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**ECONOMY**  
**AND**  
**THE DISTRIBUTION OF REFLEXIVES**

**HITOSHI SHIRAKI**

Thesis submitted in partial fulfilment of the requirements for the degree of Doctor of  
Philosophy in Linguistics

**University College London**

2006

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## ABSTRACT

This dissertation is a cross-linguistic discussion of the distribution of reflexives within the framework of generative grammar. The languages dealt with are mainly Dutch, English and Japanese, although other languages are also referred to. The aim of the dissertation is to make a contribution to an economy-based analysis of binding. First, it develops a novel analysis of the syntax of anaphoric binding. Second, it evaluates the adequacy of the cross-modular economy condition of Reuland (2001) and suggests a modification of it that accounts for cases where the effects of economy appear to be suspended. Third, it investigates the division of labour between syntax and pragmatics in accounting for the distribution of SELF anaphors. And finally, it makes a contribution to the literature on the so-called anaphor-agreement effect by showing that variation in the cross-linguistic occurrence of this effect strongly favours a theory of argument marking that dissociates case and agreement, as in GB-based theories of argument licensing.

Chapter 1 is the introduction to the dissertation. In Chapter 2, the history of binding theory from the viewpoint of economy will be reviewed. This chapter also argues against movement approaches to the syntactic encoding of anaphoric binding and introduces an alternative. Chapter 3 aims to establish the role that pragmatic considerations such as assertive vs. presupposed reflexivity and intensification play in the distribution of morphologically complex reflexives and to discuss the relation between these proposals and alternative, syntax-based, approaches to the role of the SELF-morpheme. Then, in Chapter 4, it is discussed how binding relations can be implemented with the syntactic apparatus of Chapter 2 and also how the distribution of reflexives is affected by economy. Chapter 5 discusses the Anaphor-Agreement Effect (Rizzi 1999) and its implications for the theories of argument marking. Chapter 6 is the conclusion.

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## ABBREVIATIONS

ACC	accusative
COMP	complementizer
COP	copula
DAT	dative
ERG	ergative
GEN	genitive
HON	honorific
NEG	negative
NEUT	neuter
NF	non-finite
NOM	nominative
NPST	non-past
OBJ	object
PASS	passive
PL	plural
PRES	present
PST	past
REFL	reflexive
SG	singular
SUBJ	subject
TOP	topic
UTR	utrum

# CHAPTER 1

## INTRODUCTION

This dissertation presents a study of binding theory within the framework of Principles-and-Parameters (P&P). More specifically, by examining the distribution of reflexives, I will try to establish how much of binding theory must be attributed to syntax and how much to the C-I interface and language-external systems. I will also be concerned with the question in what way the distribution of reflexives is influenced by considerations of economy. During the period of Government and Binding (GB) theory, binding theory played a central role in syntactic theory (cf. Chomsky 1981 and 1982) and its task was not confined to accounting for the distribution of anaphors, pronouns and R-expressions. For example, the locality of A-movement could be reduced to Principle A, provided traces of A-movement were considered anaphors. Similarly, strong crossover effects could be attributed to Principle C, if traces of wh-movement were considered R-expression. Perhaps most famously, the ungoverned nature of PRO was accounted for by assuming that this element is a pronominal anaphor. An element with this specification would be subject to contradictory binding requirements, unless it managed not to have a governing category (the so-called PRO theorem).

Despite the attention that binding theory attracted in the GB era, in the transition to minimalism it gradually lost its importance in syntactic theory. There were a number of reasons for this. First, the ground-breaking work of Reinhart and Reuland (1991, 1993) meant a reorientation towards a predicate-centred theory of binding, with a strong interface-oriented outlook. While their proposals continued to acknowledge a role for syntax in binding theory, this was now by and large restricted to issues of locality. Second, the adoption of Inclusiveness in Chomsky (1995a) had

the result that core notions of classical binding theory could no longer be expressed. The definition of binding made reference to indices, but Inclusiveness bans the use of such diacritics. Binding theory also relied on a classification of categories on the basis of the features [ $\pm$ anaphoric,  $\pm$ pronominal]. But since these features are unlikely to be inherently present in any lexical item, Inclusiveness requires that we abandon them. All in all, Inclusiveness made binding theory pretty much unstateable.

When considered against this background, Reuland's (2001a) paper "Primitives of Binding" can be regarded as a rearguard action to bring part of binding theory back into syntax. While he acknowledges that variable binding is an interface phenomenon, he convincingly argues that there is a component in binding theory that is syntactic. Although I believe that the discussion about exactly how anaphoric binding is syntactically encoded has not been settled, the work developed in this thesis is in agreement with the general outlook defended by Reuland.

As a starting point of my discussion, in Chapter 2 I will discuss the major changes in binding theory that occurred in the transition from GB to minimalism (cf. Reinhart (1983), Grodzinsky and Reinhart (1993) and Reuland (2001a and 2001b)). I also discuss various recent approaches to capturing the "syntactic residue" of binding theory. In particular, I will consider whether the approach in which syntactic binding is reduced to movement (or copying) as proposed by Reuland (2001a) and Hornstein (2001) is on the right track or whether an alternative theory in which syntactic binding does not involve movement, as proposed by Neeleman and Van de Koot (2002a), is to be preferred.

With the shift towards regarding binding as an interface phenomenon rather than a component of syntax, there has been growing interest in the pragmatic aspects of the theory of binding. One key strand of this work seeks to understand the difference in the distribution of morphologically complex reflexives (i.e., reflexives with SELF-morphemes) and that of morphologically simplex reflexives, in terms of the interpretive effects of the SELF-morpheme. Among various approaches to the pragmatics of the SELF-morpheme, Veraart (1996) argues that morphologically complex reflexives assert reflexivity whereas morphologically simplex reflexives presuppose reflexivity, while König and Siemund (1999) propose that the SELF-morpheme is an intensifier. The main aim of Chapter 3 is to establish the role that

pragmatics plays in the distribution of morphologically complex reflexives and to discuss the relation between these proposals and alternative approaches to the role of the SELF-morpheme such as Reinhart and Reuland (1991 and 1993) and Reuland (2001a). Reinhart and Reuland propose that this morpheme reflexivises the predicate, while Reuland suggests that it salvages the predicate from an arity violation. Admittedly, these ‘linguistic’ approaches are quite successful, but they are not without problems. I will conclude that while pragmatics must play a substantial role in accounting for the distribution of *-self* and its cousins, there is nevertheless compelling evidence that this morpheme enters into a syntactic relation.

The growing recognition that binding involves the interplay of syntax, the C-I interface and discourse factors (cf. Reuland 2001a and 2001b) has also meant a vastly increased role for the notion of economy (or cross-modular competition). The effects of economy conditions depend directly on the properties of individual anaphoric elements and the availability of anaphoric expressions in a given language. Progress in developing an economy-based theory therefore requires that we carefully study the properties of anaphoric elements. Chapter 4 is an attempt to push this approach forward by looking at such expressions in Dutch, English and Japanese. I begin by introducing a concrete proposal for how binding can be syntactically encoded without violating Inclusiveness. I then review three languages, namely Dutch, English and Japanese, and discuss for each of these which anaphoric items establishes a dependency at what linguistic level. Much of what I have to say there follows Reuland’s proposals concerning cross-modular competition, but I will make a further proposal that such competition is cancelled in certain environments in order to restrict the evaluation of economy to a relatively small domain.

A long-standing puzzle in binding theory concerns the general absence of nominative anaphors. This issue is not addressed in the first four chapters of this work and is only taken up in chapter 5. A good answer to this puzzle holds out the promise of significant improvements in our understanding of the theory of binding. Reuland (2001a) and Everaert (2001) have suggested that an answer may be found in Checking Theory (cf. Chomsky 1993, 1995b among many others): anaphors are lacking in  $\phi$ -features, and as a result they fail to enter into an appropriate agreement relation.

Starting from the assumption that the approach proposed by Reuland and Everaert is essentially correct, Chapter 5 turns the logic of the argument around and explores what we can learn about the theory of argument licensing from the cross-linguistic facts about nominative reflexives. It is concluded that the minimalist idea that case is a reflex of agreement does not square well with the cross-linguistic variation in the occurrence of anaphors in agreement positions, but that the more traditional views of case and agreement as developed in the GB era (cf. Nichols 1986 and Neeleman and Weerman 1999) are preferable.

In Chapter 6, I summarise this dissertation and makes some concluding remarks.

## CHAPTER 2

# BINDING IN TRANSITION: FROM GB TO MINIMALISM

### 1 Introduction

During the Government and Binding (GB) era, binding theory played a central role. However, in the transition to minimalism, its importance in syntactic theory has diminished and it has received less attention. Despite this trend, Reuland (2001a) convincingly argues that there is a syntactic component to binding theory. I agree with him in that some binding relations should involve syntactic encoding, although I believe how it should be encoded is a matter of debate. This chapter is devoted to establishing what role syntax must play in binding theory and how that role might be implemented.

In section 2, the theory of binding in GB will be discussed. The binding conditions in GB are defined purely in terms of configuration. That is, the distribution of nominal expressions is regulated by conditions of c-command and locality. Different types of nominals have different locality properties. Thus, one of the binding conditions states that an anaphor must be bound within its local domain, and another condition that a pronoun must not be bound its local domain. However, this implies that the near-complementary distribution of anaphors and pronouns is purely accidental; it does not give an explanation for it. Furthermore, there is no apparent reason why in some environments the complementarity can be overridden. As will be shown in sections 3 and 4, Reinhart (1983) suggests that binding theory regulates variable binding but does not deal with coreference, which, according to Reinhart, should be dealt with in an extra-syntactic system, presumably pragmatics.

This idea led to Grodzinsky and Reinhart's (1993) economy based binding rule, Rule I. Roughly speaking, Rule I states that variable binding is preferred over coreference. In particular, if variable binding and coreference do not yield a different interpretation, then variable binding takes precedence over coreference. In section 5, further development of Grodzinsky and Reinhart's ideas by Reuland (2001a, 2001b) will be presented. Rule I is about competition between the Conceptual-Intentional (C-I) interface and the pragmatics module, which is extra-linguistic.<sup>1</sup> What Reuland proposes is that the bound interpretation of pronouns at the C-I interface in turn competes with the option to encode binding syntactically, for example through movement. He argues that economy favours the latter choice.

Finally, in section 6, I will discuss how syntax establishes binding relations. Indices used to play a central role in binding theory. However, a core principle of the Minimalist Program (Chomsky 1993 and subsequent works) forbids the use of indices. This research program seeks an answer to the question of to what extent human language is perfect. Hence, it has been vigorously scrutinised whether there are redundancies or unnecessary devices in the theory. Inclusiveness is one of the conditions that express this minimalist spirit. It states that "outputs consist of nothing beyond properties of items of the lexicon" (Chomsky 1995b, 225). This implies that indices are unavailable as a theoretical device. It is against this background that section 6 explores possible alternative encodings of binding that do not rely on indices. One line of thinking takes movement to be a primitive operation of the syntax and seeks to reduce other syntactic relations, such as binding and control, to movement. Thus, Hornstein (2001) and Reuland (2001a) suggest that movement establishes a dependency between a reflexive and the antecedent. More recently, Neeleman and Van de Koot (2002a) have developed an alternative approach that rejects the operation move as a primitive on the grounds that this operation as normally understood violates Inclusiveness.

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<sup>1</sup> It is often assumed that the Central System in the Fodorian sense is the location for pragmatic inference (see, for example, Fodor 1983 and Sperber and Wilson 1986/1995). However, the currently held view in Relevance Theory (Sperber and Wilson 2002 and Wilson 2003) is that a sub-module of the "theory of mind" module is dedicated to pragmatic inference. In any case, it seems to be the case that pragmatics is extra-linguistic.

## 2 GB Binding

C-command is an essential property of syntactic dependencies. The dependency of binding is not an exception:

- (1) \* John<sub>1</sub>'s mother blamed himself<sub>1</sub>.

However, c-command is not a sufficient condition for relating two nominal expressions in the syntax. Depending on their nature, bound elements in addition exhibit locality or anti-locality. For instance, an anaphor must somehow be close to the antecedent, while a pronoun must not be close to its binder. Finally, an R-expression (e.g. a proper name) must not be bound at all (the ultimate antilocality requirement). In order to capture these characteristics of nominal expressions, the following definitions are given in GB (cf. Chomsky 1981 and 1982):

- (2)  $\alpha$  binds  $\beta$  iff (i)  $\alpha$  c-commands  $\beta$  and (ii)  $\alpha$  and  $\beta$  are coindexed.
- (3) Condition A: An anaphor must be bound in its governing category.  
Condition B: A pronoun must be free in its governing category.  
Condition C: An R-expression must be free.
- (4)  $\beta$  is a governing category for  $\alpha$  if and only if  $\beta$  is the minimal category containing  $\alpha$ , a governor of  $\alpha$ , and an accessible SUBJECT.
- (5) Subject: NP in [Spec, XP]  
SUBJECT: finite AGR
- (6) Accessible subject/SUBJECT:  
 $\alpha$  is accessible to  $\beta$  if and only if  $\beta$  is in the c-command domain of  $\alpha$ , and assignment to  $\beta$  of the index of  $\alpha$  would not violate (i)  
(i) *i-within-i condition*  
\* $[\tau \dots \delta \dots]$ , where  $\tau$  and  $\delta$  bear the same index

What Condition A means is that an anaphor must be bound locally by its antecedent. Consider the sentences in (7) and (8).

(7) John<sub>1</sub> likes himself<sub>1</sub>.

(8) \* John<sub>1</sub> believes that Bill likes himself<sub>1</sub>.

In (7) the reflexive *himself* is bound by its antecedent *John* within its governing category whereas in (8), although the antecedent *John* c-commands the reflexive, the reflexive is not bound within its governing category (the embedded clause).

Condition B states that a pronoun and its antecedent should not be in a local relation. In other words, pronouns show the property of anti-locality. This, together with Condition A, implies that a pronoun and a reflexive are in complementary distribution:

(9) \* John<sub>1</sub> likes him<sub>1</sub>.

(10) John<sub>1</sub> believes that Bill likes him<sub>1</sub>.

In (9), the pronoun *him* is bound by the antecedent *John* in its governing category, and the sentence is ungrammatical due to a Condition B violation. In (10), on the other hand, the sentence is grammatical because, the pronoun *him* is free in its governing category.

According to Condition C, an R-expression must be free anywhere. The following sentences exemplify this:

(11) \* He<sub>1</sub> likes John<sub>1</sub>.

(12) \* He<sub>1</sub> believes that Bill likes John<sub>1</sub>.

Here, in both sentences, *John* is c-commanded by its antecedent. That is, *John* in (11) and (12) is bound and not free. Therefore, these sentences are ungrammatical.

## Chapter 2: Binding in Transition: From GB to Minimalism

Although the GB approach to binding explains the core cases of binding, it cannot capture other types of sentences. For example, the sentences in (13)-(15) pose problems.

- (13) All students went to school apart from myself.
- (14) If I were you, I would hate me. (Safir 2004a, 41)
- (15) I know what John and Bill have in common. **John** thinks that Bill is terrific and **Bill** thinks that Bill is terrific. (Evans 1980, 356)

(13) violates Condition A. That is, there is no antecedent for the reflexive in its governing category. However, the sentence is grammatical. In (14), which was originally discussed in Lakoff (1972), the pronoun *me* and *I* are within the same clause, and the sentence should be ungrammatical due to a violation of Condition B. Nevertheless, the sentence is grammatical. The sentence in (15) should be ungrammatical because of Condition C. *Bill* in the second sentence is c-commanded by another instance of *Bill*. However, the sentence is grammatical. These data show that Conditions A, B and C in the GB framework do not fully explain the distribution of nominal expressions.

Furthermore, the definitions in (2)-(6) do not distinguish between variable binding and coreference. English pronouns can be interpreted as bound variables, but only if they are c-commanded by their antecedents. When a pronoun is coindexed with a quantifier, the pronoun has to be a bound variable, so that the pronoun's binder must c-command it. Consider the following sentence:

- (16) Everyone<sub>1</sub> said he<sub>1</sub> blamed John.
- (17) \* Most of her<sub>1</sub> friends like every girl<sub>1</sub>.

- (18) Most of her<sub>1</sub> friends like Mary<sub>1</sub>.

The quantifier *everyone* in (16) c-commands the coindexed pronoun *he*, and the sentence is grammatical. On the other hand, the quantified phrase *every girl* does not c-command the coindexed pronoun *her* in (17), with results in ungrammaticality. This contrasts with (18) where the non-quantificational expression *Mary* is used instead. In this sentence the coindexation between *Mary* and *her* is possible although *Mary* does not c-command the pronoun. This is because *Mary* is not a quantifier and can therefore enter into a relation with the pronoun *her* through coreference rather than variable binding. Pronominal bound variables such as the one in (17) are nominal expressions, so binding theory should account for the contrast between (16), (17) and (18). However, none of the binding conditions explains this contrast.

Another shortcoming of GB binding theory is that it does not address the typological variation found with pronouns and reflexives. For instance, the Japanese reflexive/pronoun *zibun* poses a problem for Conditions A and B. As can be seen in (19), *zibun* can have a local or a long-distance antecedent. If *zibun* is an anaphor, it is expected that it cannot take a long-distance antecedent due to Condition A, and if it is a pronoun, it is expected that it cannot have a local antecedent due to Condition B:<sup>2</sup>

- (19) John<sub>1</sub>-wa Peter<sub>2</sub>-ni [Bill<sub>3</sub>-ga zibun<sub>1/\*2/3</sub>-o semeta to itta.  
 John-TOP Peter-DAT Bill-NOM self-ACC blamed COMP said  
 “John told Peter that Bill blamed him/himself.”

To capture the typological variation in the distributional characteristics of nominal expressions, Manzini and Wexler (1987) and Wexler and Manzini (1987), for example, proposed that the size of the governing category and the orientation of antecedents can be parameterised.<sup>3</sup> However, once we allow parameterisation of the binding domain, UG in principle allows a large variety of binding domains. For

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<sup>2</sup> For extensive discussion of Japanese reflexives, see Kuno (1973), Inoue (1976), Katada (1991), Aikawa (1993), Iida (1996) among many others.

instance, Dalrymple (1993) lists 4 kinds of antecedent requirement and 8 types of domain. As Safir (2004a) states, there is nothing explanatory about this type of inventory.

Not only are there empirical problems but there are also problems on the theoretical side. First, the notions of subject and agreement are included in the definition of governing category (see (5) and (6)). But it is not clear why “subject” and AGR are relevant to binding theory.

Second, Condition A, B and C are taxonomic. In other words, these principles do not offer any insight into the motivation for their existence, nor do they offer an explanation for the fact that reflexives and pronouns are largely in complementary distribution.

Finally, Condition B states that a pronoun shows the property of anti-locality. However, anti-locality is not found with any other grammatical relation. It seems that all syntactic relations are in some sense local. Then, why does only Condition B impose anti-locality?<sup>4</sup>

In section 3 and 4, I will review the theory of binding developed by Reinhart (1983) and Grodzinsky and Reinhart (1993). Their approach attempts to solve some of the problems I have identified by distinguishing carefully between binding and coreference and by introducing a global economy constraint, rule I.

### **3 The Distinction between Variable Binding and Coreference**

In the relatively early days of generative grammar it was recognized that pronouns can sometimes be interpreted as bound variables as well as constants.<sup>5</sup> But, as briefly discussed in the previous section, variable binding was not well integrated into binding theory. This is particularly clear from the definition of binding, which does not distinguish at all between binding and coreference.

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<sup>3</sup> See Yang (1983), Harbert (1986), Koster (1987) and many others for alternative parameterisation proposals.

<sup>4</sup> Of course, there is further question in the background, namely why condition A and other grammatical dependencies share a cluster of properties, of which locality is just one.

The sentences in (20) are instances of variable binding:

- (20) a. Everyone<sub>1</sub> said he<sub>1</sub> blamed John.  
 b. Every students<sub>1</sub> thinks Mary loves him<sub>1</sub>.

In variable binding, although there is no locality constraint, it is generally said that the antecedent must c-command the variable. In (20a, b) the quantifier c-commands the pronoun, and the pronoun can be interpreted as a bound variable. On the other hand, in (21a, b) the quantifier does not c-command the pronoun, and as a result the pronoun cannot be interpreted as bound.

- (21) a. \* Most of her<sub>1</sub> friends like every girl<sub>1</sub>.  
 b. \* The class every student<sub>1</sub> attended made him<sub>1</sub> happy.

It is not only quantifiers that can bind pronouns. Other nominal constituents can also do so (cf. Reinhart 1983). The well known distinction between sloppy and strict readings shows this (cf. Sag (1976) and Williams (1977)). Consider example (22a).

- (22) a. John<sub>1</sub> said Bill blamed him<sub>1</sub>. Peter did, too.  
 b. John  $\lambda x$ . (x said Bill blamed x) & Peter  $\lambda x$ . (x said Bill blamed x)  
 c. John  $\lambda x$ . (x said Bill blamed u) & Peter  $\lambda x$ . (x said Bill blamed u) & u  
 = John

This elided sentence is ambiguous: one interpretation is *Peter said Bill blamed Peter* (sloppy reading), and the other reading is *Peter said Bill blamed John* (strict reading). This ambiguity suggests that the sentence in (22) has two different logical representations, namely those shown in (22b) and (22c). In (22b), the pronoun *him* is a bound variable  $x$ , and the logical representation of the embedded VP in the first sentence is copied into the elided VP of the second sentence. This yields the sloppy

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<sup>5</sup> Some languages, for instance Japanese, have certain pronouns that cannot be interpreted as a variable.

reading. In (22c), the pronoun is a free variable  $u$ , which is assigned a value pragmatically. The resulting representation is an instance of coreference. Again, the logical representation of the embedded VP in the first sentence is copied into the elided VP of the second sentence, and a strict reading obtains.

We saw that variable binding requires c-command in (20) and (21). If so, it is predicted that a VP ellipsis sentence cannot have a sloppy reading if the antecedent does not c-command a pronoun in the first (non-elided) sentence. This is indeed correct:

- (23) The boy who kissed Mary<sub>1</sub> loves her<sub>1</sub>, and the boy who kissed Tracy does, too.

The above sentence can have only a strict reading, that is, the right-hand conjunct cannot mean that *the boy who kissed Tracy loves Tracy*.

Are anaphors translated into either variables or constants? The example in (24) indicates that anaphors are translated only into bound variables.<sup>6</sup>

- (24) a. John loves himself. Bill does, too.  
b. John  $\lambda x. (x \text{ love } x)$  & Bill  $\lambda x. (x \text{ love } x)$

Here, the second sentence cannot mean *Bill loves John*. Therefore, *himself* must be a variable bound by *John*; apparently assignment of a value via coreference is not an option here.

The examples discussed in this section clearly show that a distinction must be drawn between two semantic interpretations of pronouns. Therefore, our theory of human language should be able to deal with the distributional differences of these two types.

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<sup>6</sup> Here, I am excluding exceptional cases such as Vehicle Change (Fiengo and May 1994). I also defer discussion of logophoric use of reflexives, which does allow reference assignment to these elements, till Chapter 4.

## 4 Rule I

Standard GB binding theory was primarily concerned with the distributional patterns of coreference and variable binding was treated as a special case. However, Reinhart (1983), departing from GB binding theory, claims that coreference and variable binding are not governed by the same module and that variable binding is a matter of the language faculty proper, whereas coreference is a matter of pragmatics. This implies a shift of focus: the central concern of binding theory should be variable binding rather than coreference. For Reinhart, therefore, binding theory does not say anything about the anaphoric relationships in the following sentences:

- (25) a. [The student [Professor Johns<sub>1</sub> criticized]] did not attend his<sub>1</sub> class.  
 b. John's<sub>1</sub> mother used to cook dinner for him<sub>1</sub>.

These examples are instances of coreference because the antecedents do not c-command coindexed pronouns.

However, this move creates a new problem. The example in (26a) has the logical representations in (26b) and (26c).

- (26) a. \*John<sub>1</sub> loves him<sub>1</sub>  
 b. John  $\lambda x. (x \text{ love } x)$   
 c. John  $\lambda x. (x \text{ love } u) \ \& \ u = \text{John}$

The representation in (26b), which involves binding, is ruled out by Condition B, but what will rule out the coreference reading in (26c), given that binding theory no longer governs it? Grodzinsky and Reinhart (1993), based on Reinhart (1983), propose Rule I, which states that a bound variable is preferred to coreference if the same interpretation is achieved by variable binding:<sup>7</sup>

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<sup>7</sup> Reinhart (1983) already proposed the idea that Rule I was based on as a pragmatic strategy. See Chapter 7 of Reinhart (1983) for the details.

(27) **Rule I**

NP A cannot corefer with NP B if replacing A with C, C a variable A-bound by B, yields an indistinguishable interpretation.

(Grodzinsky and Reinhart (1993,79 ))

If we replace the constant with a variable in (26c), as shown in (26b), we do indeed get an indistinguishable interpretation. Therefore, according to Rule I, (26b) blocks (26c). Since (26b) violates Condition B, this leaves us with just one option: to express the targeted interpretation we can only use the reflexive *himself*, as in (28).

(28) John<sub>1</sub> loves himself<sub>1</sub>.

It seems that, in most cases, a bound variable reading and a coreference reading do not yield different interpretations. However, in contexts where they do, we find apparent violations of Conditions B and C, as expected:

- (29) a. I know what John and Bill have in common. John thinks that Bill is terrific and Bill thinks that Bill is terrific. (Evans (1980, 356))
- b. Look, fathead. If everyone loves Oscar's mother, then certainly Oscar must love Oscar's mother. (Evans (1980, 356))
- c. I dreamt that I was Brigitte Bardot and I kissed me. (due to George Lakoff, discussed in Heim 1991)

In these sentences, bound variables and constants yield different interpretations. For instance, in (29c) if the pronoun *me* is replaced by *myself*, it means that the speaker of the sentence is engaging in self-kissing. However, the intended meaning of the sentence in (29c) is not about self-kissing: it means that Bardot, who is incarnated from Lakoff, kissed Lakoff. Similarly, the sentences in (29a) and (29b) also yield a different interpretation when the proper names are replaced by pronouns. Because coreference yields distinct interpretations in these cases, Rule I does not force variable binding to take precedence, so that binding violations are avoided. Clearly, the economy-based approach has an advantage here over GB binding theory, which

has no way of accounting for the grammaticality of these sentences (see also (13) and (14)).

## **5 Competition between Syntax, the C-I interface and Pragmatics**

Reuland (2001a and 2001b) moves forward the proposal of Reinhart (1983) and Grodzinsky and Reinhart (1993). Grodzinsky and Reinhart argue that two-way distinctions are needed for the way reference is assigned: one is coreference and the other variable binding. The coreference option is governed by the pragmatics module, while binding is governed by the linguistic module. The division of labour is regulated by Rule I, which states that all else being equal the bound variable interpretation wins. While Reuland adopts Reinhart's and Grodzinsky and Reinhart's idea, he proposes that the economy scheme should be extended to the syntactic encoding of binding: anaphoric expressions give rise to a syntactically encoded binding relation which takes precedence over the C-I interface rule that yields bound variable relations.

According to Reuland, reflexives give rise to an encoded binding relation through movement, either of the entire reflexive or a part of it (see section 6.2.2 for further discussion). This yields a total of three methods by which identity can be expressed: syntactic binding, variable binding at the C-I interface and coreference. Reuland proposes that these three ways of establishing anaphoric relations compete with each other. Establishing a dependency in the syntax is the most economical, binding as a result of the pronoun translation rule at the C-I interface is less economical than syntactic encoding and reference assignment in pragmatics is the least economical of all:

(30) syntax < C-I interface < pragmatics

## Chapter 2: Binding in Transition: From GB to Minimalism

The basis for this hierarchy is the number of cross-modular operations involved in each operation. For instance, if  $\alpha$  and  $\beta$  are supposed to be assigned the same value via pragmatics (discourse storage), then there are four cross-modular operations. In the case of variable binding as shown in (31b), there are three cross-modular operation, and in the case of syntactic binding in (31c), two cross-modular operations are needed.

(31)	a.	Discourse storage (values)	a		a
			↑		↑
		C-I objects (variables)	$x_1$		$x_2$
			↑		↑
		Syntactic objects (CHAIN)	$C_1$		$C_2$
		Basic Expressions	$\alpha \dots \dots \dots \beta$		
	b.	Discourse storage (values)	a		
			↑		
		C-I objects (variables)	$x_1$	←	$x_2$
			↑		↑
		Syntactic objects (CHAIN)	$C_1$		$C_2$
		Basic Expressions	$\alpha \dots \dots \dots \beta$		
	c.	Discourse storage (values)	A		
			↑		
		C-I objects (variables)	$x_1$		
			↑		
		Syntactic objects (CHAIN)	$C_1$	←	$C_2$
		Basic Expressions	$\alpha \dots \dots \dots \beta$		

(Reuland (2001a, 474))

I propose, furthermore, that an alternative account can be suggested if we consider the nature of computations at each of these levels. Establishing coreference is a costly operation, because it involves access to background knowledge and inferential

computation (cf. Sperber and Wilson 1986/1995). By contrast, the possibility of a bound relation at the C-I interface may be computed without access to background knowledge. Although such relations are not obligatory and hence not fully determined by the syntactic structure, their availability is to some extent determined by the C-I interface representation, since they are intrasentential and obey a structural constraint resembling c-command. Syntactically encoded relations, finally, are fully determined by the syntactic structure and maximally constrained. Their computation is therefore more or less deterministic, clearly the best case.

Let us examine how Reuland's economy-based idea explains the following contrast.

- (32) a. Oscar voelde [zich wegglijden]. (Dutch)  
 b. \*Oscar voelde [hem wegglijden].  
       Oscar felt [him(self) slide away] (Reuland (2001, 473))

In (32a), *zich* undergoes movement and forms a CHAIN with the antecedent *Oscar* in the syntax. In (32b), *hem* either can be translated as a bound variable at the C-I interface or can be assigned reference in pragmatics, as shown in (33a) and (33b), respectively.<sup>8</sup>

- (33) a. Oscar  $\lambda x$  (x voelde (x wegglijden))  
 b. Oscar  $\lambda x$  (x voelde (u wegglijden)) & u = Oscar

The reason why the sentence in (32a) is grammatical and the one in (32b) is that the formation of a syntactic dependency outranks the options of establishing a relation at the C-I interface or in pragmatics.

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<sup>8</sup> See footnote 14 for the definition of CHAIN.

## 6 How Should Reflexive Binding Be Encoded?

In the previous section, we discussed Reuland's (2001a) proposal that there are three places where identity relations can be established; pragmatics, the C-I interface and syntax and that these identity relations compete with each other. We have also indicated that the syntax may establish anaphoric dependencies in Reuland's system. In this section, I first discuss an alternative proposal for how anaphoric binding relations can be encoded, put forward by Neeleman and Van de Koot (2002a) (section 6.1). I then take a closer look at movement-based approaches, including Reuland's (section 6.2). In section 6.3 I evaluate the various proposals and argue that the proposal of Neeleman and Van de Koot is preferable in a number of respects.

### 6.1 The Configurational Matrix

#### 6.1.1 Anaphors and the Properties of Syntactic Dependencies

As Koster (1987) states, syntactic relations are dependencies of some kind between a dependent element  $\beta$  and an antecedent  $\alpha$ :

$$(34) \quad \dots\alpha, \dots, \beta, \dots$$

The diagram shows a sequence of elements:  $\dots\alpha, \dots, \beta, \dots$ . A curved line (arc) connects  $\alpha$  and  $\beta$ , with the letter  $R$  centered below the arc, indicating a dependency relation between the antecedent  $\alpha$  and the dependent  $\beta$ .

The relation  $R$  that holds between a dependent and its antecedent has the following four properties:

- (35) a) A dependent must have an antecedent. (obligatoriness)  
 b) The antecedent must have only one antecedent. (uniqueness of the antecedent)  
 c) The antecedent must c-command the dependent. (c-command)  
 d) A dependent must have its antecedent within its local domain. (locality)

(cf. Koster 1987 and Neeleman and van de Koot 2002a)

Anaphoric binding shares these properties with, for example, external  $\theta$ -role assignment and movement and it should therefore be assumed to be mediated by *R*.

- (36) a) \*John<sub>1</sub> likes herself<sub>2</sub>. (obligatoriness)  
b) \*John<sub>1</sub> confronted Bill<sub>2</sub> with themselves<sub>1+2</sub>. (uniqueness of the antecedent)  
c) \*John's<sub>1</sub> mother blamed himself<sub>1</sub>. (c-command)  
d) \*John<sub>1</sub> said that Mary blamed himself<sub>1</sub>. (locality)

In (36a), anaphoric dependent *herself* does not have an antecedent in the sentence. The reflexive in (36b) has two antecedents. (36c) exemplifies the c-command condition: the antecedent *John* does not c-command the anaphor *himself*. In (36d), the antecedent *John* and the reflexive are not in a local relation.

Since anaphors must exhibit these four properties, it can be inferred that anaphors enter into a syntactic dependency. On the other hand, pronouns do not appear to have the properties of syntactically dependent elements:

- (37) a) John<sub>1</sub> likes her<sub>2</sub>.  
b) John<sub>1</sub> told Bill<sub>2</sub> that Mary liked them<sub>1+2</sub>.  
c) John's<sub>1</sub> mother implied that he<sub>1</sub> should leave his girlfriend.  
d) John<sub>1</sub> said that Mary blamed him<sub>1</sub>.

The pronoun *her* in (37a) does not have an antecedent. Nevertheless, the sentence is grammatical. In (37b) the pronoun *them* has a split antecedent, namely *John* and *Bill*. As we have already seen, pronouns also do not need to obey the c-command condition. The antecedent of the pronoun *he* in (37c) does not c-command it, but the sentence is still grammatical. (37d) shows that pronouns do not require a local antecedent.

The fact that the relations that pronouns enter into lack the properties in (36) strongly suggests that this type of relation should not be treated as a syntactic phenomenon. Therefore, syntactic principles that are said to be dealing with the

distribution of pronouns, such as Condition B of GB theory, should not be syntactic after all.<sup>9</sup>

Reuland's competition approach discussed in section 5 successfully accounts for the fact that English and Dutch pronouns fail to exhibit the properties of anaphors. The economy scheme entails that a pronoun cannot occupy a position that could be occupied by an anaphor, because anaphors can move but pronouns cannot.

In the next section, I will discuss how these syntactic dependencies can be encoded in accordance with the minimalist spirit.

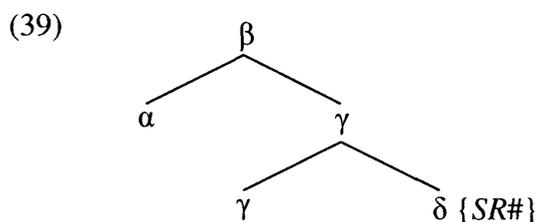
### 6.1.2 Inclusiveness and Syntactic Dependencies

The primary aim of Chomsky (1995a) is to reduce the mechanism of phrase structure theory. One of the key ideas of that paper is Inclusiveness:

(38) **Inclusiveness**

The syntactic properties of a nonterminal node are fully recoverable from the structure it dominates; the syntactic properties of a terminal node are fully recoverable from the lexicon.

Inclusiveness prohibits indices at the level of narrow syntax. In the GB era, indices played a central role in syntactic dependencies such as movement-trace relations, anaphoric dependencies, etc. However, it is not clear how dependencies can be established in a way that satisfies Inclusiveness. Consider the structure in (39).

