structural accusative position (ECM or A.c.I.) but no movement into a (structural) dative position (e.g. ECM with dative case or D.c.I.). Furthermore, Bader et.al. (1996) observe that accusative is the default case assigned to objects. One-place predicates like *schlafen* ('sleep') may select so-called cognate object, which are always assigned accusative case. This case assignment seems to be 'the result of the presence of a structurally defined [case] position' (Bader et.al. 1996: 11):

- (41) a. Peter schief [einen tiefen Schlaf]/\*[einem tiefen Schlaf]  
Peter slept a deep sleep-ACC/ a deep sleep-DAT  
b. Peter rannte [das Rennen seines Lebens]/\*[dem Rennen seines Lebens]  
Peter ran the race of-his life-ACC/ the race of-his life-DAT

In sum, there is a clear asymmetry between nominative and accusative on the one hand and dative on the other hand with respect to case movement/case assignment.

(vi) *Free datives and multiple datives*: German has so-called *free datives*, which can be inserted in sentences rather freely. Typically, they are interpreted as beneficiary or possessor, but very often they have more than one interpretation. The ambiguity of free datives is illustrated in (42).

- (42) Hans hat seinem Bruder das Buch auf den Tisch gelegt  
Hans has his brother-DAT a book-ACC on the table put  
'Hans put the book on his brother's table' or

- ‘Hans put the book for his brother on someone’s table’ or  
 ‘Hans put the book on someone’s table, because his brother wants him to do so’

In addition, the examples in (43) show that more than one dative object can be licensed within one clause. Multiple occurrences of dative objects might be rare but not ungrammatical. They seem to be restricted semantically because each dative requires a different interpretation.

- (43) a. Ich habe dir das Schnitzel dem Oliver auf den Teller gelegt  
 I have you-DAT the schnitzel-ACC the Oliver-DAT on the plate put  
 ‘For you/for Oliver (as you ordered), I put the schnitzel on Oliver’s plate’  
 b. Dem Peter habe ich gestern abends seinem Auto einen neuen Motor eingebaut  
 The P.-DAT have I yesterd. in the evening his car-DAT a new engine-ACC built  
 in  
 ‘For P.’s benefit/because of his order, I inserted a new engine into his car’  
 c. Der David hat mir der Claudia schon zu viele Komplimente gemacht  
 The D. has me-DAT the Claudia-DAT already too many compliments made  
 ‘In my view, David has already paid Claudia too many compliments’  
 d. Hilf mir bitte mal deinem Vater in der Küche  
 Help me-DAT please PARTICLE your father-DAT in the kitchen  
 ‘I want you to help your father in the kitchen, please’

Free or multiple occurrences of accusative (or nominative) objects cannot be found in German. There exist only few verbs that select two accusative objects like *lehren* (‘teach’) or *abfragen* (‘test’). Multiple accusatives are limited to these exceptions, and they are not productive (anymore).

(vii) *Extraction*: Although intuitions are not always totally clear, accusative NPs are obviously more transparent for extraction than dative NPs. WH- and PP-extraction out of accusative objects is generally much better than extraction out of dative objects (cf. also Müller 1993 and Pafel 1996).<sup>236</sup>

- (44) a. \*[<sub>PP</sub> Über wen]<sub>i</sub> hat der Verleger [einem Buch t<sub>i</sub>] keine Chance gegeben?  
 About whom has the publisher a book-DAT no chance given  
 b. [<sub>PP</sub> Über wen]<sub>i</sub> hat der Fritz der Anna [ein Buch t<sub>i</sub>] gegeben?  
 About whom has the Fritz the Anna-DAT a book-ACC given  
 c. \*[<sub>PP</sub> Über Optionalität]<sub>i</sub> habe ich [einen Aufsatz über Scrambling] [einem Buch t<sub>i</sub>] hinzugefügt  
 About optionality have I [an article about scrambling]-ACC [a book]-DAT added  
 d. [<sub>PP</sub> Über Scrambling]<sub>i</sub> habe ich [einem Buch über Optionalität] [einen Aufsatz t<sub>i</sub>] hinzugefügt  
 About scrambling have I [a book about optionality]-DAT [an article]-ACC added

(viii) *Coherent infinitives*: Some verbs selecting a *zu*-infinitive can form a morphosyntactic unit with its infinitival complement, which is called ‘coherent infinitive’, cf. Bech (1995/1957). The complex verb, which consists of the matrix verb and the *zu*-infinitive, seems to be one single verb in syntax and thus assigns only one nominative and one accusative (recall from (vi) that German does not have multiple nominatives and accusatives). Therefore,

<sup>236</sup> This contrast may have to do with processing asymmetries, which are discussed below. A parser seems to prefer accusative objects over dative objects for the reconstruction of the fronted constituent.

verbs selecting a coherent infinitive are expected to be intransitive. They cannot assign accusative case to an additional complement, as is illustrated in (45.a). However, Haider (1988) shows that dative objects can occur in the matrix clause. Verbs that select a dative object are able to form a coherent infinitive, cf. (45.b).<sup>237</sup> This difference is further evidence for an analysis that distinguishes between structural and oblique case.

- (45) a. \*... weil es sie jemand zu lesen überredet hat  
 ... because it-ACC her-ACC someone-NOM to read persuaded has  
 b. ... weil es ihr jemand zu lesen versprochen hat  
 ... because it-ACC her-DAT someone-NOM to read promised has

(ix) *Sentence processing*: Bader et.al. (1996) demonstrate in an off-line study and an ERP-experiment that processing difficulties arise if an object NP in clause-initial position which is not morphologically marked for case (i.e. ambiguous between accusative and dative case) must be assigned dative instead of accusative. A garden-path effect arises especially if the distance between the sentence-initial NP and the verb that assigns either accusative or dative is long enough. This is illustrated in (46).

- (46) a. Dirigenten, die ein schweres Werk einstudiert haben, kann ein Kritiker ruhig umjubeln  
 Conductors-ACC who a difficult opus rehearsed have can a critic savely cheer  
 b. #Dirigenten, die ein schweres Werk einstudiert haben, kann ein Kritiker ruhig applaudieren  
 Conductors-DAT who a difficult opus rehearsed have can a critic savely applaud

The syntactic structures of both sentences in (46) do not crucially differ. Thus the garden-path effect in (46) is solely related to case assignment. The first sentence contains a verb that assigns accusative case and is much easier to parse than the second sentence, which contains a verb assigning dative. Bader et.al. argue that this difference can be explained on the basis of the same distinction that we draw: the parser prefers assignment of structural case over oblique case (in their terminology *abstract* case is preferred over *lexical* case). The lexicon must only be reaccessed in sentences like (46.b) which contain a NP which turns out to be assigned dative case. This results in a garden-path effect. The relevant assumptions from Bader et.al. are summarized in (47).<sup>238</sup>

<sup>237</sup> Scrambling the embedded object in front of the matrix subject is only possible with coherent infinitives. According to this criterion, both sentences in (45) are coherent constructions. Besides, coherent infinitives are also grammatical with two dative objects, cf. Vogel and Steinbach (1998).

(i) ... weil einem kranken Schüler der Rektor dem Lehrer zu helfen erlaubte  
 ... because a sick student-DAT the headmaster-NOM the teacher-DAT to help allowed  
 ‘... because the headmaster allowed that the teacher helped a sick student’

<sup>238</sup> The second assumption can be derived from the fact that every sentence that contains an accusative object also contains a subject. ECM-constructions may be the only exception. In ECM-constructions the subject of the embedded sentence is assigned accusative case. But even in this case, a subject assigned nominative is present in the matrix clause. Moreover, we saw in the previous section that in subject oriented languages like German implicit or reduced accusative objects do not require morphosyntactic marking whereas implicit or reduced subjects do (e.g. in passives, anticausatives, or middle constructions). Thus only the omission of the subject is morphosyntactically marked.

- (47) a. If possible, prefer structural Case over lexical [i.e. oblique] Case  
 b. If possible, prefer nominative Case over accusative Case

### 6.2.3 *The syntax of dative objects*

All examples we discussed in sections 6.2.1 and 6.2.2 indicate that German makes a distinction between structural and oblique case. Moreover, we found evidence for an additional asymmetry between nominative and accusative case: nominative is ranked higher than accusative just as dative case is ranked higher than other oblique cases.<sup>239</sup> This distinction supports the picture that we gave at the end of chapter 5.

- (48) **nominative** > **accusative** > dative ≥ others

The differences between accusative and dative objects can be explained under the assumption that (i) structural case is morphologically unmarked, whereas oblique case is morphologically marked and (ii) structural and oblique case differ in syntax. Analyses like those proposed in Fanselow (1995), Gallmann (1992), Sabel (1995), and Wegner (1991), who treat dative as structural case, predict that accusative and dative objects behave alike. The difference between structural and oblique case can be implemented in various ways. Müller (1993), for examples, argues for a derivational account. Dative objects move from their VP-internal  $\Theta$ -position into the specifier of  $\mu$ P, a VP-shell, for case reasons. In this position they receive dative case. Unlike accusative case, dative case is not assigned in the VP-internal base position by the verb.

- (49) [ $\mu$ P DAT<sub>1</sub> [ $\nu$ P ACC [ $\nu$  t<sub>1</sub> V<sup>o</sup> ]]]

Müller claims that in German  $\mu$ P,Spec is a A'-position per definition. With this he can account for the A'-properties of dative objects and the asymmetry between structural and oblique case. One could, for example, argue that A-movement (i.e. passivization, middle formation, or tough-movement) is excluded for dative objects because this would lead to a violation of the *principle of unambiguous binding*, cf. Müller and Sternefeld (1993).<sup>240</sup> Müller's analysis is based on Chomsky's (1981) theory of binding. According to this theory, a dative reflexive pronoun must be c-commanded by its nominative or accusative antecedent. Recall from chapter 5 and section 6.2.2 (ii) above that nominative and accusative NPs asymmetrically bind dative NPs. In order to account for this asymmetry, Müller assumes that (dative) reflexive pronouns need not be case-assigned. A dative reflexive pronoun stays in its VP-internal base-position and can thus be bound by an accusative object, which c-commands the reflexive pronoun in this position, cf. structure (49). In sum, Müller's analysis might account for the differences between accusative and dative objects. Nevertheless, we reject the assumption of  $\mu$ P for two reasons. First, the stipulation that (dative) reflexive pronouns need not be assigned case cannot be maintained. We already saw that oblique case forms are morphologically marked. Moreover, in the first and second person singular the dative form of reflexive

<sup>239</sup> This asymmetry follows from the syntactic analysis of nominative and accusative case which is standard in GB-theory: nominative NPs always c-command accusative NPs. Note that in German finite verbs show agreement only with a nominative subject. Moreover, only nominative case seems to depend on the specification of tense. A [+finite] active clause obligatorily requires a nominative DP.