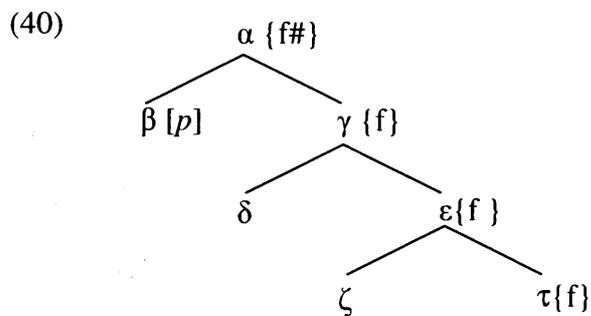



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<sup>9</sup> Recall that Condition B is not about locality, but it is about anti-locality, which otherwise appears to play no role in grammar. Indeed, as we have seen, the anti-locality of pronouns is a by-product of competition.

In the above structure,  $\delta$  is a dependent element. For concreteness, assume that  $\delta$  carries a selectional requirement  $SR$  that is satisfied by the c-commanding constituent  $\alpha$  (satisfaction of a  $SR$  is indicated by '#'). Inclusiveness allows  $\delta$  to carry  $SR$  as a lexical property. But the fact that  $SR$  is satisfied by  $\alpha$  cannot be determined by inspection of the internal structure of  $\delta$  (or indeed the internal structure of the antecedent  $\alpha$ ), in violation of Inclusiveness.

Neeleman and Van de Koot (2002a) argue that Inclusiveness itself dictates a particular solution to this problem and that this solution explains why the clustering in (35) exists. First of all, as just said, this principle determines that a dependent lexical item must express its dependent nature as a lexical property. Therefore, a dependent element must carry a selectional requirement that mediates the dependency it enters into. (Henceforth, I will refer to a selectional requirement as a 'function'.) In (40) below, the dependent element  $\tau$  introduces the function  $f$  that can be satisfied by property  $p$ . The function is repeatedly copied upwards until it reaches the node  $\alpha$  which directly dominates the property  $p$ . There  $f$  is satisfied under direct domination (# indicates that the function is satisfied).



The way functions are copied and satisfied is determined by two principles, namely Inclusiveness, as stated in (38), and Accessibility:

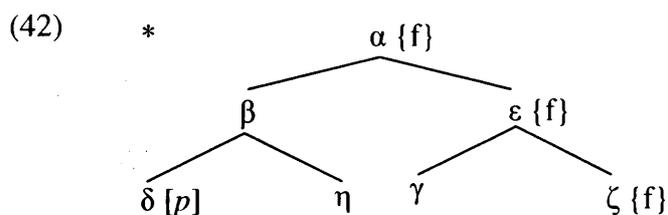
(41) **Accessibility**

Relations between nodes require immediate domination.

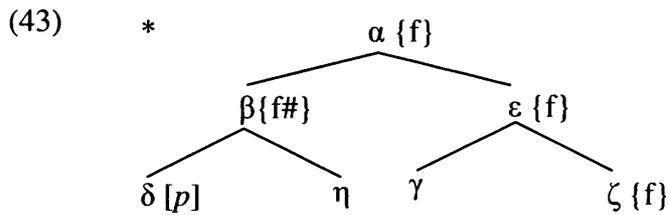
(Neeleman and van de Koot 2002a, 532)

What Accessibility says is that one node cannot be related to another, unless it is ‘immediately connected’ to that node.

The way functions are copied and satisfied is determined entirely by Inclusiveness and Accessibility. Copying is upward only, since downward copying associates a node with a property that it has not inherited from its daughters or from the lexicon, in violation of Inclusiveness. Satisfaction can only apply downwards, since upward satisfaction would associate a node with a property that can only be recovered by considering its mother, again in violation of Inclusiveness. Since copying involves the transfer of a property from one node to another, it can apply recursively, so that the upward trajectory of a function is in principle unbounded. By contrast, satisfaction does not involve the transfer of a property, so that Accessibility restricts satisfaction to direct domination. The properties of copying and satisfaction taken together suffice to yield c-command as the defining characteristic of any relation established through a function. In the structure below, the node  $\zeta$  introduces a function,  $f$ , which is potentially satisfied by the property,  $p$ , residing in the node  $\delta$ . The function can be copied up to the node  $\alpha$  that dominates  $\delta$ . However, Accessibility prohibits function satisfaction at  $\alpha$  because  $\alpha$  does not directly dominate  $\delta$ :



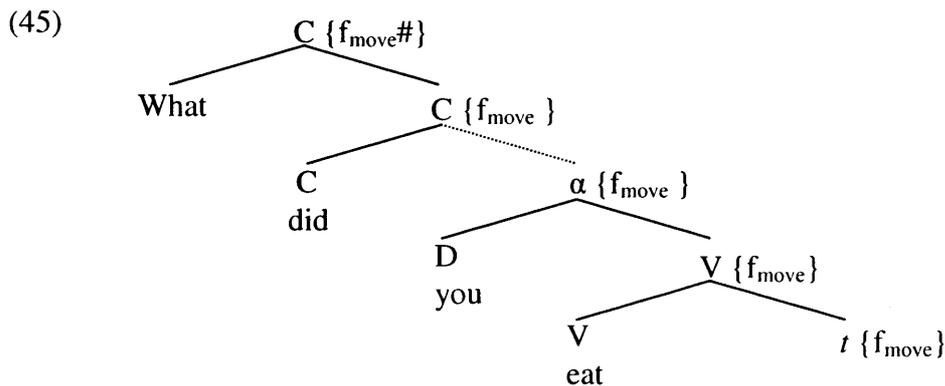
In the tree below, the same function is copied downward from  $\alpha$  to  $\beta$ . From  $\beta$  the function can access its argument  $p$  in  $\delta$ . However, downward copying of  $f$  from  $\alpha$  to  $\beta$  violates Inclusiveness:



Consider A'-movement as an example:

(44) What did you eat?

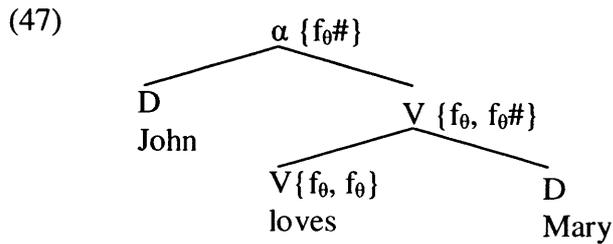
The tree representation of (44) is shown in (45). Here and in what follows I abstract away from inflectional structure and use the node  $\alpha$  as a shorthand for the IP-layer.



The trace of *what* introduces  $f_{\text{move}}$ , which is looking for a wh-operator. This function is copied upward to the maximal projection of C, which directly dominates *what*. In this position,  $f_{\text{move}}$  is satisfied by the wh-phrase, and the trace is licensed.

Not only the relationship between a wh-phrase and its trace, but also the relationship between a predicate and its arguments are mediated by a function, namely the thematic function  $f_{\theta}$ . Consider the following sentence and its tree representation:

(46) John loves Mary.

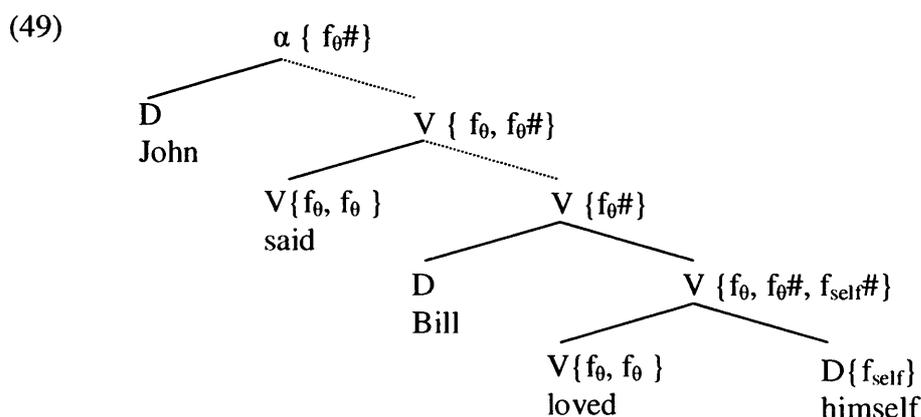


Here, the verb *loves* introduces two theta functions, one of them is satisfied by the internal argument *Mary* and the other by the external argument *John*. If the verb establishes a predicate-argument dependency with its arguments in this way, it is correctly predicted that an argument always c-commands the head that introduces the thematic function that it satisfies.

Let us now turn to anaphoric dependencies. The properties of anaphoric binding fall into line with those of movement and other dependencies, once it is assumed, following Williams (1994), that the antecedent of an anaphor is a  $\theta$ -role. In this view of binding, a bindee is not directly related to its DP binder, but this surface relation is mediated by two underlying relations, namely one between the bindee and a  $\theta$ -role and another between that  $\theta$ -role and its argument (which is interpreted as the binder). In terms of the theory adopted here this means that the first relation is mediated by an anaphoric function, which I will refer to as  $f_{\text{self}}$ , and the second by the theta function  $f_{\theta}$ . In other words, an anaphor introduces an anaphoric function that is satisfied by a theta function. This theta function is in turn satisfied by an argument. In this fashion, the anaphor and the argument establish a binding relation. I illustrate this two-step binding procedure with the help of the example in (48), which has the structure shown in (49).

(48) John<sub>1</sub> said Bill<sub>2</sub> loved himself<sub>\*1/2</sub>.<sup>10</sup>

<sup>10</sup> I use indices for expository convenience. They have no theoretical importance whatsoever here.

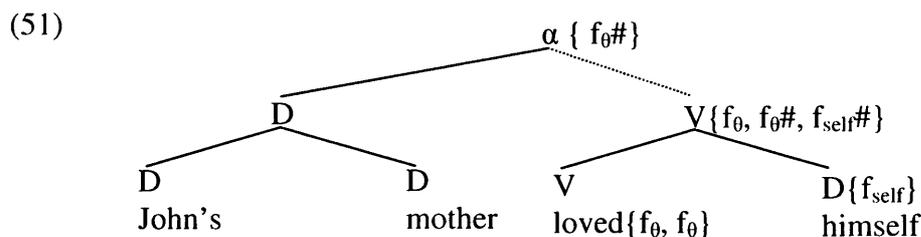


In the above structure,  $f_{self}$  is introduced by the anaphor *himself* and copied upward to V in search of an antecedent. In this position,  $f_{self}$  is satisfied by the external  $f_0$  in the head *loved*. It cannot be interpreted as satisfied by the internal theta role of this verb, because this would give rise to endless self-referring. A long-distance binding dependency with the matrix subject *John* is not available in (48). The reason for this is that  $f_{self}$  cannot be copied past the embedded verbal projection. Economy considerations determine that a function is satisfied at the earliest opportunity. As a consequence,  $f_{self}$  cannot be related to any  $f_0$  in the predicate *said*, and the matrix subject *John* cannot be the antecedent of *himself*.

This approach to binding also explains the ungrammaticality of the sentence in (50).

(50) \*John's<sub>1</sub> mother loved himself<sub>1</sub>.

The intended interpretation of the above sentence is that *John's mother loved John*. The tree for (50) is shown below:



In this structure,  $f_{self}$ , is copied up to the upper V node and satisfied by the external  $f_{\theta}$  that is ultimately satisfied by the whole D *John's mother*. The external  $f_{\theta}$  cannot be satisfied by the D *John's* because of Accessibility. Therefore, no dependency can be established between *John* and *himself*.

In this section, we have discussed how the existence of syntactic dependencies can be reconciled with Chomsky's Inclusiveness condition. A dependent element must express its dependent nature as a lexical property (a selectional requirement or 'function'). This property undergoes upward copying until it finds the properties it is looking for. In this position the function is satisfied, as a result of which the dependent is licensed. The strength of this system is that it derives the defining properties of syntactic dependencies. This was illustrated here for obligatoriness, c-command and locality.

Anaphoric binding exhibits the properties of a syntactic dependency. We therefore assume that binding relations are the result of the dependent nature of anaphors: these introduce the selectional requirement  $f_{self}$ . We adopted Williams's idea that binding is not a direct relation between the antecedent and an anaphor, but should instead be decomposed into two relations. In terms of the theory adopted here, binding dependencies are mediated by  $f_{self}$  and  $f_{\theta}$ . An anaphor introduces  $f_{self}$ , and this function is satisfied by one of  $f_{\theta}$ . Then, the  $f_{\theta}$ , which satisfied  $f_{self}$  is satisfied by the antecedent of the anaphor.

## 6.2 Movement and Binding

In the previous section, I showed how the theory of syntactic dependencies proposed by Neeleman and van de Koot (2002a) can account for the properties of reflexive binding without violating Inclusiveness. There are also alternative theories of binding within the minimalist framework. Almost all of these claim explicitly and sometimes implicitly that the copy theory of movement is compatible with Inclusiveness and express binding through movement. In this section, I review these proposals. First I discuss Hornstein's (2001) approach, according to which the reflexive and its antecedent are merged together, followed by movement of the antecedent. Then I turn to Reuland's (2001a) theory in which a reflexive moves to

the V/I complex and establishes identity with its antecedent under CHAIN formation.<sup>11</sup>

### 6.2.1 Movement of Antecedents (Hornstein 2001)

In mainstream minimalism, it is often suggested that other syntactic dependencies can be reduced to movement.<sup>12</sup> For instance, Hornstein (1999) argues that control is a by-product of movement. This idea is extended to anaphoric binding in Hornstein (2001), where it is proposed that the (future) antecedent of a reflexive is generated together with the SELF-morpheme of the reflexive. It then undergoes movement to a case/EPP checking position. Consider the following sentence:<sup>13</sup>

(52) John likes himself.

The underlying structure Hornstein assumes for (52) is shown in (53).

(53) [<sub>VP</sub> likes [[John] self]

*John* and *–self* are merged together, and subsequently *John* is copied to the specifier of IP through intermediate positions. In one of these *John* receives the external theta role of the verb, while in its landing site case and EPP features are checked:

(54) [<sub>IP</sub> John I [<sub>VP</sub> John [likes [[John] self]]]]

Following this operation, lower copies of *John* are deleted at the Articulatory-Perceptual (A-P) interface for reasons of linearization (cf. Nunes 1995). However, because the morpheme *–self* is a bound morpheme, it cannot stand alone. In view of this, Hornstein proposes that a pronoun is inserted after the lower copy of *John* has been deleted, so as to provide morphological support for *–self*. This approach

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<sup>11</sup>Kayne (2002) also proposes a movement approach to binding. However, his theory is rather different from those put forward by Hornstein (2001) and Reuland (2001a), and I will not discuss it here. See Safir (2004b) for an extensive discussion of Kayne's approach.

<sup>12</sup> I assume throughout this section that 'movement' is an operation that leaves behind a copy.

<sup>13</sup> See Chomsky (2000) and (2001) for EPP checking.

requires that *-self* has an accusative case feature and that it is the SELF-morpheme that checks the accusative case of a predicate. Therefore, in the above example, *John* checks the nominative case feature on I (or T), and *-self* checks the accusative case feature of the verb *likes*. Crucially, Hornstein dispenses with the Theta Criterion (cf. Chomsky 1981). Otherwise, movement of an argument from a theta position to another theta position would not be possible. In (52)-(54), *John* has two theta roles: one is an internal theta role assigned at the complement position of the verb and the other is an external theta role assigned at the specifier position of the vp.

Hornstein argues that the mechanism shown above suffices to account for the properties of reflexive binding, that is, Condition A. For instance, anaphors require c-command by their antecedent for the same reason that NP traces do:

(55) \**John's* mother blamed himself.

In (55), the specifier position of the subject is not a legitimate landing position of the object DP. Therefore, the sentence is ungrammatical. In the same vein, the locality requirement of anaphoric binding reduces to the locality of movement. In the sentence below, the derivation would move *John* across a potential landing site, the embedded subject position filled by *Bill*. This is prohibited by Relativised Minimality (Rizzi 1991) or the Minimal Link Condition (Chomsky 1995b):

(56) *John*<sub>1</sub> said that *Bill* would blame himself<sub>1</sub>.

We have seen Hornstein's proposal for Condition A. Now let us turn to his approach to Condition B. This constraint cannot be reduced to another grammatical relation, because pronouns do not behave like syntactically dependent elements. Instead, Hornstein assumes that certain expressions/morphemes are inherently 'grammatical' in that they are not part of the lexicon and cannot be used unless required for convergence. An example of such a morpheme would be *do*, as used in English *do*-support. That is, *do* can be inserted only if movement in the guise of affix hopping is prohibited from applying. In a nutshell, *do*-insertion is banned where it is not required. For Hornstein, occurrences of pronouns are a comparable phenomenon.

In other words, pronouns can only be used if a derivation fails to converge by merger and movement alone. This explains the ungrammaticality of the following sentence:

(57) \*Everyone loves him.

In (57), if we replace *him* with the reflexive *himself*, the sentence becomes grammatical. The derivation would be roughly like the following: *everyone* first merges with *-self*, and then *everyone* moves to [spec; IP] to check the features. Nothing prevents this derivation from converging. Hence, the reflexive *himself* has to be used instead of the pronoun *him*. On the other hand, in the following sentence movement from the position of *him* to *John's* is impossible. It is, therefore, possible to place the pronoun in the object position as a last resort:

(58) John's<sub>1</sub> girlfriend loves him<sub>1</sub>.

### 6.2.2 Movement of Reflexives (Reuland 2001a)

Reuland (2001a) also assumes that movement is responsible for the dependency between an anaphor and its antecedent. The difference is that, in Reuland's proposal, it is the reflexive, not the (future) antecedent, that undergoes movement. He suggests that an anaphor moves to the V/I complex, and that this enables the anaphor to establish a binding relation with its antecedent by forming a CHAIN.<sup>14</sup> Consider the following sentence:

(59) Oscar<sub>1</sub> voelde [zich<sub>1</sub> wegglijden]  
 Oscar felt self slide-away

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<sup>14</sup> The definition of CHAIN:

#### Chain

( $\alpha$ ,  $\beta$ ) form a Chain if (a)  $\beta$ 's features have been (deleted by and) recovered from  $\alpha$ , and (b) ( $\alpha$ ,  $\beta$ ) meets standard conditions on chains such as uniformity, c-command, and locality.

If ( $\alpha$ ,  $\beta$ ) is a Chain, and both  $\alpha$  and  $\beta$  are in A-positions, ( $\alpha$ ,  $\beta$ ) is an A-Chain.

#### CHAIN

If ( $\alpha_1$ ,  $\alpha_2$ ) is a Chain and ( $\beta_1$ ,  $\beta_2$ ) is a chain and  $\alpha_2 = \beta_1$ , then ( $\alpha_1$ ,  $\alpha_2/\beta_1$ ,  $\beta_2$ ) is a CHAIN.



the case of R-expressions and pronouns with number features, a binding dependency with an antecedent cannot be established in this manner. Reuland argues that number features are highly context dependent and similar to lexical elements, and the deletion of number features therefore cannot in general be recovered on the basis of some occurrence used to delete it. Therefore, number feature deletion violates PRD, and R-expressions and pronouns with number features cannot enter into syntactic binding relations. Hence, they cannot establish a binding dependency in syntax.

It is not true that *zich* can occur wherever it can form a CHAIN with its potential antecedent. For instance, the following sentence is ungrammatical:

- (63) \*Jan<sub>1</sub> haat zich<sub>1</sub>.  
Jan hates him.

According to Reuland, the ungrammaticality of (63) is due to an arity violation. In this sentence, *zich* forms a chain with the antecedent *Jan*. At the C-I interface, the CHAIN is realized as a structure of variable binding. The logical representation looks like the one shown below:

- (64) Jan  $\lambda x$  [x haatte x]

However, the verb *haatte* requires two distinct arguments at the C-I interface. In (64), the predicate has only one argument, namely *x*. Hence, the representation in (64) is ruled out on theta-theoretic grounds. Instead of *zich*, the complex reflexive *zichzelf* can be used:

- (65) Jan<sub>1</sub> haatte zichzelf<sub>1</sub>.  
Jan hated himself.

Reuland suggests that use of *zichzelf* circumvents an arity violation. Following Helke's (1971) analysis for English, Reuland assumes that this reflexive has the following structure:

(66) [DP zich [NP zelf]]

At the C-I interface, (66) is translated into  $f(x)$ , the value of some function of  $x$ , and the interface representation of the sentence in (65) would be like the one in (67).<sup>15</sup>

(67) Jan  $\lambda x$  [x haatte  $f(x)$ ]

The argument  $f(x)$  is not identical to  $x$ , so there is no arity violation here and therefore the sentence in (65) is grammatical.

### 6.3 Criticism of Movement Approaches

In this section, I will argue against the approaches that reduce syntactic dependencies, especially binding, to movement/copy. First, I will consider specific problems associated with each of the theories outlined in the previous section. Subsequently, I will turn to problems of the movement approach in general.

#### 6.3.1 Problems of Hornstein (2001)

As outlined in section 6.2.1, Hornstein (2001) argues that reflexive binding is a result of the movement of an antecedent of the reflexive. Let us review how this works:

- (68) a. John likes himself.  
 b. [<sub>VP</sub> likes [[John] self]]  
 c. [<sub>IP</sub> John I [<sub>VP</sub> John [likes [[John] self]]]]]  
 d. [<sub>IP</sub> John I [<sub>VP</sub> ~~John~~ [likes [[~~John~~ him] self]]]]]

The sentence in (68a) is derived in the following fashion. First, the future antecedent of the reflexive *John* is merged with SELF-morpheme, then this complex merges with the verb *likes*, and [[*John*] *self*] receives an internal theta role of the verb (68b).

Next, *John* moves to the intermediate landing site, that is, specifier of the verb, where *John* receives an external theta role of the verb. Then, *John* moves to the specifier position of the matrix IP to check case/EPP features (68c). The accusative case features are checked by *-self*. Finally, at the A-P interface, all copies of *John* except the topmost one are erased for linearization, and the pronoun *him* is inserted to support the reflexive (68d).

Hornstein's attempt to reconcile binding with minimalism is not without problems, however. Firstly it is stipulated that pronouns and the SELF-morpheme are not lexical elements. He assumes that "certain expressions/morphemes are inherently grammatical in that they are not part of the lexicon and cannot be used unless required for convergence" (p172), and he also assumes that pronouns and the SELF-morpheme are such expressions. Because they are not part of the lexicon, they cannot be used unless required for convergence. According to Hornstein, this explains the (near-)complementary distribution between reflexives and pronouns. That is, when movement of the antecedent of a reflexive cannot take place, a pronoun is used as a last resort. Regarding the SELF-morpheme, Hornstein states that it is used to "allow a derivation to licitly converge" (p163). (In particular, he attributes to *-self* the ability to check case.) However, it is not clear to me at all where pronouns and the SELF-morpheme come from if they are not part of the lexicon. Recall that Inclusiveness, which is one of the key notions of minimalism, states that outputs consist of nothing beyond properties of items of the lexicon. (Therefore, for instance, indices are not available in the minimalist program.) However, if pronouns and the SELF-morpheme are not elements in the lexicon, adding them in the course of a derivation violates Inclusiveness in the same sense as addition of indices to a phrase in a course of a derivation.

There is a further problem with regard to the SELF-morpheme. In (68d), the pronoun *him* is added to [~~*John*~~ *self*] because the English SELF-morpheme is a bound morpheme and cannot stand on its own:

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<sup>15</sup> Reuland argues that  $f(x)$  has influence on interpretation of the reflexive. That is,  $f(x)$  is interpreted as proxy for  $x$ . He explains Madame Tussaud sentences discussed in Jackendoff (1992) and Münchhausen sentences discussed in Voskuil (1991).

(69) \*John likes self.

This analysis might work fine for languages in which the SELF-morpheme is a bound morpheme but makes incorrect predictions for languages like Dutch where the same morpheme, *zelf*, is morphologically free. The example in (70) shows the Dutch SELF-morpheme can appear on its own.<sup>16</sup>

(70) dat Jan Marie niet zelf ontmoette  
 that Jan Marie not self met  
 “...that Jan didn’t meet Mary himself/herself.”

If we adopt Hornstein’s theory, the derivation of the sentence in (71), should parallel that of the English example in (68). This is shown in (72).

(71) Jan<sub>1</sub> haatte zichzelf<sub>1</sub>.  
 Jan hated himself.

(72) a. Jan haatte zichzelf.  
 b. [<sub>VP</sub> haatte [[Jan] zelf]  
 c. [<sub>IP</sub> Jan I [<sub>VP</sub> Jan [haatte [[Jan] zelf]]]]]  
 d. [<sub>IP</sub> Jan I [<sub>VP</sub> ~~Jan~~ [likes [[~~Jan~~ zich] zelf]]]]]

First, a reflexive morpheme *zelf* is merged with its antecedent *Jan*, and then [[*Jan* *zelf*]] merges with the verb *haatte* (72b). Then, *Jan* moves successively to the specifier of IP satisfying all case/EPP and theta requirements (72c). Finally, all copies of *Jan* except the one in the head of the chain are deleted for linearization, and *zich* is inserted to the position where *Jan* was base-generated (72d).

However, recall that *zelf* is not a bound morpheme. Therefore, there is no reason why *zich* should be inserted in the trace position of *Jan*, and we should expect

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<sup>16</sup> See Chapter 3-4 for the discussion of Dutch *zelf*.

that even if *zich* was removed from (71), the sentence should be grammatical. But in fact the sentence is ungrammatical without *zich*.

- (73) \*Jan<sub>1</sub> haatte zelf<sub>1</sub>.  
Jan hated self

In short, these Dutch data cast serious doubt on the idea that pronouns are inserted as a last resort.

The third problem is that if reflexive binding is the result of movement, it should show the same locality properties as movement. However, this is not true. It is well known that nothing can be extracted from a coordinate phrase (Coordinate Structure Constraint (Ross 1967)):

- (74) \*What sofa will he put the chair between some table and *t*?

Therefore, the movement approach to binding wrongly predicts that the following sentence is ungrammatical:

- (75) The queen<sub>1</sub> invited both Charles and herself<sub>1</sub>.

In the above sentence, *the queen* should originate in the position of *her* in *herself*, after which it moves to the matrix subject position. However, movement of *the queen* should be impossible, and, hence, instead of a reflexive, the pronoun *her* should be used as a last resort. The sentence with the pronoun *her*, however, is ungrammatical with the intended reading:

- (76) \*The queen<sub>1</sub> invited both Charles and her<sub>1</sub>.

Hornstein's theory also runs into a problem regarding the complementary distribution of reflexives and pronouns. As discussed at the end of section 6.2.1, it is assumed that a reflexive must be used whenever possible and that a pronoun is used where a reflexive cannot be placed as a last resort. This predicts that reflexives and

pronouns are always in complementary distribution. This is, however, not true. Consider the sentences in (14) and (29c), repeated here as (77) and (78) respectively.

(77) If I were you, I would hate me. (Safir 2004a, 41)

(78) I dreamt that I was Brigitte Bardot and I kissed me. (due to George Lakoff, discussed in Heim 1991)

In the above sentences, the pronoun *me* can be replaced by the reflexive *myself*. This shows that there are cases where the complementary distribution between pronouns and reflexives is not observed. As discussed in section 4, pronouns and reflexives are not in complementary distribution if they yield a different interpretation (Rule I). Hornstein's approach is unable to capture this and wrongly predicts that (77) and (78) are ungrammatical.

Finally, Hornstein abandons the Theta Criterion in order to reduce syntactic dependencies such as control of PRO and reflexive binding to movement, but this seems to be problematic. Brody (1999) argues that if the Theta Criterion does not exist, Burzio's generalization should not be expected to hold in natural language. If PRO is just an NP-trace as Hornstein assumes, why is (79) ungrammatical?

(79) \*John hit *t*.

One might suggest that the ungrammaticality of (79) is due to a Case-theoretic violation. Then, however, it is not clear at all why there is no verb like HIT which assigns both subject and object  $\theta$ -roles but no Case to its object.<sup>17</sup>

### 6.3.2 Problems of Reuland (2001a)

Although his approach is substantially different from that advocated by Hornstein (2001), Reuland (2001a) also proposes that movement can establish a reflexive

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<sup>17</sup> See Brody (1999) for more discussion against Hornstein's approach, and see also Hornstein (2000) and Brody (2001) for a continuation of the debate between them.

binding relation. While Reuland's theory seems to be more promising than Hornstein's, it, too, is not without problems.

Reuland proposes, following Reinhart and Reuland (1991), that in English the SELF-morpheme is interpreted as an identity predicate that adjoins to the predicate head, yielding a reflexive interpretation.

- (80) a. ....[V<sub><y,x></sub>.....[.....-self<sub><x,y></sub>]]  
 b. SELF<sub><x,y></sub> & V<sub><y,x></sub>

For instance, in (81) *-self* moves to the predicate *hates*. Then, the logical representations in (82a)/(82b) are assigned, and a reflexive reading is obtained without violating the arity requirement of the predicate.

- (81) a. John hates himself.  
 b. John [self hate] [him *t*]

- (82) a. John  $\lambda x$  (x hates him & him = x)  
 b. John  $\lambda x$  (him  $\lambda y$  (hates (x, y) & y = x))

Nevertheless, this approach does not explain the grammaticality contrast between an anaphor and a pronoun in the English ECM construction. Consider the following ECM sentences:

- (83) a. John<sub>1</sub> believes himself<sub>1</sub> to be clever.  
 b. \*John<sub>1</sub> believes him<sub>1</sub> to be clever.

Comparable Dutch data show that a SELF-morpheme is not required in this context (the simple anaphor *zich* is sufficient):

- (84) Jan voelde [ zich wegglijden]  
 John felt SE slide-away

This is understandable, since, on the one hand, the anaphor is not a co-argument of *Jan* in (84), and, on the other, Dutch *zich* undergoes movement and therefore gives rise to the preferred option of a syntactically encoded relation.

Why then does English require a SELF-anaphor in the same context? The logic of Reuland's economy-based approach dictates that the SELF-anaphor must give rise to syntactic encoding, presumably as a result of SELF-incorporation. However, this process on its own does not yield the desired logical representation. This is because SELF is an identity predicate, which – when composed with the matrix predicate – will require identity of the two arguments of that predicate. But of course, *John* cannot be made identical to [y to be clever]. This problem can be circumvented if SELF-incorporation is accompanied by complex-predicate formation, as shown in (85). (See Reinhart and Reuland 1991 for details of this proposal.)

(85) a. John  $\lambda x$  (him  $\lambda y$  (x believes-clever y) & x=y)

However, if the complex predicate analysis is correct, the contrast in grammaticality between (86a) and (86b) is surprising. This is because neither in (86a) nor in (86b) is the bound element related to its antecedent through a movement relation (since that would violate the Coordinate Structure Constraint). Then, in each case, the relation is established through the application of the C-I interface translation rule that allows a pronoun to be interpreted as a bound variable, and these examples should therefore not compete with each other and be equally acceptable.<sup>18</sup>

(86) a. John<sub>1</sub> believed [[Mary and himself<sub>1</sub>] to be friends]  
 b. ??John<sub>1</sub> believed [[Mary and him<sub>1</sub>] to be friends]

Crucially, there is some reason to believe that the structure in (86a) does not prevent syntactic encoding of binding. This is shown by the analogous Dutch example in

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<sup>18</sup> In fact, Reuland (2001a) proposes that – even without movement – a SELF-morpheme can be used to protect a predicate from an arity violation and argues that the contrast between (86a) and (86b) can therefore still be explained in terms of the  $\theta$ -Criterion (because (86b) would still involve an arity violation after complex-predicate formation). See Chapter 3 section 2.2 and 4 for discussion of this

(87), which is fully grammatical with the true syntactic anaphor *zichzelf* (see (87a)) but marginal with *hemzelf*, as in (87b), or a pronoun, as in (87c).

- (87) a. Jan voelde [[ Marie en zichzelf] wegglijden]  
           John felt       Mary and himself slide-away
- b. ??Jan voelde [[ Marie en hemzelf] wegglijden]  
           John felt       Mary and himself slide-away
- c. ??Jan voelde [[ Marie en hem] wegglijden]  
           John felt       Mary and him slide-away

Because *hemzelf* and *hem* establishes an anaphoric relation with their antecedent at an extra-linguistic level, the contrast between (87a) on the one hand and (87b) and (87c) on the other is not expected if *zichzelf* in (87a) does not establish a binding relation in syntax.<sup>19</sup> This reinforces our earlier conclusion that the syntactic encoding of binding is most likely not due to a movement operation.

## 6.4 Problems of the Movement Approach in General

Reducing binding to movement/copy can be seen as an attractive move in a minimalist sense because it reduces the theoretical machinery. However, this advantage must be weighed against other aspects of the proposal, such as its empirical validity. In particular, reducing movement to binding implies that they should share the same properties. But is this true?

It seems to be true to some extent. Movement and binding share the properties of c-command, locality, the uniqueness of the antecedent, and obligatoriness of the antecedent. However, there are also differences among different types of syntactic dependencies. For example, although all syntactic dependencies show locality, the exact nature of that locality can differ from one type of dependent

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issue. In any case, the data shown in (87) strongly suggests that even in coordinate structures binding can be encoded syntactically, and this poses a problem for movement approaches of binding.

<sup>19</sup> I will argue that a reflexive [pronoun + *zelf*] (such as *hemzelf*) as a whole establishes an anaphoric relation with its antecedent extra-syntactically, although the *zelf* part of [pronoun + *zelf*] (such as *hemzelf*) establishes a dependency relation with its head, i.e., the pronoun part. See the discussion in Chapter 4.

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to the next. And it is here that movement and binding seem to diverge from each other. Movement abides by Relativised Minimality (Rizzi 1991)/Minimal Link Condition, MLC (Chomsky 1995b):

- (88) \*When did you wonder whether John blamed Bill  $t_{\text{when}}$ .  
\*John is likely that it seems  $t_{\text{John}}$  to be clever.  
\*What have John will  $t_{\text{have}}$  finished by tomorrow?

However, anaphoric binding seems to be able to violate Relativised Minimality/MLC, as shown by the following example:

- (89) John<sub>1</sub> told Bill<sub>2</sub> about himself<sub>1/2</sub>.

In (89), the antecedent of *himself* can be either the subject *John* or the direct object *Bill*. But *Bill* intervenes between the reflexive and *John*. Therefore, *Bill* should block the binding of the reflexive by *John*, if binding abides by Relativised Minimality/MLC.

Hornstein (2001) is aware of this problem and assumes that [*about himself*] can adjoin in several positions. When *Bill* is the antecedent, [*about himself*] adjoins somewhere low. On the other hand, when *John* is the antecedent, [*about himself*] adjoins higher. Hornstein states that the logic of his treatment of sentences like the one in (89) is similar to what one says about secondary predicates, which may involve PRO:

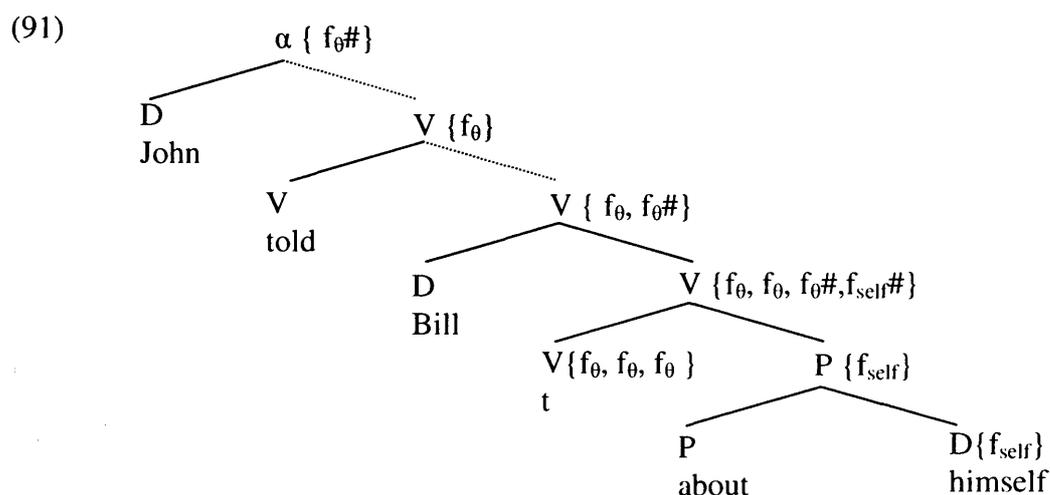
- (90) John painted the model nude.

However, the analysis of (90) cannot be straightforwardly applied to (89). Even if we grant that an adjunct has several positions where it can potentially adjoin, standard minimalist theory is firmly rooted in a UTAH-based view of argument structure, according to which a particular type of argument always appears in the same syntactic configuration. Since [*about himself*] in (89) is an argument, the proposal

that it can appear in different positions is in conflict with a core assumption of the framework in which it is put forward.

Contrary to the movement approach, the approach to binding that takes the antecedent of an anaphor to be the  $\theta$ -role that satisfies the binding requirement  $f_{self}$  does not have this problem. The way a function is satisfied is the same across dependencies. That is, the copying and satisfaction process abides by Inclusiveness and Accessibility. This is why all syntactic dependencies share some properties. But what a function is looking for is different from one type of function to another. As I will now show, this is sufficient to explain why the locality binding is different from the locality of movement.

Consider the tree representation for (89) in (91) below:<sup>20</sup>



Recall that a binding function,  $f_{self}$ , is not looking for a DP itself. That is, in (91) the function  $f_{self}$  is not looking for a DP such as *John* or *Bill*, but rather for an unsatisfied theta function. In the above structure, the binding function introduced by the reflexive *himself* is satisfied by one of the  $f_{\theta}$ 's in the head of lower VP.<sup>21</sup> If  $f_{self}$  is satisfied by the  $f_{\theta}$  that is satisfied by *John*, the reflexive ends up bound by *John*; if  $f_{self}$  is satisfied by the  $f_{\theta}$  that is satisfied by *Bill*, the reflexive ends up bound by *Bill*. This theory correctly predicts that an anaphor can be related to any argument of the

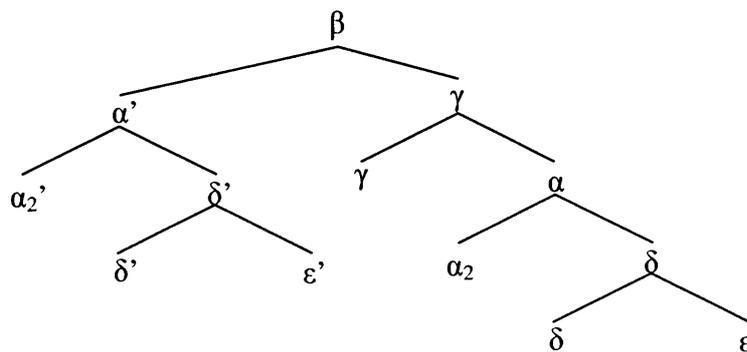
<sup>20</sup> I omitted irrelevant details in this tree.

nearest c-commanding predicative head, but not to any argument of a higher predicate. Hence, binding can ‘skip’ an object, but not a subject.

A second problem with reducing binding to movement stems from the common, but incorrect, assumption that the copy theory of movement comes for free in a theory of grammar based on Inclusiveness. Merge is generally considered a ‘virtual conceptual necessity’. In Minimalism, movement is taken to be a special case of merger, namely internal merger. Since (external) merger comes ‘for free’ (since it is conceptually necessary), the implication is that internal merger therefore comes for free as well.

Neeleman and Van de Koot (2002a) challenge this view on the grounds that – in the absence of indices – LF representations whose construction involved internal merger do not express a dependency between a moved element and its copy. Consider the structure in (92).

(92)



This tree should be read as containing a movement chain: the constituent rooted in  $\alpha'$  is a full copy of the constituent rooted in  $\alpha$  (I am using apostrophes for notational convenience only). However, there is nothing in the representation in (92) that encodes a relation between these constituents. One could perhaps argue that they *must* form a chain on the grounds that the numeration from which (92) was built contains only one instance of the material contained in  $\alpha$ . However, this would mean

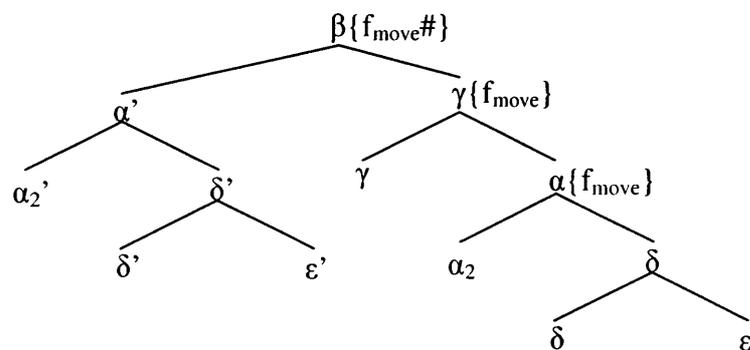
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<sup>21</sup> The binding function  $f_{self}$  cannot be satisfied by  $f_{\theta}$  that is satisfied by the anaphor introducing the  $f_{self}$ , as discussed in section 6.1.2.

that many LF structures will be ambiguous. Suppose the numeration contains an item  $\alpha$  twice, but that  $\alpha$  is present in the structure generated from that numeration three times. Then how can we tell which two instances of  $\alpha$  form a chain? Of course, this problem could be circumvented by assuming that items in the numeration carry an index (see Chomsky 1995; 227), but that assumption is in conflict with Inclusiveness.

I introduced earlier the mechanism for encoding dependencies adopted by Neeleman and Van de Koot and discussed why it is compatible with Inclusiveness and Accessibility. Could the same mechanism be used to encode a relation between two full copies of a constituent? In other words, could the copy theory of movement be made compatible with Inclusiveness by bolting onto it the encoding mechanism adopted earlier? As shown by Neeleman and van de Koot, the answer to this question is negative. Consider the structure in (93).

(93) \*



This representation violates both Accessibility and Inclusiveness.

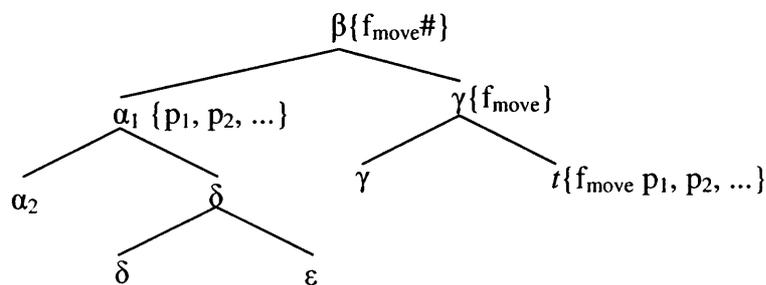
Accessibility must be violated at the point at which the movement function introduced by the lower copy is satisfied by the higher copy. This is so because the function must somehow check that the higher copy is identical to the lower copy. This requires inspection of the internal structure of  $\alpha'$  in violation of Accessibility.

The representation also violates Inclusiveness because there is no source in the lower copy for the function  $f_{\text{move}}$ . None of the lexical items contained in  $\alpha$  carries  $f_{\text{move}}$  as a lexical property and therefore, by Inclusiveness, none of them is licensed to

carry it. Of course, one could introduce  $f_{\text{move}}$  on a nonterminal node (for example, on  $\alpha$ , as shown here), but this also violates Inclusiveness.

Neeleman and Van de Koot take these problems as diagnostic for the type of solution that is required. The function  $f_{\text{move}}$  should not have to inspect the internal structure of the node that satisfies it. This inspection can only be avoided if the ‘trace’ has no internal structure, because then there is nothing to compare. Consider the structure below:

(94)



Here, the trace, which introduces  $f_{\text{move}}$ , does not have any internal structure.

An A'-trace, however, is arguably not a lexical item: if it were, one would have to allow a great many of them (because reconstruction can give rise to A'-traces with very different properties), which seems unattractive. But if the trace is not a lexical item, then how are its contents licensed? Neeleman and Van de Koot assume that nodes in a syntactic tree contain only syntactic information and that they are linked to phonological and semantic information through a “mapping rule” (see Halle and Marantz 1993 and Jackendoff 1997). That is, a lexical entry is a mapping rule that associates minimal syntactic, semantic and phonological representations. This means that a syntactic terminal node is related to semantic and phonological matrices with the same “lexical address”. Building on this idea, Neeleman and van de Koot propose that A'-movement is a relation that allows an A'-trace to be related to a syntactic address (rather than a lexical address). In other words, the relation between the properties of the antecedent and the properties of the trace is taken to be an instance of mapping, just like the relation between a terminal and a lexical entry

for that terminal. This syntactic mapping is achieved through the introduction and satisfaction of  $f_{\text{move}}$ .

The introduction of  $f_{\text{move}}$  itself is regulated by the following rule, which states that  $f_{\text{move}}$  is introduced on an addressless trace:

- (95)  $f_{\text{move}}$  introduction: [Address: -]  $\Rightarrow$  {...,  $f_{\text{move}}$ , ...}<sup>22</sup>  
(Neeleman and Van de Koot (2002a, 556))

I conclude from this that an implementation of A'-movement that respects Inclusiveness and Accessibility relies on mechanisms – namely the copying and satisfaction of a selectional requirement (or function) – that can also be used to characterize other grammatical dependencies. This achieves a unification of grammatical dependencies at a fundamental level – namely in terms of the system of syntactic encoding – while still allowing differences between grammatical dependencies to be expressed in terms of the type of function involved.

## 7 Summary

In this chapter I have reviewed the development of binding theory from GB theory to the Minimalist Program and have shown that the role of the notion of economy has become important. In section 2, GB binding theory and its problems were discussed. In section 3, I argued, based on Reinhart (1983), that the distinction between bound variables and constants should be taken into account and that variable binding is the core issue of binding. Then, in sections 4 and 5, I introduced works by Reinhart and Grodzinsky (1993) and Reuland (2001a and 2001b) in which cross-modular competition partially determines the distribution of reflexives and pronouns. In section 6, I turned to the issue of how a syntactic dependency can be established in a minimalist syntax. The majority of approaches to syntactic dependencies in minimalism seem to assume that such a dependency can only be formed through movement/copy. This view appears to underlie the proposals in the domain of

binding made by Hornstein (1999, 2001) and Reuland (2001a). However, I demonstrated that an alternative approach to syntactic dependencies put forward by Neeleman and van de Koot (2002a) allows a superior treatment of binding, while managing to meet the strict requirements imposed by Inclusiveness that the copy theory of movement falls short of.

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<sup>22</sup> In Neeleman and Van de Koot's original paper, this rule is called *Move* introduction.

## CHAPTER 3

### THE ROLE OF SELF

#### 1 Introduction

In the previous chapter, we have seen that the classical GB-type binding theory (cf. Chomsky 1981 and 1982) leaves several problems unsolved. One of these problems is that it cannot capture the typological variation in the distribution of anaphors and pronouns across languages. In particular, it is not clear how binding Condition A captures the languages that have more than one kind of reflexive. Dutch is such a language: one type of reflexive is *zich* and another type is *zichzelf*.<sup>1</sup> *Zich* is a morphologically simplex anaphor, while *zichzelf* is a morphologically complex anaphor that consists of *zich* and the morpheme *-zelf*. The latter is morphologically similar to English reflexives. In this chapter, I will discuss what the difference in distribution between simplex reflexives and complex reflexives should be attributed to and focus on what role the SELF-morpheme plays in the distribution of reflexives.

In the field of binding theory, there are a number of approaches to the role of this morpheme. These can be classified into two groups, which pursue linguistic and pragmatic accounts of its distribution, respectively. Two of the most influential linguistic approaches are Reinhart and Reuland's (1993) "Reflexivity" and Reuland's (2001a) "Primitives of Binding". Although quite successful in explaining the difference in distribution between simplex and complex reflexives, these theories leave some data unexplained. These problematic data seem to fall into place when we consider additional, pragmatic, factors, such as presupposed/asserted reflexivity,

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<sup>1</sup> Dutch also has a reflexive that consist of a pronoun and a *-zelf* morpheme, such as *hemzelf*. I will discuss this type of reflexive in Chapter 4.

proximate readings, and intensification, as discussed in Veraart (1996), Lidz (2001), and König and Siemund (1999), respectively.

Does this mean that the effects of the SELF-morpheme are purely extralinguistic? My answer to this question is no. Although it appears to be true that pragmatics plays a role in the distribution of simplex and complex reflexives, contextual considerations on their own do not suffice for a full account. In this chapter, I would like to show that the distribution of SELF results from the interplay of syntactic and contextual factors. Our conclusions form the basis of the syntactic analysis of reflexives developed in the next chapter.

In section 2, I will review Reinhart and Reuland (1993) and Reuland (2001a). Section 3 introduces the work of Veraart (1996), Lidz (2001) and König and Siemund (1999), which is concerned with the relation between SELF and context. Finally, in section 4, I will discuss the approaches presented in section 2 and section 3 and conclude that not only context but also syntax should be taken into account when considering the distribution of simplex and complex reflexives.

## **2 SELF and Arity**

In this section I will review Reinhart and Reuland (1993) and Reuland (2001a). In Reinhart and Reuland, a reflexive with a SELF-morpheme, i.e., a SELF-anaphor, can reflexivize the predicate whereas a reflexive without a SELF-morpheme, i.e., an SE-anaphor, cannot. Therefore, a bound SELF-anaphor appears in an argument position of a non-inherently reflexive predicate, whereas when a locally bound SE-anaphor appears in an argument position, the predicate has to be inherently reflexive (section 2.1). Although a reflexive with a SELF-morpheme can reflexivize the predicate, Reuland further assumes that in some languages a reflexive with a SELF-morpheme is used to salvage a sentence from an arity violation (section 2.2).

### **2.1 Reinhart and Reuland's (1993) View**

In GB theory, it is assumed that an anaphor must be bound by an antecedent in its local domain and that a pronoun must be free in its local domain. As we saw in

chapter 2, however, GB-style binding theory raises a number of problems. One of these is that the theory does not explain the difference in distribution between SELF-anaphors and simplex anaphors. For instance, in Dutch the simplex anaphor *zich* can appear with the predicate *schaamen* ‘be ashamed’ but not with the predicate *bewonderen* ‘admire’:

- (1)        Jan<sub>1</sub>    schaamt    zich<sub>1</sub>.  
              John   be-ashamed   self
- (2)        \*Jan<sub>1</sub>    bewondert   zich<sub>1</sub>.  
              John   admires     self

On the other hand, if *zich* in (1) and (2) is replaced with *zichzelf*, the grammaticality judgements are reversed: the sentence in (3) is ungrammatical but that in (4) is grammatical:

- (3)        \*Jan<sub>1</sub>    schaamt    zichzelf<sub>1</sub>.  
              John   be-ashamds   himself
- (4)        Jan<sub>1</sub>    bewondert   zichzelf<sub>1</sub>.  
              John   admires     self

Reinhart and Reuland (1993) depart from GB-style binding theory and propose a predicate-centred binding theory. For them, binding theory is about the interpretation of reflexive predicates. They define that a predicate is reflexive if and only if (at least) two of its arguments are coindexed and propose that natural language has the property that reflexivity must be licensed. There are two ways to license reflexivity: one is that a predicate is lexically licensed as a reflexive (i.e., inherently reflexive (cf. Everaert 1986)), and the other is that a predicate is marked by a SELF-anaphor in one of its argument positions. The definitions of *syntactic predicate*, *semantic predicate*, *reflexive*, and *reflexive-marked* are given in (5).

(5) **Definitions**

- a. The *syntactic predicate* formed of (a head) P is P, all its syntactic arguments, and an external argument of P (subject).

The *syntactic arguments* of P are the projections assigned  $\theta$ -role or Case by P.

- b. The *semantic predicate* formed of P is P and all its arguments at the relevant semantic level.
- c. A predicate is *reflexive* iff two of its arguments are coindexed.
- 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.

(Reinhart and Reuland (1993, 678))

Binding Conditions A and B are then defined as follows:

(6) **Conditions**

A: A reflexive-marked syntactic predicate is reflexive.

B: A reflexive semantic predicate is reflexive-marked.

(Reinhart and Reuland (1993, 678))

Let us now return to the sentence in (1). This example satisfies both Conditions A and B, and it is grammatical. The verb *schamen* is lexically (inherently) reflexive and therefore reflexive-marked. As required by Condition A, the predicate is reflexive: its arguments are coindexed. Condition B is also satisfied. The (semantic) predicate is reflexive. It should therefore be reflexive-marked and it is (since *schamen* is inherently reflexive). The sentence in (2), on the other hand, violates Condition B. The predicate *bewonderen* is a reflexive semantic predicate because its (semantic) arguments are coindexed. However, the verb is not reflexive-marked: the predicate *bewonderen* is not inherently reflexive, nor does the SE-anaphor, *zich*, reflexive-mark it. The example in (3) is ungrammatical, even though both Condition A and Condition B are satisfied. According to Reinhart and Reuland, this is because the verb is doubly reflexive-marked. It is a lexical reflexive and also marked by a SELF-anaphor. That is, the ungrammaticality of (3) follows from principles of

economy: the same property should not be marked twice.<sup>2</sup> The sentence in (4) violates neither Condition A nor B: the verb is reflexive-marked by a SELF-anaphor and the predicate is reflexive because its arguments are coindexed.

While the definitions in (5) and the conditions in (6) suffice to for the sentences in (1)-(4), the ungrammaticality of the sentences below cannot be accounted for:

(7) \*Jan<sub>1</sub> schaamt hem<sub>1</sub>.  
John be-ashamed him

(8) \*Zich<sub>1</sub> schaamt Jan<sub>1</sub>.  
self be-ashamed John

These examples violate neither Condition A nor B and are therefore predicted to be grammatical. The verb *schamen* is inherently reflexive, so it does not have to be reflexive-marked by a SELF-anaphor. Therefore, in (7) the pronoun *hem* should be able to be placed in object position. In (8), the antecedent of *zich* is located lower than the reflexive itself and the reflexive precedes its antecedent. But the definitions in (5)-(6) do not state anything about hierarchical and linear relations between an anaphor and its antecedent.

In order to rule out (7) and (8), Reinhart and Reuland propose the Chain Condition in (9) and the feature analysis of anaphors and pronouns in (10):

(9) **Chain Condition**

A maximal A-chain ( $\alpha_1, \dots, \alpha_n$ ) has

- a. exactly one link –  $\alpha_1$ , which is both +R and marked for structural Case – and
- b. exactly one  $\theta$ -marked link.

(Reinhart and Reuland 1993, 698)

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<sup>2</sup> See Reinhart and Reuland's (1993) footnote 15.

(10)	SELF	SE	Pronoun
Reflexivizing function	+	-	-
R(eferential independence)	-	-	+

(Reinhart and Reuland 1993, 659)

First consider the feature system of SELF- and SE-anaphors and pronouns shown in (10). The ability of SELF-anaphors to reflexivize predicates and the inability of SE-anaphors and pronouns to do so is attributed to the specification of the reflexivizing function feature in (10). Only the SELF-anaphors are valued positively, so only these can reflexivize predicates. In addition to this feature, anaphors and pronouns have the R feature. The positively valued R feature, i.e., [+R], is basically the same as the one assumed in the GB theory for R-expression (Chomsky 1981), which are inherently referential. Thus, proper names like *John* or *Mary* are specified [+R]. Reinhart and Reuland assume that pronouns also have the [+R] feature. On the other hand, they consider that the R feature of both SELF- and SE-anaphors is specified negatively, in line with the widely held assumption that anaphors are referentially defective (cf. Chomsky (1986), Keenan (1987) among others).

The Chain Condition Reinhart and Reuland propose is not a conventional one. A chain represents a history of movement. In line with this, the Chain Condition of Chomsky (1981, 1986) is a well-formedness condition on movement chains. However, Reinhart and Reuland extended the condition to cover the relation between a bound element and its antecedent. What their version of the Chain Condition in (9) states is that only the head of an A-chain must have the feature [+R] and receive structural Case and that an A-chain can have only one  $\theta$ -role.<sup>3</sup> This Chain Condition rules out the examples in (7) and (8) as follows. In (7), *Jan* and *hem* being coindexed

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<sup>3</sup> The sentences in (1) and (4) seem to be counterexamples to the  $\theta$ -requirement expressed by the Chain Condition. However, Reinhart and Reuland (1993) argue, following Fox (1993), that it is possible to maintain the  $\theta$ -requirement for anaphoric chains. In the case of a sentence with an inherently reflexive predicate, it is assumed that the predicate contains only one  $\theta$ -role. Therefore, a sentence of this type does not violate the  $\theta$ -requirement. In the case of a predicate that is reflexive-marked by a SELF-anaphor, this anaphor can be analysed as an operator that turns a transitive predicate into an intransitive one (cf. Keenan 1987). Hence, in this case as well, a chain can be formed without violating the  $\theta$ -requirement. Although the ECM construction appears to raise a problem, Reinhart and Reuland state that a well-formed anaphoric chain can be established in this construction as well by assuming that the  $\theta$ -requirement is relativized to a  $\theta$ -assigner (cf. Fox 1993). That is, a chain has exactly one  $\theta$ -marked link per  $\theta$ -assigner.

each other, form a chain. However, both arguments have the [+R] feature. This is a violation of the (a) clause of the Chain Condition. In (8), *zich* and *Jan* form a chain. In this case, the problem is not that the chain contains more than one [+R] link: only *Jan* has the [+R] feature, *zich* does not. However, the Chain Condition requires the head of the chain to be [+R] and this is not the case in (8).

Reinhart and Reuland's predicate centred approach to binding is successful in solving some of the problems of GB-style binding theory. Especially, their theory can account for the contrasting behaviour of simplex and complex anaphors, something to which GB theory did not pay much attention.<sup>4</sup> Reuland (2001a) develops the key ideas of Reinhart and Reuland (1993) in a minimalist setting. It is to his work that we turn next.

## 2.2 Reuland's (2001a) View

As discussed in Chapter 2 (section 6.2.2), Reuland (2001a) proposes that the formal features of a reflexive undergo movement to the V/I complex and that this movement establishes a dependency between the reflexive and its antecedent by forming a CHAIN.<sup>5</sup> For instance, in the Dutch example in (11) the formal features of *zich* move to I, to which the verb *voelde* has also adjoined, and forms a CHAIN with its antecedent *Oscar*.

- (11) Oscar<sub>1</sub> voelde [*zich*<sub>1</sub> wegglijden]  
       Oscar felt self slide-away

However, this movement theory on its own does not account for the contrast between SE-anaphors and SELF-anaphors shown in (1)-(4), repeated here as (12)-(15).

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<sup>4</sup> Although the distributional differences between simplex anaphors and complex anaphors were studied in the GB era, the focus of the research was different from that of Reinhart and Reuland (1993). That is, researchers tended to focus on the tendency of simplex anaphors to allow long-distance binding and the lack of long-distance binding with complex anaphors. Most of the studies of this issue assumed that simplex anaphors undergo LF-movement and that this is responsible for their ability to take a long-distance antecedent (see Pica 1987, Cole, Hermon and Sung 1990, Huang and Tang 1991, Katada 1991 and Cole and Sung 1994, among others).

<sup>5</sup> For the definition of CHAIN see footnote 14 of Chapter 2.

- (12)      Jan<sub>1</sub>    schaamt      zich<sub>1</sub>.  
              John    be-ashamed    self
- (13)      \*Jan<sub>1</sub>    bewondert    zich<sub>1</sub>.  
              John    admires      self
- (14)      \*Jan<sub>1</sub>    schaamt      zichzelf<sub>1</sub>.  
              John    be-ashamed    himself
- (15)      Jan<sub>1</sub>    bewondert    zichzelf<sub>1</sub>.  
              John    admires      self

As discussed in the previous section, in Reinhart and Reuland (1993) it is assumed that a SELF-anaphor is used to reflexive-mark a predicate. Therefore, non-inherently reflexive predicates, such as *bewonderen*, ‘admire’ in (15) are licensed as reflexives predicate by the SELF-anaphor *zichzelf*.

Reuland (2001a) proposes that in some languages, including Dutch, a SELF-anaphor, is used to salvage a sentence from arity violation. To begin with, let us consider the case of an inherently reflexive predicate. Why do such predicates tolerate an SE-anaphor? While the verb *schamen* requires both subject and object positions to be filled in the syntax, it is arguably interpreted as a 1-place predicate at the C-I interface. This is precisely what it means for a predicate to be inherently reflexive. In (12), *zich* is placed in the object position and *Jan* in the subject position. *Zich* forms a CHAIN with *Jan*, yielding one syntactic object. This syntactic object is translated into one semantic object. One way of expressing this is that the CHAIN relation between *zich* and *Jan* entails that in the mapping to semantics  $vbl_{SE} = vbl_{Jan}$ .<sup>6</sup> The semantic representation of (12) is shown below:

- (16)      Jan  $\lambda x$  (x schaamt x)

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<sup>6</sup> vbl stands for “variable”.

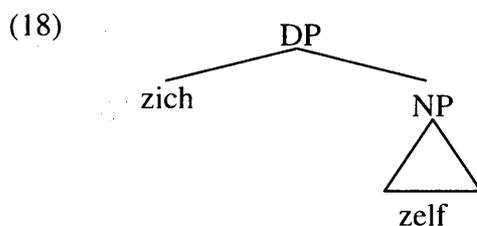
What (16) shows is two occurrences of a variable, bound by the same operator and not distinguished by any property except their position.

Now let us consider an instance of a non-inherently reflexive predicate. Unlike an inherently reflexive predicate, a non-inherently reflexive predicate requires two (or more) distinct semantic arguments. The sentence in (13) is ungrammatical because *zich* forms a CHAIN with *Jan*, yielding one syntactic object mapped onto a single semantic argument at the C-I interface:

(17) Jan  $\lambda x$  (x bewondert x)

Here the two occurrences of variable *x* are not distinguished by any property except their position. However, the verb *bewonderen* is not an inherently reflexive predicate; it is semantically a 2-place predicate. Therefore, it needs two semantic arguments. In other words, (13) is ungrammatical due to an arity violation.

Reuland proposes that the presence of a SELF-morpheme avoids such an arity violation. First, *zichzelf* is assumed to have the following structure (cf. Helke (1971)):



Second, it is also assumed that *zich*, but not *zelf*, is a pronominal element to be coindexed with the antecedent. Therefore, the structure of (15) looks like (19).

(19) Jan<sub>1</sub> bewondert [<sub>α</sub> zich<sub>1</sub> [<sub>N</sub> zelf]].

In (19), the coargument of *Jan* is the constituent  $\alpha$ , not *zich*, and it is  $\alpha$  that is coindexed with *Jan*. This has the following semantic representation:

(20) Jan  $\lambda x (x \text{ bewondert } f(x))$

The verb takes two arguments. One is identical with the  $x$ , and the other with the value of some function of  $x$ , i.e.,  $f(x)$ . The variable  $x$  and the function of  $x$ ,  $f(x)$ , do not qualify as identical semantic arguments, so that the arity requirements of *bewonderen* are respected.

Next, let us consider English reflexives. Unlike Dutch *zich*, an English pronoun does not form a CHAIN with its antecedent due to its specified number feature (see Chapter 2 section 6.2.2). This implies that an English reflexive, which consists of a pronoun such as *him* and a reflexive morpheme SELF, does not form a CHAIN with its antecedent. For English, Reuland assumes that SELF incorporates into the predicate to reflexivize it (compare Reinhart and Reuland 1991). This process yields the effect of restricting its interpretation. The structures below illustrate the (covert) incorporation of a SELF-morpheme:

(21) a. DP... [H] [pron [self]]  
 b. DP... [self H] [pron [e]]

As it is assumed that SELF is a relational noun  $\text{self}\langle x, y \rangle$  interpreted as an identity predicate that incorporates into the main predicate, it gives rise to representations like those in (22).

(22) a. ...[ $V_{\langle y, x \rangle}$ ... [...  $\text{self}\langle x, y \rangle$ ]]  
 b.  $\text{self}\langle x, y \rangle$  &  $V_{\langle y, x \rangle}$

In (22b) the SELF-conjunct specifies that the two arguments of  $V$  must be identical. Therefore, the interpretation is equivalent to that in (23).

(23)  $V_{\langle x, x \rangle}$

Consider the sentence in (24a). After incorporation of SELF, the sentence has the logical representations (24b)/(24c).

- (24) a. John<sub>1</sub> admires himself<sub>1</sub>.  
 b. John  $\lambda x$  (admires (x, him) & him = x)  
 c. John  $\lambda x$  (him  $\lambda y$  (admires (x, y) & y = x))

This representation is interpretively and formally reflexive. Furthermore, the LF representation respect the arity of the verb *admire* because its two arguments are distinct.

On the other hand, the sentence below does violate the arity requirement of the verb on a bound variable reading of the pronoun:

- (25) \*John<sub>1</sub> admires him<sub>1</sub>.

If the pronoun in (25) is translated into a variable that is bound by the same operator that binds the antecedent *John*, the following semantic representation is obtained.

- (26) John  $\lambda x$  (x admires x)

However, this logical structure results in an arity violation. Hence, the sentence is ungrammatical.

To sum up so far, Reuland (2001) argues that a SELF-morpheme protects sentences from an arity violation. However, the strategy of arity protection is different from language to language. In Dutch, the morpheme *zelf* merely allows the reflexive *zichzelf* to surface as semantically distinct from the binder. The binding relation itself results from a property of *zich*, namely that it forms CHAIN. In English, by contrast, it is incorporation of the morpheme SELF that gives rise to the locality effects associated with reflexives. It does so indirectly: incorporation yields a reflexive interpretation and therefore requires identity between the reflexive and its co-argument.

### 3 SELF and Context

In the previous section, we looked at the role attributed to SELF in the predicate-oriented theories of binding of Reinhart and Reuland (1993) and Reuland (2001a). I now turn to theories that argue for a very different account of the distribution of SELF. The proposals that will be discussed here claim that the context in which a sentence is used plays a role in determining whether a SELF-morpheme should be used together with a pronoun or a *zich* type element. In section 3.1 I review Veraart (1996), who proposes that the distribution of *zich* and *zichzelf* in Dutch is partially determined by pragmatic factors such as contrastiveness and presupposition. In section 3.2, Lidz (2001) will be discussed. Lidz argues that the choice between a reflexive with a SELF-morpheme and a simplex reflexive depends on semantics but not syntax; a reflexive with a SELF-morpheme induces a “near-reflexive” interpretation, while one without a SELF-morpheme induces a “pure-reflexive” interpretation. Finally, in section 3.3, we look at some criticism that König and Siemund (1999) have levelled at Lidz’s proposals and consider yet an alternative explanation for the distribution of SELF based around the concept of intensification.

#### 3.1 Asserted Reflexivity and Presupposed Reflexivity

Recall the discussion of Reinhart and Reuland’s (1993) approach in section 2.1. In their theory, a predicate that is inherently reflexive does not need to be reflexive-marked by a SELF-anaphor in order to obtain a reflexive reading. Hence, verbs such as *schamen* ‘be-ashamed’ and *vergiszen* ‘be-mistaken’ can have *zich* as its object but not *zichzelf*:

(27) Jan<sub>1</sub> schaamt zich<sub>1</sub>/\*zichzelf<sub>1</sub>.  
 John be-ashamed self  
 “John is ashamed.”

(28) Jan<sub>1</sub> vergist zich<sub>1</sub>/\*zichzelf<sub>1</sub>.  
 John be-mistaken self  
 “John is mistaken.”

On the other hand, when a predicate is not inherently reflexive, a SELF-anaphor must be used in order to obtain a reflexive interpretation:

(29) Jan<sub>1</sub> bewondert \*zich<sub>1</sub>/zichzelf<sub>1</sub>.  
 John admires self  
 “John admires himself.”

(30) Jan<sub>1</sub> ziet \*zich<sub>1</sub>/zichzelf<sub>1</sub>.  
 John sees self  
 “John sees himself.”

The verbs *bewonderen* ‘admire’ and *zien* ‘see’ are not inherently reflexive. Therefore, *zichzelf*, rather than *zich*, is used with these verbs.

Veraart (1996) argues that Reinhart and Reuland’s theory cannot account for the fact that presuppositions are relevant to the acceptability of sentences with *zich/zichzelf*. For instance, consider the following sentences:<sup>7</sup>

(31) Marie schaamt zich rot.  
 Maire is-ashamed SE rotten  
 “Marie is terribly ashamed.”

(32) Marie werkt zich suf.  
 Maire works SE silly

(33) Marie drinkt zich dronken.  
 Maire drinks SE drunk

(34) Marie drinkt zich arm.  
 Maire drinks SE poor.

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<sup>7</sup> The sentences in (31)-(34) are all taken from Veraart (1996), p19.

All the above sentences involve resultative small clauses. In (31), we have an inherently reflexive verb. On the other hand, in (32)-(34) although the verbs are not inherently reflexive, SE-anaphors are strongly preferred over SELF-anaphors, as shown in (32')-(34'):

(32')   ?\*Marie werkt zichzelf suf.  
           Maire works SELF silly

(33')   ?\*Marie dinkt zichzelf dronken.  
           Maire drinks SELF drunk

(34')   ?\* Marie drinkt zichzelf arm.  
           Maire drinks SELF poor

The problem that Reinhart and Reuland's approach faces is that it is not clear how the sentences in (32)-(34) can be treated in their framework. In their analysis, the matrix subjects and the reflexives in the above sentences are syntactic, but not semantic, coarguments of the matrix predicate, so *zichzelf* is predicted to be as acceptable as *zich*.<sup>8</sup> However, *zich* is preferred to *zichzelf*.

Veraart proposes that there are two kinds of reflexivity: one is "presupposed reflexivity" and the other is "asserted reflexivity". In the case of presupposed reflexivity, there is a preference for *zich* and, in the case of asserted reflexivity *zichzelf* is preferred. This sounds similar to Reinhart and Reuland's proposal in which there are two ways of reflexive marking: lexical and syntactic. However, unlike Reinhart and Reuland, in Veraart's approach it is not the predicate that determines the choice between *zich* and *zichzelf*, but it is the contextual assumptions. The sentence in (35) illustrates that the subject of the small clause-complement of *drinken* 'drink' does not necessarily have to be coindexed with the drinker.

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<sup>8</sup> See (5) and (6) for the definitions and conditions of Reinhart and Reuland's binding theory.