<sup>240</sup> The principle of unambiguous binding demands that every intermediate trace of a movement chain must be of the same type as the head of the chain, i.e. either A or A'.

pronoun (*mir, dir*) clearly differs from the accusative form (*mich, dich*). Thus dative reflexive pronouns are morphologically case marked (at least in the first and second person). Besides, even reflexive pronouns are expected to be subject to the case filter. Second, Müller incorrectly predicts that free datives must not be bound by an accusative object, because they are inserted directly into  $\mu P, Spec$ . However, we already saw in chapter 6 that free datives can be bound by accusative objects. We repeat the example in (50).

- (50) a. Maria setzte die Kinder<sub>1</sub> einander<sub>1</sub> auf den Schoß  
 Maria sat the children-ACC each-other-DAT on the lap  
 b. \*Maria setzte den Kinder<sub>1</sub> einander<sub>1</sub> auf den Schoß  
 Maria sat the children-DAT each-other-ACC on the lap

Therefore we propose a different analysis of dative objects. One might argue that the phrasal category of dative NPs differs from the one of accusative and nominative NPs. Only the former project a KP. Nominative and accusative simply project NPs. Thus, oblique case forms are syntactically more complex, which might account for certain asymmetries between structural and oblique case forms. Apart from that, one could argue that only arguments which are linked to NPs can undergo argument structure alternations such as passivization, middle formation, and tough-movement. This line of argumentation can be found in Bittner and Hale (1996) and Bader et.al. (1996). Alternatively, one might argue that oblique all dative objects are adjuncts in syntax. As opposed to Müller (1993), Vogel and Steinbach (1998) propose that dative objects do not move into an A'-position but are base-generated as adjuncts. Note that these two alternative approaches do not exclude each other. Dative objects might be syntactic adjuncts because they are KPs. Vogel and Steinbach argue that dative objects are adjoined either to VP, to AgrOP or to AgrSP, cf. structure (51) below. The insertion into one of these positions depends on the constraints regulating word order in the German middle-field. The position of accusative objects (as well as nominative subjects) is structurally fixed. Accusative objects must check their (structural) case feature in the extended projection of the verb, cf. Vogel and Steinbach (1995 and 1998) for a more detailed discussion of this issue. In (51) TP and the heads of the functional projections are omitted.

- (51) [<sub>AgrSP</sub> (DAT) [<sub>AgrSP</sub> NOM<sub>1</sub> [<sub>AgrOP</sub> (DAT) [<sub>AgrOP</sub> ACC<sub>2</sub> [<sub>VP</sub> (DAT) [<sub>VP</sub> t<sub>1</sub> [<sub>V'</sub> t<sub>2</sub> V ]]]]]]]

This analysis correctly predicts that dative objects cannot undergo 'middle formation'. A-chain formation as defined in chapter 5 is impossible for dative objects because they are A'-elements in German. Dative reflexive pronouns cannot be bound by the subject in syntax and therefore the non-argument interpretation is excluded. Dative reflexive pronouns are always linked to a semantic argument of the verb and they are bound by a less oblique co-argument of the predicate, i.e. either the nominative subject or the accusative object. Reduction of the first argument and promotion of the second argument is generally restricted to arguments that are linked to structural case positions. Of course, a wide-ranging study of structural and oblique case forms and their morphological, syntactic, and semantic properties is necessary for a better understanding of the interaction of case and valency change/argument structure alternations.<sup>241</sup>

<sup>241</sup> We are aware of the fact that this analysis of dative objects also requires a modified account to their semantics. In our framework dative objects receive a semantic interpretation like other oblique case forms as e.g. *von*-PPs (by-phrases) or *mit*-PPs (with-phrases, see e.g. Strigin 1995), which are also adjuncts in syntax. Many oblique forms can be linked to a semantic argument of the verb but they can also receive a non-argument interpretation. Structural case-positions (or VP-internal argument positions) are only one possibility of argument

For the present study of middle voice in German the illustration that the distinction between structural and oblique case is independently motivated will be sufficient.

### 6.3 *Conclusion*

The first part of this chapter dealt with the difference between middle constructions and anti-causatives. We argued that the implicit first argument can either be saturated or reduced. Then, we compared unaccusatives to impersonal middle constructions and showed that our analysis provides an indirect argument against a syntactic analysis of unaccusatives. In the second part we gave various empirical arguments in support of the distinction between structural and oblique case. Unlike nominative and accusative case, dative case is oblique and dative objects cannot undergo middle formation, because they are not syntactic arguments.

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realization/linking. Besides, an explanation of the (verb-independent) semantics of free datives is independently needed. Possibly, this leads to a unified analysis of the semantics of dative (and other oblique) objects in general. Wegener (1985) observes that all datives seem to have some underspecified meaning in common, which can roughly be outlined as follows: the entity the dative object refers to seems to be ‘personally affected’ by the event/action. Consider the following two examples.

- (i) Arsene Lupin hat Cäsars Toga/\*dem Cäsar die Toga gestohlen (aus dem Museum)  
Arsene Lupin has Caesar-GEN toga/the Caesar-DAT the toga stolen (from the museum)
- (ii) Peter hat den Brief dem Bundeskanzler/an den Bundeskanzler geschickt  
Peter has the letter the chancellor-DAT/to the chancellor sent

Caesar cannot be affected by the theft because he is dead. Therefore, the dative but not the genitive is odd in (i). In the second example (ii), only the dative object implies that the letter is necessarily written for the chancellor. With the PP, the chancellor is understood as the addressee, but the letter is not necessarily written for him. ‘Personal affectedness’ may be also the reason why dative NPs rarely refer to inanimate entities.

Similar examples are embedded V2-clauses and parentheticals in German. We argued in chapter 1 that embedded V2-clauses cannot be selected by the verb. Instead they are licensed by general semantic and pragmatic conditions. Steinbach (1999) argues that parenthetical constructions are yet another example for ‘non-standard’ argument linking, cf. also Vogel (1998) for further examples.

## 7 Middle Constructions Revisited

In this chapter we finally return to middle constructions. The analysis proposed in the previous chapters implies that middle constructions neither exist in the lexicon nor in the syntax. We argued in chapters 5 and 6 that non-argument reflexives are not linked to a semantic argument themselves. Instead the subject is linked to the second argument (position) of the predicate. The first semantic argument does not project to syntax and must therefore be either bound by a quantifier or deleted. Following Chierchia (1989), we call the first operation on implicit arguments *argument saturation* and the second one *argument reduction*. Middle constructions are the output of argument saturation. Hence, the specific meaning of middle constructions results from the interpretation of complex A-chains, on the one hand, and the semantic operation of argument saturation, on the other hand. Syntactically, middle constructions are simple transitive reflexive sentences. Consequently, we cannot account for the quasi-obligatory adverbial modification and the so-called ‘generic’ interpretation in the lexicon or in syntax. These properties of middle constructions should follow from the semantics (and possibly the pragmatics) of this construction. In this final chapter we want to outline how these problems can be handled in a postsyntactic approach. We turn to genericity first. Adverbial modification is briefly discussed in the second part of this chapter, section 7.2. The final section deals with adjunct middles in German. It will turn out that adjunct middles make use of the interpretation of complex A-chains and the generic quantification.

### 7.1 Middle constructions and genericity

Recall from chapter 3, section 3.2.1, that middle constructions are *characterizing sentences* in the terminology of Krifka et al. (1995). Middle constructions differ from clauses that contain an individual-level predicate in several respects. First, middle constructions, unlike individual-level predicates, permit temporal modification.<sup>242</sup> Second, only in middle constructions locative PPs can modify either the subject (NP-modification) or the event described by the verb (VP-modification). Individual-level predicates do not permit the latter interpretation. Third, middle constructions can be modified by adverbs of quantification. Fourth, middle constructions do not necessarily describe a permanent property of their subject (which is linked to the second argument of the verb). And finally, some adverbials clearly modify events in middle constructions. The relevant examples are repeated in (1) – (5), for individual-level predicates see section 3.2.1.

- (1) Heute Nachmittag verkaufen sich die Bücher wie warme Semmeln  
Today afternoon sell RP the books like hot cakes
- (2) ... weil sich die Bücher in diesem Laden gut verkaufen  
... because RP the books in this shop well sell

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<sup>242</sup> In English middle constructions like (1) can be progressive, cf. section 2.1.4.

- (3) a. Dieses Buch liest sich immer wieder gut  
This book reads RP again and again well  
b. Dieses Auto fährt sich normalerweise ganz gut  
This car drives RP normally quite well  
c. In Ostfriesland wandert es sich nur selten gut  
In East-Frisia wanders it RP only rarely well  
d. Hier pflegte es sich gut zu schlafen  
Here used it RP well to sleep
- (4) Der Bach hat sich gestern Abend ausnahmsweise mal ganz gut gespielt  
The Bach has RP yesterday evening exceptionally once quite well played  
'Exceptionally, this piece by Bach played well last night'
- (5) Der Rasen mäht sich schnell  
The lawn cuts RP quickly

Note that the adverbs in (3) quantify either over individuals or over events (situations, or happenings), cf. e.g. Cohen (1996). The former usually involves subjects that refer to kinds. Fagan (1992:154) argues that in middle constructions these adverbs quantify only over individuals. However, quantification over individuals is clearly excluded in (3), because the subjects and the locative PPs do not refer to kinds. Thus frequency adverbs can also quantify over events in middle constructions. Besides, middle constructions are morphosyntactically simple active sentences that always contain stage-level predicates. There is no evidence that all these verbs turn into individual-level predicates in middle constructions.

Recall from chapters 5 and 6 that middle constructions contain an unbound semantic variable, which must be bound by some semantic operator. In middle constructions like (6) the syntactic subject is linked to the second argument of the verb. The first argument cannot be linked to syntax because VP,Spec is occupied by an intermediate trace of the complex A-chain. As opposed to anticausatives, the implicit argument is not deleted in middle constructions. Therefore the free argument variable  $x$  in (6.b) must be bound by some semantic operator. We called this semantic operation argument saturation.

- (6) a. Das Buch liest sich schnell  
The book reads RP quickly  
b. read (s, x, b) & quick (s)

We propose that an implicit argument can be bound either by an existential quantifier or by a generic operator. Existential quantification of the implicit first argument yields the passive interpretation, and generic quantification the middle interpretation. In section 2 we saw that middle constructions and passives are morphosyntactically identical in many Indo-European languages. In these languages constructions with weak reflexive markers (i.e. the middle voice) receive both interpretations. The only difference is the semantic operator that binds the implicit argument. In German, sentences that contain an implicit object show the same ambiguity. Sentence (7) has two readings, which are paraphrased in (i) and (ii).

- (7) Peter näht in der Küche  
Peter sews in the kitchen  
(i) Peter is sewing something in the kitchen now (existential)  
(ii) Whenever Peter sews something he does this in the kitchen (generic)

Again the implicit semantic argument can be existentially or generically bound, and sentence (7) can be used to describe a specific situation or it describes a habit of Peter. It is a well-known fact that in German most sentences can either report a particular situation or a regularity, because German, unlike English, does not make an aspectual distinction between episodic and generic sentences. Therefore, it is not surprising that implicit arguments (i.e. unbound argument variables) can be bound by an existential quantifier or a generic operator. Both unselectively bind any free variable in their scope. As opposed to some Indo-European languages, German has two different forms for passives and middle constructions.<sup>243</sup> Unlike middle constructions, passives are not reflexive.

- (8) a. Der Bericht schreibt sich schnell  
The report writes RP quickly  
b. Der Bericht wurde schnell geschrieben  
The report was quickly written

German shows a division of labor with respect to the interpretation of the first implicit argument. Passives are responsible for existential quantification and middle constructions for the generic quantification. This seems to be a construction-specific property. Our analysis of the semantic ambiguity of reflexive pronouns in chapter 5 is compositional. However, this does not hold for the generic quantification in middle constructions. As far as we can tell this semantic aspect of middle constructions can neither be attributed to the reflexive pronoun nor to the adverbial modification. In many languages reflexive constructions can also receive a passive interpretation and adverbials do not necessarily trigger a generic interpretation as can be seen in (8.b). Besides, anticausatives and simple reflexives are not generic statements, although they are reflexive. In this respect middle constructions equal conditional sentences, which also have construction-specific properties.

We follow Krifka et.al. (1995) and Cohen (1996) who analyze the generic operator as a dyadic semantic operator that binds any free variable in its scope and relates two open formulas, the restrictor and the nuclear scope.<sup>244</sup> Cohen argues that the topic of the sentence is always mapped into the restrictor and the comment (including the focus) into the nuclear scope.<sup>245</sup>

<sup>243</sup> Recall from section 2.3 that the picture is not always that clear. On the one hand, some ‘medio-passive’ languages, i.e. languages with a reflexive passive that is formally identical to the middle construction, also have an additional non-reflexive (periphrastic) passive construction. On the other hand, in languages like Italian, which draw a formal distinction between middle constructions and passives some middle constructions are interpreted like passives.

<sup>244</sup> Krifka et.al. call the nuclear scope *matrix*.

<sup>245</sup> As opposed to Cohen, Krifka et.al. argue that the topic and the background are mapped into the restrictor. Thus only the focus goes to the nuclear scope. For the present discussion this will make no difference, cf. also Krifka (1995) and Rooth (1995).

Focus on the subject of the middle construction is an interesting example. According to Krifka et.al., the subject of the middle construction in (i.b) is mapped into the nuclear scope and the whole background including the verb and the adverbial is mapped into the restrictor. (i.c) would be true if a situation in which something is easy to read for someone is likely to be a situation in which this person reads *War and Peace* given a set of contextually salient alternatives like e.g. {*Der Zauberberg, Frankenstein, American Pastoral, ...*}.

- (i) a. Was liest sich leicht?  
What reads RP easily  
b. [Krieg und Frieden]<sub>F</sub> liest sich leicht  
c. GEN<sub>S,X,Y</sub>: [read(s,x,y) & easy(s)] [y = war-and-peace]

The definition of topic varies, but most linguists agree that the topic is an (improper) part of the non-focus, cf. Reinhart (1981) and Vallduví (1990) for a detailed discussion. Intuitively, the topic is that which the sentence is about. In middle constructions the topic is most likely the subject<sup>246</sup> of the sentence. Consider the following example. First, the subject of each sentence is linked to the second argument position of the verb. In addition, it is mapped to the restrictor in (9.c). The adverb *leicht* ('easily') is the focus and the rest of the sentence can be called the background. The focus and the background are mapped together to the nuclear scope.

- (9) a. Wie liest sich Krieg und Frieden?  
How reads RP War and Peace?  
'How can this book be read?'  
b. Krieg und Frieden liest sich [leicht]<sub>F</sub>  
War and Peace reads RP easily  
c. GEN<sub>S,X,Y</sub>; [y = war-and-peace] [read(s,x,y) & easy(s)]

In (9) the generic operator takes sentential scope. It binds the 'topic', the implicit argument, and the situation variable. (9) is thus a characterizing or habitual sentence, cf. Krifka et.al (1995). Simplifying somewhat, the generic operator can be analyzed as the phonologically empty counterpart to the frequency adverb *usually*. The generic sentence in (9) is evaluated with respect to a set of (salient) alternatives. According to Cohen, the set of alternatives is usually determined by the focus. Recall from chapter 4 that the focus semantic value of a sentence is a set of alternatives. The alternatives to the focus in (9.c) are for example {hard, badly, well, quickly, excellently, ...}. Hence, sentence (9) would be true if a situation in which someone reads *War and Peace* is very likely to be a situation in which *War and Peace* is easy to read for this person.<sup>247</sup> This analysis can also be applied to impersonal middle constructions. Impersonal middle constructions usually contain locative, instrumental or temporal adverbials, which can be the topic of the respective sentence. In example (10) the locative adverbial *in diesem Bett* is mapped into the restrictor. The set of alternatives is again determined by the adverbial. It says that it is generally true for sleeping situations in this bed that they are comfortable (i.e. they are more likely do be comfortable than e.g. uncomfortable).

- (10) a. Wie schläft es sich in diesem Bett?  
How sleeps it RP in this bed?  
b. In diesem Bett schläft es sich [bequem]<sub>F</sub>  
In this bed sleeps RP comfortably  
c. GEN<sub>S,X,Y</sub>; [in-this-bed(y)] [sleep(s,x,y) & comfortable(s)]

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Alternatively, we could follow Cohen (1995:157), who argues that sometimes focused elements are mapped onto the restrictor. Note finally that the subject is always bound by the generic quantifier no matter whether it is mapped into the restrictor or the nuclear scope.

<sup>246</sup> Note that the subject is not necessarily the topic of the sentence, although "in English and languages of similar typology, the grammatical relation 'subject' is a weak indicator of 'Topic,'" Dowty (1991:564). Unlike English, German has yet another position, the so-called 'Vorfeld' (sentence-initial position) which is an even stronger indicator of 'Topic', cf. Gärtner and Steinbach (2000). In most middle constructions the subject occupies the sentence-initial position.

<sup>247</sup> The exact definition of the meaning of the generic quantifier and the set of contextually salient alternatives is a difficult task. We refer the reader to Krifka et.al. (1995:43f.) and Cohen (1996).

This analysis enables us to derive several observations from the second chapter. First, we can account for Fagan's (1992) observation that middle constructions usually attribute properties to their subject. The topic of a sentence is the element which the sentence is 'about'. The tripartite structure in (9) and (10) predicates the nuclear scope over the restrictor. That is, for the restrictor of a generic sentence generally holds what is described by the nuclear scope. Besides, the 'responsibility' of the syntactic subject (i.e. the second semantic argument) seems to be closely related to this. Recall that some middle constructions are unacceptable because the second semantic argument (i.e. the syntactic subject of the middle construction) cannot be understood to be responsible for the event described by the verb. This is illustrated by the following minimal pair.

- (11) a. \*These books buy well / \*Diese Bücher kaufen sich gut  
 b. These books sell well / Diese Bücher verkaufen sich gut

In the previous chapters we argued that middle constructions are morphosyntactically simple active sentences. Hence, the second argument of the verb might inherit some prototypical semantic properties of the subject. In particular, it might inherit the responsibility for the event described by the verb. By contrast, this is not possible in passives. However, responsibility clearly depends on the context, as is illustrated in (12).

- (12) a. Bei fachlich geschultem Personal kauft sich die richtige Software letztlich doch schneller als im Discounter  
 With qualified personnel buys RP the right software in the end PARTICLE faster than in a discount store  
 'In the end the right software buys faster with qualified personnel than in the d.s.'  
 b. Standardgrößen kaufen sich leichter als Sondergrößen  
 Standard-size buys RP more easily than extra-size

Moreover, it need not be the syntactic subject of the middle construction that is 'responsible'. In impersonal middle constructions, it is usually a locative, instrumental, or temporal adverbial that is 'responsible'. The same holds for example (13). It is clearly the car wash that is responsible for the washing-event. The intrinsic properties of the syntactic subject *das Auto* ('the car') are irrelevant in (13).

- (13) In dieser Waschstraße wäscht sich das Auto viel besser  
 In this car wash washes RP the car much better

Hence, the 'responsibility' seems to be related to the topic (i.e. restrictor) of the generic sentence. Thus it is very likely that some intrinsic property of the entity described by the restrictor is 'responsible' for this.

Second, the ungrammaticality of the middle construction in (14) can be explained if we follow Kratzer (1995), who assumes that individual-level predicates do not supply a situation variable.