- (35) Marie drinkt haar ouders arm.  
 Maire drinks her parents poor

The sentence presupposes that Marie's parents pay for her drinks. Likewise, the example in (34) only makes sense if Marie pays for her drinks herself. The point here is, however, that if there is no context given, the least marked presupposition is "Marie pays for her drinks herself". This is presupposed reflexivity and *zich*, rather than *zichzelf*, is used here. This explanation based on presupposition applies to (31)-(33), too. For instance, in the case of the (complex) predicate *dronken-drinken* 'drink-drunk' in (33), it is quite difficult to dream up a scenario in which person A's drinking causes person B to get drunk. This results in presupposed reflexivity and a preference for *zich*. On the other hand, in a context in which reflexivity has to be asserted, *zichzelf* but not *zich* is used. Imagine a context in which other people sometimes pay for Marie's drinks. We then have to assert reflexivity:

- (36) Vorig jaar dronk Marie haar ouders arm en  
 Last year drank Marie her parents poor and  
 tegenwoordig drinkt ze zichzelf/\*zich arm.  
 these-days drinks she SELF/SE poor  
 Last year, Marie drank her parents poor and these days she drinks  
 herself poor. (Veraart 1996, 20)

We have seen that there appears to be a correlation between presupposed reflexivity and *zich*, on the one hand, and asserted reflexivity and *zichzelf*, on the other. Veraart argues that not only the presupposition-assertion distinction but also another factor plays a role in the distribution of *zich* and *zichzelf*. The following data, which have focus on a constituent other than the reflexive, show that *zich* is sometimes possible even when reflexivity is asserted:<sup>9</sup>

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<sup>9</sup> Bold letters indicate that they are contrastively focused.

(37) Jan wees zich aan **mij** toe, in plaats van aan  
 Jan assigned SE to me (particle) instead of to  
 zijn vaste **danspartner**.  
 his usual dance partner  
 Jan assigned himself to me instead of to his usual dance partner.

(38) ?Jan hoorde zich die aria niet zingen maar **neuriën**.  
 Jan heard SE that aria not sing but hum  
 Jan didn't hear himself sing that aria, he heard himself hum it.

The presence of *zich* in (37) and (38) does not change the assertion of reflexivity into presupposition of reflexivity. Contrary to (37) and (38), *zich* is not possible in the sentences in (39) and (40), where the anaphors are focused.<sup>10</sup>

(39) Jan kan **Marie** niet afvragen of taalkunde  
 Jan can Marie not wonder whether linguistics  
 interessant is, hij kan alleen **zichzelf** dat afvragen.  
 is interesting he can only SELF that wonder

(40) Hij kan **Jan** niet bewust zijn van zijn falen, hij kan  
 he can Jan not aware be of his failure he can  
 alleen **zichzelf** bewust zijn van zijn falen.  
 only SELF aware be of his failure

The reason why *zich* is impossible here is that being focused means, by definition, that reflexivity is asserted. Then, the unavailability of *zich* in the above sentence follows from the above discussion – asserted reflexivity is expressed by *zichzelf* but not by *zich*.<sup>11</sup>

<sup>10</sup> The examples in (37) and (38) are from page 24 and 25 of Veraart (1996), respectively. (39) and (40) are also from Veraart, page 27.

<sup>11</sup> A stress-based alternative to Veraart's story presents itself. There is some independent evidence that *zich* cannot bear (main) stress. In Dutch, main stress normally goes to the direct object:

Based on (31)-(40), Veraart puts forward the following generalization: *zichzelf* asserts reflexivity but asserted reflexivity is not always expressed by *zichzelf*, and presupposed reflexivity is always expressed by *zich*, but *zich* does not always express presupposed reflexivity. Notice that there is a gap in this generalization. That is, there is a relation between *zich* and asserted reflexivity, whose nature does not follow from the above generalizations. This can be schematized in the following fashion:

- (41) I. presupposition → *zich*  
 assertion → *zich*, if X  
 assertion → *zichzelf*, if not X
- II. *zich* → presupposition  
*zich* → assertion if X  
*zichzelf* → assertion
- (Veraart 1996, 29)

X stands for the conditions under which *zich* is used for asserted reflexivity. Now it has to be answered what the condition X is. Veraart suggests that focus on another constituent rather than the anaphor itself allows *zich* to appear in an asserted reflexive context.

Let us summarize here. If reflexivity is asserted and the sentence is neutral with respect to focus, or focus is on the reflexive, then we have *zichzelf*. If reflexivity

- 
- (i) ...dat Jan een **boek** leest.  
 ...that John one book reads

However, if the direct object is *zich* then stress shifts to the verb:

- (ii) ...dat Jan zich **schaamt**.  
 ...that John self be-ashamed

This could be the result of anaphoric distressing. Then it could be that (a) we have a syntactic opposition between *zich* and *zichzelf* and (ii) on top of that *-zelf* is added whenever *zich* requires stress (e.g. because of focus).

is asserted and a constituent other than the reflexive is focused, we have *zich* or *zichzelf*. If reflexivity is presupposed we have *zich*.<sup>12</sup>

### 3.2 Pure-reflexivity and Near-reflexivity

In this section, I will discuss the claim put forward by Lidz (2001), and also discussed in Reuland 2001a, that SELF-anaphors yield a different semantic interpretation from SE-anaphors. To appreciate the difference in interpretation between simple and complex reflexives, consider the Dutch sentences in (42) and (43) in a Madame Tussaud (wax museum) context (these facts were first discussed in Jackendoff 1992).

(42) Ringo scheert zich  
 Ringo shaves self  
 “Ringo shaves himself.”

(43) Ringo scheert zichzelf  
 Ringo shaves selfself  
 “Ringo shaves himself.”

The sentence (43) is ambiguous in that *zichzelf* can refer to Ringo Starr himself as well as a statue depicting Ringo Starr. In other words, the sentence can mean both that Ringo Starr shaves himself and that Ringo Starr shaves the statue of himself. On the other hand, the sentence in (42) the interpretation in which the anaphor refers to the statue of Ringo is not available.

The difference between complex and simplex reflexives can also be observed in comparative deletion constructions:

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<sup>12</sup> Things are actually more complicated. For instance, it is not always the case that focus plays a decisive role in the distribution of *zich* and *zichzelf*. These additional factors are not relevant to what follows and will not be discussed here. For a full discussion of these issues, see Veraart’s original work.

- (44) Zij verdedigde zich beter dan Peter.  
 she defended self better than Peter  
 “She defended herself better than Peter defended himself.”  
 \*“She defended herself better than Peter defended her.” (Lidz 2001, 129)
- (45) Zij verdedigde zichzelf beter dan Peter.  
 she defended selfself better than Peter  
 “She defended herself better than Peter defended himself.”  
 “She defended herself better than Peter defended her.” (Lidz 2001, 129)

The sentence with *zich* in (44) has only a sloppy reading whereas the sentence with *zichzelf* in (45) can have either a sloppy reading or a strict reading.

Lidz calls the *zichzelf*-type reflexive a “near-reflexive” and the *zich*-type reflexive a “pure-reflexive”. Following Reuland (2001a), he assumes that a near-reflexive is translated into  $f(x)$  at the C-I interface and that a transitive predicate with a near-reflexive has the following semantic representation:<sup>13</sup>

- (46)  $\lambda x [x P f(x)]$

The interpretation of the second argument,  $f(x)$ , approximates that of the first argument,  $x$ . In other words,  $f(x)$  is a function which takes the first argument as input and returns an entity that is representationally related to the first argument. Although the first argument,  $x$ , is formally distinct from the second argument,  $f(x)$ , they can be extensionally equivalent. Hence, a near-reflexive and its antecedent can refer to exactly the same entity in the world. Due to this proxy function, in (43) the reflexive *zichzelf* can refer to the statue of Ringo Starr as well as Ringo Starr himself. Lidz also attributes the availability of both the strict and the sloppy reading in (45) to this approximate function. The reason for the availability of both sloppy and strict readings is that two possible semantic representations exist for the non-elided part of the sentence in (45):

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<sup>13</sup> Lidz refers to Reuland (1995) that is an earlier version of Reuland (2001a).

- (47) a. *Zij verdedigde zichzelf beter dan Peter.*  
       she defended selfself better than Peter  
       b.  $She_1 \lambda x [x \text{ defend } f(x)]$   
       c.  $She_1 \lambda x [x \text{ defend } f_1(x)]$

(47b) and (47c) are the semantic representations of *Zij verdedigde zichzelf* (she defended selfself). In (47b) there is no coindexation between *she* and  $f(x)$ . The semantic representation  $\lambda x [x \text{ defend } f(x)]$  is copied to the elided part, and this process yields the representation shown in (48).

- (48) Peter  $\lambda x [x \text{ defend } f(x)]$

The logical form in (48) has a sloppy reading. Now let us consider why the strict reading is also available in (47). In (47c) *she* and  $f$  are coindexed.  $[x \text{ defend } f_1(x)]$  is copied to the elided part of the sentence at semantics. After this process we have the following semantic representation for the elided part:

- (49) Peter  $\lambda x [x \text{ defend } f_1(x)]$

Here,  $f$  has the index 1, which the pronoun *she* also has (see (47c)), and a strict reading is obtained.

Let us move on to a pure-reflexive. The pure-reflexives have to be identical with their antecedent, and they cannot be translated into  $f(x)$ :<sup>14</sup>

- (50)  $\lambda x [x \text{ P } x]$

The reflexive *zich* in (42), therefore, cannot refer to a statue of Ringo Starr or other types of representation of him and is only able to refer to Ringo himself. As mentioned earlier, pure-reflexive anaphors have only a sloppy reading in comparative deletion constructions. This is because the pure-reflexives are not

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<sup>14</sup> The reason why *zich*-type reflexives cannot be translated into  $f(x)$  will be explained shortly.



semantically reflexive.<sup>15</sup> To see how Condition R works, let us consider the following examples in (54)-(56).

(54) \*Jan<sub>1</sub> bewondert zich<sub>1</sub>.  
John admires self

(55) Jan<sub>1</sub> scheert zich<sub>1</sub>.  
John shaves self

(56) Jan scheert zichzelf<sub>1</sub>.  
John shaves selfself

The sentence in (54) is ungrammatical because of a violation of the left-to-right implication of Condition R. The sentence is semantically reflexive, but the predicate is not inherently reflexive. In (55), the sentence is both semantically reflexive and the predicate is inherently reflexive. Hence, the sentence is grammatical. The example in (56) is also grammatical because Condition R does not apply to this sentence: *zichzelf* introduces  $f(x)$ , so the sentence is not semantically reflexive.

### 3.3 Reflexives and Intensifiers

König and Siemund (1999) argue against Lidz's approach, in which reflexives with a SELF-morpheme are analysed as an approximate function  $f(x)$ . Consider again the sentences in (42) and (43), which are repeated in (57) and (58) respectively.

(57) Ringo scheert zich  
Ringo shaves self  
"Ringo shaves himself."

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<sup>15</sup> For criticism of this condition see the appendix of Reuland (2001a).

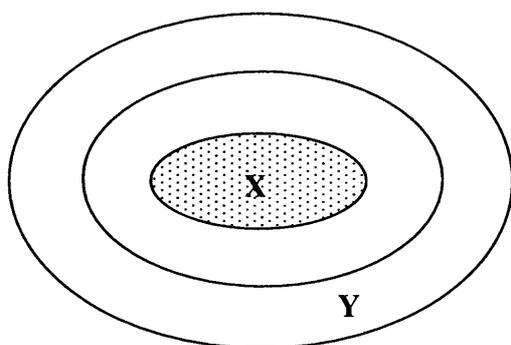
- (58) Ringo scheert zichzelf  
 Ringo shaves selfself  
 “Ringo shaves himself.”

The sentence in (58) can have (at least) two interpretations: one is that Ringo Starr engages in self-shaving and the other is that Ringo Starr shaves statue of himself in a wax museum. On the other hand, the sentence in (57) does not have a statue interpretation. According to Lidz, the reason why the statue reading is available in (58) is that *zichzelf* is translated into the approximate function in the semantics, and this function allows the reflexive to refer to the proxy of its antecedent. König and Siemund point out that this analysis is not very plausible. In the example in (59), it is very hard, if not impossible, to obtain an interpretation that the reflexive *herself* refers to an approximation of the Queen, i.e. some other royal figure.

- (59) The Queen herself will come to the final.

König and Siemund argue that the contrast between (57) and (58) is due to specific contextual conditions interacting with the meaning of the intensifier *-zelf*. The term “intensifier” has different definitions from researcher to researcher. What König and Siemund call “intensifiers” in their paper are lexical items with a SELF-morpheme that “evoke alternatives to the referent(s) of the NP to which they are adjoined and characterize these alternatives (Y) as periphery or entourage of the referent(s)” (König and Siemund 1999, 44). This can be visualized as in (60), taken from König and Siemund (1999, 45).

- (60)



For instance, in the sentence in (59), people who can be alternatives of the Queen (say, the Queen’s family, her staff, etc.) are evoked. When intensifiers are omitted, the evocation of alternatives is missing.

Now let us return to the sentences in (57) and (58). König and Siemund propose that the meaning of *-zelf* is responsible for the statue reading of (58). The morpheme *-zelf* adds the evoking of alternatives to the value given by Ringo Starr to the meaning of the reflexive. Because in the context given no other people are mentioned and we know that in a wax museum there are statues of other famous people that constitute alternatives to Ringo Starr, we tend to think that those statues of famous people can be an alternative to the value given. Hence, *zichzelf* in (58) can be interpreted to refer to the statue of Ringo Starr rather than Ringo Starr himself.

There has been a considerable amount of research into the link between reflexivity and intensification. König and Siemund’s work is predated by that of other researchers, such as McKay (1991), Baker (1995) and Zribi-Hertz (1995) among others. It can be safely said that Veraart 1996, which was discussed in section 3.1 of this chapter, is another example of work in this spirit. More recently, Bergeton (2004) has tried to draw a clear dividing line between intensification and binding. Consider the Danish reflexives and intensified nominal expressions shown below:

- (61) a. *sig* ‘self’  
 b. *sig selv* ‘self self’  
 c. *ham selv* ‘him self’  
 d. *Peter selv* ‘Peter himself’

The expression in (61d) *Peter selv* consists of the proper noun *Peter* and the adnominal intensifier *selv*. This phrase is equivalent to the English phrase “Peter himself”. It is often claimed that the reflexive *sig selv* in (61b) is a complex reflexive. However, Bergeton suggests that *sig selv* is an intensified form of the morphologically simplex reflexive *sig* in (61a). That is, *sig selv* consists of the reflexive *sig* plus the intensifier *selv*. The same analysis can be applied to (61c): *ham selv* is an intensified form of the pronoun *ham* by *selv*. For Bergeton, the SELF-

morpheme (*-selv* in Danish) is neither for reflexivization of a predicate (Reuland and Reinhart 1991 and 1993) nor for arity-protection (Reuland 2001a): it is exclusively used for intensification. The advantage of this approach is that it is possible to achieve a unified account of all types of intensified nominals.

The distribution of *sig/sig selv* is determined by the meaning of predicates in Bergeton's theory. He divides predicates into three types: neutral, anti-reflexive and inherently reflexive. Examples of these three types are shown in (62)-(64).

(62) **Inherently reflexive predicates**

- a. Peter dukkede sig/ \*sig selv/ \*Marie.  
 Peter ducked self \*self self \*Mary  
 "Peter ducked himself/Mary."
- b. Peter tog en kniv med sig/ \*sig selv/ \*Marie.  
 Peter took knife with self \*self self/ \*Mary  
 "Peter took a knife with him/\*himself/\*Mary."

(63) **Anti-reflexive predicates**

- a. Peter misunde \*sig/ sig selv/ Marie.  
 Peter envies \*self self self Mary  
 "Peter envies himself/Mary."
- b. Peter mistænker \*sig/ sig selv/ Marie.  
 Peter suspects \*self self self/ Mary  
 "Peter suspects himself/Mary."

(64) **Neutral predicates**

- a. Peter vasker sig/ sig selv/ bilen.  
 Peter washes self self self car-the  
 "Peter washes himself/the car."
- b. Peter tørrer sig/ sig selv/ Marie.  
 Peter dries self self self/ Mary  
 "Peter dries himself/Mary."

(Bergeton 2004, 17)

The predicates in (62) are inherently reflexive in the sense that they are only compatible with reflexive scenarios. For instance, it is impossible for one to duck anybody other than oneself. With these predicates, only the simplex reflexive *sig* is allowed and the complex reflexive *sig selv* and a proper name are not allowed. The predicates in (63) are anti-reflexive in that they presuppose non-reflexive scenarios. In normal situations, it is unlikely that one envies oneself or that one suspect oneself. With this type of predicate, either the complex predicate *sig selv* or a proper name can be used but the simplex reflexive *sig* cannot be used. The predicates in (64) are neutral in that they do not evoke such presuppositions and allow all types of direct objects.

#### 4 What is SELF for?

So far, I have presented in this chapter two kinds of approach to the role of SELF: one is the predicate-centred theories proposed by Reinhart and Reuland (1993) and Reuland (2001a) and the other is the context-based theories proposed by Veraart (1996), Lidz (2001) and König and Siemund (1999).

In Reinhart and Reuland, it is considered that a reflexive with a SELF-morpheme, i.e. a SELF-anaphor, has the ability to reflexivize the non-inherently reflexive predicate, while an anaphor without a SELF-morpheme, i.e., a SE-anaphor, lacks this ability. Hence, the predictions of this theory are that, in order to obtain a reflexive interpretation, a SELF-anaphor must be used if a predicate is not inherently reflexive, and an SE-anaphor if it is. Furthermore, if a reflexive and its antecedent are not coarguments, there should not be any preference of one over the other. However, as we have already seen in section 3.1, these predictions are not entirely borne out.

In Reuland (2001a), it is argued that the introduction of a SELF-morpheme saves a sentence from an arity violation. Again, this proposal is not without problems. Consider the following examples (see also Chapter 2, section 6.3.2):

- (65) a. John<sub>1</sub> believes himself<sub>1</sub> to be clever.  
 b. \* John<sub>1</sub> believes him<sub>1</sub> to be clever.

The sentences in (65) show that when an exceptionally case-marked subject is bound by the argument in the matrix clause, the ECM subject has to be an anaphor. But if SELF covertly incorporates into the predicate in (65a), this yields the following semantic representation:

(66) a. John  $\lambda x$  (x believes (y to be clever)) & x = [y to be clever]

This representation, however, is not interpretable. Therefore, we must conclude that SELF does not incorporate in this context. This in turn implies that there is no way for *himself* in (65a) to establish a dependency with its antecedent *John* in the syntax. (Recall that *him* in *himself* cannot establish a dependency with *John* in the syntax either, because it has a number feature that prevents it from forming a CHAIN (cf. Chapter 2, section 6.2.2). It follows that *himself* in (65a) and *him* in (65b) should not compete with each other, since neither of them can establish a dependency in syntax, while either of these forms should be able to yield a bound variable representation at the C-I interface. Hence, both sentences in (65) should be grammatical contrary to fact.

However, as discussed in Chapter 2 section 6.3, this problem could be avoided if we assume complex predicate formation in ECM constructions (cf. Reinhart and Reuland 1991). That is, the complex predicate formation of the verb in the embedded clause and the verb in the matrix clause makes the matrix subject and the ECM subject coarguments. As a result, the sentence does not yield an unintelligible semantic interpretation. Although this would account for the contrast between (66a) and (66b), the contrast between (67a) and (67b) cannot be explained because *him* and *himself* are in coordinate phrases. Since SELF cannot incorporate in this environment, these structures should not compete with each other.

(67) a. John<sub>1</sub> believed [[Mary and himself<sub>1</sub>] to be friends]  
 b. ??John<sub>1</sub> believed [[Mary and him<sub>1</sub>] to be friends]

Recall, however, that the SELF-morpheme has another strategy to prevent an arity violation: a reflexive with a SELF-morpheme can be translated into  $f(x)$  (cf. section 2.2). Therefore, one could argue that at the C-I interface (67b) violates the arity requirement of the matrix verb whereas (67a) does not. Nonetheless, there is strong evidence that this strategy is not on the right track. Consider the following sentences:<sup>16</sup>

- (68) a. Jan voelde [[ Marie en zichzelf] wegglijden]  
       *John felt Mary and SE-self slide-away*  
       b. ??Jan voelde [[ Marie en hemzelf] wegglijden]  
       *John felt Mary and himself slide-away*  
       c. ??Jan voelde [[ Marie en hem] wegglijden]  
       *John felt Mary and him slide-away*

Here, the contrast between (68a) and (68c) could be accounted for by translating *zichzelf* into  $f(x)$  and *hem* into  $x$  because by this translation there is no arity violation in the former whereas there is in the latter. However, this account fails to explain why (68b) is not equally acceptable as (68a).

I also presented context-based theories of a SELF-morpheme, which argue that there is a correlation between assertion of reflexivity, intensification, focus, etc., on the one hand, and the use of a SELF-morpheme, on the other. I agree with Veraart, and König and Siemund that pragmatic factors play a more important role in the distribution of anaphors than traditionally thought in the field of generative grammar. However, the context-based approach itself does not explain the purely syntactic properties of the SELF-morpheme. That is, the context-based theory does not explain syntactic differences between a morphologically simple reflexive and a complex reflexive. For instance, the antecedent of the Dutch complex reflexive *zichzelf* can be either a subject or an object whereas the antecedent of the simple reflexive *zich* has to be a subject that agrees with a predicate:

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<sup>16</sup> These sentences also show that movement approach of binding cannot be tenable. See section 6.3 in Chapter 2.

(69) Peter<sub>1</sub> laat Marie<sub>2</sub> voor zich<sub>1/\*2</sub> werken  
 Peter let Marie for self work  
 “Peter has Mary work for him.”

(70) dat Peter<sub>1</sub> Jan<sub>2</sub> zichzelf<sub>1/2</sub> getoond heeft (in de spiegel)  
 that Peter Jan self-self shown has (in the mirror)  
 “...that Peter has shown Jan to himself.”

In (69), the antecedent of *zich* is the matrix subject *Peter*, which agrees with the matrix verb, and the ECM subject *Marie* cannot be the antecedent. In (70), the antecedent of *zichzelf* can be either the subject *Peter* or the object *Jan*. It appears that just saying that *-zelf* intensifies/focuses *zich* or asserts reflexivity of the sentence is not enough to capture the subject-orientation of *zich*.

The context-based theory also cannot capture the fact that *zelf*, when used on its own, also has anaphoric properties:<sup>17</sup>

(71) dat Jan<sub>1</sub> Marie<sub>2</sub> gisteren zelf<sub>1/2</sub> ontmoette.  
 that Jan Marie yesterday self met  
 “...that Jan met Marie himself/herself yesterday.”

(72) dat Jan<sub>1</sub> gisteren zelf<sub>1/\*2</sub> Marie<sub>2</sub> ontmoette.  
 that Jan yesterday self Marie met  
 “...that Jan himself met Marie yesterday.”

(73) Hans<sub>1</sub> zei dat Jan<sub>2</sub> Marie niet zelf<sub>\*1/2</sub> ontmoette.  
 Hans said that Jan Marie not self met  
 “Hans said that Jan himself met Marie.”

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<sup>17</sup> Following Neeleman and Weerman (1999), I assume that an object of a predicate in Dutch can be base-generated higher than a VP-internal adjunct. Hence, the base structure of (71) is: [...[<sub>VP</sub> Marie [gisteren [zelf [ontmoette]]]]], and there is no movement of the complement *Marie*.

The sentences in (71) and (72) show that the antecedent of *zelf* must c-command it. In (72), *Marie* does not c-command *zelf* and cannot be its antecedent. The sentence in (73) shows the property of locality. In this sentence, *Hans*, which is located in the matrix clause, cannot be related to *zelf* whereas *Jan* in the embedded clause can bind it.

To sum up, it seems that context plays some role in the choice of whether a SELF-morpheme should be used or not. That is, a SELF-morpheme has a certain pragmatic effect, and this effect affects the distribution of reflexives. Nevertheless, the pragmatic effect is not the only property of a SELF-morpheme: it also has purely syntactic properties. In the next chapter, I will develop a proper characterization of the syntax of the Dutch SELF-morpheme, *zelf*, and explore the syntax of other type of reflexives as well.

# CHAPTER 4

## ECONOMY, SYNTACTIC ENCODING AND LOCALITY

### 1 Introduction

Chapter 3 explored the correlation between context and the use of the SELF-morpheme. I argued that context is not enough to explain the distribution of complex reflexives, and that the syntactic properties of such reflexives should be taken into account.

In this chapter, I will investigate how the syntactic properties of reflexives are encoded. The theory of syntactic dependencies I adopt in this dissertation is that developed in Neeleman and Van de Koot (2002a), which was outlined in Chapter 2. How this theory of syntactic dependencies accounts for the properties and the distribution of reflexives will be discussed here. I will also discuss how economy determines the choice between reflexives and pronouns, adopting the economy hierarchy proposed by Reuland (2001a and 2001b), which was also outlined in Chapter 2.

I will consider three languages in this chapter: Dutch (section 2), English (section 3) and Japanese (section 4). Dutch has four reflexive forms (not all of which actually function as reflexives): the morphologically simplex reflexive *zich*, the combination of *zich* and the Dutch self morpheme *zelf*, i.e., *zichzelf*, a combination of a pronoun and *zelf*, and a combination of a proper name and *zelf*. I will propose that both *zich* and *zelf* introduce a binding function and that *zich* and *zichzelf* establish a syntactic dependency with their antecedent through satisfaction of a

function.<sup>1</sup> In the case of [pronoun/proper name + *zelf*], the binding function introduced by *zelf* is internally satisfied, and any relation between [pronoun + *zelf*] and an antecedent is established outside syntax.

English reflexives also display the diagnostic properties of syntactically dependent elements, as I showed briefly in Chapter 2, and I propose that they introduce a binding function and establish binding relations in syntax. However, as is well known, in some contexts, English reflexives can be locally free (cf. Zribi-Hertz (1989) and Baker (1995)), and I argue that locally free English reflexives have to be pragmatically licensed.

Like Dutch, Japanese has (at least) four kinds of reflexives: the morphologically simplex reflexive *zibun*, the compound form of *zibun* and the Japanese SELF-morpheme *-zisin*, namely, *zibun-zisin*, a compound form of a pronoun and *-zisin* and a compound form of a proper name and *-zisin*. It has often been proposed that these reflexives have to be licensed at the syntactic level (cf. Katada (1991) and Aikawa (1993) among many others). However, unlike their Dutch counterparts, it seems that these reflexives lack the diagnostic properties associated with syntactically dependent elements and I argue that they do not establish a syntactic dependency. Instead, they can either be interpreted as a bound variable at the C-I interface or be assigned a referent at the pragmatic level.

## 2 Dutch

In Dutch, there are two types of reflexive morphemes: *zich* and *zelf*. Although *zelf* can be used on its own, this morpheme can be combined with other nominal morphemes yielding morphologically complex forms such as *Janzelf* (proper noun + *zelf*) and *hemzelf* (pronoun + *zelf*). Like *zelf*, *zich* can be used on its own and can also be compounded with the *zelf* morpheme yielding *zichzelf*. In this section, I will discuss the syntactic properties of *zich* and *zelf* and how these behave when they are compounded with other morphemes.

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<sup>1</sup> The proposal developed below that both *zich* and *zelf* introduce a binding function, although of a different type, is in the spirit of Hellan (1988), who proposes that the Norwegian SELF morpheme (*selv*) and the morphologically simplex reflexive (*seg*) both establish an anaphoric relation but are associated with different antecedent restrictions.

First, I will demonstrate in section 2.1.1 that the Dutch SELF-morpheme, *zelf*, can be used without being compounded with anything and that it establishes a syntactic dependency when used like this. Section 2.1.2 considers [proper noun + *zelf*] and [pronoun + *zelf*]. It is proposed that the morpheme *-zelf* in these reflexives introduces a binding function (cf. Chapter 2) but that this function is satisfied internally to the complex expression. In section 2.2.1, the syntactic properties of the simplex reflexive *zich* will be discussed, and in section 2.3, I will analyse the complex reflexive *zichzelf*. A key proposal I will make is that competition between syntax and other modules is cancelled in certain environments.

## 2.1 *Zelf*

### 2.1.1 *Zelf* as a Syntactically Dependent Element

In Chapter 3, I discussed the role of the SELF-morpheme. As demonstrated by Veraart (1996), König and Siemund (1999) and Bergeton (2004), this component morpheme of complex reflexives seems to induce some pragmatic effects such as intensification and assertion of reflexivity not found with simplex reflexives. This suggests that pragmatics could play an important role in the determination of the distribution of morphologically complex reflexives (i.e., reflexives with a SELF-morpheme). Although the strong correlation between the pragmatic effect and the distribution of complex reflexives is undeniable, pragmatic considerations are insufficient to explain the distribution of the SELF-morpheme. As briefly discussed at the end of Chapter 3, this morpheme appears to display properties that are typical of a syntactically dependent element. Koster (1987) claims that syntactic dependencies show a cluster of properties that include c-command and locality (see also Chapter 2), and *zelf*, shows these diagnostic properties.

Dutch *zelf* is different from its English counterpart in that it can be a free morpheme. This character of *zelf* allows us to establish that this morpheme establishes a dependency in syntax.

Consider the following examples:

(1) [Jan<sub>1</sub>'s moeder]<sub>2</sub> heeft zelf<sub>\*1/2</sub> de boodschappen gedaan.  
 John's mother has self the shopping done  
 "John's mother herself has done the shopping."

(2) dat Jan<sub>1</sub> gisteren zelf<sub>1/\*2</sub> Marie<sub>2</sub> ontmoette.  
 that Jan yesterday self Marie met  
 "...that Jan himself met Marie yesterday."

(3) dat Jan<sub>1</sub> Marie<sub>2</sub> gisteren zelf<sub>1/2</sub> ontmoette.  
 that Jan Marie yesterday self met  
 "...that Jan met Marie himself/herself yesterday."

The sentences in (1)-(3) show that *zelf* must be c-commanded by its antecedent. In (1), *Jan*, which does not c-command *zelf*, cannot be associated with *zelf* while the NP *Jan's moeder*, which does, can. In (3) *zelf* is c-commanded by *Marie*, whereas in (2) it is not, and only the sentence in (3) allows the association between *Marie* and *zelf*.

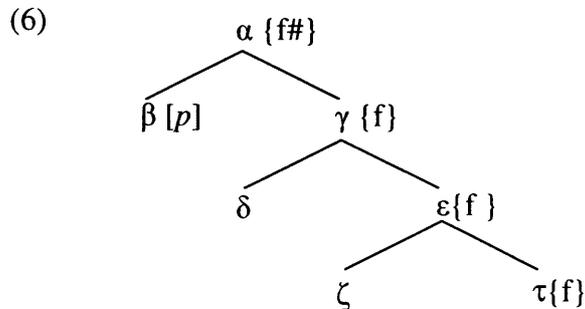
The following sentences show that *zelf* also has the property of locality:

(4) dat Hans<sub>1</sub> Jan<sub>2</sub> gisteren zelf<sub>1/2</sub> ontmoette.  
 that Hans John yesterday self Met  
 "...that Hans met Jan himself/herself yesterday."

(5) Hans<sub>1</sub> zei dat Jan<sub>2</sub> Marie niet zelf<sub>\*1/2</sub> ontmoette.  
 Hans said that Jan Marrie not self met  
 "Hans said that Jan himself met Marie."

In (4), *Hans* and *Jan* are located in the same clause as *zelf*, and *zelf* can be associated with either of them. In (5), on the other hand, *Hans* is in the matrix clause, and both *Jan* and *zelf* are in the embedded finite clause. Here, *zelf* can be associated with *Jan* but not with *Hans*. If it is true that *zelf* establishes a dependency in syntax, then how does it achieve this? I will assume, in line with the conclusions drawn in chapter 2,

that a dependent element carries a selectional requirement, or “function”, that mediates the dependency it enters into. Consider the following structure:



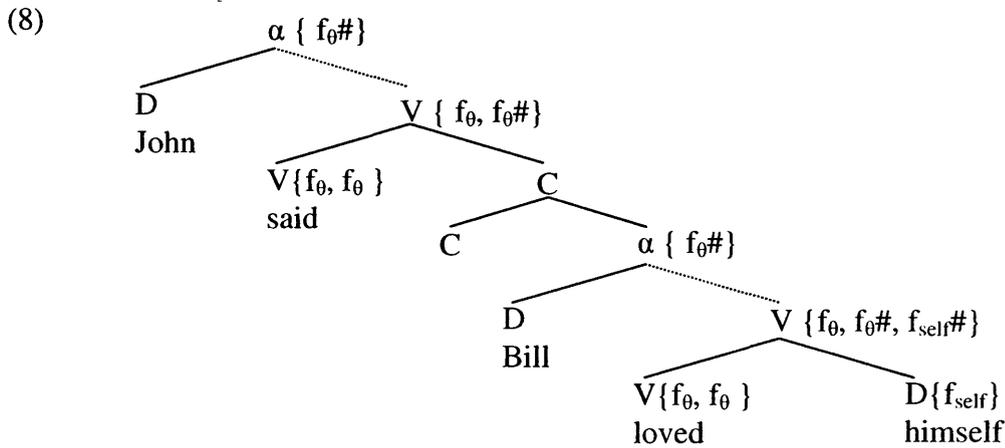
Here the dependent  $\tau$  introduces a function  $f$  that is looking for a property  $p$ . The function is copied up to the node  $\alpha$  that immediately dominates the node  $\beta$ . The node  $\beta$  contains the property  $p$ , which the function is looking for. The selectional requirement  $f$  is satisfied at the  $\alpha$  node by the node  $\beta$ , and the dependency between  $\tau$  and  $\beta$  is established.

Although this encoding of dependencies explains why they exhibit a certain cluster of properties, it is still to be explained why there is variation in locality depending on the type of dependent. For instance, the locality of theta role assignment is not identical to the locality of WH-movement. The variation of locality can be attributed to the fact that different types of dependents introduce functions looking for different properties. Then, what is the Dutch SELF-morpheme, *zelf*, looking for? As shown in (4) and (5), the locality of *zelf* seems to be that found with English reflexives, and it is safe to assume that *zelf* introduces  $f_{\text{self}}$ , the selectional requirement that looks for a theta function.

We briefly discussed how an English reflexive establishes a binding relation with its antecedent in Chapter 2, but let us review this mechanism here. Consider the sentence in (7) and its associated tree structure in (8).<sup>2</sup>

(7) John<sub>1</sub> said Bill<sub>2</sub> loved himself<sub>\*1/2</sub>.

<sup>2</sup> In (8) and other tree representations in this chapter, irrelevant functions are omitted. The satisfaction of a function is indicated by #.



Following Neeleman and Van de Koot (2002a), I assumed that an English reflexive introduces a reflexive function  $f_{self}$  that is satisfied by a theta function  $f_\theta$ , which is in turn satisfied by an argument. In (8), the reflexive introduces  $f_{self}$ , and this function is satisfied by a theta function in the verb *loved*, which is itself satisfied by *Bill*.  $f_{self}$  cannot be satisfied by the  $f_\theta$  that is satisfied by the reflexive because that would give rise to endless self-referring. Furthermore, *John* cannot be the antecedent of the reflexive because the  $f_\theta$  satisfied by *John* cannot satisfy  $f_{self}$ .