- (14) \*Müller heißt es sich nicht so leicht  
 Müller names it RP not that easily

Third, the so-called ‘modal’ meaning of middle constructions can also be derived from the semantic representation of middle constructions given in (9) and (10) above.<sup>248</sup> Cohen argues that generics express probability judgements which are statements of hypothetical relative frequency. The exact truth conditions of generics may vary across speakers. In addition, the evaluation of generic statements fundamentally depends on contextually salient alternatives. Generic statements are evaluated with respect to a set of alternatives.<sup>249</sup> Although the exact definition of the set of salient alternatives is not easy, we want to emphasize that a generic statement like (9) is generally true iff the probability that *War and Peace* is easy to read is greater than the probability that it is difficult etc. to read.<sup>250</sup> But this is exactly the modal meaning that is involved in middle constructions.

And finally this analysis can also account for the ‘arbitrary’ interpretation of the implicit argument (the ‘implicit subject’) in middle constructions. The first semantic argument of the verb is always bound by the generic quantifier. Unlike the universal quantifier, the generic quantifier usually allows for exceptions. On the other hand, generic quantification does not “capture a mere accidental generalization” as might be possible for universal quantification, cf. Krifka et.al. (1995:44). Thus the meaning of the middle construction in (9) above can be rendered as: In appropriate situations in which some (arbitrary) person reads *War and Peace* this novel is easy to read for that person. Sentence (9) does not entail that the novel is easy to read for everybody nor does it entail that there exists a specific person for which it is easy to read. The arbitrary reference might be restricted to salient persons. In (9) this might be persons that are able to read and that have normal reading experience. That is, illiterates, literary critics, professors of literary studies, and first-graders might be excluded.<sup>251</sup>

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<sup>248</sup> See Fagan (1992:22,194) for the notion of modality.

<sup>249</sup> The following middle construction is, for example, also evaluated with respect to people that are able to drive a car.

(i) Dieses Auto fährt sich gut (i.e. This car drives RP well)

The following example is evaluated with respect to a set of alternatives that contain most likely other alcoholic drinks like e.g. {wine, whiskey, ...}, because situations in which some normally drinks e.g. coffee, tea, or milkshakes are not typical situations in which someone drinks beer or wine.

(ii) John drinks [beer]<sub>F</sub>

<sup>250</sup> Note that some middle constructions, like (i) express the modal notion of necessity instead of possibility, cf. Fagan (1992:23f). This specific meaning is not only found in middle constructions, as can be seen in (ii). for further discussion see Krifka et.al (1995:49f) and Cohen (1996:chapter 2)

(i) Ich schreibe mich mit ‘k’  
I write RP with ‘k’  
‘My name is spelt with a ‘k’

(ii) Two and two equals four

<sup>251</sup> The first semantic argument of most verbs in middle constructions is either ‘actor’ or ‘experiencer’, cf. Dowty’s (1991) proto-patient properties. However, we saw in chapters 2 and 3 that middle formation in German is not restricted to actors. We would expect that the implicit argument in middle constructions can refer to a non-human entity if the verb does not entail volitional involvement or sentience for its first argument. This seems to be confirmed by the following examples. None of the sentences implies that the action can only be performed by human beings.

We conclude the discussion with a final remark on temporal specification. Middle constructions are interpreted generically, i.e. they are habitual sentences. The argument variables and the situation variable are bound by the generic quantifier in middle constructions, whereas in passives they are bound by the existential quantifier. Hence, the middle interpretation of reflexive constructions involves a non-argument reflexive and a generic quantifier. The first is responsible for the implicit first argument and the second for the generic interpretation. Generic quantification can be restricted to a specific period of time, as can be seen in (15). Recall that the generic quantifier in middle constructions does not only quantify over situations but also over the first argument variable. That is, middle constructions, unlike most ‘normal’ habitual sentences have two ‘unbound’ generic arguments. Most generic statements are about an unbounded set of situations, cf. Cohen (1996:80f.). Therefore generic sentences that set an explicit limit on the set of situations are expected to be ungrammatical.<sup>252</sup> Middle constructions seem to be more liberal in this respect. Although sentence (15) restricts the set of situations to a specific period of time, it does not include an explicit limit. (15) is true for a potentially unbound set of salespersons and thus also for a potentially unbound set of situations in which these salespersons sell our books this afternoon.

- (15) Unsere Bücher verkaufen sich heute Nachmittag wie warme Semmeln  
Our books sell RP today’s afternoon like sandwiches

The same holds for the middle construction in (16). Although its meaning is very similar to that of the corresponding passive in (17), the middle construction does not imply that there was (exactly) one performance of this piece of music by one or more musicians. By contrast, the middle construction quantifies over situations that happened last night and (a potentially salient) group of musicians. Thus only the middle construction entails that these situations

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- (i) a. Die Hemden verpacken sich jetzt besser  
The shirts pack RP now better  
b. Die Kotflügel verschrauben sich mittlerweile ganz gut  
The wings screw-together RP now quite well  
c. Die Milch füllt sich jetzt besser ab  
The milk fills RP now better VERBAL-PARTICLE

Note, however, that arbitrary reference to human beings is always the preferred option in middle constructions for two reasons: (i) human beings are generally more salient discourse referents than non-humans (cf. also section 4.2.3 on personal pronouns in sentence initial position). (ii) only human beings are typical proto-agents. Therefore they are the best candidate for the first argument position of most verbs. Note that this asymmetry is also reflected in all thematic hierarchies: agent is ranked higher than instrument.

<sup>252</sup> Consider the following examples. Only sentence (i.a) is a generic statement. Sentence (i.b) cannot be interpreted as a habitual statement, because it is very likely that Peter goes to work only once a day. Hence, sentence (i.b) describes a single event. The boundaries between eventive and habitual statements might not always be clear, as can be seen in (ii), which is ambiguous between an eventive and a habitual reading.

- (i) a. Peter fährt mit der U-Bahn zur Arbeit  
Peter goes with the underground to work  
b. Peter ist gestern Morgen mit der S-Bahn zur Arbeit gefahren  
Peter is yesterday with the underground to work goes  
(ii) Peter tanzt heute Abend (ausnahmsweise) mit Maria  
Peter dances tonight (exceptionally) with Maria

were very likely to be situations in which the piece by Bach was played well. In addition, the adverbial *ausnahmsweise* ('exceptionally') entails that it is usually hard to play.<sup>253</sup>

- (16) Der Bach hat sich gestern Abend ausnahmsweise mal ganz gut gespielt  
The Bach has RP last night exceptionally once quite well played  
'Exceptionally, this piece by Bach played well last night'
- (17) Der Bach wurde gestern Abend ausnahmsweise mal ganz gut gespielt  
The Bach was last night exceptionally once quite well played

## 7.2 *Adverbial modification in middle constructions*

Although most middle constructions require some adverbial modification, we also find examples without adverbials. We already gave some examples in section 2.1., here repeated in (1). Of course, all examples in (1) are highly context-dependent. Nevertheless they are not ungrammatical, cf. also Hale and Keyser (1986 and 1987), Roberts (1985), Ackema and Schoorlemmer (1994), Iwata (1999), or den Dikken (1997) for the same observation.<sup>254</sup>

- (18) a. Welche Tür öffnet sich?  
Which door opens RP  
'Which door can be opened?'
- b. Nimm diese Tür da, die öffnet sich!  
Take that one over there, it opens RP  
'Take that one. It can be opened'
- c. Nur keine Angst. Dein Ohring wird sich finden  
'Don't worry'. Your earring will RP find
- d. Dieses Kleid hat keinen Reißverschluß. Es knöpft sich zu  
This dress has no zip. It buttons RP PARTICLE
- e. Jetzt ist es schwer, aber es vergißt sich alles.  
Now is it hard, but it forgets RP everything

<sup>253</sup> The situation is different in example (i.a), which explicitly limits the size of the set of situations to 56. The meaning of this example seems to be identical to the corresponding passive in (i.b), cf. also Fagan (1992:241) for similar examples.

- (i) a. 1968 verkaufte sich diese Continental Executive Limousine immerhin 56 mal  
(In) 1968 sold RP this Continental Executive Limousine at least 56 times
- b. 1968 wurde diese Continental Executive Limousine immerhin 56 mal verkauft  
(In) 1968 was this Continental Executive Limousine at least 56 times sold

We think that (i.a) is not a middle construction but an anticausative. The verb *verkaufen* ('sell') does not necessarily select an agent, as can be seen in (ii.b). This example is from the Frankfurter Rundschau, 29.9.2000.

- (ii) Aber [diese Schlagzeile] verkauft so wenige Bild-Zeitungen, wie der steif aufgerichtete Körper eine  
But this headline sells as few Bild-newspapers as the rigidly straightend body of-a  
Dressreiterin  
dressage-rider

Hence, *verkaufen* is not excluded from argument reduction, cf. section 6.1.

- (iii) ?Dein Wagen hat sich gerade verkauft (i.e. Your car has RP right-now sold)

<sup>254</sup> Recall that in some cases the reflexive or anticausative interpretations, which are more easily available, may interfere with the middle interpretation, cf. chapter 1. Beyond this, there are usually alternatives to middle constructions with similar meaning that are less ambiguous. Hence, it may take some time to grasp the meaning of middle constructions without adverbial modification.

- f. Die entscheidende Frage nach den Kriterien der Amerikaner [i.e. amerikanischen Lektoren] beim Ankauf eines Manuskripts fand regelmäßig die verblüffend einfache Antwort:  
 When asking what Americans [i.e. American editors] consider to be crucial criteria for accepting a manuscript you always get the same answer:  
 “Dass es uns gefällt und dass es sich verkauft.”  
 That it us pleases and that it RP sells  
 ‘That we like it and that it sells’

The same holds for impersonal middle constructions. Besides, impersonal middle constructions require an additional adverb. This second adverbial is usually a locative, instrumental, or temporal PP, cf. section 7.1 above and Fagan (1992:48&189).