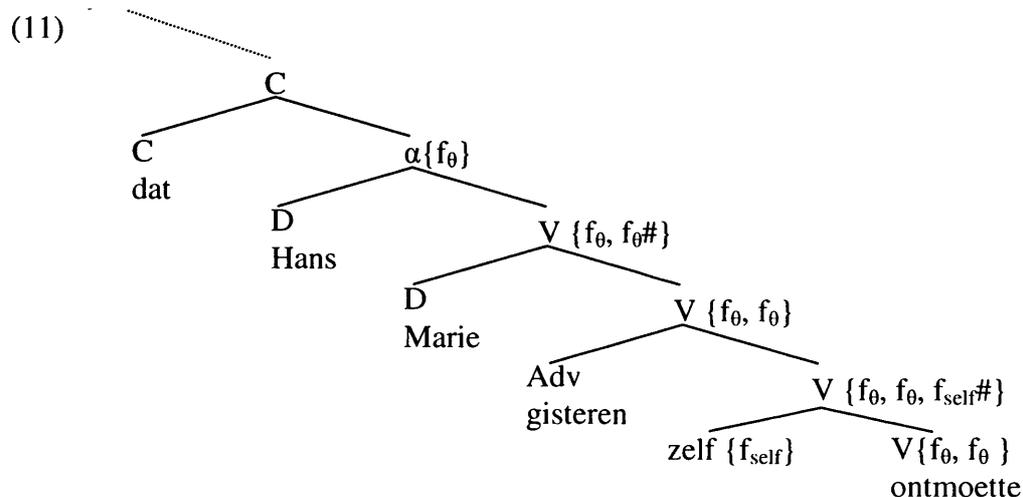
Now let us apply this analysis to *zelf*. Consider the sentences in (4) and (5), which are repeated here as (9) and (10), respectively.

- (9) dat Hans<sub>1</sub> Marie<sub>2</sub> gisteren zelf<sub>1/2</sub> ontmoette.  
 that Hans Marie yesterday self met  
 "...that Hans met Jan himself/herself yesterday."

- (10) Hans<sub>1</sub> zei dat Jan<sub>2</sub> Marie zelf<sub>\*1/2</sub> ontmoette.  
 Hans said that Jan Marie self met  
 "Hans said that Jan himself met Marie."

The tree representation of (9) is shown below:<sup>3, 4</sup>

<sup>3</sup> As before, I assume, following Neeleman and Weerman (1999), that adjuncts can be base generated between a verb and its internal argument.

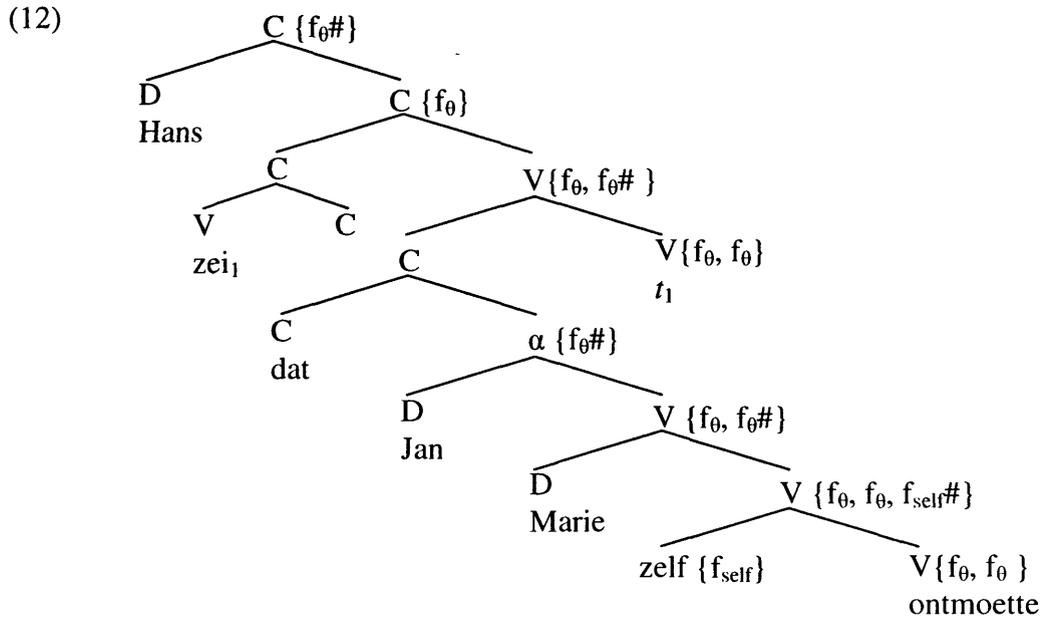


Here, *zelf* introduces  $f_{self}$ , and this function is satisfied in the first projection of  $V$  by either of the two theta functions introduced by *ontmoeten* ‘meet’. One of the theta functions is satisfied by the internal argument *Marie* and the other by the external argument *Hans*. In this fashion, *zelf* can be associated either with *Jan* or *Hans*, depending on which theta function satisfies it.

Now consider the structure of the sentence in (10), which is shown below:<sup>5</sup>

<sup>4</sup> It is not clear to me which category *zelf* is specified for. It might be the case that, as has often been suggested (see Helk 1971 and Reuland (2001a), that it is specified for N.

<sup>5</sup> Here and in what follows I assume that the external argument in Dutch main clauses may be base-generated in spec CP. However, the argument presented here goes through even if we assume that the external argument is base-generated in a lower position and subsequently raises to spec CP. This is because the relation between an A-trace and its antecedent is itself mediated by a theta function (see Neeleman and Van de Koot (2002a) for discussion).



In (12),  $f_{self}$  is satisfied by one of the theta functions introduced by the verb *ontmoeten* ‘meet’. These theta functions are satisfied by the arguments *Jan* and *Marie*. Therefore, it is possible for *zelf* to establish a dependency with either *Jan* or *Marie*. However,  $f_{self}$  cannot establish a relation with the matrix subject *Hans* because *Hans* is licensed by one of the theta functions introduced by the matrix verb *zeggen* ‘say’.  $f_{self}$  cannot be copied that far because it is satisfied at the first opportunity, in the projection of *ontmoette*.

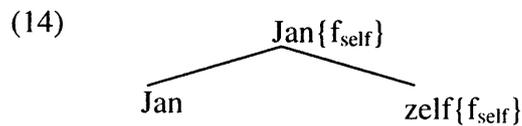
### 2.1.2 [Proper noun + *zelf*] and [pronoun + *zelf*]

As we have just seen, *zelf* can establish a dependency in syntax, all on its own. However, *zelf* can be combined with a noun phrase like *Jan* to form *Janzelf*. In (13) below, *Janzelf* must form a constituent, since – Dutch being a verb second language – *gaat* must be in second position.

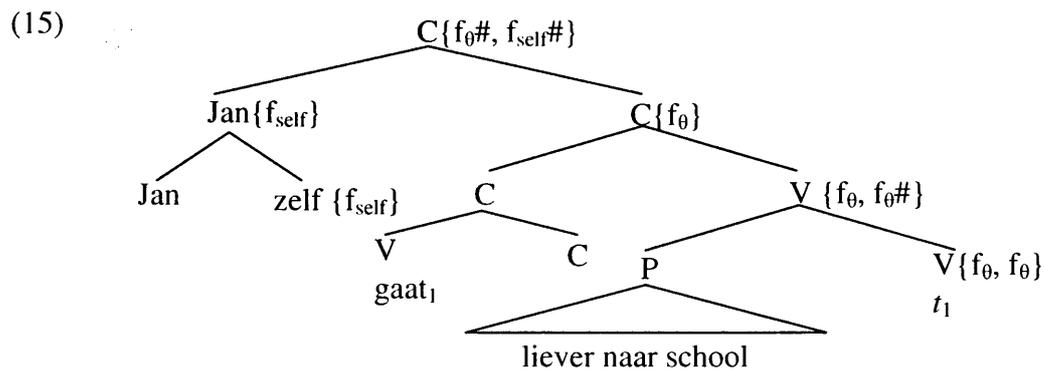
- (13) *Janzelf* gaat liever naar School  
 John-self go rather to School  
 “John himself prefers to go to school.”

Notice that *Janzelf* is not bound in the above sentence. Indeed, [proper noun + *zelf*] behaves like an R-expression.

I propose that this type of phrase is headed by a proper name as shown in (14). The motivation for this proposal is that [proper noun + *zelf*] can appear in an agreement position, i.e., a nominative position, and, as I will argue in detail in Chapter 5, in order for a phrase to appear in an agreement position it should contain fully specified  $\phi$ -features (cf. Shiraki 2004a and 2004b). If [proper noun + *zelf*] is headed by *zelf*, we should expect, contrary to fact, that [proper noun + *zelf*] cannot appear in a nominative position, because *zelf* is not fully specified for  $\phi$ -features.<sup>6</sup>



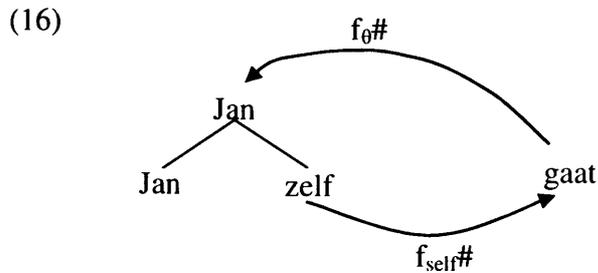
If the analysis of *zelf* in section 2.1.1 is on the right track, we should expect that [proper noun + *zelf*] also introduces  $f_{self}$ . If that is so, the tree representation of the sentence in (13) would be the one in (15), still assuming – as we did in chapter 2 – that  $f_{self}$  is satisfied by a theta-function.



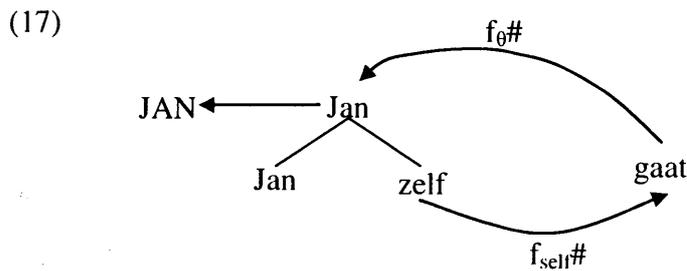
In (15),  $f_{self}$  introduced by *zelf*, is copied upward to the maximal projection of C. In this node,  $f_{self}$  is satisfied by the  $f_{\theta}$  that is ultimately satisfied by the head *Jan*. In

<sup>6</sup> The alternative structure for [proper noun + *zelf*], in which the structure is headed by *zelf*, would require additional assumptions about feature percolation that are probably best avoided.

other words, the *zelf* morpheme establishes the dependency with *Jan* via  $f_{self}$  and  $f_{\theta}$ . One might argue that this cause an endless self-referring, which is schematized in (16).

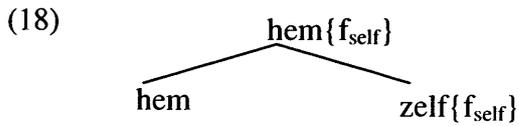


However, the proper name *Jan* is a referential expression and can refer to the entity JAN without relying on any other syntactic constituent:



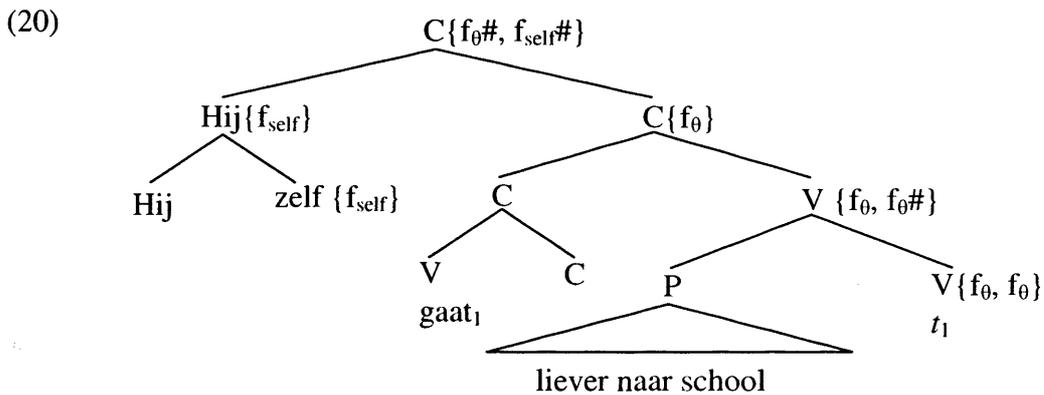
Hence, endless self-referring is not an issue.

In Dutch there is another type of reflexive that uses the *zelf* morpheme, namely, [pronoun + *zelf*]. An example is *hemzelf* ‘himself’. The analysis of this reflexive form can parallel that of [proper noun + *zelf*]. As with [proper noun + *zelf*], it would be simplest to assume that the morphological structure of [pronoun + *zelf*] is headed by a pronoun, because [pronoun + *zelf*] can appear in an agreement position, i.e., nominative position (see Chapter 5). Thus, *hemzelf* ‘him-self’ has the following structure:



Now consider the sentence in (19). If *zelf* introduces  $f_{self}$ , the tree representation would be the one shown in (20).

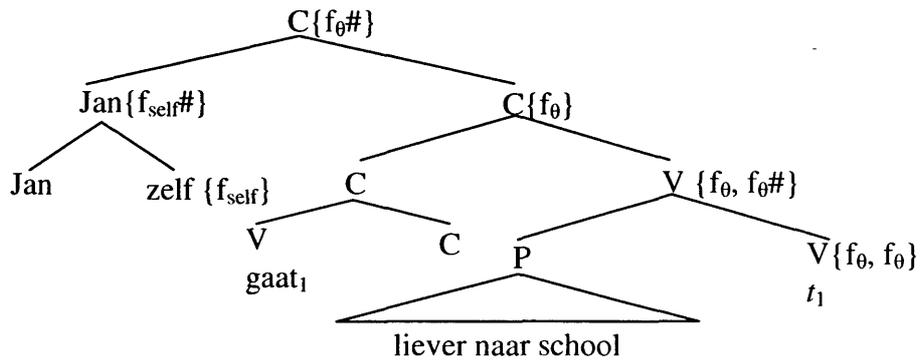
- (19) Hijzelf gaat liever naar school.  
 he-self goes rather to school  
 “He himself prefers to go to school.”



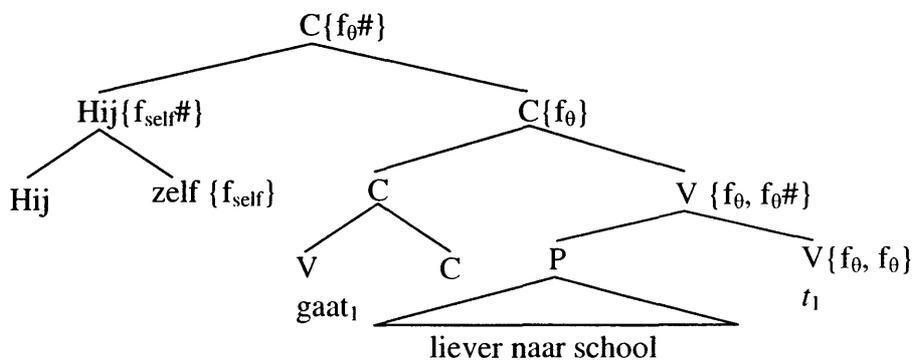
The analysis here parallels that in (15). The function  $f_{self}$  introduced by *zelf* is copied up to the maximal projection of C, and is satisfied there by the theta function that is ultimately satisfied by *hij* ‘he’. As is the case with [proper noun + *zelf*], the problem of endless self-referring does not arise, since a pronoun can pick out a referent in discourse.

A potential alternative to the structure in (15) and (20) is shown in (21) and (22). Suppose that  $f_{self}$  can be satisfied by a theta function,  $f_θ$ , because that function is ultimately associated with an argument. Then we might hypothesize that  $f_{self}$  can also be directly satisfied by an argument without the intervention of  $f_θ$ . If so, the selectional requirement of *zelf* would be satisfied by the expression to which it attaches in (21) and (22), namely *Jan* and *hij*, respectively:

(21)



(22)

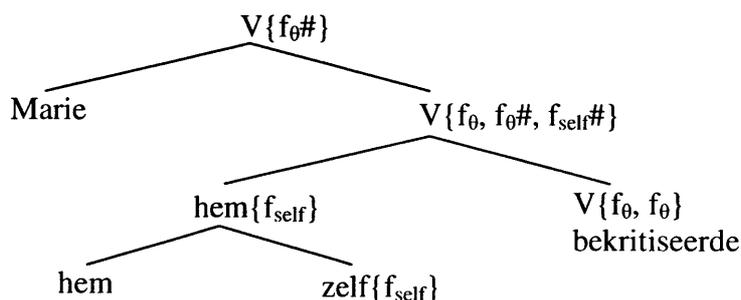


This alternative proposal finds support in the following example, where *zelf* must be interpreted as anaphorically related to *hem*:

- (23) Jan<sub>1</sub> zei dat Marie hemzelf<sub>1</sub> bekritiseerde (en niet John said that Marie him-self criticised and not iemand anders).  
 someone different  
 "John<sub>1</sub> said that Marie criticised HIM<sub>1</sub> (and not someone else)."

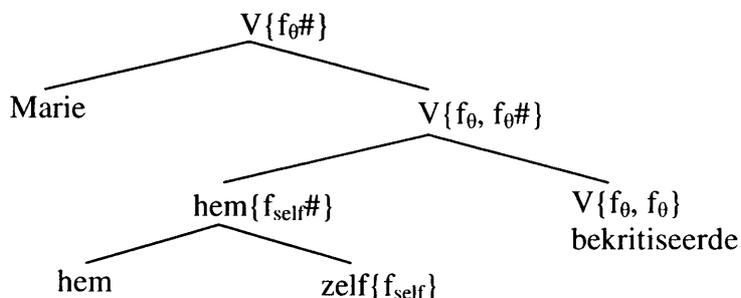
As shown in (24) below, if  $f_{self}$  is always satisfied by  $f_{\theta}$ , then *zelf* should be able to establish a binding relation with the external argument, *Marie*, contrary to fact.

(24)



On the other hand, if  $f_{self}$  can be also satisfied by an argument, the same problem does not arise. Consider the alternative structure:

(25)



Here, as soon as  $f_{self}$  is copied to the node that dominates *zelf*, it is satisfied by *hem*. It is impossible for  $f_{self}$  to be copied beyond the maximal projection of *hem*, because satisfaction of a function is an automatic operation. That is, a function is always satisfied at the earliest opportunity.

### 2.1.3 Summary

In this section, I argued that the Dutch morpheme *zelf* establishes a syntactic dependency through introduction of the selectional requirement  $f_{self}$ . In section 2.1.1 I discussed the case where *zelf* is used on its own, while section 2.1.2 focussed on cases where *zelf* combines with a proper noun or a pronoun. In the latter cases the selectional requirement of *zelf* is satisfied by the theta-role assigned to the complex expression. There are still other expressions containing *zelf*: it can also combine with

the simplex reflexive *zich*, forming *zichzelf*. I will postpone the discussion of this form until section 2.3.

## 2.2 *Zich*

### 2.2.1 *Zich* as a Syntactically Dependent Element

It has often been said that *zich* has properties of both a pronoun and an anaphor. In some environments, *zich* and the morphologically complex reflexive *zichzelf* are seemingly in complementary distribution, and *zich* and a pronoun are not:

- (26) Peter laat mij voor hem/zich/?\*zichzelf werken  
Peter let me for him/self/selfself work  
“Peter has me work for him.” (Everaert 1986, 2)

- (27) Hans zag de hond naast ?hem/zich/?\*zichzelf  
Hans saw the dog next to him/self/selfself  
“Hans saw the dog next to him.” (Everaert 1986, 2)

In these data, *zich* looks like a pronoun. On the other hand, in other environments, the antecedent of *zich* must appear within its governing category (cf. Chomsky 1981), suggesting that *zich* sometimes behaves like an anaphor (cf. Everaert 1986 and 1991).

- (28) Jan wast zich.  
John washed self  
“John washed himself.”

Indeed, in these environments *zich* must have a local c-commanding antecedent, as one would expect if the relevant relation is syntactically encoded:

- (29) \*Jan's<sub>1</sub> moeder waste zich<sub>1</sub>  
 John's mother washed self  
 "John's mother washed him"
- (30) \*Mieke<sub>1</sub> zag dat ik zich<sub>1</sub> schilderde.  
 Mieke saw that I self painted  
 "Mieke<sub>1</sub> saw that I painted her<sub>1</sub>."
- (31) \*Het was iets dat onnodig was voor zich<sub>1</sub>,  
 It was something that unnecessary was for self  
 alhoewel het misschien van belang was voor Jan<sub>2</sub>.  
 although it perhaps of importance was for Jan  
 "It was something that was unnecessary for him<sub>1</sub>, although it was perhaps  
 important for John<sub>2</sub>".

The sentence in (29) is ungrammatical because the antecedent *Jan* does not c-command *zich*. In (30), the antecedent of *zich* is located in the matrix subject position across the finite clause boundary, and the sentence is ungrammatical, indicating that *zich* exhibits locality. The sentence in (31) is ungrammatical because the antecedent of *zich* is not within the sentence. If *zich* were a pronoun, it should be possible for pragmatics to assign it a referent, and we would expect (31) to be grammatical. These data therefore confirm that *zich* enters into a syntactic dependency. In line with this, let us assume that *zich* introduces some kind of anaphoric function and that this function is satisfied by an appropriate property. A potential problem for this conclusion is the lack of complementary distribution between *zich* and a pronoun in some environments, as shown in (26) and (27). If *zich* establishes a dependency with its antecedent in syntax, then economy should prefer *zich* over a pronoun (cf. Chapter 2). The discussion of this issue is deferred until section 2.2.3.

Although *zich* seems to introduce a function to establish a syntactic dependency with its antecedent, this function cannot be identical to that of an English reflexive ( $f_{\text{self}}$ ). As the sentences in (32) and (33) illustrate, *zich* is a subject-

oriented anaphor, as is often the case for morphologically simplex reflexives. In fact, it is oriented to *nominative* subjects only. In (32), *Bill* is an ECM subject bearing accusative case and cannot bind *zich* whereas the nominative subject *Jan* can. The sentence in (33) shows the same point. It is widely considered that the person feature of *zich* is specified for 3<sup>rd</sup> person. Therefore, it can have neither a first-person nor a second-person antecedent. In (33), the person feature of the matrix subject is specified for a 1<sup>st</sup> person, and the matrix subject cannot be the antecedent of *zich*. Then, the only potentially possible antecedent is the ECM accusative subject. However, the degraded status of the example indicates that the ECM subject cannot be the antecedent of *zich*.

(32) Jan<sub>1</sub> laat Bill<sub>2</sub> voor zich<sub>1/??2</sub> werken  
 John made Bill for self Worked  
 “John made Bill worked for himself<sub>1/??2</sub>.”

(33) ??Ik liet Bill wat beter voor zich zorgen  
 I made Bill a-bit better for self care  
 “I made Bill take care of himself a bit better.”

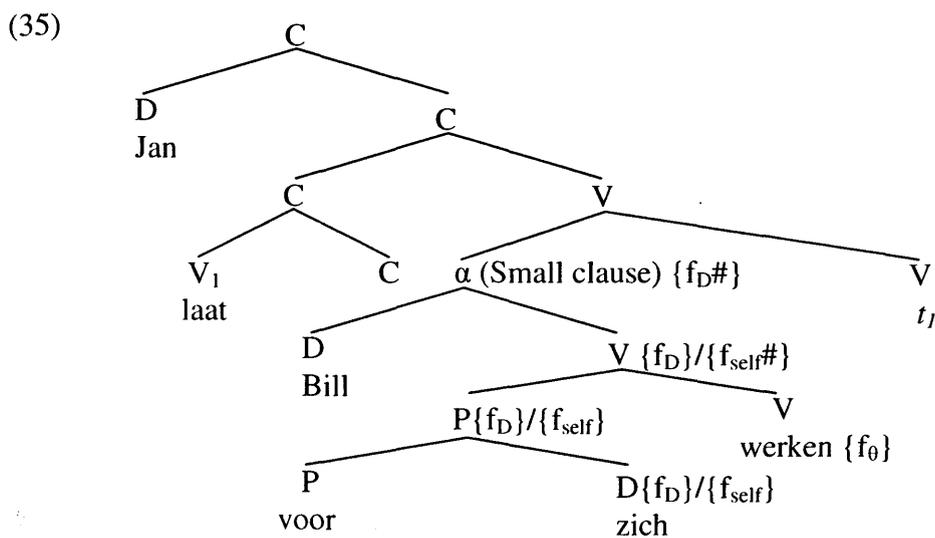
We have already seen that the binding function  $f_{self}$  can be satisfied by a thematic function assigned to an internal argument, so that it is possible for an object argument to be the antecedent of a reflexive. The relevant example is repeated in (34).

(34) John<sub>1</sub> showed Bill<sub>2</sub> to himself<sub>1/2</sub> (in the mirror).

The nominative subject orientation of *zich* therefore suggests that this anaphor does not carry  $f_{self}$ , but a selectional requirement associated with agreement, as Reinhart and Reuland (1991) suggest. Reinhart and Reuland propose that a morphologically simplex anaphor, i.e. an SE-anaphor, undergoes head movement and adjoins to the functional head I at LF. In this position the morphologically simplex reflexive is bound by its antecedent, which is the nominative subject in the specifier of I. In the

approach taken in this dissertation, it is a function that establishes the relevant dependency, not movement. Hence, I propose that *zich* introduces a function that is satisfied by agreement.

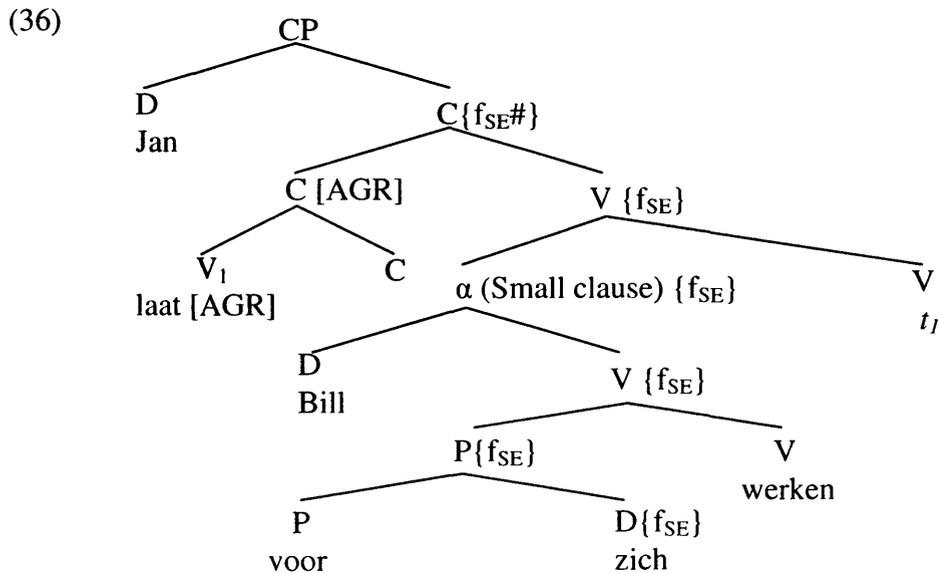
However, before proceeding to the analysis of sentences along the lines of this proposal, let us first rule out some potential alternatives. Suppose *zich* introduces a function that is satisfied by a DP or some referential element. Consider the sentence in (32) whose tree is shown in (35).



Let us first consider the case in which *zich* would introduce a binding function,  $f_D$ , which would be satisfied by a D. In the structure above, the first syntactic element that can satisfy  $f_D$  is D *Bill*. Because a function must be satisfied at the earliest opportunity, the binding function in the structure cannot be copied up further, and *zich* cannot establish a dependency with *Jan*. This is the wrong result. Next let us examine the case in which *zich* would introduce  $f_{self}$ , which is satisfied by a theta function,  $f_\theta$ . This is also an incorrect analysis because the theta function in the verb *werken* is not satisfied by *Jan*, so that *zich* and *Jan* cannot establish a dependency. Hence, we can conclude that a theta function cannot be the property that a function introduced by *zich* is looking for.

Now I would like to go back to my proposal that a binding function introduced by *zich* is satisfied by agreement. I will henceforth refer to this function

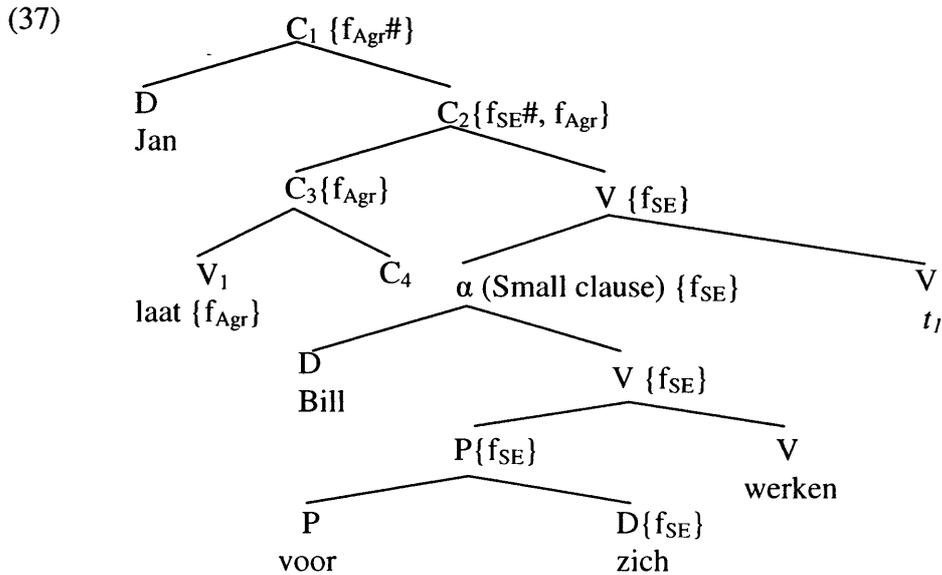
as  $f_{SE}$ . Consider how *zich* in (32) establishes a dependency with its antecedent. The tree structure of the sentence is shown below:



In (36),  $f_{SE}$  is satisfied by the verb *laat*, which contains agreement, AGR.<sup>7,8</sup> However, there are reasons for suspecting that AGR itself is not the antecedent of the anaphor. An agreeing verb is a dependent element: it is invariably c-commanded by the local antecedent with which it agrees. We should therefore attribute to *laat* in (32) a selectional requirement  $f_{Agr}$ , as shown in the alternative structure in (37) below. (The assumption that an agreeing predicate introduces an agreement function will receive independent motivation in chapter 5, where we will be concerned with the nonexistence of nominative anaphors.)

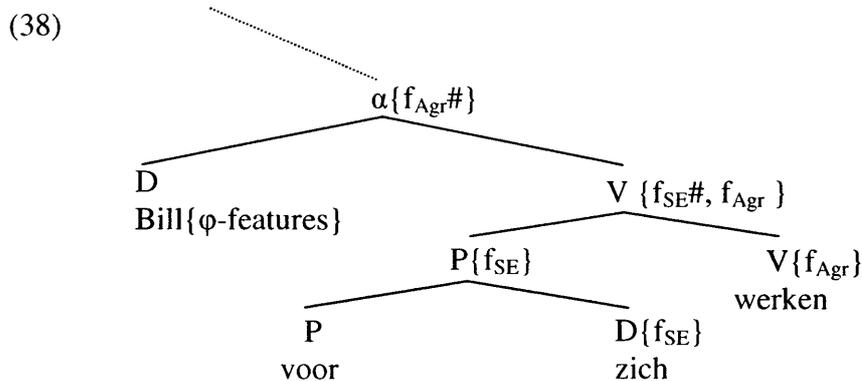
<sup>7</sup> It is not important for the argument presented here whether AGR resides in INFL, V or a trace of these, as long as AGR itself enters into a relation with the agreeing subject, as discussed in the main text.

<sup>8</sup> At first sight, Accessibility appears to be violated in (36). However, Neeleman and Van de Koot (2002a) argue that adjunction structures involve storage of the adjoined node in the node to which it adjoins. This implies that AGR is present in C in this structure, so that  $f_{SE}$  can be satisfied by it.



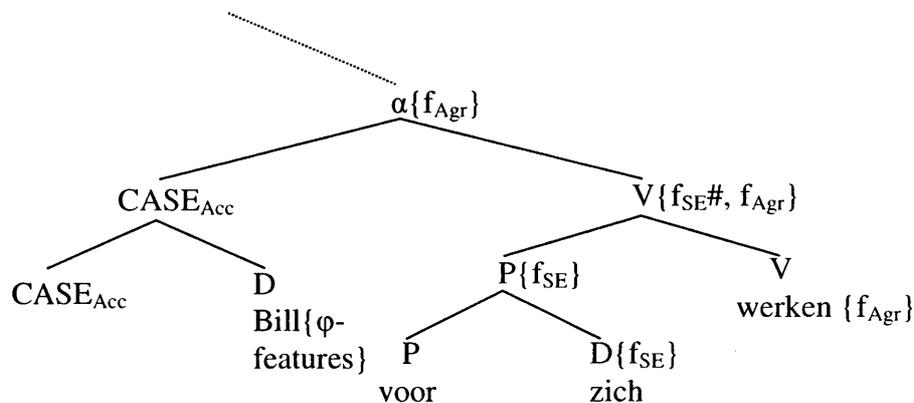
Satisfaction of  $f_{SE}$  is thus a two-step process, much like the indirect binding relation we have already seen with  $f_{self}$ : *zich* introduces  $f_{SE}$ , which is copied up and satisfied in  $C_2$  by  $f_{Agr}$ .  $f_{Agr}$  itself is copied to the maximal projection of the complementizer and is satisfied there by *Jan*.

Note that the ECM subject *Bill* cannot be the antecedent of *zich* because *Bill* is not associated with an agreement function. As a result, it is not possible for *zich* to establish a dependency with *Bill*. One might argue that the embedded verb *werken* introduces an instance of  $f_{Agr}$  and that this function is satisfied by the external argument *Bill*. If so, the function introduced by *zich* would be satisfied by this agreement function. If this function were then in turn satisfied by *Bill*, as shown in (38), *zich* would end up bound by *Bill*, contrary to fact.



However, I will assume, following Neeleman and Weerman (1999), that a case shell is projected on top of every accusative argument (cf. Lamontagne and Travis 1987, Bittner and Hale 1996). As shown in (39), the presence of a case shell on *Bill* means that an agreement function cannot be satisfied by this argument without violating Accessibility. Given that verbal agreement is clause-bound, we are led to the conclusion that *werken* does not introduce an agreement function. (The assumption I rely on here, namely that non-nominative DPs have a case shell, will receive support in chapter 5, where we will be concerned with the nonexistence of nominative anaphors.)<sup>9</sup>

(39)



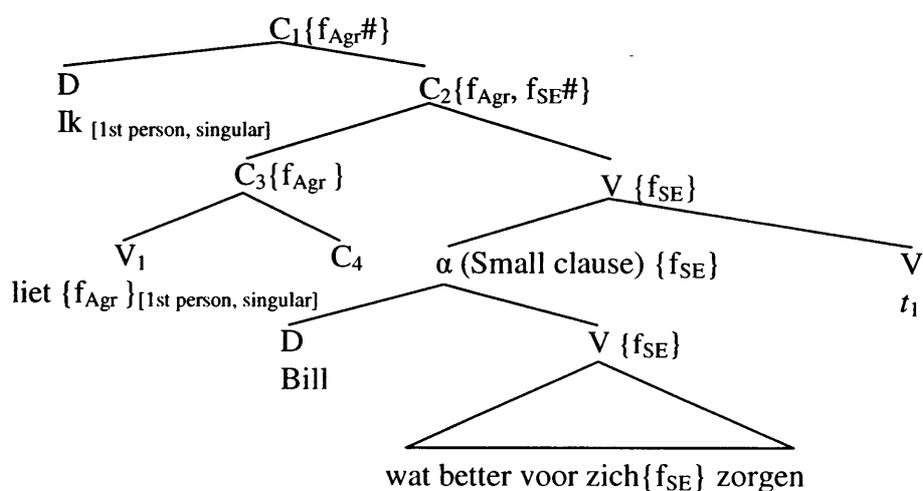
Let us now consider why the sentence in (33), repeated here as (40), is unacceptable.

(40) ?? Ik liet Bill wat beter voor zich zorgen  
 I made Bill a-bit better for self care  
 "I made Bill take care of himself a bit better."

The tree representation is shown below:

<sup>9</sup> Recall that I proposed that  $f_{self}$  can be satisfied by an argument as well as by  $f_{\theta}$ . By analogy, one might suggest that  $f_{SE}$  should also be satisfiable by an argument. If this were correct,  $f_{SE}$  should be satisfied in  $\alpha$  by the argument *Bill*. However, the logic behind the hypothesis that  $f_{self}$  can be satisfied by an argument is that  $f_{\theta}$  is ultimately satisfied by an argument. If we extend this logic to  $f_{SE}$ , then we expect that this function can be satisfied by appropriate  $\phi$ -features (since it can be satisfied by a function that looks for such features). But, as explained in the main text, the  $\phi$ -features contained in arguments that carry a case shell will remain inaccessible to  $f_{SE}$ .

(41)



Here,  $f_{Agr}$  introduced by the verb is copied to the node  $C_1$  where this function is satisfied by  $D$  *ik*, while  $f_{SE}$  introduced by the reflexive *zich* is copied up to the  $C_2$  where this function is satisfied by  $f_{Agr}$  residing in node  $C_3$ . However, the sentence is not acceptable. This is because the person feature of DP *ik* is specified as 1<sup>st</sup> person (and hence the  $f_{Agr}$  is specified for 1<sup>st</sup> person), while the person feature of the reflexive *zich* is specified as 3<sup>rd</sup> person. This feature discrepancy is the cause of the unacceptability of the sentence.

Now let us consider the following sentences:

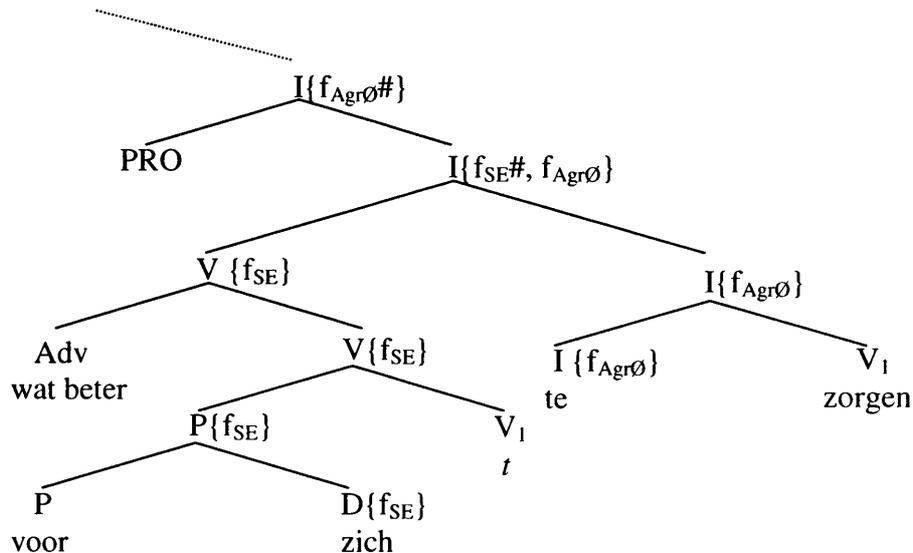
(42) Jan<sub>1</sub> vroeg Piet<sub>2</sub> om wat beter voor zich\*<sub>1/??2</sub> te zorgen  
 John asked Peter for a-bit better for zelf to care  
 “John asked Peter to take care of himself a bit.”

(43) Jan<sub>1</sub> beloofde Piet<sub>2</sub> om wat voor zich??<sub>1/\*2</sub> te zorgen  
 John promised Peter a-bit for zelf to care  
 “John promised Peter to take care of himself a bit.”

The examples in (42) and (43) are control structures. In neither sentence *zich* can be anaphorically linked to an argument in the matrix clause, whether it is the controller or not. The head whose specifier is occupied by PRO, i.e., I, introduces an agreement function and establishes a dependency relation with PRO. I assume that this function

looks for an argument that completely lacks  $\phi$ -features, and will refer to this agreement function as  $f_{Agr[\emptyset]}$ .  $f_{SE}$  should be satisfied by this function, so that a PRO-oriented reading of *zich* should give rise to a fully grammatical sentence, as shown in (44), but it does not. Why should this be so?

(44)



The reason for this is presumably nothing to do with syntax. As I discussed in Chapter 3, the distribution of reflexives is not solely determined by syntax. Semantics/pragmatics and phonology also play a role. Now, as shown by (45), the embedded predicate of (42) and (43) requires asserted reflexivity in an out-of-blue-context:

- (45) ??Piet zorgt goed voor zich.  
 Peter looked well after self.  
 “Peter looked after himself well.”

We are therefore led to the conclusion that the degraded status of (42) and (43) on the PRO-oriented reading is due to pragmatic factors.

That this is indeed the correct perspective on these data is corroborated by the facts in (46) and (47), where the embedded predicate induces presupposed reflexivity and *zich* is perfect on the PRO-oriented reading:

(46) Jan<sub>1</sub> vroeg Piet<sub>2</sub> om zich\*<sub>1/2</sub> niet dronken te drinken  
 John asked Peter for self not drunk to drink  
 “John asked Peter not to drink himself drunk.”

(47) Jan<sub>1</sub> beloofde Piet<sub>2</sub> om zich<sub>1/\*2</sub> niet dronken te drinken  
 John promised Peter for self not drunk to drink  
 “John promised Peter not to drink himself drunk.”

The alternative reading of (42), according to which *zich* refers to *Jan*, is completely ungrammatical. The reason for this is that there is simply no way to establish a syntactic relation between *zich* and *Jan*. The example in (43) receives a completely parallel account, except that *beloven* ‘promise’ is a subject control verb, so that the reading on which *zich* is linked to *Jan* is marginally acceptable, whereas the alternative reading is completely out.

### 2.2.2 Dutch Pronouns

Unlike *zich*, Dutch pronouns (for instance, *hem* ‘him’, *haar* ‘her’, *het* ‘it’, etc) do not show the properties diagnostic of an element that enters into a syntactic dependency. The sentence in (48) shows that the antecedent of a pronoun does not need to c-command it.

(48) Jan’s<sub>1</sub> moeder waste hem<sub>1</sub>  
 John’s mother washed him  
 “John’s mother washed him”

The example in (49) shows that a pronoun can have an antecedent across the finite clause boundary. By contrast, syntactic binding of anaphors across a CP is always ruled out:

- (49) Mieke<sub>1</sub> zag dat ik haar<sub>1</sub> schilderde.  
Mieke saw that I her painted  
“Mieke<sub>1</sub> saw that I painted her<sub>1</sub>.”

Indeed, the antecedent of a pronoun can be located outside of the sentence that contains the pronoun:<sup>10</sup>

- (50) Het was iets dat onnodig was voor hem<sub>1</sub>,  
It was something that unnecessary was for him  
alhoewel het misschien van belang was voor Jan<sub>2</sub>.  
although it perhaps of importance was for Jan  
“It was something that was unnecessary for him<sub>1</sub>, although it was perhaps  
important for John<sub>2</sub>”.

From these data, I conclude that Dutch pronouns do not establish a syntactic dependency. Of course, this does not prevent them from entering into a relation of variable binding at the C-I interface:

- (51) Iedereen<sub>1</sub> zag dat Mieke hem<sub>1</sub> schilderde.  
everyone saw that Mieke him painted  
“Everyone<sub>1</sub> saw that Mieke painted him<sub>1</sub>.”

In (51), the quantified phrase *iedereen* binds the pronoun *hem*. This shows that a Dutch pronoun can be a bound pronoun.

To sum up, Dutch pronouns can either be assigned their referent in pragmatics or be translated into bound variables at the C-I interface, but they lack the ability to establish a syntactic dependency. This suggests that they do not introduce a function.

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<sup>10</sup> Compare the sentence in (50) with the one in (31).

### 2.2.3 Local Evaluation of Economy (LEE)

Anaphoric relations can be established at three levels: in syntax, at the C-I interface, or in an extra-linguistic module, namely, pragmatics. In Chapter 2, following Reuland (2001a and 2001b), I argued that these three components compete with each other in establishing anaphoric relations. Establishing a binding relation in syntax is the most economical option, variable binding at the C-I interface less economical, and establishing an anaphoric dependency in pragmatics is the least economical:

(52) syntax < C-I interface < pragmatics

This economy approach to the distribution of nominal expressions poses a problem for the Dutch simplex reflexive *zich*. As we observed in section 2.2.1, the distribution of *zich* sometimes indicates that it is a pronoun-like element and sometimes that it is an anaphor-like element. Consider the sentences in (53)-(55).

(53) Peter<sub>1</sub> laat mij voor zich<sub>1</sub> /hem<sub>1</sub> werken  
 Peter let me for self/ him work  
 “Peter has me work for him.” (Everaert 1986, 2)

(54) Jan<sub>1</sub> schaamt zich<sub>1</sub> / \*hem<sub>1</sub>  
 John ashamed-of self/him  
 “John is ashamed of himself”

(55) Oscar<sub>1</sub> voelde [zich<sub>1</sub> / \*hem<sub>1</sub> wegglijden]  
 Oscar felt self slide-away  
 “Oscar felt himself slide away” (Reuland 2001a, 450)

The sentence in (53) is an instance of so-called medium-distance binding. The sentence in (54) is an instance of binding between co-argument elements, and the sentence in (55) is an instance of binding between a matrix subject and an ECM subject. While *zich* does not show complementary distribution with the pronoun *hem* in (53), in (54) and (55) it does. If *zich* introduces a function that establishes a

binding dependency, as I argued in section 2.2.1, and if pronouns in Dutch never establish such a dependency in syntax, as discussed in section 2.2.2, then the lack of complementary distribution in (53) is unexpected. We should expect that *zich* always wins the competition against a pronoun.

There are at least two ways in which this problem could be addressed. The first option is to propose that in some cases *zich* is syntactically unbound. Instead, it enters into a relation of variable binding at the C-I interface (like a pronoun). Alternatively, one could argue that *zich* always establishes a binding relation in syntax, but that sometimes competition is cancelled.

Consider the first potential solution.<sup>11</sup> If we allow *zich* to remain syntactically unbound, then there should be no competition between *zich* and a pronoun. The main objection to this approach is that *zich* generally shows the properties of a syntactic dependent: it requires a c-commanding, local antecedent. Indeed, even when it is in a position where it does not show complementary distribution with a pronoun, it still displays the properties of a syntactically dependent element. Compare the sentences below with the sentence in (53).

(56) Peter<sub>1</sub>'s moeder laat mij voor zich<sub>\*1/\*2</sub> werken  
 Peter's mother let me for self work  
 "Peter<sub>1</sub>'s mother has me work for him<sub>1</sub>."

(57) \*Jan<sub>1</sub> zag dat Peter mij voor zich<sub>1</sub> laat werken  
 John saw that Peter me For self let work  
 "John<sub>1</sub> saw that Peter made me work for him<sub>1</sub>."

In (56) *Peter* cannot be the antecedent of *zich*, showing that *zich* cannot have an antecedent that does not c-command it. Admittedly, variable binding is also blocked here, but why is it impossible for *zich* to be interpreted as a free variable, an option that *is* available to a pronoun in the same environment. That the anaphor cannot remain unbound is confirmed by the fact that it also cannot refer to something

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<sup>11</sup> This type of approach appears to be the line taken by Reuland (2001a and 2001b).

outside of the sentence. The sentence in (57) shows that the locality of *zich* is typical of syntactic binding. Here, *zich* cannot be bound across a CP. If *zich* does not establish an anaphoric dependency in syntax, we should not expect these properties: Dutch pronouns are able to have an antecedent that does not c-command them, that is not in the same sentence, and that is located across a finite clause boundary.

Considering the fact that *zich* always displays the properties of a syntactically dependent element, I believe that it is better to choose the second solution, according to which *zich* always establishes a binding relation in syntax, but that competition can be cancelled under certain conditions. More specifically, I would like to explore the possibility that there is a condition that restricts the evaluation of global economy to a relatively small domain. I will refer to this as the Local Evaluation of Economy or LEE:

(58) **Local Evaluation of Economy (LEE)**

- (a) If a sentence with an anaphor or pronoun *X* is targeting a reading that relates *X* to a DP  $\theta$ -marked by the nearest accessible head, activate economy. If this is not the case, do not activate economy.
- (b) An accessible head for *X* is a head that:
  - (i) c-commands *X*
  - (ii) could potentially theta mark the DP (i.e., contains more than one theta role)

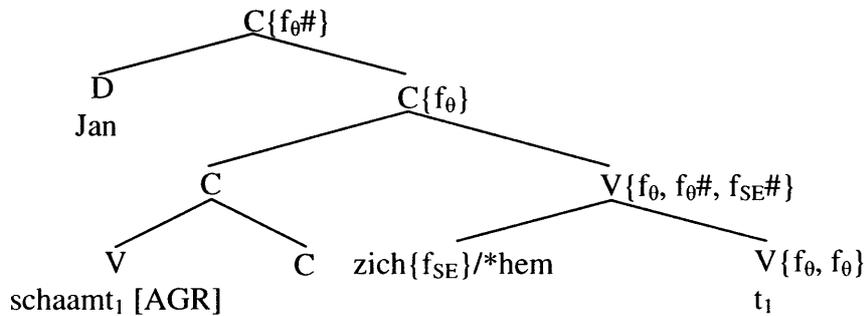
What (58) states is that economy will choose between competing forms only if the nearest c-commanding head for an anaphor or pronoun that contains ‘spare’ theta functions assigns a  $\theta$ -role to the intended antecedent of the anaphor or pronoun.<sup>12</sup> (If the nearest c-commanding head has a single theta function that is satisfied by the anaphor itself, then this head is not counted as a head that could potentially theta-mark the antecedent and the next head up is considered instead.)

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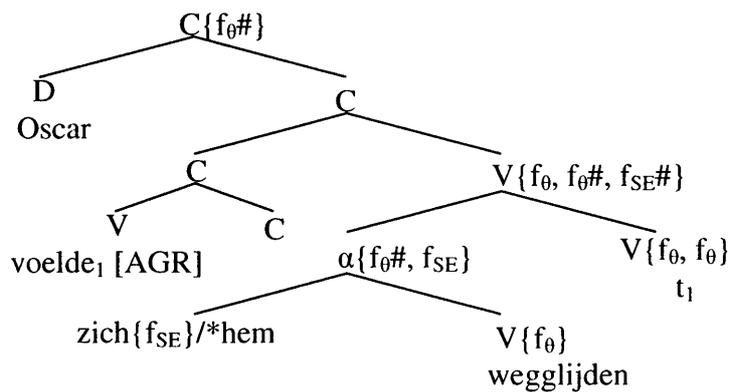
<sup>12</sup> Note that coargumenthood is irrelevant in this condition. By contrast, in Reinhart and Reuland’s (1993) reflexivity approach, lack of complementary distribution between reflexives and pronouns is

Consider how LEE deals with the sentences in (53)-(55). First, let us examine (54) and (55), in which competition is activated. The structures of these sentences are shown in (59) and (60), respectively.

(59)



(60)



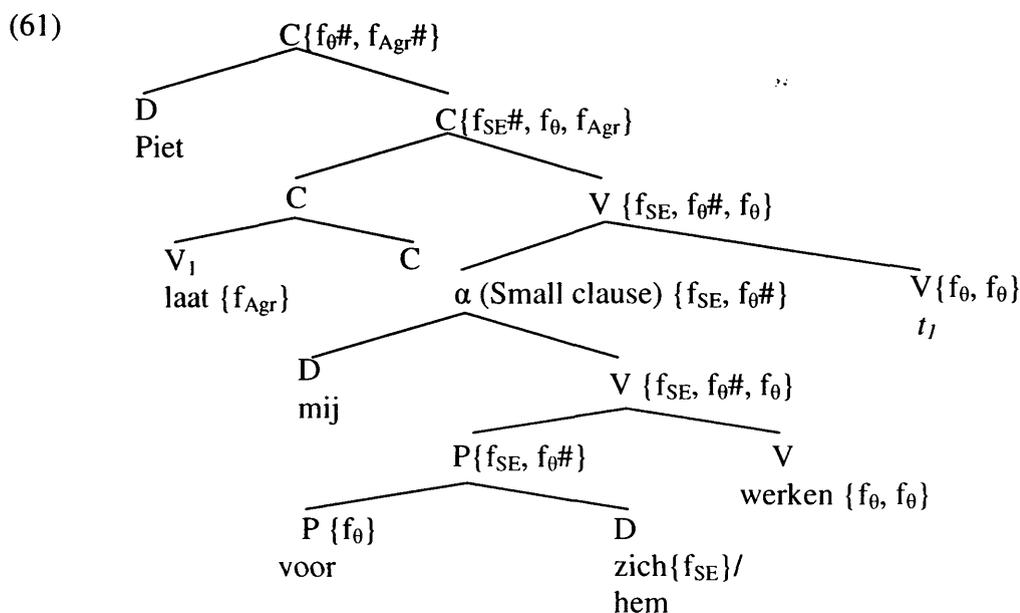
In (59), the nearest c-commanding head of *zich* that contains theta functions is *schaamt*, and one of the theta functions is satisfied by the antecedent of *zich*. Hence, economy is activated, and *hem* is ruled out. The same analysis applies to the ECM construction in (60). In this sentence, the nearest c-commanding head of *zich/hem* that contains a theta function is the verb *wegglijden*. However, the theta function that this verb introduces is satisfied by *zich/hem* itself, and the verb is therefore not counted as a head that potentially theta marks the antecedent. This makes *voelde* ‘felt’ the nearest c-commanding head that potentially theta marks the antecedent.

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attributed to the non-coargument relation between a reflexive and its antecedent. Furthermore, it is assumed that an ECM subject position and a matrix subject are coarguments.

One of the theta functions of this verb is satisfied by the antecedent of the reflexive. Therefore, economy is activated and the pronoun is excluded.

Now, let us consider a case in which competition is not activated. The structure of the sentence in (53) is shown in (61).



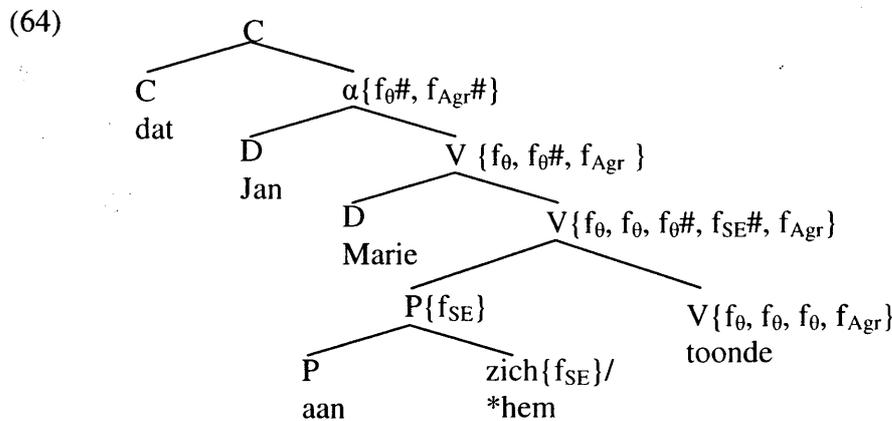
Here, *zich/hem*'s nearest c-commanding head that contains theta functions is the preposition *voor*. However, the theta function that this head introduces is satisfied by *zich/hem* itself. Hence, *voor* cannot be counted as the nearest c-commanding head that could potentially  $\theta$ -mark the antecedent. The next nearest c-commanding head that contains theta functions is *werken* 'work' and one of its functions could potentially be assigned to an antecedent of *zich/hem*. However, the theta function that this head introduces is satisfied by *mij* 'me' and not by *Peter*, the intended antecedent of *zich/hem*. *Peter* is theta-marked by one of the theta functions introduced by the verb *laat*. Since the intended antecedent is not an argument of *werken*, economy is not activated and either *zich* or the pronoun *hem* is allowed.

LEE makes the further prediction that there is a contrast between a dative construction and what I call a *toe*-sentence. The sentence in (62) is a dative construction sentence, and the sentence in (63) is a *toe*-sentence.

(62) dat Jan<sub>1</sub> Marie aan zich<sub>1</sub>/\*hem<sub>1</sub> toonde  
 that John Marie to self/him showed  
 “.....that John<sub>1</sub> showed Marie to himself<sub>1</sub>.”

(63) dat Jan<sub>1</sub> Marie aan zich<sub>1</sub>/hem<sub>1</sub> toe wees  
 that John Marie to self'/him toe (particle) pointed  
 “.....that John<sub>1</sub> assigned Marie to himself<sub>1</sub>.”

In both the sentences above, the dependency between *zich* and its antecedent is established in the syntax via  $f_{SE}$  and  $f_{Agr}$  (see (64) and (67)). Then, if competition is active, *hem* should be ruled out in both sentences. However, while *zich*, but not *hem*, is allowed in the dative position in (62), both *zich* and *hem* are possible in the PP in (63). This indicates that economy is active in the dative construction in (62), whereas it is not in (63). First, let us consider the reason for the absence of competition in (62). The structure of this sentence is shown below:



In (64), three theta roles are involved: agent, theme, and goal. The agent role is assigned to *Jan* and theme role is assigned to *Marie* by the application of theta functions introduced by the verb *tonen* (*toonde*) ‘show’. The goal theta role is assigned from the verb to the preposition phrase *aan zich/hem* ‘to himself/him’ as a whole.<sup>13</sup>

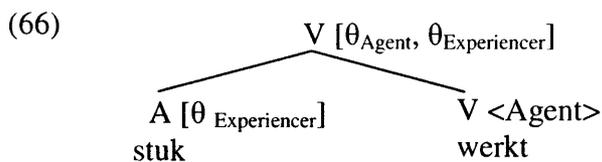
<sup>13</sup> Following Larson (1988), I regard the preposition *to* here as pure case marking.

In this structure, the closest c-commanding head that contains theta functions that could potentially  $\theta$ -mark an antecedent is the verb *tonen*, and one of the theta functions introduced by this verb is satisfied by the intended antecedent of *zich/hem*. Hence, economy is activated. As a result, *hem* is ruled out: economy prefers *zich* to *hem*.

Now let us move on to the *toe*-sentence in (63). I will assume that *toe* and the verb *wijzen* (*wees*) ‘point’ form a complex predicate and adopt an analysis of complex predicates along the lines proposed by Neeleman and Van de Koot (2002b). According to this analysis, a resultative secondary predicate forms a constituent with the verb. Therefore, in an example like (65), *stuk* ‘to-pieces’ and *werkt* ‘works’ form a constituent.

- (65) dat Jan zijn handen [stuk werkt].  
 that John his hands to-pieces works  
 “...that John<sub>1</sub> works his hands to pieces.”  
 (Neeleman and Van de Koot 2002a, 21)

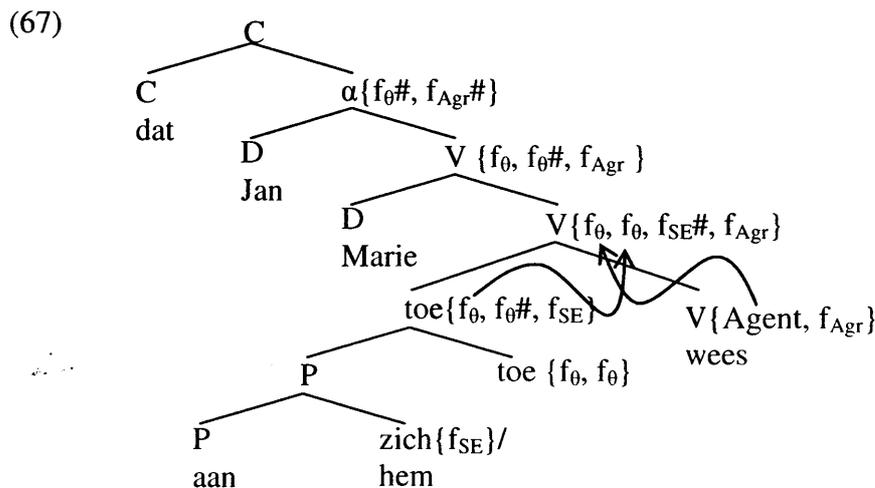
Neeleman and Van de Koot propose that this complex predicate has a  $\theta$ -grid (indicated in (66) with square brackets) that is formed from the (as yet unmapped) semantic roles available in the verb and the semantic role that corresponds to the external  $\theta$ -role of the resultative predicate. The latter semantic role, despite being part of a grid in the resultative predicate, undergoes ‘remapping’ to the grid of the complex predicate, where it becomes an internal argument, in line with the constraints imposed by the thematic hierarchy:<sup>14</sup>



<sup>14</sup> There is another type of integration of theta roles. Theta roles introduced by two distinct heads can also be collapsed into one under certain condition. See Neeleman and Van de Koot (2002b) for discussion.

Of course,  $\theta$ -roles are fully equivalent to theta functions. In (65), the agent theta function is satisfied by *Jan* and the theme theta function is satisfied by *zijn handen* 'his hands'.

Now let us go back to the analysis of the sentence in (63). The structure of the sentence is shown below in (67).<sup>15</sup>



There are a few points that should be clarified here. Firstly, the verb *wijzen* (*wees*) 'point' has only one theta function:

- (68)
- |      |         |
|------|---------|
| Jan  | wees.   |
| John | pointed |

Secondly, *toe* has two theta functions. This particle expresses an interrelation, that is, the relation between a starting point and an end point, and this interrelation is expressed as two theta functions. *Toe* and the verb *wijzen* form a complex predicate: the external  $\theta$ -role introduced by *toe* undergoes remapping and appears as the internal  $\theta$ -function in the first projection of *V*. (The mapping process is indicated by the two arrows in (67)). This theta function is ultimately satisfied by *Marie*, and the theta function that is mapped from the verb is satisfied by *Jan*. *Zich/hem* is licensed

<sup>15</sup> Here, I assume that the preposition *aan* does not introduce a theta function and that this preposition exists to assign case to *zich/hem*.

by the other theta function introduced by *toe*. The nearest c-commanding head of *zich/hem*, which has theta functions, is *toe*. This head is a potential  $\theta$ -assigner for an antecedent, since it has two  $\theta$ -functions. The intended antecedent of *zich/hem* is *Jan*, and the theta function that satisfies this argument does not originate in *toe*. Therefore, according to LEE in (58), economy is not activated. As a result *zich* and *hem* do not compete, and both forms are permitted in (63).

### 2.2.4 Summary

In this section, I have discussed how *zich* establishes a binding relation with its antecedent. As is well known, the antecedent of *zich* is always a subject that agrees with a predicate. Based on this fact, I proposed that a binding function introduced by *zich* is satisfied by an agreement function, which is an independently motivated function, to be discussed in more detail in Chapter 5. In turn, this agreement function is satisfied by the antecedent of *zich*.

We then considered some potential problems for the view that *zich* always establishes a binding dependency in syntax. On the one hand, economy prefers syntactic dependencies over relations established at the C-I interface or in pragmatics. On the other hand, there are data in which a pronoun, which cannot enter a syntactic dependency, and *zich* do not compete with each other and in which either of them may establish a binding relation with its antecedent. This dilemma can be solved by assuming that in certain environments economy is cancelled. I proposed a condition that restricts the evaluation of global economy to local contexts (LEE), and demonstrated that it successfully explains problematic data for the competition approach to the distribution of *zich* and a pronoun.

### 2.3 *Zichzelf*

So far, I have discussed four kinds of reflexives in Dutch: *zelf*, [proper name + *zelf*] (*Janzelf*), [pronoun + *zelf*] (*hemzelf*) and *zich*. Dutch, however, has another type of reflexive, namely, *zichzelf*, which is a reflexive that is formed by compounding *zich* and *zelf*. As I argued in section 2.1, the morpheme *zelf* on its own introduces the binding function  $f_{\text{self}}$  and establishes a dependency in syntax. I also proposed in

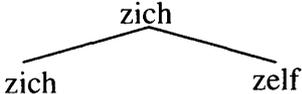
section 2.2 that *zich* introduces another type of binding function, namely  $f_{SE}$ , and that this function also establishes a dependency in syntax. Being a compound form of *zelf* and *zich*, it would be a natural assumption that *zichzelf* also introduces a binding function and establishes a syntactic dependency with its antecedent. But what kind of function does *zichzelf* introduce? Optimally, it is free to introduce either  $f_{self}$  or  $f_{SE}$ , and indeed I propose that *zichzelf* can introduce either of them:<sup>16</sup>

(69) *zichzelf* { $f_{self}$ }

(70) *zichzelf* { $f_{SE}$ }

As regards the internal structure of *zichzelf*, there are (at least) two options: the one headed by *zich*, shown in (71) and the one headed by *zelf*, shown in (72). It is not clear to me which of these is the correct structure, and it might be the case that either of them is permitted. However, since the choice of head does not affect what follows, I will leave the choice open here.

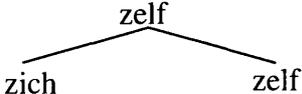
(71)



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graph TD
  A[zich] --- B[zich]
  A --- C[zelf]
  
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(72)