- (19) a. [In diesem Bett]<sub>Adverbial 1</sub> schläft sich’s [gut]<sub>Adverbial 2</sub>  
           In this beed sleeps RP it well  
 b. ?[In diesem Bett]<sub>Adverbial 1</sub> schläft sich’s  
           In this beed sleeps RP it  
 c. ?Es schläft sich [gut]<sub>Adverbial 2</sub>  
           It sleeps RP well

Fagan (1992:190) argues that the second adverbial of impersonal middle constructions is “not required by the rule of Middle Formation itself. In general, it appears in impersonal middle [construction]s for semantic/pragmatic reasons.” Unlike Fagan, we want to argue that both adverbials are required for pragmatic reasons. Native speakers agree that both (19.b) and (19.c) sound odd, but it is hard to tell the alleged ungrammaticality of example (19.b) from the pragmatic oddity of (19.c). Besides, Fagan also discusses some adverbials without adverbial modification and concludes that “although middles typically appear with some sort of adverbial modification, since the purpose of a middle is to describe how some activity can be carried out with respect to a given object, pragmatic considerations [...] allow the ‘how’ of middles to be expressed in ways that do not involve an overt adverbial expression” (Fagan 1992:189). We think that a pragmatic approach enables us to explain the fact that most middle constructions require some adverbial as well as the observation that some middle constructions are grammatical without an adverbial.<sup>255</sup> Recall that none of the theories we discussed in chapter 3 gives a satisfactory explanation for the adverbial modification. Hoekstra and Roberts (1993), and similarly den Dikken (1997), try to derive the adverbial modification in middle constructions in terms of theta-theory. As we argued in chapter 3, this approach cannot be maintained. Lexical theories like Fagan (1992) and Bierwisch (1997) simply stipulate that ‘middle verbs’ obligatorily select an adverbial. However, this stipulation does not offer a conclusive explanation of adverbials in middle construction either.

The following presentation relates to the discussion of focus in chapter 4. Recall that the assertion of a sentence S, given a common ground CG, is (*pragmatically*) *licensed* if it is informative and compatible with CG.<sup>256</sup> A simplified version of the relevant definitions is given in

<sup>255</sup> In chapter 3 we mentioned that verbs like *wohnen* (‘live’) raise the same problem. The analysis outlined in the following can be applied to these verbs as well.

<sup>256</sup> See also Blutner (1997) for a definition of the term *pragmatically licensed*, which incorporates the insights of Gricean pragmatics.

(20).  $CG'$  is the common ground that results from adding the proposition  $S$  to the old common ground  $CG$  ( $CG' = CG \cap [S]$ ;  $[S]$  is the meaning of the sentence  $S$ , i.e. the set of possible worlds that make  $S$  true).<sup>257</sup> (20.a) states that the resulting common ground  $CG'$  must not be identical to the old common ground  $CG$  and condition (20.b) requires that the intersection between  $CG$  and the proposition added to  $CG$  must not be empty, i.e. that the new proposition is compatible with  $CG$ .  $CG$  is determined by the previous discourse, the conversational setting, and by knowledge about the world shared by the speaker and the hearer.

- (20) a.  $CG' \neq CG$  (informativity)  
 b.  $CG' = \emptyset$  (compatibility)

The assertion of a sentence  $S$  is (pragmatically) licensed iff it satisfies both conditions in (20). This is illustrated by the following example. We use questions to specify the previous discourse, i.e. the background of the corresponding answer. When we talk about books, we are usually interested (among other things) in how these books can be read. This can be expressed by means of a middle construction like (21.b).

- (21) a. Wie liest sich dieses Buch?  
 How reads RP this book?  
 'How does this book read?'  
 b. Das Buch liest sich [gut/schwer/schnell/wie ein Kriminalroman]<sub>F</sub>  
 The book reads RP well/difficult/quickly/like a crime story

In example (21) the  $CG$  is determined by question (21.a). The assertion in (21.b) maps (or *updates*) the common ground  $CG$  into  $CG'$ , which contains the new information that this book reads e.g. *well*. Furthermore, the intersection between  $CG$  specified by (21.a) and the proposition (21.b) is not empty. Thus both conditions in (20) are fulfilled. (21) exemplifies the most common use of middle constructions. By contrast, the utterance of a middle construction without adverbial modification like (22.b) simply states that *dieses Buch* ('this book') has the property that it can be read. This information is, however, usually part of our knowledge about books because books are made for reading. According to condition (20.a),  $CG$  must not include this information. Hence, it has to be under discussion whether *dieses Buch* ('this book') can be read altogether, possibly because it is poorly written or very difficult to read/understand. The corresponding question is given in (22.a).

- (22) a. Liest sich dieses Buch?  
 Reads RP this book  
 'Can this book be read?'  
 b. Ja, dieses Buch [liest]<sub>F</sub> sich  
 This book reads RP

Another possibility is, to ask for a specific book which can be read. Assuming that you have to choose between several books and you are interested in the books that can be read, you might ask a question like (23.a). In this case condition (20.a) requires that there must be some type

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<sup>257</sup> An utterance generally maps a common ground  $CG$  to a common ground  $CG'$ . Therefore, it is a function from common grounds to common grounds. The utterance *updates* an old common ground and the new common ground  $CG'$  can be called an *update*.

identical and contextually salient alternatives to *this book*, otherwise CG would be identical to CG'.

- (23) a. Welches Buch liest sich?  
Which book reads RP  
Which book can be read?'  
b. ??[Dieses]<sub>F</sub> Buch liest sich  
This book reads RP

In these contexts the middle constructions without adverbial modification in (22) and (23) are acceptable because they are (pragmatically) licensed. However, they can be uttered only in this very special context. With respect to most books we are still more interested in the way a book can be read and not whether it can be read at all. Therefore, (22) and (23) are only possible in a very specific context which must be accommodated if these sentences are uttered out of the blue. The same holds for the examples in (18) above. The following examples illustrate the same point. The manager of a publishing company may doubt whether his or her customers will buy a special edition or the books of some author. In this context a salesperson can utter (24.b) or (24.c) in response to question (24.a) because it is of interest to the manager whether people buy a special edition or the books of an author.

- (24) a. Kauft überhaupt irgend jemand diesen Schund?  
'Does anybody buy that trash altogether?'  
b. Ja, das Buch verkauft sich  
The book sells RP  
c. Nur das erste Buch von Vera Schind verkauft sich. Die anderen sind Ladenhüter  
Only the first book of Vera Schind sells RP. The others are shelf-warmers

Finally consider example in (25). Narrow focus on the definite determiner implies that the meaning of the first sentence, i.e. *this (kind of) beer can be drunk*, must not be part of CG, although it is part of our knowledge that beer is made for drinking, i.e. that a beer usually can be drunk. Therefore, sentence (25.b) is only licensed if it is under discussion whether *this (kind of) beer* is drinkable or tastes awful.

- (25) a. Welches Bier kann man hier trinken?  
Which (kind of) beer can one here drink?  
b. [Das]<sub>F</sub> Bier trinkt sich. Die anderen schmecken furchtbar  
That (kind of) beer drinks RP. The others taste awfully.

Note that sometimes there is an additional pragmatic effect. Imagine a club where people are in high spirits. The DJ is playing excellent music and everybody is dancing. It is obvious that one can dance in this club (this follows from the conversational setting). In this situation sentence (26) yields a special meaning that can be described as follows: There is extremely good dancing in this club. This interpretation may result from conversational implicatures. This meaning is also available for sentence (25.b).

- (26) Hier tanzt sich's  
Here dances RP it

This treatment of adverbial modification implies that middle constructions without adverbials are (pragmatically) licensed only in very special contexts. Hence they are expected to be very rare. By contrast, middle constructions with adverbial modification are licensed more easily. They can be applied to common grounds that do not challenge the fact that e.g. *beer is drinkable* or *books are readable*. Furthermore, they are more informative because their meaning is more specific. This is also the reason why middle constructions with negation are judged to be

more acceptable than middle constructions without any modification. Usually it is more informative to deny that an entity does not have the property it is assumed to have. This can be seen in (27.a) and (27.b). The same holds for the subjunctive in (27.c). Questions are yet another example. They explicitly introduce the appropriate context. Question (27.d), for example, implies that there are at least two doors, one of which is probably closed. This follows again from the conditions in (20). Recall that the question word corresponds to the focus (cf. also section 4.2.2).

- (27) a. Dieses Brot schneidet sich einfach nicht  
This bread cuts RP simply not  
b. ... ein Telefonbuch fand sich nicht  
... a phonebook found RP not  
c. Mein Buch könnte sich verkaufen  
My book might RP sell  
d. Welche Tür öffnet sich?  
Which door opens RP

Passives, unlike middle constructions, are always perfectly acceptable without any adverbial modification. This is due to the fact that passives are usually not generic statements (characterizing sentences). They refer to specific events. But the common ground CG does not imply that, for example, a book that can usually be read is/was also actually read by some person. Hence, passives are always informative without additional modification.

Note finally that a similar pragmatic effect can be observed in (28). All three sentences are ambiguous between an episodic and a generic reading. Sentence (28.a) for example either refers to a particular event of drinking or it means that Peter usually drinks. The second interpretation involves alcohol, i.e. it means that Peter is an alcoholic. That this interpretation is not an intrinsic property of habitual drinking is illustrated in (28.b). The little child is usually not supposed to be an alcoholic. The habitual interpretation of sentence (28.b) can be rendered as: the little child did not drink anything for some time, but now it starts drinking again. Hence, in (28.a) the interpretation that Peter is an alcoholic seems to follow from pragmatic reasoning. On the one hand, people normally drink a lot every day. Hence, sentence (28.a) does not provide any interesting information. On the other hand, alcohol is the most salient drink not only in Western cultures. In addition, not everybody regularly drinks alcohol. According to these assumptions, sentence (28.a) is pragmatically licensed if it means that Peter is an alcoholic. The same holds for sentence (28.c), which means that Peter sniffs drugs or adhesive. Sentence (28.b), on the other hand, is licensed without this specific interpretation, because it is a known fact that little children refuse to drink now and then.<sup>258</sup>

- (28) a. Peter trinkt wieder  
Peter drinks again  
b. Das Baby trinkt wieder  
The baby drinks again  
c. Peter schnüffelt  
Peter sniffs

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<sup>258</sup> Sentence (28.a) can also yield this interpretation. Let's assume that Peter is in hospital after an accident or that he refuses to eat and drink because he is on hunger strike. In these situations the meaning of sentence (28.a) does not involve alcohol.

We conclude that the adverbial modification in middle constructions can be derived from the conditions on assertions to be pragmatically licensed. There is no need to stipulate a special kind of (lexical) adverbial selection or some (syntactic) theta-identification mechanism. Middle constructions are simple transitive reflexive sentences in syntax.