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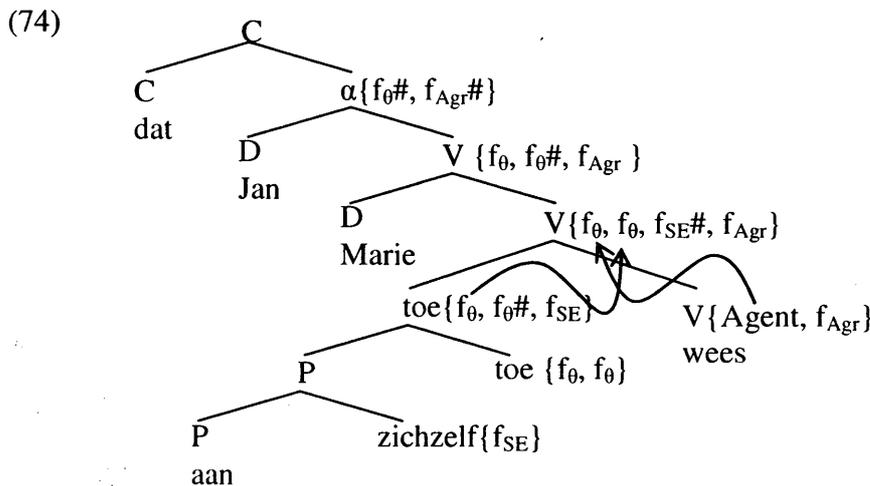
graph TD
  A[zelf] --- B[zich]
  A --- C[zelf]
  
```

First, let us consider the variant of *zichzelf* that introduces  $f_{SE}$ . In the sentence in (73), whose structure is shown in (74),  $f_{SE}$  is introduced by *zichzelf*, and this function is satisfied by the agreement function,  $f_{Agr}$ , which resides in the verb *wijzen* (*wees*) ‘point’. In turn, this agreement function is satisfied by the subject *Jan*. In this

<sup>16</sup> It may well be the case that a binding function resides in both *zich* and *zelf*. That is, the *zich* part contains  $f_{SE}$  and the *zelf* part contains  $f_{self}$ . However, one of these functions is enough to establish a binding function, and due to economy consideration, only one of them would undergo copying and

fashion, the binding dependency between *Jan* and *zichzelf* is established. However, because  $f_{SE}$  is looking for an agreement function that is looking for an agreeing subject, *zichzelf* with  $f_{SE}$  cannot establish a binding relation with the object *Marie*.<sup>17</sup> Despite this, the sentence in (73) allows a reading in which the object *Marie* functions as the antecedent of *zichzelf*. The assumption that *zichzelf* can also introduce  $f_{self}$  is sufficient to account for this fact. I will return to this issue later.

- (73) dat Jan<sub>1</sub> Marie<sub>2</sub> aan zichzelf<sub>1/2</sub> toe wees  
 that John Marie to selfself toe (particle) pointed  
 “.....that John<sub>1</sub> assigned Marie to himself<sub>1</sub>/herself<sub>2</sub>”



If *zichzelf* introduces  $f_{SE}$ , it is also expected that the matrix subject *Peter* can be the antecedent of *zichzelf* in the following sentence because it is *Peter* that agrees with the verb. However, native speakers of Dutch seem to find this reading not entirely acceptable:

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satisfaction. Because this alternative view has the same empirical consequences as the one discussed in the main text, I will not pursue it any further.

<sup>17</sup> Recall that an accusative argument is topped by a case shell. Hence,  $f_{Agr}$  cannot be satisfied by  $\phi$ -features in an accusative argument (section 2.2.1).

- (75) ?\* Peter<sub>1</sub> laat mij voor zichzelf<sub>1</sub> werken  
Peter let me for himself work  
“Peter has me work for him.” (Everaert 1986, 2)

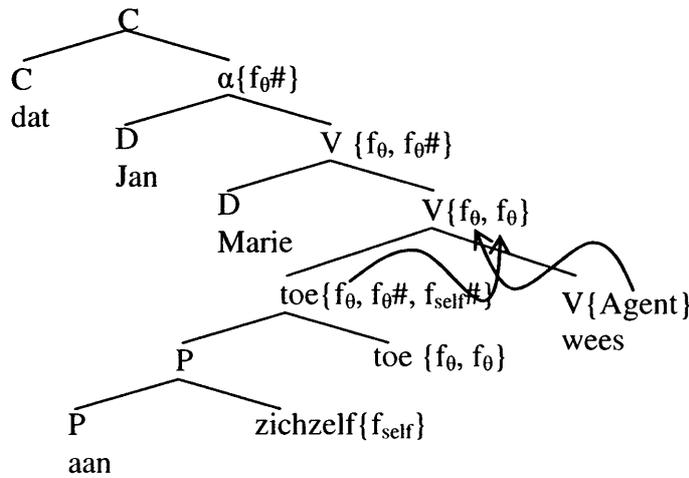
Nevertheless, if *zelf* in *zichzelf* is stressed, the acceptability of the sentence is much improved:

- (76) Peter<sub>1</sub> laat mij voor zichZELF<sub>1</sub> werken  
Peter let me for himself work  
“Peter has me work for him.”

This fact could be taken to support the proposal that *zichzelf* may introduce  $f_{SE}$ . However, why is there a contrast between (75) and (76)? As discussed in chapter 3, Veraart (1996) convincingly argues that the distribution of reflexives is partly determined by pragmatic and phonological considerations. Here the relevant additional factor determining a preference for the complex anaphor is contrastive focus.

*Zichzelf* can also introduce  $f_{self}$ . When it introduces  $f_{self}$ , the antecedent can be either a subject or an object. Let us consider the structure of (73) for the case where *zichzelf* introduces  $f_{self}$ . As shown in (77),  $f_{self}$  introduced by *zichzelf* is satisfied by the external theta function of *toe*, which, following remapping to the internal role of *toewijzen* ‘assign’, is ultimately satisfied by *Marie*.

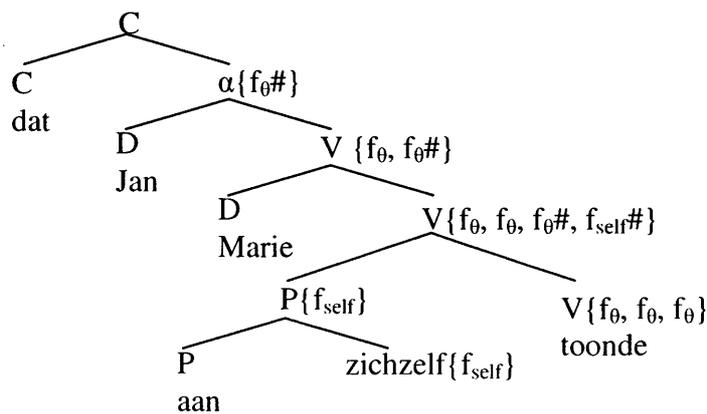
(77)



The suggestion that *zichzelf* introduces  $f_{self}$  explains why either the subject or the direct object can be the antecedent of *zichzelf* in a double object construction. Consider the sentence in (78) and its structure in (79).

(78) dat Jan<sub>1</sub> Marie<sub>2</sub> aan zichzelf<sub>1/2</sub> toonde  
 that John Marie to self-self showed  
 “.....that John<sub>1</sub> showed Marie to himself<sub>1</sub>.”

(79)



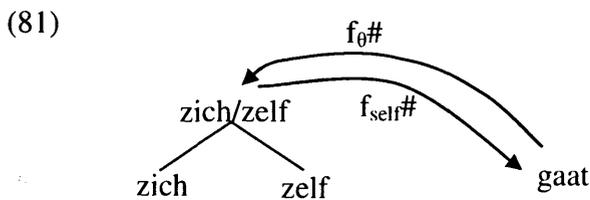
Here, there are two options regarding which theta function satisfies  $f_{self}$ : one is the theta function that is satisfied by the subject argument *Jan*, and the other is the theta function that is satisfied by the object argument *Marie*.

## Chapter 4: Economy, Syntactic Encoding and Locality

Recall that in section 2.1.2 I argued that, although  $f_{\text{self}}$  introduced by a [proper noun/pronoun + *zelf*] form is satisfied by the thematic function assigned to the head of [proper noun/pronoun + *zelf*] itself, this does not cause a problem of endless self-referring. However, in the case of *zichzelf* this problem does arise. Consider the sentence in (80) (compare this sentence with the one in (13) and (19)).

- (80) \* *Zichzelf* gaat liever naar school  
 Himself go rather to school  
 “He himself prefers to go to school.”

As shown below,  $f_{\text{self}}$  introduced by *zichzelf* is satisfied by the theta function,  $f_{\theta}$ , introduced by the verb *gaan* (*gaat*) ‘go’, and this theta function is satisfied by the head of *zichzelf* (either *zich* or *zelf*):



By assumption, *zich* and *zelf* are deficient elements that must introduce a selectional requirement looking for something that is ‘richer’ than the anaphoric expression itself. It stands to reason that the self-reference that results from the structure above does not resolve the anaphor’s deficiency. In other words, *zichzelf* cannot escape from the problem of self-referring when it is used in a position where the binding function introduced by it is satisfied by a theta function which is ultimately satisfied by the reflexive itself.

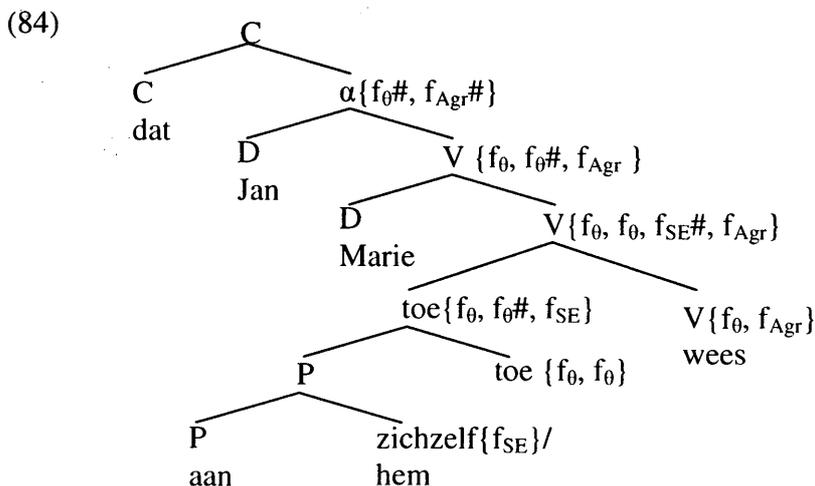
Let us now turn to the issues of competition. Since *zichzelf* establishes a binding relation with its antecedent at the level of syntax and pronouns do not, economy should always favour the use of *zichzelf* over a pronoun. The following data verify this:

- (82) Oscar<sub>1</sub> voelde [zichzelf<sub>1</sub>/\*hem<sub>1</sub> wegglijden]  
 Oscar felt himself/him slide-away  
 “Oscar felt himself slide away” (Reuland 2001a, 450)

Although competition is at work in the distribution of *zichzelf* and *hem*, it seems that, here too, competition is sometimes cancelled, as in the case of the competition between *zich* and a pronoun (see section 2.2.3). Consider a *toe*-sentence with *zichzelf*.

- (83) dat Jan<sub>1</sub> Marie aan zichzelf<sub>1</sub>/hem<sub>1</sub> toe wees  
 that John Marie to himself\*/him toe (particle) pointed  
 “.....that John<sub>1</sub> assigned Marie to himself<sub>1</sub>.”

In this sentence, either *zichzelf* or *hem* can be placed in the complement position of the preposition *aan* ‘to’. I argue that LEE in (58) is responsible for this. The structure of the sentence in (83) is shown in (84).



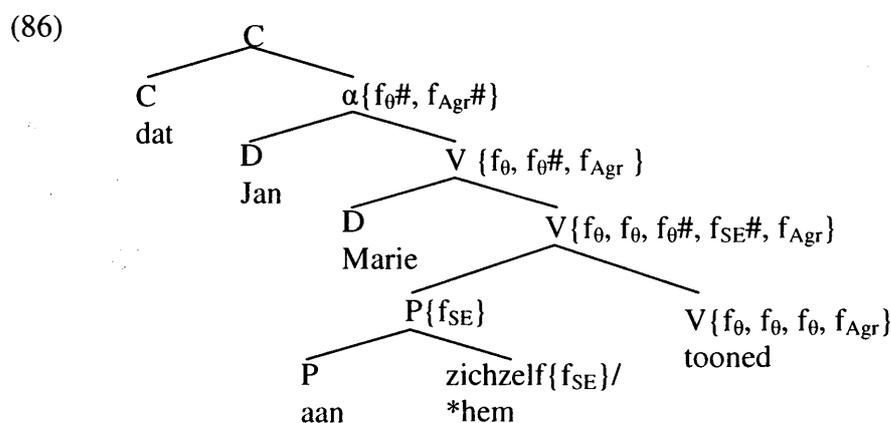
Here, exactly the same analysis as the one discussed for the sentence in (67), section 2.2.3, applies. That is, the nearest c-commanding head of *zichzelf/hem* is *toe*. This is a potential  $\theta$ -role assigner for an antecedent, but its external  $\theta$ -role is not satisfied by the targeted antecedent of *zichzelf/hem*. As a result, economy is inapplicable and

either *zichzelf* or *hem* is possible. In (84), I used *zichzelf* with  $f_{SE}$ , but even if *zichzelf* introduces  $f_{self}$ , the result should not be affected.<sup>18</sup>

The *toe*-sentence above makes a contrast with a double object construction, as in the case of *zich*. In (85), *zichzelf* but not *hem* can be placed in the complement position of *aan* 'to'.

- (85) dat Jan<sub>1</sub> Marie aan zichzelf<sub>1</sub>/\*hem<sub>1</sub> toonde  
 that John Marie to himself/him showed  
 “.....that John<sub>1</sub> showed Marie to himself<sub>1</sub>.”

This is because, as shown in (86), *zichzelf/hem*'s nearest c-commanding head, the verb *tonen* (*tooned*) 'show', has a theta function that is assigned to its antecedent. Therefore, economy is active, and *zichzelf* wins over *hem*. Again, if *zichzelf* introduces  $f_{self}$ , the result would not change.



To sum up, *zichzelf* can introduce two types of binding functions, namely,  $f_{self}$  and  $f_{SE}$ . Due to  $f_{self}$ , *zichzelf* can have either a subject or an object as its antecedent, and due to  $f_{SE}$ , medium-distance subject-oriented binding is possible. Finally, LEE was

<sup>18</sup> If *zichzelf* introduces  $f_{self}$ , *Marie* can be the antecedent of this reflexive in (85)/(86), as I discussed earlier (see (79)). If the targeted antecedent is *Marie*, competition is expected to be active, and a pronoun *haar* 'her' should not be acceptable because the nearest c-commanding head with theta functions is *toe*, and one of these functions is satisfied by *Marie*. This seems to be the correct prediction.

shown to explain why *zichzelf* is not always in complementary distribution with a pronoun.

## 2.4 Summary of Section 2

In this section, I have discussed five types of Dutch reflexive forms: *zelf*, [proper name + *zelf*] such as *Janzelf*, [pronoun + *zelf*] such as *hemzelf*, *zich*, and *zichzelf*. In all of these the morpheme *zelf* introduces a binding function and establishes a syntactic dependency. While *zelf* introduces  $f_{\text{self}}$ , which is satisfied by a theta function, *zich* introduces  $f_{\text{SE}}$ , which is satisfied by an agreement function  $f_{\text{Agr}}$ . Since  $f_{\theta}$  and  $f_{\text{Agr}}$  are themselves satisfied by appropriate arguments, these arguments are then interpreted as the antecedents of *zelf* and *zich*. Being a compound form of *zich* and *zelf*, *zichzelf* introduces either  $f_{\text{SE}}$  or  $f_{\text{self}}$  and exhibits the properties of both *zich* and *zelf*. Although *zelf* in [proper name + *zelf*] and [pronoun + *zelf*] introduces  $f_{\text{self}}$ , this function is satisfied internally to these compounds. This sounds as if it would give rise to endless self-referring. However, this is avoided by the fact that the heads of these forms are referential.

I also proposed that Reuland's economy hierarchy is ignored in certain environments. In particular, I suggested that the application of this global economy condition is evaluated locally (LEE). LEE makes quite sophisticated predictions about the distribution of reflexives and pronouns in various kinds of constructions, including double object constructions and constructions involving predicative verbal particles like *toe*.

## 3 English

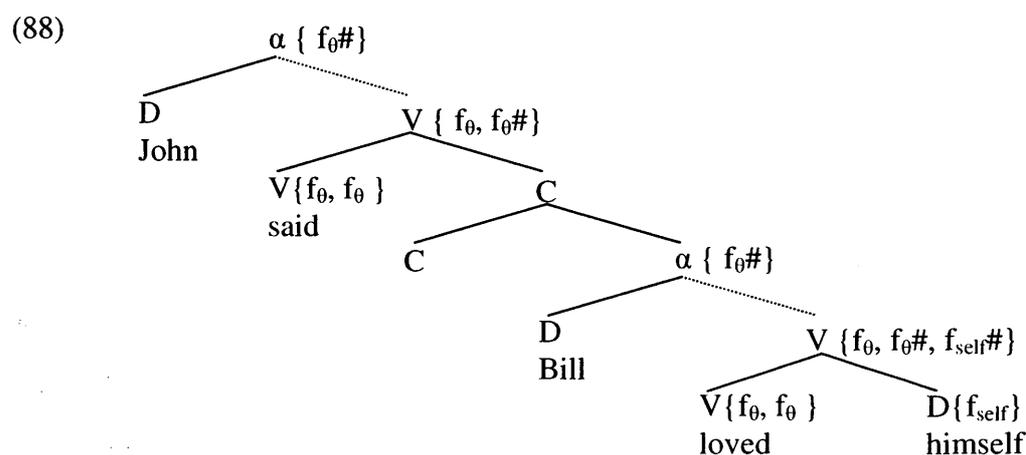
In this section, I would like to extend the analysis offered for Dutch reflexives to the syntax of English reflexives. In section 3.1, I will review the way English reflexives establish a syntactic dependency. In section 3.2, it will be shown that Local Evaluation of Economy, LEE, is operative in English as well, and finally in section 3.3, I will suggest that there are two types of reflexives in English: one introduces a

binding function while the other does not. I will briefly illustrate that the latter type has to be licensed by pragmatic factors.

### 3.1 The Syntactic Encoding of English Reflexive Binding

As I have already discussed, English reflexives introduce a binding function,  $f_{\text{self}}$ , which is satisfied by a theta function,  $f_{\theta}$ . The theta function that satisfies  $f_{\text{self}}$  is itself satisfied by an argument of the predicate. Consider the sentence in (7) again, repeated here as (87), and its tree representation in (88).

(87) John<sub>1</sub> said Bill<sub>2</sub> loved himself<sub>\*1/2</sub>.



Here, the binding function introduced by the reflexive is copied up to the maximal V node in the embedded clause. In this node, the binding function is satisfied by the theta function that is ultimately satisfied by the argument *Bill*. Because functions must be satisfied at the earliest opportunity,  $f_{\text{self}}$  in (88) cannot be copied up beyond the maximal V node in the embedded clause. Therefore, the matrix subject *John* cannot be the antecedent of the reflexive.

Contrary to (87), in (89) not only *Bill*, which is the nearest c-commanding argument, but also *John* can be the antecedent of the reflexive. As already explained in some detail in chapter 2 section 4, this is a direct consequence of the fact that  $f_{\text{self}}$  is satisfied by a theta function rather than by an argument itself.

(89) John<sub>1</sub> showed Bill<sub>2</sub> to himself<sub>\*1/2</sub> (in the mirror).

Let us now turn to the morphological form of English reflexives. The surface form of English reflexive is the same as Dutch [pronoun + *zelf*], as shown in (90). However, I propose that English reflexives have a different structure from Dutch [pronoun + *zelf*]. Recall that Dutch [pronoun + *zelf*] can appear in a nominative position. The relevant data was shown in (19) and is repeated here as (91). I argued in section 2.1.2 that the reason why this type of reflexive can appear in a nominative position is that it is headed by a pronoun, which is fully specified for  $\phi$ -features. The head cannot be *zelf* because this morpheme is not fully specified for  $\phi$ -features (see Chapter 5).

(90) a. himself      [pronoun + *self*]  
       b. hemzelf     [pronoun + *zelf*]

(91) Hijzelf      gaat liever naar school.  
       he-self      goes rather to school  
       “He himself prefers to go to school.”

On the other hand, English reflexives do not appear in nominative position:

(92) \*Heself/himself goes to school.

This strongly suggests that English reflexives are headed by the SELF-morpheme, which reflects only a number feature but no other features (see Chapter 5):<sup>19</sup>

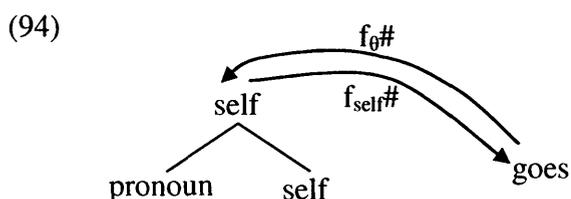
(93)

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graph TD
    self --> pronoun
    self --> self2[self]
  
```

<sup>19</sup> As in the case of Dutch *zelf*, it is not clear to me which category is –self specified for. I believe, however, that this does not affect the argument developed here.

If (93) is the correct structure for English reflexives, then satisfaction of the binding function introduced by *-self* will not be possible whenever the anaphor occurs in an agreeing subject position. Consider why.  $F_{\text{self}}$  is an external selectional requirement and must be copied at least as far as the node directly dominating the reflexive. It cannot be satisfied by the external  $\theta$ -function it can access there, because that  $\theta$ -function is satisfied by *-self*, and *-self* itself does not refer to anything:<sup>20</sup>



Since CP is an absolute barrier to  $f_{\text{self}}$ , it will also not be able to reach any  $\theta$ -functions associated with higher predicates.

The preceding discussion assumes that  $f_{\text{self}}$  must be externalized, so that the pronominal part contained in an English anaphor cannot satisfy this function internally to the projection of *-self*. However, even if the assumption that binding functions are always external could not be maintained, the desired result could still be obtained by claiming that, in contrast to Dutch complex reflexives, an English reflexive is stored in the lexicon as a combined form (i.e., [pronoun + *self*]). If so, it will be the reflexive as a whole that introduces  $f_{\text{self}}$  rather than the SELF-morpheme, so that this function cannot be satisfied by the pronominal part of the reflexive (unlike what happens in its Dutch counterpart; see section 2.1.2).

The assumption that English anaphors are stored forms is supported by the fact that in this language there are only a small number of expressions with a SELF-morpheme. In Dutch *zelf* can be combined not only with a pronoun or *zich* but also with proper names whereas in English this is not the case.

<sup>20</sup> In section 3.3, I will argue that English reflexives are ambiguous in that sometimes they do not introduce binding functions but at other times they do. When they do not introduce a binding function, they can select a referent in the discourse. In this case, of course, the problem of endless self-referring does not occur because they are not a syntactically dependent.

### 3.2 Local Evaluation of Economy and English Reflexives

In Chapter 2, it was argued that the complementary distribution between reflexives and pronouns is the result of competition between them (cf. Reuland 2001a and 2001b). I also suggested in section 2.2.3 that the lack of complementary distribution between reflexives and pronouns in Dutch is the result of cancellation of competition. The environments where competition does occur are defined by Local Evaluation of Economy, LEE, which was given in (58), repeated here as (95).

(95) **Local Evaluation of Economy (LEE)**

- (a) If a sentence with an anaphor or pronoun X is targeting a reading that relates X to a DP  $\theta$ -marked by the nearest accessible head, activate economy. If this is not the case, do not activate economy.
- (b) An accessible head for X is a head that:
  - (i) c-commands X
  - (ii) could potentially theta mark the DP (i.e., contains more than one theta role)

In this section, I will argue that LEE is operational in English as well. Consider the following sentence:

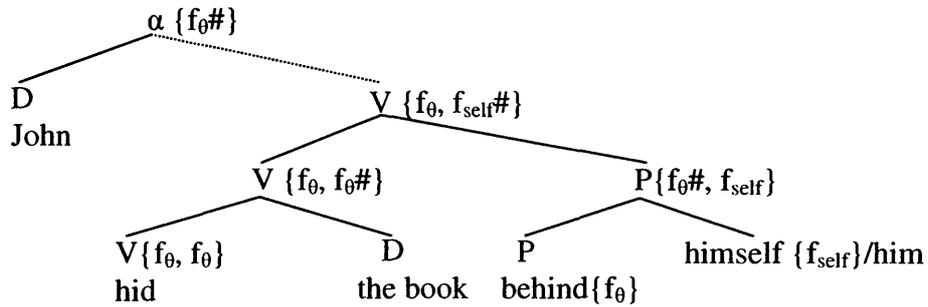
(96) John hid the book behind himself/him.

In (96), the complement of the preposition *behind* can be either the reflexive *himself* or the pronoun *him*. There is no complementary distribution here. On the approach defended here, this strongly implies that LEE is operational and that competition between the reflexive and the pronoun is cancelled. Let us analyse the structure of the sentence. The tree representation is illustrated in (97).<sup>21</sup>

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<sup>21</sup> The preposition *behind* expresses an interrelation. Hence, at the semantic level the preposition must have two arguments. However, one of the arguments (namely, the argument that expresses a thing located behind of something) is suppressed, and it is not translated as a theta function (cf. Neeleman and van de Koot 2002b). Therefore, the preposition *behind* in (96)/(97) has only one theta function.

(97)

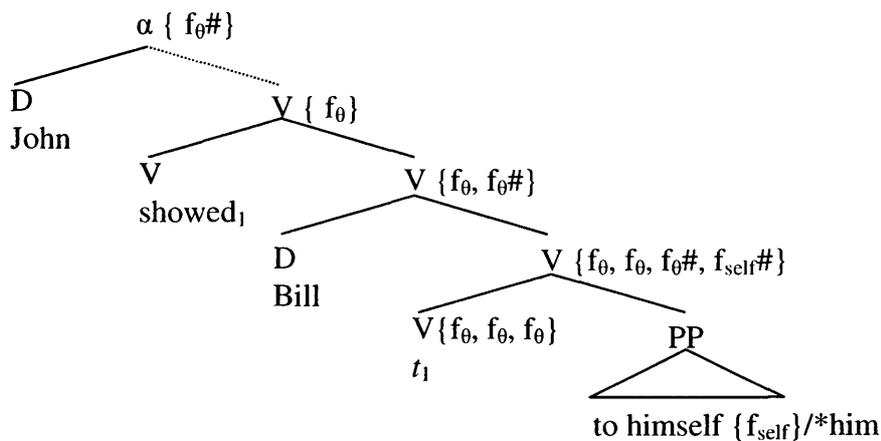


Here, the nearest c-commanding head of the reflexive/pronoun is the preposition *behind*. However, this preposition has only one theta function, and this function is satisfied by the reflexive/pronoun itself. Therefore, this preposition cannot be counted as head that potentially theta-mark the antecedent. There is no head with theta functions that c-command the reflexive/pronoun in higher positions. Hence, economy is not activated, and there is no competition between the reflexive and the pronoun.

On the other hand, in a double object construction, a reflexive and a pronoun in an indirect object position compete with each other. Consider the sentence and its structure shown below:

(98) John<sub>1</sub> showed Bill<sub>2</sub> to himself<sub>1/2</sub>/\*him (in the mirror).

(99)



First, let us consider the reading in which the antecedent of the reflexive/pronoun is the subject argument *John*. This argument satisfies one of the theta functions that are introduced by the verb, which is the nearest c-commanding head. Hence, according to LEE, economy is activated, and, being the more economical option, the reflexive has to be chosen. In the reading in which the antecedent of the reflexive/pronoun is the object argument *Bill*, the same analysis applies. *Bill* satisfies one of the theta functions that are introduced by the verb, and, again according to LEE, economy is activated. Therefore, the pronoun is ruled out.

### 3.3 English Reflexives without Binding Functions

It seems that CP boundaries are almost always barriers for syntactic dependencies. A-movement does not occur across a CP boundary, and, in wh-movement, a wh-phrase has to land in a specifier of CP in order to move beyond the CP. In reflexive binding, it also appears that reflexives have to have their antecedents within the CP domain in most of the cases. So far I have only considered cases where reflexives have their antecedent within the same clause. However, under some condition English reflexives can have their antecedent beyond CP boundaries and even beyond sentence boundaries:

(100) Mary heard from John<sub>i</sub> that an obscene paper supposedly written by Ann and himself<sub>i</sub> was being circulated. (Kuno 1987, 120)

(101) [Philip is starting an affair with Désirée, Zapp's wife] Whom he<sub>i</sub> [Philip] was supposed to be fooling, he couldn't imagine. Not the twins, surely, because Désirée, in the terrifying way of progressive American parents, believed in treating children like adults and had undoubtedly explained to them the precise nature of her relationship with himself<sub>i</sub>.<sup>22</sup>

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<sup>22</sup> From David Lodge (1975) *Changing Places* (p. 170). Penguin Books. Cited in Zribi-Hertz (1989).

- (102) (...) There were hours when Mrs Wix<sub>1</sub> sighingly testified to the scruples she surmounted (...) If the child couldn't be worse it was a comfort even to herself<sub>1</sub> that she was bad (...)<sup>23</sup>
- (103) The Miss Dashwoods had no greater reason to be dissatisfied with Mrs. Jennings's style of living, and set of acquaintance, than with her behaviour to themselves, which was invariably kind.<sup>24</sup>
- (104) If Cassandra<sub>1</sub> has filled my bed with fleas, I am sure they must bite herself<sub>1</sub>.<sup>25, 26</sup>

If it is a general property of syntax that syntactic dependencies cannot be established across a CP boundary, then it is unexpected that the examples in (100)-(104) are grammatical. One might suggest that one way of circumventing this puzzle could be to apply the same analysis as the one for Dutch [proper noun + *zelf*] and [pronoun + *zelf*]. In these Dutch reflexives, a binding function is internally satisfied, and the referents of the reflexives are assigned semantically or pragmatically. This is possible because the head of these types of reflexives is a proper noun or pronoun (cf. section 2.1.2). However, as I discussed in section 3.1, the English reflexives are headed by a SELF-morpheme, so that the binding function must be satisfied externally to the anaphor.

We are therefore led to the conclusion that English reflexives are ambiguous with respect to whether they introduce a binding function or not and that in the (100)-(104) the reflexives do not carry such a function. However, it cannot be the

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<sup>23</sup> From Henry James (1897) *What Maisie Knew* (p. 61). World's Classics Paperbacks reprint, (1985). Cited in Zribi-Hertz (1989).

<sup>24</sup> From Jane Austen (1811) *Sense and Sensibility*. London, Penguin Classics, (1986). Cited in Baker (1995).

<sup>25</sup> From Jane Austen (1932) *Jane Austen's letters to her sister Cassandra and others*, Vol. II, collected and edited by R. W. Chapman. Oxford: Oxford University Press. Cited in Baker (1995).

<sup>26</sup> This sentence poses a problem for Reinhart and Reuland (1991 and 1993). According to their Condition A, a reflexive-marked predicate must be reflexive. If this is correct, this sentence should be ungrammatical, contrary to fact, because *herself* marks the predicate reflexive while the coargument of *herself*, i.e., *they*, does not yield a reflexive interpretation. Furthermore, the fact that *herself* here can be replaced with the pronoun *her* is unexpected if Reinhart and Reuland approach to logophoricity is on the right track.

case that reflexives without a binding function can appear freely. Otherwise sentences like the one in (105) should be perfectly grammatical. The intended reading of this sentence is that the reflexive *himself* refers to someone outside of the sentence.

(105) \*Mary<sub>1</sub> blamed himself<sub>2</sub>.

The phenomena in (100)-(104) are usually called “locally free reflexives” in the literature. It seems that locally free reflexives in English must satisfy certain pragmatic requirements. A number of approaches have been proposed. For instance, Zribi-Hertz (1989) takes the logophoric approach and suggests that these reflexives can occur if they refer back to the subject of consciousness, which is “a semantic referent whose thoughts or feelings, optionally expressed in speech” (p.711). According to her, a locally free reflexive refers to the nearest available NP (or NPs) which is read as logophoric (subject of consciousness) or the speaker or the addressee.<sup>27</sup> On the other hand, Baker (1995) suggests that contrastiveness together with discourse prominence, rather than subject of consciousness, plays a central role for the distribution of locally free reflexives in English. He proposes that locally free reflexives in English should be treated as intensified nominal expressions that are subject to two conditions. The first condition states that they are appropriate only in contexts in which emphasis or contrast is desired, and the second condition states that they require that the character being referred to to be more important or more central than other characters included in the contrast set.<sup>28</sup> Whichever approach is on the right track, it seems that the distribution of locally free reflexives is regulated by pragmatic/discourse factors, and that the referent of this kind of reflexives is assigned at the level of pragmatics.

Finally, recall that there is no complementary distribution between the reflexive and the pronoun in the sentence in (96), repeated here as (106).

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<sup>27</sup> See Kuno (1987) for the similar approach.

<sup>28</sup> See references cited in Zribi-Hertz (1989) and Baker (1995) for the discussions of other approaches to locally free reflexives.

(106) John hid the book behind himself/him.

In section 3.2, I argued that LEE is operative in this sentence and that competition between the reflexive and the pronoun is cancelled. One might argue, however, that the reflexive in this sentence is an instance of a free anaphor, hence one that does not introduce a binding function. If so, there is no competition between *himself* and *him* in this example. However, it appears that none of subject of consciousness or contrastiveness and discourse prominence is involved here. Therefore, the sentence in (106) is perhaps not an instance of locally free reflexives, but the lack of complementary distribution between the reflexive and the pronoun is the result of LEE, as I concluded in section 3.2.

### 3.4 Summary of Section 3

In this section I discussed English reflexives. First, I illustrated in section 3.1 that English reflexives introduce a binding function,  $f_{\text{self}}$ , which is satisfied by a theta function,  $f_{\theta}$ , introduced by a predicate. Next, in section 3.2, I argued that LEE operates in English as well and explains the lack of complementary distribution between a reflexive and a pronoun in certain sentences. Finally, in section 3.3, I proposed that so-called locally free reflexives do not introduce a binding function and followed Zribi-Hertz (1989) and Baker (1995) in claiming that such reflexives establish dependencies with their antecedent at the level of pragmatics.

## 4 Japanese

In the previous two sections, I have discussed Dutch and English reflexives. In this section, I would like to turn to Japanese reflexives. The list of Japanese reflexives is almost identical to the list of Dutch reflexives: both languages have simplex reflexives and also allow a SELF-morpheme to be attached to simplex reflexives, pronouns and proper names. However, as I will illustrate in this section, the properties of Japanese reflexives are considerably different from their Dutch counterparts.

First, in section 4.1, I will argue that syntactic accounts of the distribution of the Japanese simplex reflexive *zibun* are untenable and that *zibun* should be treated as a (bound or free) variable. In the same section I will show that Local Evaluation of Economy (LEE) is also operative in Japanese. In section 4.2, I will discuss morphologically complex Japanese reflexives and will argue that these also do not establish a binding relation with their antecedent in syntax.

## 4.1 *Zibun*

### 4.1.1 *Zibun* as a C-I Interface Variable

It has often been claimed that the Japanese simplex reflexive *zibun* has the properties of long-distance binding and subject orientation:<sup>29</sup>

- (107) John<sub>1</sub>-ga Bill<sub>2</sub>-ni [Mike<sub>3</sub>-ga *zibun*<sub>1/\*2/3</sub>-o seme-ta to] it-ta.  
 John-NOM Bill-DAT Mike-NOM self -ACC blame-PST COMP say-PST  
 “John said to Bill that Mike blamed him/himself.”

In (107), *zibun* can establish a dependency with either the matrix subject *John* or the embedded subject *Mike*, but not with the matrix object *Bill*. To explain the properties of long-distance binding and subject orientation of *zibun*, various approaches have been proposed, and it seems that these approaches tend to try to derive these properties of *zibun* from syntactic operations. For instance, Katada (1991) proposes that *zibun* is an operator and that at LF it undergoes long-distance movement and adjoins to VP. Because of this, only the subject can be its antecedent.<sup>30</sup> On the other hand, Aikawa (1993) assumes that *zibun* cannot be interpreted if it remains unbound, since it lacks  $\phi$ -features, and proposes that *zibun* is bound by the first accessible Agr at LF to receive such features. As a consequence, the antecedent of *zibun* must be a subject. Furthermore, she argues that because Agr in Japanese is anaphoric and can be bound by a higher Agr, *zibun* can be bound by a long-distance antecedent.

<sup>29</sup> For example, see Kuroda (1965), Kuno (1973), Inoue (1976) and Katada (1991) among many others.

In this section, I would like to propose, contrary to these approaches, that it is not in syntax that *zibun* establishes a dependency with its antecedent but at the C-I interface or in pragmatics. The main motivation for this is that the relation that *zibun* enters into is neither obligatory nor local. Hence, it lacks two properties that are diagnostic of syntactically dependent elements. As shown in (107), the antecedent of *zibun* can appear across a CP boundary. Furthermore, *zibun* can have an antecedent even across more than one CP boundaries. In (108), the matrix subject *John* can be the antecedent of *zibun*, and there are two CPs intervening between them. Indeed, there is no limitation to the number of CP boundaries that can appear between *zibun* and its antecedent.<sup>31</sup> This strongly suggests that *zibun* does not have the property of locality.

- (108) John<sub>1</sub>-ga Bill<sub>2</sub>-ni [Tom<sub>3</sub>-ga [Mike<sub>4</sub>-ga zibun<sub>1/\*2/3/4</sub>-o  
 John-NOM Bill-DAT Tom-NOM Mike-NOM sekf- ACC  
 seme-ta to] omot-ta to] it-ta.  
 blame-PST COMP think-PST COMP say-PST  
 “John said to Bill that Tom thought that Mike blamed him/himself.”

In fact, the antecedent of *zibun* can be something outside of the sentence. In this case, the referent of *zibun* tends to be the speaker or the addressee:<sup>32</sup>

- (109) John-ga zibun-o hagemasi-ta.  
 John-NOM self-ACC encourage-PST  
 “John encouraged me” (Aikawa 1993, 52)

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<sup>30</sup> See Cole, Hermon and Sung (1990) and Cole and Sung (1994) for a similar explanation of the properties of Chinese long-distance reflexive *ziji*. One of the differences from Katada’s approach is that they assume that the reflexive moves cyclically from INFL to INFL.

<sup>31</sup> Although factors of performance (for instance, limitation of short term memory) might make this kind of long sentence difficult to parse, the judgement given to the sentence seems to be robust.

<sup>32</sup> It seems that *zibun* is used to refer to the addressee when the speaker blames the addressee. However, in some dialects (western dialect such as Osaka dialect), *zibun* may be used to refer to the addressee without such an implication.

- (110) Yamada-sensei-ga zibun-o suisensi-te-kudasat-ta.<sup>33</sup>  
 Yamada-teacher-NOM self-ACC recommend-NF-give-PAST  
 “Professor Yamada recommended me”

Furthermore, with some contexts, it is possible for *zibun* to refer to a third person outside of the sentence:

- (111) Watasi-no tizin<sub>1</sub>-wa, kuruma-de kodomo-o hii-ta.  
 I-GEN acquaintance-TOP car-by child-ACC run.over-PST  
 “An acquaintance of mine ran over a child by (his) car.”  
 Kare<sub>1</sub>-wa, [kyuu-ni tobidasi-te-ki-ta hoo-ga waru-i.  
 he-TOP suddenly run.out-NF-come-PST side-NOM bad-NPST  
 [Kodomo-o yoku situke-te-i-na-kat-ta] oyaga  
 child-ACC well discipline-NF-be-NEG-COP-PST parent-NOM  
 waru-i-to it-te-i-ta.  
 bad-NPST-COMP say-NF-be-PST  
 “He was saying, ‘The one who came running out suddenly was to blame.’  
 ‘The parents who did not discipline the child well were to blame.’”  
 Tokoroga, sono go zibun<sub>1</sub>-no kodomo-ga kuruma-ni  
 but that after self-GEN child-NOM car-by  
 hik-are-te sin-da.  
 run.over-PASS-NF die-PST  
 “But after that his child was run over by a car and died.”<sup>34</sup>

<sup>33</sup> In (109), *zibun* can refer to the subject *John* as well. On the other hand, in (110) it seems that *zibun* cannot refer to the subject *Yamada-sensei* and has to refer to the speaker of the sentence. The reason for this is that *kudasat-ta* implies that the subject gave a benefit to the utterer of the sentence.

<sup>34</sup> From Ayako Miura (1982) *Hikari Aru Uchi ni: Michi Arika Dai San-bu, Shinkoo Nyuumon-hen.* (p 27) Shinchoosha: Tokyo. Cited in Hara (2002).