### 7.3 *Adjunct middles*

The last section of this chapter deals with adjunct middle constructions in German. Unlike adjunct middles in Dutch, their German counterparts seem to be less productive, cf. Hoekstra and Roberts (1993) and Ackema and Schoorlemmer (1994) for adjunct middles in Dutch. They are only licensed in special contexts, and at first sight they sound somewhat odd to many native speakers and judgements may vary from speaker to speaker and from context to context. Adjunct middles always correspond to an impersonal counterpart, as is illustrated in (29).

- (29) a. <sup>?</sup>Die neuen Wanderschuhe laufen sich hervorragend  
The new hiking boots walk RP excellently  
a'. Es läuft sich hervorragend in den neuen Wanderschuhen  
It walks RP excellently in the new hiking boots  
b. <sup>?</sup>Dieser Füller schreibt sich sehr gut  
This pen writes RP very well  
b'. Es schreibt sich sehr gut mit diesem Füller  
It writes RP very well with this pen

Besides, impersonal middle constructions are less restricted than the corresponding adjunct middle constructions. (30) illustrate that not every adjunct can be promoted to subject. Adjunct middles are always a proper subclass of the corresponding impersonal middle constructions.

- (30) a. Es schläft sich gut in diesem Bett/in Berlin  
It sleeps RP well in this bed/in Berlin  
b. <sup>?</sup>Dieses Bett/#Berlin schläft sich gut  
This bed/Berlin sleeps RP well

The active counterparts of adjunct middle constructions are ungrammatical. The subject of the adjunct middle construction must be realized as an adjunct in this case. It cannot be linked to the direct object in the active.

- (31) a. Ich laufe \*die neuen Wanderschuhe/in den neuen Wanderschuhen hervorragend  
I walk the new hiking boots/in the new hiking boots excellently  
b. Er schreibt \*diesen Füller/mit diesem Füller sehr gut  
He writes the pen/with this pen very well  
c. Jürgen schläft \*das Bett/in diesem Bett gut  
Jürgen sleeps the bed/in this bed well

Interestingly, the meaning of impersonal middle constructions and the corresponding adjunct middles is not completely identical. The first sentence is ambiguous between two interpretations that are equally available. By contrast, sentence (32.b) shows a clear preference for one of these two interpretations. (32.a) can mean either that you better take these shoes (instead of others) if you have to walk during a rainstorm (because these shoes are made for rainstorms) or that these shoes should mainly be put on for walks in rainstorms (instead of walks in the sunshine), because they are more comfortable in a rainstorm (they are possibly softer because

of the rain). (31.b), on the other hand, clearly favors the second interpretation. Sentence (32.b) can also yield the second interpretation but it is less salient.

- (32) a. Mit diesen Schuhen läuft es sich bei einem Unwetter bequemer  
 With these shoes walks it RP during a rainstorm more-comfortably  
 b. Diese Schuhe laufen sich bei einem Unwetter bequemer  
 These shoes walk RP during a rainstorm more-comfortably

The same preferences for one interpretation can also be observed in (33.b). Again, one interpretation is salient in the second sentence, whereas both interpretations are equally available in (33.a). The salient interpretation of (33.b) is that one can drive your car much better in summer than in winter. The impersonal middle construction in (33.a) can either mean that in summer your car is better than e.g. mine or that one can drive your car much better in summer than in winter. The latter interpretation is the preferred interpretation for (33.b).

- (33) a. Mit deinem Wagen fährt es sich im Sommer viel besser  
 With your car drives it RP in summer much better  
 b. Dein Wagen fährt sich im Sommer viel besser  
 Your car drives RP in summer much better

Unlike (32.b), sentence (33.b) is not an adjunct middle construction because the argument linked to the subject in (33.b) can be linked to the direct object in the corresponding active (*Ich fahre deinen Wagen* ‘I drive your car’). Hence, the preference for a specific interpretation in (32.b) and (33.b) is not a specific property of adjunct middle constructions. Recall from section 7.1 that the topic of the sentence is mapped onto the restrictor. In personal middle constructions (including adjunct middles), the subject is most likely to be the topic and thus mapped onto the restrictor, as is illustrated in (34).

- (34) GEN<sub>s,x,y</sub>; [these-shoes(y)] [walk(s,x) & in(s,y) & rainst.(s) & more-comfortable(s)]

On the other hand, impersonal middle constructions have a non-referential (impersonal) subject. Therefore, some other element must be mapped into the restrictor. Usually this is a locative, instrumental, or temporal adverbial. Note that both middle constructions in (32.a) and (33.a) include two adverbial PPs. Furthermore, the value of the comparative adverbials *bequemer* (‘more comfortably’) and *viel besser* (‘much better’) is evaluated with respect to a set of salient alternatives, which is usually provided by the focus. In (32.b) and (33.b) the temporal adverbial is likely to be the focus, because in personal middle constructions the subject is usually the topic. Hence, in the salient meaning of (33.b) the focus is *summer* and the alternatives are {*winter, fall, spring*}. This interpretation is, however, only salient if the personal middle construction is uttered out of the blue. The other interpretation is also available if the context explicitly restricts the focus. In (35) the subject is the focus and the alternatives are *my car* and *your car*.

- (35) a. Welches Auto fährt sich im Sommer besser, deines oder meines?  
 Which car drives RP in summer much better, yours or mine?  
 b. Im Sommer fährt sich mein Auto besser!  
 In summer drives RP my car much better

By contrast, the sentences in (32.a) and (33.b) contain two adverbials, both of which are likely to be the focus of the sentence and we expect that in principle two interpretations are equally available, which is confirmed by the data. Besides, the impersonal middle construction and the corresponding adjunct middle in (32) only get one interpretation if we omit the adverbial *bei einem Unwetter*. In (36) we cannot choose between different sets of alternatives.

- (36) a. In diesen Schuhen läuft es sich viel besser  
 With these shoes walks it RP much better  
 b. Diese Schuhe laufen sich viel besser  
 These shoes walk RP much better

In sum, adjunct middle constructions and impersonal middle constructions are not completely identical in meaning. This might be one reason why languages like Dutch and German have adjunct middle constructions. They enable us to talk directly ‘about’ the object which is used as instrument or location in the event described by the verb. That is, the NP that is usually contained in a PP is the topic of the sentence, that is mapped into the restrictor. This is especially the case if the object is of great importance for the action one performs. Sentence (37.a) might be uttered by a professional skier and (37.b) by a tennis player.<sup>259</sup>

- (37) a. Die neuen Skier fahren sich hervorragend  
 The new skis ski RP excellently  
 b. Die neue Halle/der neue Belag spielt ich sehr gut  
 The new sports-hall/the new covering plays RP very well

So far, we saw why adjunct middles might exist. In the final part of this section we want to investigate how they are licensed. Ackema and Schoorlemmer (1994) argue that only A-marked PPs can undergo adjunct middle formation. But what does it mean for a PP to be A-marked?<sup>260</sup> They observe that mainly instrumental and locative PPs undergo middle forma-

<sup>259</sup> The following adjunct middle construction is attested by a friend and was uttered by a badminton player who had bought a new piece of sportswear and was wearing it for the first time. He was not sure how he could play with his new trousers on. After the match he used the middle construction in (i):

(i) Die neue Hose hat sich recht gut gespielt (i.e. The new trousers have RP quite well played)

<sup>260</sup> According to Ackema and Schoorlemmer’s analysis, an A-marked preposition can incorporate into the verb in the lexicon. The complement of the preposition is the internal argument of the new complex verb that consists of the verb and the preposition. This NP can undergo middle formation as usual. Note that the rule of p-incorporation is rather complex. In Dutch p-incorporation in the lexicon is limited to lcs’s that undergo middle formation. Prepositions can only incorporate into middle verbs. It is, however, unclear why the optional lexical rule of p-incorporation depends on the rule of middle formation. Besides, this rule asymmetrically deletes only the morphological and phonetic content of the preposition but not of the verb. In Dutch p-incorporation is also p-‘deletion’. Thirdly, the A-marking of a PP does not only depend on the PP itself but also on the NP selected by the preposition. In (38) above the locative PP is only A-marked if it contains a NP like *das Bett* (‘the bed’) but not if it contains a NP like *Berlin*. In (i) only the NP *die Wolle* (‘the wool’) turns the PP into an argument of the verb, but not the NP *das Bett* (‘the bed’) or *die Hose* (‘the trousers’).

(i) Die Wolle/\*das Bett/\*die Hose strickt sich gut (i.e. The wool/the bed/the trousers knit(s) RP well)

Hence, the question whether or not a PP can be considered an argument of the verb depends (at least partly) on the knowledge about walking, sleeping, and knitting situations. A LCS approach requires at least two lexically different kinds of locative modifiers for e.g. *sleep*. In addition, we have to specify for every object whether or not it is a *sleeping-thing*.

(ii) [Event SLEEP ([Thing  $\alpha$ ] A, [Place 1 IN [Sleeping-Thing  $\beta$ ] ]A, [Place 2 IN [Thing  $\beta$ ] ] ... ) ... ]

In (ii) only *sleeping-locations* (i.e. places that include a *Sleeping-Thing*) count as (locative) arguments of *sleep*. The same holds for *knit*, *walk*, *write*, ... This can either be stipulated for every verb and object or it can be derived from our knowledge about events in which certain entities are important or may become important. Consider finally the following example. A sentence like (iii) can only be uttered in very special contexts, i.e. by a football-player who is inspecting the new soccer pitch. Only in this context the PP *auf dem neuen Rasen* (‘on the new grass’) must be considered an argument of the verb *spielen* (‘play’).

(iii) <sup>?</sup>Der neue Rasen spielt sich viel schneller

The new grass plays RP much faster (i.e. ‘You can play much faster on the new grass’)

tion. Furthermore, only instruments or locations that play a crucial role for the event or action described by the verb can be promoted to subject. These instruments or locations are usually designed for this very special action or event. This is illustrated in the following examples. The corresponding impersonal middle constructions are not subject to these restrictions.

- (38) a. <sup>?</sup>Dieser Schuh/<sup>??</sup>der neue Belag/#die Mütze läuft sich besser  
This shoe/this new covering/this cap walks RP better  
a'. In diesem Schuh/auf diesem Belag/mit dieser Mütze läuft es sich besser  
b. <sup>?</sup>Diese Wolle/<sup>?</sup>diese Nadel/#Geduld strickt sich besser  
This wool/this needle/patience knits RP better  
b'. Mit dieser Wolle/mit dieser Nadel/mit Geduld strickt es sich besser  
c. <sup>?</sup>Der Füller/<sup>??</sup>das weiße Papier/#die neue Schreibtischlampe schreibt sich besser  
The pen/the white paper/the new desk lamp writes RP better  
c'. Mit diesem Füller/mit dem w. Papier/mit d. neuen S.lampe schreibt es sich besser

In German adjunct middle constructions seem to be restricted by the following two constraints:

- i. The function of the instrument or location in the action/event is obvious so that the preposition can easily be reconstructed.
- ii. Some properties of the instrument or location are important for the way the action/event described by the verb is carried out.

Instruments or locations that are typical of the event described by the verb are very good candidates for adjunct middle formation. Their function in the event is obvious and their quality may influence the event/action described by the verb. Consider the following meaning postulate which is relevant for example (38.c). It is part of our knowledge about the world that some writing utensils (traditionally pens) are always involved in writing events and that a pen is typically an instrument that people generally use for writing. By contrast, writing events do not imply that there is, for example, a desk lamp involved and that desk lamps are generally used for writing.

- (39) a.  $\forall e (\text{WRITE}(e) \rightarrow \exists x (\text{INSTR}(e, x)))$   
b.  $\forall x (\text{PEN}(x) \rightarrow (\text{INSTR}(\text{write}, x)))$

The second constraint, which states that properties of the instrument/location are of importance for the action/event, holds especially if *professionalism* is at issue. For professional sprinters, the quality of the new surface or their new shoes may be as important as the quality of the piano for piano players, cf. (37) above. But even for non-professionals it is true that the state of *a bed* may directly affects their sleep.

We conclude that adjunct middle constructions are the only possibility to directly attribute a property to an entity which is otherwise contained in a PP.<sup>261</sup> This is, however, only possibly under very special conditions that depend on our knowledge about actions/events, the instruments or locations involved in these actions/events and on the very special context of utter-

<sup>261</sup> Note that English has adjunct middle constructions such as (i), too. They seem to be subject to the same licensing conditions.

(i) This tent sleeps five

ance. This is summarized in (i) - (iii): (i) Impersonal and personal adjunct middle constructions are not always semantically identical; (ii) The function of the instrument or location in the action/event is obvious (i.e. the preposition can be omitted and - semantically - reconstructed); (iii) The function and quality of the instrument is important for the event/action described by the verb (*professionalism*). (ii) and especially (iii) may be the reason for the varying judgements on the acceptability of adjunct middle constructions. Adjunct middle constructions make use of the grammatical processes of A-chain formation and A-chain interpretation, but they are licensed beyond the pure structural interpretation of transitive reflexive sentences. The subject of the adjunct middle is not linked to the second argument but to an instrumental or locative argument that is licensed by meaning postulates like (39). Thus the interpretation of adjunct middle constructions involves accommodation.<sup>262</sup>

In contrast to some PP-adjuncts, dative objects cannot form ‘adjunct’ middle constructions because they are not subject to the licensing conditions that permit adjuncts to undergo middle formation. Firstly, the referent of a dative object is usually not in this very special connection with the event described by the verb that is required by (ii) and (iii). They do not express entities (e.g. instruments or locations) that are conceptually related to the action/event denoted by the verb. Secondly, unlike NPs that are contained in PPs, dative objects are always bare NP- (or KP-) objects in syntax, cf. section 6.2. Dative NPs can easily be the topic of the impersonal middle construction that is mapped into the restrictor. No transformation is necessary.

- (40) a. Dem Papst widerspricht es sich nicht so leicht  
The pope-DAT contradicts it RP not that easily  
b. \*Der Papst widerspricht sich nicht so leicht (middle interpretation)  
The pope-NOM contradicts RP not that easily  
(only possible reading:  
The pope does not contradict himself that easily)

Hence, promotion of the dative object to the (nominative) subject position would not change anything. The impersonal construction receives the same interpretation as the personal one. There is no semantic reason for dative objects to undergo middle formation. Therefore, dative objects are excluded from adjunct middle formation as well as from A-chain formation.

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<sup>262</sup> In the same way passive constructions are sometimes licensed although the corresponding active sentences sound odd.

- (i) a. <sup>?</sup>Die Wolle ist schon einmal gestrickt worden  
The wool is before knitted PASS  
b. #Jemand (someone) hat schon einmal die Wolle gestrickt  
The passive constructions in (i) are also interpreted on the basis of the semantic interpretation of a potentially available but not quite acceptable corresponding active sentence. This results in a causative interpretation which can be productively used as can be seen e.g. in (ii) – example (ii.c) is due to Ralf Vogel.
- (ii) a. Peter wurde gestern gegangen (\*Jemand hat Peter gegangen)  
Peter PASS yesterday gone (Someone has Peter gone)  
‘Peter was made to go’  
b. Wenn Fücks nicht zurücktritt, dann muß er eben zurückgetreten werden  
If Fücks not resigns, then must he PARTICLE resigned PASS  
‘If Fücks does not resign, then he must be voted out of his office’

## 8 Concluding Remarks

Starting from the observation that in German transitive reflexive sentences of the form *subject + verb + accusative reflexive pronoun* are multiply ambiguous, we were searching for an analysis which derives all interpretations in a uniform way from one underlying syntactic representation. Recall that transitive reflexive sentences are ambiguous between the following interpretations:

- i. Reflexive interpretation: both the subject and the reflexive pronoun are linked to the first and second semantic argument of the verb respectively. These arguments are coreferent.
- ii. Middle interpretation: the subject is linked to the second semantic argument of the verb. The verb's first argument is bound by the generic quantifier (argument saturation).
- iii. Anticausative interpretation: the subject is linked to the second semantic argument of the verb. The verb's first argument is deleted (argument reduction). Anticausatives are one-place predicates.
- iv. Inherent reflexive interpretation: equals the anticausative interpretation. The verb's first argument is always deleted.

We called the reflexive pronoun in (i), which is linked to a semantic argument itself, *argument reflexive*. The reflexive pronoun in (ii)-(iv), which is not linked to a semantic argument itself, was called *non-argument reflexive*. Non-argument reflexives mediate the linking of the syntactic subject to the second argument of the verb. Since there is no empirical evidence for the claim that transitive reflexive sentences which differ in meaning also differ in syntax, we keep the minimal assumption that all transitive reflexive sentences are identical in syntax. As a consequence, a syntactic derivation of the different interpretations of transitive reflexive sentences is not available. Likewise, a lexical derivation cannot be empirically motivated either. In German, middle formation is not morphologically marked on the verb and it turned out to be a very productive operation which is not lexically restricted to certain classes of verbs (the only exception are individual-level predicates which are incompatible with the generic quantifier and thus excluded for independent reasons). Therefore, we argued for a third kind of analysis that has generally been neglected so far. The ambiguity of transitive reflexive sentences is derived at the interface between syntax and semantics.

Our analysis is based on the distinction between structural and oblique case and on the observation that the morphosyntactic features of reflexive pronouns are maximally underspecified. As a consequence, reflexive pronouns are not lexically specified for the morphosyntactic feature [R]. These two assumptions enable us to derive the semantic ambiguity of transitive reflexive sentences. The ambiguity illustrated in (i)-(iv) is restricted to reflexive pronouns that are assigned structural case. Unlike accusative case, dative case is oblique in German. Therefore dative reflexive pronouns are not ambiguous. Thus our analysis correctly predicts that in German only an accusative reflexive pronoun in the position of the direct object is ambiguous between an *argument* and a *non-argument* interpretation. We called the accusative reflexive pronoun in this position a morphosyntactic *middle marker*. Many Indo-European languages use weak reflexive pronouns as indicators of valency reduction. It seems to be a universal property that the middle marker is always the pronominal element which is morphologically less specified. However, middle markers in different languages have different morphosyntac-

tic properties. We saw that the middle marker in German is an independent word, i.e. the accusative reflexive pronoun in the position of the direct object. In other languages middle markers are weak reflexive pronouns, verbal clitics, verbal affixes or verbal inflection. Hence, unlike most Indo-European languages, German has a morphosyntactically ‘strong’ middle marker. Besides, the German middle marker relies on structural case. Therefore, the analysis we proposed for the middle marker in German (i.e. for transitive reflexive sentences) does not necessarily hold for the middle voice in other languages. Middle formation might be lexical in some languages and syntactic in others, but it generally involves weak reflexive pronouns. Thus every analysis of the middle voice has to embed this universal property into the language-specific context, which determines the specific morphosyntactic properties of the middle voice in each language.

In the following we briefly summarize the main findings of our analysis. In chapter 2 we argued that German is a middle marking language in the sense of Kemmer (1993). The ambiguity of transitive reflexive sentences in German is not exceptional. In many Indo-European languages the weak reflexive pronoun is a middle marker, which is usually ambiguous between a reflexive, passive, middle, anticausative, and inherent reflexive interpretation among others. Note that the possible interpretations for a weak reflexive pronoun may differ from language to language, cf. also below. Although German, unlike most Indo-European languages, is a *one-form* language, which does not distinguish weak from strong reflexive pronouns, it has also a morphosyntactic middle marker, the accusative reflexive pronoun in the position of the direct object, which is responsible for the ambiguity of transitive reflexive sentences. Besides, we illustrated that middle formation is not restricted to certain classes of verbs. On the one hand, we saw that middle formation is possible with all kinds of one-, two-, or three-place predicates. Only zero-place predicates and individual-level predicates are excluded from middle formation for independent reasons. On the other hand, we have seen that dative objects must not undergo middle formation. Verbs selecting a dative object can only occur in impersonal middle constructions. As opposed to middle constructions, anticausatives are more restricted. In addition, German has reflexive and non-reflexive anticausatives. Non-reflexive anticausatives are syntactically unaccusative. In chapter 3, we discussed several syntactic and lexical analyses of middle constructions. We were concentrating on analyses of middle constructions, because middle formation is the most productive operation and it is most controversially debated. In 3.1 and 3.2 we argued that both lexical and syntactic theories fail to offer a conclusive analysis of middle constructions. Syntactic analyses derive middle constructions, like passives, by means of A-movement. Lexical analyses, on the other hand, assume either a lexical rule of middle formation or a middle template. Neither of these analyses can account for the presence of an accusative reflexive pronoun. Besides, they need additional ad hoc stipulations and they do not provide a uniform analysis for the systematic ambiguity of transitive reflexive sentences. And finally they are neither empirically nor conceptually motivated. Therefore, we pursued a different (and, as far as we can see, a new) path. We derive the ambiguity of transitive reflexive sentences from a uniform syntactic representation at the interface between syntax and semantics. This postsyntactic approach was developed in chapters 4, 5 and 6. Chapter 4 dealt with the syntax of transitive reflexive sentences. We argued that transitive reflexive sentences differ in their semantic interpretation but not in syntax. Section 4.1 showed that the accusative reflexive pronoun is always subject to the same restrictions on word order in the middle field, regardless of whether it is an argument reflexive (i.e. (i) above) or non-argument reflexive (i.e. (ii)-(iv) above). Section 4.2 illustrated that the differences between argument and non-argument reflexives concerning coordination, focus, and fronting follow from their different semantics. Only argument reflexives are linked to a semantic ar-

gument variable themselves, which is a necessary condition on coordination, focus, and fronting of the reflexive pronoun. Hence, there are good reasons for treating all transitive reflexive sentences the same way in syntax. Chapter 5 investigated the interpretation of reflexive pronouns in German. We followed Reinhart and Reuland (1993) and Pollard and Sag (1994), who argued that binding should be defined relative to the syntactic and semantic arguments of a verb. Only NPs that are assigned nominative and accusative case are syntactic arguments (A-expressions) in German. In addition, reflexive pronouns are not lexically specified for the feature [R]. Therefore, they can be bound either in syntax (i.e. [-R]-reflexives) or in semantics (i.e. [+R]-reflexives). And finally, reflexive pronouns that cannot be bound by a co-argument of the same predicate are exempt from binding. This leads to the following three-fold picture of binding.

- i. syntactic binding (A-chain formation, restricted to accusative [-R]-RPs)
- ii. semantic binding (O-binding, restricted to [+R]-RPs & co-arguments of a predicate)
- iii. logophoric binding (restricted to [+R]-RPs which are exempt from (i) and (ii))

A theory that is based on A-chain formation and the distinction between [+/-R] reflexive pronouns correctly accounts for the ambiguity of the accusative reflexive pronoun in the position of the direct object. Recall that reflexive pronouns are lexically underspecified. Thus their specification of the feature [R] depends on the syntactic context. The reflexive pronoun can either be specified as [+R] or [-R]. The [+R] reflexive pronoun must head its own chain whereas the [-R] reflexive pronoun must be included in another A-chain which is headed by a [+R]-expression. This is illustrated in (1.b) and (1.c).

(1) A-chains and [+/-R]-expressions in German

	<b>syntax</b>	<b>semantics</b>
<b>a. simple chain</b>	[+R, NP] — [-R, TRACE]	1 argument
<b>b. complex chain</b>	[+R, NP] — [-R, RP] — [-R, TRACE] — [-R, TRACE]	1 argument
<b>c. two chains</b>	[+R, NP] — [-R, TRACE]; [+R, RP] — [-R, TRACE]	2 arguments
<b>d. two chains</b>	[+R, NP] — [+R, TRACE]; [+R, NP] — [-R, TRACE]	2 arguments

The [-R] reflexive pronoun in (1.b) must be included in a complex A-chain, which is linked to the second semantic argument of the verb via its base in the complement position of the verb. By contrast, the [+R] reflexive pronoun in (1.c) heads its own chain, which is linked again to the second argument. The second chain in (1.c), which is headed by the subject, is linked to the first semantic argument via its base position in VP,Spec. The [-R] reflexive pronoun in (1.b) is the non-argument reflexive and the [+R] reflexive pronoun in (1.c) the argument reflexive. This analysis of is based on the following two linking principles for syntactic arguments in German.

- (2) a. VP,Spec is linked to the first argument of the verb
- b. The complement of V° is linked to the second argument of the verb

In sum, our analysis correctly accounts for the two essential features of middle markers in German. A middle marker must be assigned structural case and it must be a reflexive pronoun. Thus we can derive the observation we made in chapter 2.

- (3) Only a accusative reflexive pronoun in the position of the direct object is a middle marker in German

The difference between middle constructions and anticausatives results from two semantic operations. Implicit semantic arguments that are not linked to syntax can either be *saturated* (i.e. bound by a quantifier) or *reduced* (i.e. deleted). Both operations apply to free argument variables. Argument saturation is responsible for the middle interpretation and argument reduction for the anticausative and the inherent reflexive interpretation. We gave several empirical arguments for the claim that dative case is oblique in German. We argued that dative objects are A'-elements in syntax. This analysis correctly accounts for the differences between accusative and dative objects and explains why dative reflexive pronouns are excluded from middle formation. Dative reflexive pronouns are always linked to a semantic argument of the verb. Our analysis predicts that middle constructions are simple transitive reflexive sentences. Therefore, the generic interpretation of middle constructions and the quasi-obligatory adverbial modification should follow from the semantics (and pragmatics) of middle constructions. In chapter 7 we illustrated how a postsyntactic approach can account for the generic quantification and the adverbial modification. Middle constructions involve generic quantification over events/situations and the implicit argument. As a consequence, middle constructions without adverbial modification are restricted to very specific contexts. The adverbial modification can thus be derived from pragmatic licensing conditions. Finally, we discussed adjunct middle constructions, which are subject to non-configurational (semantic) licensing conditions.

We hope that the present study casts new light on the interaction between syntax and semantics in general and on the analysis of middle constructions and anticausatives in particular. We confined ourselves to the discussion of the syntax and semantics of transitive reflexive sentences in German. We were mainly interested in the problem of argument linking in reflexive constructions. In this connection we also discussed case theory, focus theory, restrictions on fronting and word order in the middle field, the distinction between weak and strong reflexive pronouns, and further issues of binding theory. Of course, many questions remained unanswered. Besides, additional interesting questions arise if we accept the approach proposed in this book. First of all one would like to know to what extent our analysis can be applied to other languages. Languages differ with respect to their morphosyntactic properties. We saw in chapter 2 that middle markers can be quite different crosslinguistically. Therefore, we expect morphological, syntactic, and semantics differences between the middle voice systems in different languages. Consider, for example, English. Table (4) illustrates the possible interpretations for intransitive and transitive reflexive sentences.

(4) Intransitive and transitive reflexive sentences in English

Syntax	Semantics	Example	
<b>a. intransitive: Subject + Verb</b>	1. V < x >	Peter sleeps	unergative
	2. V << y >>	Peter dies	unaccusative
	3. V < x < (y) >>	Peter drinks	impl. inter. argument
	4. V < Ø < y >>	The door opens	anticausative
	5. V < (x) < y >>	The bread cuts easily	middle construction
	6. V < x < x >>	Peter shaves	reflexive
<b>b. transitive reflexive: Subject + Verb + RP</b>	V < x < x >>	Peter hates himself	reflexive

Unlike most Indo-European languages, English does not have an overt middle marker. However, table (4) illustrates that intransitive sentences in English receive typical middle interpretations: anticausative, middle, and reflexive. In German, these interpretations are connected

with the transitive reflexive sentence in (4.b). One could argue that in English weak reflexive pronouns do not have a morphosyntactic realization (or that they are morphologically empty forms, cf. Keyser and Roeper (1984)). According to this assumption the ambiguity of intransitive sentences in English is quite regular. It can be derived if we assume the following linking principle for the subject in English:

- (5) VP,Spec is linked to the first (external or internal) and/or second semantic argument of a predicate.

Thus, English differs from German in two respects: (i) English is a two-form language with a morphologically empty weak reflexive pronoun and (ii) only in English the subject can also be linked to the second semantic argument of the predicate, cf. Steinbach (to appear) for more discussion.

Another interesting issue concerns the interpretation of the middle voice in different languages. Recall from chapter 2 that some languages permit a passive interpretation for the weak reflexive pronoun. Russian, for example, does not morphosyntactically distinguish between middle constructions and passives, and French and Italian middle constructions can receive an eventive interpretation that seems to be almost identical to the interpretation of the periphrastic passive in these languages. Consider again table (47) from chapter 2 here repeated as (6).

- (6) Possible interpretations for an overt (weak) reflexive marker

	English	Dutch	German	French	Modern Greek	Russian
<b>Passive</b>	–	–	–	– (+)	+	+
<b>Middle</b>	–	–	+	+	+	+
<b>Anticausative</b>	–	+	+	+	+	+
<b>Reflexive</b>	–	+	+	+	+	+

Two closely related issues are of interest in this connection: (i) Why is the passive interpretation of the (weak) reflexive marker not licensed in a language like German? (ii) Are there any dependencies between the different interpretations of (weak) reflexive pronouns. Note that 16 different constellations are possible in principle if we restrict the investigation to the four meanings illustrated in table (6). There seems to be an interesting correlation between the morphological ‘weight’ of a weak reflexive marker and the functions it encodes: reflexive markers that are verbal affixes like the Russian *-sja* seem to encode more functions/interpretations than reflexive markers that are independent words. Verbal clitics are somewhere in between: French *se-* and Italian *si-* constructions, for example, can get a passive (or at least a passive-like) interpretation, which is impossible for the German middle marker. As opposed to *se* and *si*, the German reflexive pronoun *sich* is an independent word in syntax. At first sight the passive interpretation seems to depend on the middle interpretation in (6). This issue is also closely related to the phenomenon of grammaticalization and the historical development of ‘neo-middle constructions’ in modern Indo-European languages. Besides, this book mainly dealt with German, a one-form language. Hence, further investigation will show to what extent the analysis proposed in this book also applies to two-form languages. Finally, this analysis of the middle voice in German should be embedded in psycholinguistic research on the acquisition and processing of reflexive pronouns in reflexive constructions, middle constructions, anticausatives, and inherent reflexives.

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**Erklärung**

Hiermit erkläre ich, daß die vorliegende Arbeit von mir selbständig erarbeitet wurde und daß keine anderen als die angegebenen Quellen und Hilfsmittel verwendet wurden.

Mainz, den 29.1.2001