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- (112) Sore-wa [Takiko-ni-wa taisetu kamosirenai ga zibun-ni-wa  
 it-TOP Takiko-to-TOP important may.be but self-to-TOP  
 hituyoo-no nai koto deat-ta.  
 need-GEN no matter be-PST  
 “It was something unnecessary to (lit.) self though may be (something)  
 important to Takiko. (Oshima 1979, cited in (Kameyama 1984))

In (111), *zibun* refers to *watasi-no tizin* ‘my acquaintance’ that appears two sentences back. Likewise, in (112), *zibun* refers to someone mentioned several sentences back in the same paragraph. The data in (108)-(112) strongly suggests that the relationship between *zibun* and its antecedent does not involve a syntactic dependency, but rather that the relevant relation is established outside of syntax.

However, one might argue that subject orientation of *zibun* implies that some syntactic operation must be involved in the binding of *zibun* because “subject” is a syntactic notion. Although it is true that *zibun* tends to pick out a subject as its antecedent, this is certainly not always the case, as shown in (113)-(114).

- (113) Toro-wa Takasi<sub>1</sub> kara [itosii Yosiko-ga zibun<sub>1</sub>-o  
 Taro-TOP Takasi from beloved Yosiko-NOM self-ACC  
 nikun-de-i-ru koto-o kii-ta.  
 hate-NF-BE-NPST COMP-ACC hear-PST  
 “Taroo heard from Takasi that his beloved Yosiko hated him.”  
 (Iida and Sells 1988, 29)

- (114) Yamada-sensei<sub>1</sub>-wa Taro<sub>2</sub> ni-totte zibun<sub>\*1/2</sub>-no oya-no  
 Yamada-teacher-TOP Taro for self-GEN parent-GEN  
 yoona sonzai dat-ta.  
 like existence be-PST  
 “For Taro<sub>1</sub>, Prof. Yamada<sub>2</sub> was like his<sub>\*1/2</sub> own parent.”  
 (Kameyama 1984, taken from Saito 1980)

- (115) Toro<sub>1</sub>-wa Zi-roo<sub>2</sub> ni zibun<sub>1/2</sub> to sokkurina otoko-ga iru  
 Taro-TOP Zi-roo by self with alike man-NOM exist  
 koto-o sirasa-re-ta.  
 COMP-ACC inform-PASS-PST  
 “Taro<sub>1</sub> was informed by Zi-roo<sub>2</sub> that there is a man who looks just like  
 him<sub>1/2</sub>. (Iida 1996, 53)

In (113), the antecedent of *zibun* is *Takasi*, which is a complement of the matrix verb, and in (114) the topic of the sentence, *Yamada-sensei* ‘Prof. Yamada’, which is a topicalised subject, cannot be the antecedent of *zibun*, and the adjunct *Taroo* is the antecedent. In (115), although the preferred antecedent of *zibun* is the topicalized subject *Taroo*, the adjunct *Zi-roo* can also be the antecedent of *zibun*. The tendency of *zibun* to have an antecedent in subject position perhaps can be attributed to the logophoric nature of *zibun* rather than to any syntactic properties it has. Subjects tend to be a logophoric centre and therefore the antecedent of *zibun* tends to be a subject of the sentence.<sup>35, 36</sup>

Of course, it might be possible to assume that *zibun* is ambiguous in that one type of *zibun* introduces a binding function and the other does not and that the one with a binding function takes a local antecedent and the one without a binding function takes a non-local antecedent, as I proposed for English reflexives. However, as shown in the sentences in (107), (108) and (113), *zibun* can establish long-distance relationships with its antecedent without any particular context, unlike English locally free reflexives (cf. section 3.3). In this regard, *zibun* is much more similar to English pronouns than to English reflexives.

<sup>35</sup> For instance, Sells (1987) proposes that a logophor pick out an antecedent that is either SOURCE, SELF or PIVOT. Subjects of verbs that take sentential complements are usually a SOURCE. Therefore, when *zibun* appears in an embedded clause, it can choose the subject of the matrix clause as its antecedent. Furthermore, it might also be the case that *zibun* tends to choose a phrase that is prominent in the discourse. See Kuno (1972) and (1978), Sells (1987) and Iida and Sells (1988) among many others for the discussion of logophoric nature of *zibun*.

<sup>36</sup> Sakakibara (1994) presents a number of examples in which the antecedent of *zibun* is not a subject. She proposes that *zibun* is used when it is rational for a speaker to believe that the referent is responsible for or emotionally affected by the action, event or state described. She further argues that the distribution of *zibun* should be explained in terms of pragmatics (more specifically Gricean pragmatics (Grice 1976)) rather than syntax.

We have now established that *zibun* does not enter into a syntactic dependency and hence that it does not introduce a binding function. Then how does it establish a dependency with its antecedent? There are two possibilities left: one is reference assignment in pragmatics, and the other is variable binding at the C-I interface. The sentences in (111) and (112), in which the antecedent of *zibun* is located outside of the sentence, illustrate that *zibun* can be assigned a referent through pragmatic inference. The following data illustrates that *zibun* can also function as a bound variable:

- (116) Daremo<sub>1</sub>-ga [Bill-ga zibun<sub>1</sub>-o seme-ta to] it-ta.  
 Everyone-NOM Bill-NOM self-ACC blame-PST COMP say-PST  
 “Everyone<sub>1</sub> said that Bill blamed him<sub>1</sub>.”

Aikawa (1993) argues that *zibun* cannot be locally bound based on the following sentences:<sup>37</sup>

- (117) ?\*Dareka-ga zibun-o turet-ta.  
 Someone-NOM self-ACC pinch-PST  
 Someone pinched himself. (Aikawa 1993, 41)
- (118) ?\*Daremo-ga zibun-o hagemasi-ta  
 everyone-NOM self-ACC encourage-PST  
 Everyone encouraged himself. (Aikawa *ibid*)

However, it seems to me that the sentences in (117) and (118) do not necessarily show that *zibun* cannot be locally bound, because, although these sentences sound somehow awkward, some native speakers of Japanese, including myself, do not find them ungrammatical. Furthermore, the awkwardness of the above sentences might be due to pragmatic factors, as discussed in Chapter 3. That is, the contrast in distribution between complex and simplex reflexives may be partially attributed to

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<sup>37</sup> I find the sentence in (118) much better than the one in (117). The grammatical judgements shown in (117) and (118) are due to Aikawa (1993).

the contrast between presupposed and asserted reflexivity (Veraart 1996). Indeed, the following sentence shows that if the verbs in (117) and (118) are replaced by *semeta* ‘blamed’, the awkwardness of the sentences disappears:<sup>38</sup>

- (119) Daremo-ga zibun-o seme-ta.  
 everyone-NOM self-ACC blame-PST  
 Everyone blamed himself.

Furthermore, as shown in (120), when *zibun* appears as a genitive modifying a noun phrase, it can be locally bound by a quantified phrase, and the sentence is perfectly grammatical.

- (120) Daremo<sub>1</sub>-ga zibun<sub>1</sub>-no kuruma ni not-ta.  
 Everyone-NOM self-GEN car to get.into-PST  
 “Everyone<sub>1</sub> got into his<sub>1</sub> car.”

I conclude that *zibun* is a variable that is either bound at the C-I interface or assigned a referent in pragmatics.

#### 4.1.2 Competition with a Pronoun

Having established that *zibun* is not a syntactic anaphor, I would like to turn to the issue of competition between Japanese pronouns and *zibun*. Japanese pronouns are what Noguchi (1993) calls an N-pronoun or what Déchaine and Wiltchko (2002) call a pro-NP, and they show that this type of pronoun cannot be a bound variable. Consider the following sentences:

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<sup>38</sup> One might argue that the Reflexivity approach of Reinhart and Reuland (1993) explains the contrast between (117) and (118), on the one hand, and (119), on the other. That is, one might propose that the predicates in (117) and (118) are not inherently reflexive and require a SELF reflexive (i.e., *zibun-zisin*) while the predicate in (119) can be inherently reflexive and allows a SE reflexive (i.e., *zibun*). However, the Reflexivity approach to the distribution of *zibun/zibun-zisin* is problematical. I return to this issue in section 4.2.1, where it will be argued that the pragmatic approach is to be preferred (see the discussion surrounding examples (138)-(147)).

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- (121) \*Daremo<sub>1</sub>-ga kare<sub>1</sub>-no kuruma ni not-ta.  
Everyone-NOM self-GEN car to get.into-PST  
“Everyone<sub>1</sub> got into his<sub>1</sub> car.”

- (122) \*Daremo<sub>1</sub>-ga [Bill-ga kare<sub>1</sub>-o seme-ta to] it-ta.  
Everyone-NOM Bill-NOM self-ACC blame-PST COMP say-PST  
“Everyone<sub>1</sub> said that Bill blamed him<sub>1</sub>.”

In both (121) and (122), the quantifier cannot bind the pronoun *kare* ‘him’. This implies that Japanese pronouns are free variables that can only be assigned a referent in pragmatics, so that they effectively function as constants.

If this is correct, then *zibun* should be preferred over a pronoun whenever a bound variable interpretation is an option. That is, binding at the C-I interface is more economical than value assignment in pragmatics. The sentence in (123) confirms this prediction.

- (123) John-ga zibun/\*kare-o semeta-ta.  
John-NOM self/him-ACC blame-PST  
“John blamed himself”

However, in the long-distance environment, the complementary distribution between *zibun* and a pronoun disappears:

- (124) John<sub>1</sub>-ga Bill-ni [Mike-ga zibun<sub>1</sub>/kare<sub>1</sub>-o seme-ta to]  
John-NOM Bill-DAT Mike-NOM self/him -ACC blame-PST COMP  
it-ta.  
say-PST  
“John<sub>1</sub> said to Bill that Mike blamed him<sub>1</sub>.”

In (124), both *zibun* and the pronoun *kare* in the embedded clause can have the matrix subject *John* as its antecedent.

It would seem that LEE (cf. section 2.2.3) can readily explain the absence of competition in the long-distance environment in Japanese. Before examining a sentence with a long-distance relation, let us first consider the sentence in (123). Here, the nearest head with theta functions c-commanding *zibun/kare* is the verb *semet-ta* ‘blamed’. One of the theta functions that are introduced by this head is satisfied by the intended antecedent of *zibun/kare*. Therefore, economy is activated, and the pronoun *kare* is ruled out. In (124), the nearest head with theta functions that c-commands *zibun/kare* is the embedded verb *semet-ta* ‘blamed’. However, none of the theta functions introduced in this verb are satisfied by the intended antecedent of *zibun/kare*, namely, the matrix subject *John*. Hence, economy is not activated, and both *zibun* and *kare* are possible here.

The sentence in (125) also shows absence of competition between *zibun* and a pronoun.

- (125) John<sub>1</sub>-wa [zibun<sub>1</sub>/kare<sub>1</sub>-ga Mary-o korosi-ta to]  
 John-TOP self/him-NOM Mary-ACC kill-PST COMP  
 kokuhakusi-ta.  
 confess-PST  
 “John<sub>1</sub> confessed that he<sub>1</sub> killed Mary.”

In (125), the nearest head with theta roles c-commanding *zibun/kare* is the matrix verb *kokuhakusi-ta* ‘confessed’, and one of the theta functions introduced by this verb should be satisfied by the intended antecedent of *zibun/kare*, i.e., *John*. Then, we should expect that economy is active and that *kare* is ruled out, contrary to fact. However, this problem can be evaded if we interpret LEE in such a way that the “nearest head” is the head that a self-function introduced by a dependent element would be satisfied with. Suppose that *zibun/kare* introduced a self-function. This function would not be satisfied by the matrix verb, because CP blocks copying of a function. Then, the matrix verb cannot be counted as the nearest accessible head of *zibun/kare*. This implies that the intended antecedent *John* does not satisfy a theta function introduced by the nearest accessible head of *zibun/kare* because this head

does not exist. Hence, economy is not activated. The following is the revised definition of LEE:

(126) **Local Evaluation of Economy (LEE) [Revised]**

- (a) If a sentence with an anaphor or pronoun X is targeting a reading that relates X to a DP  $\theta$ -marked by the nearest accessible head, activate economy. If this is not the case, do not activate economy.
- (b) An accessible head for X is a head that:
  - (i) c-commands X
  - (ii) could potentially theta mark the DP (i.e., contains more than one theta role)
  - (iii) would satisfy a self-function introduced by X.

**4.2 –Zisin**

In this subsection, I will discuss three types of reflexives with the morpheme *-zisin*. Section 4.2.1 deals with *zibun-zisin*, and section 4.2.2 with [pronoun + *zisin*] and [proper name + *zisin*].

**4.2.1 Zibun-zisin**

Based on examples like (127) and (128), it is often argued that the Japanese complex reflexive *zibun-zisin* shows the properties of locality and subject orientation. In (127), the antecedent of *zibun-zisin* is the embedded subject and the matrix subject and the dative object cannot be the antecedent.

- (127) John<sub>1</sub>-ga Bill<sub>2</sub>-ni [Mike<sub>3</sub>-ga zibun-zisin<sub>7\*1/\*2/3</sub>-o seme-ta  
 John-NOM Bill-DAT Mike-NOM self -self-ACC blame-PST  
 to] it-ta.  
 COMP say-PST  
 “John said to Bill that Mike blamed him/himself.” (Katada 1988, 171)

In (128) *zibun-zisin* must be c-commanded by its antecedent:

- (128) John<sub>1</sub>-no titioya<sub>2</sub>-ga zibun-zisin<sub>+1/2</sub>-o semeta-ta.  
 John-GEN father-NOM self-self-ACC blame-PST  
 “John blamed himself”

On the basis of these observations, a number of syntactic analyses of the distribution of *zibun-zisin* have been proposed. For instance, Katada (1991) argues that *zibun* in *zibun-zisin* is an operator and may undergo LF movement. In the GB framework, the trace of a moved element has to be properly governed to abide by the Empty Category Principle, ECP (Chomsky 1981). There are two ways of satisfying the ECP: either through lexical government or through antecedent-government. Katada argues that the trace of *zibun* cannot be lexically governed. Hence, antecedent-government is the only way to satisfy ECP. Antecedent-government will only be achieved if the movement of *zibun* is local. It is then predicted that *zibun-zisin* exhibits locality.

Aikawa (1993) also proposes a syntactic approach to *zibun-zisin*. Her approach is in essence the same as Reinhart and Reuland’s (1991) reflexivity theory. She suggests that *zibun-zisin* is a SELF- anaphor and that the *zisin* part of *zibun-zisin* moves to V in order to reflexivise the verb. Since incorporation is a local process, *zibun-zisin* shows the property of locality.

However, as Hara (2002) observes, *zibun-zisin* does not always take a local antecedent. Consider the following example:

- (129) John<sub>1</sub>-wa [Mary-ga Fred dewanaku zibun-zisin<sub>1</sub>-o hihansi-ta  
 John-TOP Mary-NOM Fred not.but self-self-ACC criticize-PST  
 to] it-ta.  
 COMP say-PST  
 “John<sub>1</sub> said that Mary blamed him<sub>1</sub> but not Fred.”

The antecedent of *zibun-zisin* in the embedded object position is the matrix subject *John*. One might argue that because this sentence involves contrastiveness, *zibun-zisin* in this sentence should be treated along the lines of locally free English

reflexives (cf. section 3.3). However, although the following sentence does not seem to involve contrastiveness or other factors that would trigger locally free reflexives in English, long-distance dependencies are possible:<sup>39</sup>

- (130) John<sub>1</sub>-ga Bill-ni [Mike-ga zibun-zisin<sub>1</sub>-o seme-ta  
 John-NOM Bill-DAT Mike-NOM self-self-ACC blame-PST  
 koto]-o tuge-ta.  
 COMP-ACC tell-PST  
 “John<sub>1</sub> told Bill that Mike blamed him<sub>1</sub>.” (Hara 2002, 74)

In (130), it is possible for *zibun-zisin* in the embedded object position to have the matrix subject *John* as its antecedent.<sup>40</sup> The following sentence illustrates the same point:

- (131) John<sub>1</sub>-ga Bill-ni [Mike-ga zibun-zisin<sub>1</sub>-no tomodati-o  
 John-NOM Bill-DAT Mike-NOM self-self-ACC friend-ACC  
 seme-ta koto]-o tuge-ta.  
 blame-PST COMP-ACC tell-PST  
 “John<sub>1</sub> told Bill that Mike blamed his friend<sub>1</sub>.” (Hara 2002, 78)

The example in (132) shows that *zibun-zisin* can even have an antecedent outside of the sentence:

- (132) Boku-wa ano toki totemo kanasi-kat-ta.  
 I-TOP that time very sad-COP-PST  
 “I was very sad at that time.”  
 [Sinyuu-da-to omot-te-i-ta] John-ga kotomoarooni  
 best.friend-COP-COMP think-NF-be-PST John-NOM of.all.people

<sup>39</sup> Notice that even in the sentence in (127), the long-distance dependency is not impossible for some speakers (cf. Katada 1988).

<sup>40</sup> Replacing the complementizer *to* with another complementizer, *koto*, makes a long-distance anaphoric relation of *zibun-zisin* easier. For why this is so, see Hara (2002).

zibun-zisin-o uragit-ta-kara-da.  
 self-self-ACC betray-PST-because-COP  
 “That’s because John, whom (I) considered (my) best friend, betrayed me  
 of all people.” (Hara 2002, 78)

In this sentence, the antecedent of *zibun-zisin* is located in the previous sentence, namely, *boku* ‘I’. This shows that the referent of *zibun-zisin* can be determined in pragmatics.

Based on the data I have presented so far in this section, I propose that *zibun-zisin* does not establish a syntactic dependency. Therefore, it does not introduce a binding function.

Although *zibun-zisin* does not establish a syntactic dependency with its antecedent, it can be a bound variable at the C-I interface:

(133) Daremo-ga zibun-zisin-o semeta.  
 everyone-NOM self-self-ACC blame-PST  
 Everyone blamed himself.

(134) Daremo<sub>1</sub>-ga zibun-zisin<sub>1</sub>-no kuruma ni not-ta.  
 Everyone-NOM self-self-GEN car to get.into-PST  
 “Everyone<sub>1</sub> got into his<sub>1</sub> car.”

This predicts that *zibun* and *zibun-zisin* do not compete with each other because both of them can establish a dependency at LF but not in the syntax. This prediction is borne out by the fact that *zibun-zisin* in (127)-(134) can be replaced by *zibun*.

On the other hand, Japanese pronouns cannot establish dependencies at either the syntactic level or the C-I interface, but their antecedents are determined through pragmatic inference (cf. section 4.1.2). This implies that *zibun-zisin* is preferred to a pronoun because variable binding is less costly than value assignment in pragmatics. This prediction also seems to be supported. Consider the following sentence:

- (135) John<sub>1</sub>-ga zibun-zisin<sub>1</sub>/\*kare<sub>1</sub>-o hihansi-ta.  
 John-NOM self-self/him-ACC criticise-PST  
 John criticised himself.

In (135) *kare* cannot take *John* as its antecedent while *John* and *zibun-zisin* can establish an anaphoric relation.

However, there are certain environments in which there is no competition between *zibun-zisin* and pronouns. These environments appear to be identical to those where *zibun* and pronouns do not compete. Compare the sentences in (136) and (137) with those in (124) and (125).

- (136) John<sub>1</sub>-ga Bill-ni [Mike-ga zibun-zisin<sub>1</sub>/kare<sub>1</sub>-o seme-ta  
 John-NOM Bill-DAT Mike-NOM self-self/him -ACC blame-PST  
 to] it-ta.  
 COMP say-PST  
 “John<sub>1</sub> said to Bill that Mike blamed him<sub>1</sub>.”

- (137) John<sub>1</sub>-wa [zibun-zisin<sub>1</sub>/kare<sub>1</sub>-ga Mary-o korosi-ta to]  
 John-TOP self-self/him-NOM Mary-ACC kill-PST COMP  
 kokuhakusi-ta.  
 confess-PST  
 “John<sub>1</sub> confessed that he<sub>1</sub> killed Mary.”

Recall that I proposed in section 4.1.2 that LEE is responsible for the lack of complementary distribution of *zibun* and *kare* in (124) and (125). This account will carry over to the present cases without any modification.<sup>41</sup>

The discussion so far in this section suggests that *zibun* and *zibun-zisin* are essentially the same. That is, both *zibun* and *zibun-zisin* lack the property of locality, they both can be bound at the C-I interface, and both of them can be assigned an

<sup>41</sup> It is not clear to me how the lack of complementary distribution in genitive positions can be accounted for. In this position, *zibun*, *zibun-zisin*, and pronouns such as *kare* do not seem to compete

interpretation in pragmatics. Are there any differences between them at all? I propose that *-zisin* has a similar role to Dutch *zelf*. In Chapter 3, I discussed that *zelf* induces pragmatic effects such as intensification, including assertion of reflexivity. It seems that *-zisin* has a similar effect. Consider the sentences in (117)-(119), repeated here as (138)-(140).

(138) ?\*Dareka-ga zibun-o tunet-ta.  
 Someone-NOM self-ACC pinch-PST  
 “Someone pinched himself.” (Aikawa 1993, 41)

(139) ?\*Daremo-ga zibun-o hagemasi-ta  
 everyone-NOM self-ACC encourage-PST  
 “Everyone encouraged himself.” (Aikawa ibid)

(140) Daremo-ga zibun-o semeta.  
 everyone-NOM self-ACC blame-PST  
 “Everyone blamed himself.”

As mentioned in section 4.1.1, (138) and (139) are somehow awkward while (140) is perfectly acceptable. This is perhaps because it is easy to imagine a context where everyone blames himself but it is less easy to come up with context where everyone is encouraging himself or someone is pinching himself.<sup>42</sup> Therefore, the prediction is that if *zibun* is replaced with *zibun-zisin*, the acceptability of the sentences will improve. This prediction is borne out:

(141) Dareka-ga zibun-zisin-o tunet-ta.  
 Someone-NOM self-self-ACC pinch-PST  
 “Someone pinched himself.”

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with each other. This might indicate that a refinement of LEE might be needed. I would like to leave this issue for future research.

<sup>42</sup> The sentence in (118)/(139) is better than the sentence in (117)/(138). I suspect that the reason for this contrast is that it is easier to construct a context in which everyone is encouraging himself than someone is pinching himself.

- (142) Daremo-ga zibun-zisin-o hagemasi-ta  
 everyone-NOM self-self-ACC encourage-PST  
 “Everyone encouraged himself.”

A further prediction made by the claim that *-zisin* is an intensifier and asserts reflexivity is that, in a context where assertion of reflexivity is not needed; sentences like (138) and (139) should be acceptable. Consider example (143), which is slightly modified version of (138).

- (143) ?\*Daremo-ga zibun-o tunet-ta.  
 everyone-NOM self-ACC pinch-PST  
 “Everyone pinched himself.”

Out of context, this sentence is awkward, but when uttered in the following context, it is perfectly acceptable:<sup>43</sup>

- (144) Sensei-ga kyousitu de onara-o si-ta.  
 teacher-NOM classroom in wind-ACC do-PST  
 “The teacher broke wind at the classroom.”  
 Warai-o koraeru tameni, kyousitu ni i-ta  
 laughter-ACC refrain.from in.order.to classroom in be-PST  
 daremo-ga zibun-o tunet-ta.  
 everyone-NOM self-ACC pinch-PST  
 “In order not to burst into laughter, everyone at classroom pinched himself.”

An alternative approach to the distribution of *-zisin* is explored by Aikawa (1993), who adopts the theory proposed by Reinhart and Reuland (1991 and 1993) and applies it to Japanese reflexives. She suggests that in Japanese some predicates are specified for [– reflexive] while others are specified for [+/- reflexives]. For

<sup>43</sup> It is believed in Japanese speaking culture that pinching oneself is a good way to hold back laughter.



feature system of reflexivity does not express the property of gradation. It seems to me that the pragmatic approach is more successful in this respect. It is extremely difficult to think of a situation where one arrests oneself. Imagining the situation where one kicks oneself is not as difficult as imagining self-arresting, and creating a context in which one protects oneself is very easy.

#### 4.2.2 [Pronoun + *zisin*] and [Proper noun + *zisin*]

In section 2.1.2, I illustrated that the Dutch *-zelf* morpheme can be combined with a pronoun or a proper noun. The same phenomenon is found in Japanese. That is, *-zisin* can be compounded with a pronoun or a proper noun:

- (148) Syatyo<sub>1</sub>-wa [untensyu-ga unten-si-te-kureru to]  
 president-TOP driver-NOM drive-do-NF-give COMP  
 omot-te-i-ta.  
 think-NF-be-PST  
 “The president thought that his driver would drive a car (for him).”  
 Sikasi, untensyu<sub>2</sub>- ga yopparat-te-i-ta node,  
 However, driver-NOM drunken-NF-be-PST because  
 kare-zisin<sub>1</sub>-ga untensi-ta.  
 him-self-NOM drive-PST  
 “Because the driver<sub>2</sub> was drunk, he<sub>1</sub> himself drove.”
- (149) Sakkyokuka-zisin-ga piano de kono kyoku-o ensousi-ta  
 Composer-self-NOM piano with this tune play-PST  
 “The composer himself played this tune with the piano.”

Like the case of *zibun-zisin*, *-zisin* in [pronoun + *zisin*] and [proper noun + *zisin*] seems to be an intensifier. As I mentioned in Chapter 3, Köning and Siemund (1999) argue that lexical items with a SELF-morpheme evoke alternatives to the referents of the NP to which they are adjoined and characterize these alternatives as a periphery of the referents. In (148), the person referred to by *kare-zisin* (namely the president) is intensified by the intensification, and alternatives of *kare* ‘he’ are evoked (say, the

driver, his wife, his subordinate, etc). Likewise, in (149), *sakkyokuka* ‘composer’ is intensified, and alternatives (say, the pianist, etc.) are evoked.

Recall that neither the Dutch [pronoun + *zelf*] nor [proper name + *zelf*] shows the property of locality. This is because the binding functions introduced by *zelf* are satisfied internally to these complex expressions. The sentences in (148) and (149) show that Japanese [pronoun + *zisin*] and [proper name + *zisin*] also lack the property of locality. However, the reason for this is different. As I argued in section 4.2.1, *zibun-zisin* does not introduce a binding function and cannot establish a syntactic dependency. In other words, unlike Dutch *zelf*, Japanese *-zisin* does not introduce a binding function. This is supported by the fact that *-zisin* itself does not show the property of locality. The morpheme *-zisin* can be used without combining with *zibun*, a pronoun or a proper name, if it is prefixed with the honorific marker *go-*. (cf. Fuji 1999). The sentence in (150) shows that *go-zisin* can have a long-distance antecedent.

- (150) Tanaka-sensei<sub>1</sub>-wa [mukasi-no osiego-ga go-zisin<sub>1</sub>-no  
 Tanaka-teacher-TOP former-GEN student-NOM HON-self-GEN  
 musume-to kekkonsi-ta koto-o] totemo yorokon-da  
 daughter-with marry-PST COMP-ACC very please-PST  
 “Prof. Tanaka<sub>1</sub> was pleased about the fact that his ex-student got married  
 to his<sub>1</sub> daughter.”

If [pronoun + *zisin*] in Japanese does not establish a syntactic dependency, it should be expected that *zibun* or *zibun-zisin* are always preferred over [pronoun + *zisin*] in local environments. This is because Japanese pronouns are constants while *zibun* and *zibun-zisin* can be bound variables.<sup>44</sup> That is, Japanese pronouns are assigned a referent in pragmatics, and this is more costly than the binding of *zibun/zibun-zisin* at

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<sup>44</sup> In non-local environments, LEE would cancel competition between *zibun* and *zibun-zisin* on the one hand and [pronoun + *zisin*] and [proper name + *zisin*] on the other. Hence, the lack of complementary distribution is expected. See section 4.1.2.

the C-I interface. However, as noticed by some researchers, [pronoun + *zisin*] can appear with a local antecedent, as illustrated in the following examples:<sup>45</sup>

(151) ?John<sub>1</sub>-ga kare-zisin<sub>1</sub>-o mamot-ta.  
 John-NOM self-ACC protect-PST  
 “John protected himself.”

(152) \*John<sub>1</sub>-ga kare<sub>1</sub>-o mamot-ta.  
 John-NOM self-ACC protect-PST  
 “John protected himself.”

Although the example in (151) is not ungrammatical, *zibun* or *zibun-zisin* in place of *kare-zisin* is much preferred. In general, [pronoun + *zisin*] tends to have a long-distance antecedent – the typical location of the antecedents is outside of the sentence. This seems to suggest that economy is operative here as well. Then, we need an explanation for why local-binding of [pronoun + *zisin*] does not cause ungrammaticality.

Although the contrast between (151) and (152) strongly suggests that it is the morpheme *-zisin* that somehow alleviates the Condition B effects of [pronoun + *zisin*], it is not clear why local binding of [pronoun + *zisin*] is possible. One possible answer to this is found in a combination of Rule I and the claim put forward by Köning and Siemund (1999) that the SELF-morpheme, being an intensifier, invokes alternatives.

(153) **Rule I**

NP A cannot corefer with NP B if replacing A with C, C a variable A bound by B, yields an indistinguishable interpretation.

(Grodzinsky and Reinhart 1993, 79)

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<sup>45</sup> See Katada (1991) and Fuji (1999).

The observation I will be relying on is that the use of *kare-zisin* appears to be acceptable precisely in contexts in which it yields an interpretation that is distinguishable from a bound variable interpretation; therefore in those contexts it does not compete with *zibun-zisin* (or *zibun*). The sentence in (151) is acceptable in a context in which the only person defending John was John himself; it cannot be used in contexts in which the only person who was defending himself was John. This is not unexpected: recall that *kare* cannot be bound by a quantifier, so its use unambiguously rules out a bound reading. But why does the same context that licenses *kare-zisin* not also license *kare*? Unlike *kare-zisin*, pronouns such as *kare* ‘him’ do not automatically create contexts that invoke alternatives, although they are compatible with such contexts. Suppose that the intended interpretation of the sentence in (152) is that *John protected himself* without contrasts with alternatives (such as *Bill, Mark, Tom*). Replacing *kare* with *zibun* does not yield a different interpretation, and *zibun* should be preferred according to Rule I. Hence, the sentence in (152) is ruled out. The suggestion put forward here is a tentative one, and I would like to leave this issue for future research.

### 4.3 Summary of Section 4

In this section, I discussed Japanese reflexives. In section 4.1, I argued that the morphologically simplex reflexive *zibun* does not introduce a binding function (hence, it does not establish a syntactic dependency with its antecedent). Then, in section 4.2, I discussed morphologically complex reflexives. In Japanese, like Dutch, morphologically complex reflexives are formed by combining a SELF-morpheme, *-zisin*, with either the simplex reflexive, i.e. *zibun*, a pronoun or proper name. However, I concluded that, unlike Dutch, *-zisin* does not introduce a binding function, and does not establish a dependency at the syntactic level.<sup>46</sup>

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<sup>46</sup> Chinese reflexives have similar properties to Japanese reflexives in many respects (for instance, the possibility of long-distance binding, preference of subject antecedents, lack of c-command condition, etc). Yu (1996) proposes an extensive analysis of Chinese reflexives, which is very different from the analysis of Japanese developed here. Yu argues that local binding is the result of theta role assignment to the anaphor, which covertly moves to VP, and that the long-distance logophoric interpretation of an anaphor is the result of incorporation of the anaphor into a pro element.

## 5 Summing Up

The aim of this chapter was to show that syntax, combined with economy considerations affecting nominal expressions, plays a role in determining the distribution of reflexives. More specifically, I adopted the theory of syntactic dependencies developed by Neeleman and Van de Koot (2002a) and the economy hierarchy of linguistic levels where dependencies are established, as proposed by Reuland (2001a and 2001b). I explored how a combination of these theories could explain the distribution of reflexives.

Following Neeleman and Van de Koot, I proposed that English reflexives, Dutch *zelf* and other nominal expressions combined with this morpheme introduce a binding function  $f_{\text{self}}$ , which is satisfied by a theta function  $f_{\theta}$ , which is in turn satisfied by an argument. However,  $f_{\text{self}}$  does not explain the distribution of the morphologically simplex Dutch reflexive *zich*, and I suggested that *zich* (and *zichzelf*) introduce another type of binding function  $f_{\text{SE}}$  that is satisfied by an agreement function  $f_{\text{Agr}}$ , which is ultimately satisfied by  $\phi$ -features carried by an argument.

This theory of syntactic dependencies by itself does not explain the complementary distribution of reflexives and pronouns in certain environments, and in order to account for this I adopted Reuland's theory of economy. A key proposal I put forward is that economy is evaluated locally (LEE). This had the consequence that under some conditions, economy is deactivated. LEE accounts for a range of otherwise mysterious data.

Contrary to English and Dutch, in Japanese, what are traditionally called reflexives i.e., *zibun* and *zibun-zisin*, do not show locality and do not seem to establish dependency with their antecedents. However, I suggested that even in this language LEE is operational, and that the lack of complementary distribution between *zibun* and *zibun-zisin*, on the one hand, and pronouns, on the other, in a long-distance environment can be explained by LEE.

Combining the theory developed in this chapter with the pragmatic approach discussed in Chapter 3 enables us to overcome some of the empirical and conceptual problems of other approaches (such as the movement approaches of Hornstein

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(2001) and Reuland (2001a and 2001b), the reflexivity approach of Reinhart and Reuland (1991) and (1993) and the arity violation approach of Reuland (2001a)), and it seems that the approach presented in this chapter is a promising way to proceed.

The following tables give an overview of the anaphoric and pronominal forms across the three languages discussed and of the properties I have attributed to them:

<b>DUTCH</b>			
	<b>Syntactic Property</b>	<b>Semantic Property</b>	<b>Notes</b>
<b>zelf</b>	$f_{self}$	bound variable	
<b>zich</b>	$f_{SE}$	bound variable	
<b>pronoun/ + zelf</b>	$f_{self}$ (introduced by <i>zelf</i> )	bound/free variable	$f_{self}$ is internally satisfied by the pronoun.
<b>proper name + zelf</b>	$f_{self}$ (introduced by <i>zelf</i> )	constant	$f_{self}$ is internally satisfied by the proper name.
<b>pronoun (hem, etc)</b>	no function introduced	bound/free variable	

<b>ENGLISH</b>			
	<b>Syntactic Property</b>	<b>Semantic Property</b>	<b>Notes</b>
<b>pronoun/ + self/selves<sup>1</sup></b>	$f_{self}$	bound variable	
<b>pronoun/ + self/selves<sup>2</sup></b>	no function introduced	bound/free variable	Have to satisfy pragmatic constraints.
<b>pronoun (him, etc)</b>	no function intrduced	bound/free variable	

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<b>JAPANESE</b>			
	<b>Syntactic Property</b>	<b>Semantic Property</b>	<b>Notes</b>
<b>zibun</b>	no function introduced	bound/free variable	
<b>zibun-zisin</b>	no function introduced	bound/free variable	
<b>pronoun/ + zibun</b>	no function introduced	constant	
<b>proper name + zibun</b>	no function introduced	constant	
<b>pronoun (kare, etc)</b>	no function introduced	constant	

## CHAPTER 5

# ON AGREEMENT, CASE AND THE DISTRIBUTION OF REFLEXIVES

### 1 Introduction

In the previous chapters, I argued that the syntactic encoding of binding dependencies, economy, and pragmatic factors (such as intensification, etc.) all play a role in the distribution of reflexives. However, these factors do not explain why reflexives do not appear in nominative position in many languages. Consider the following English sentence:

- (1) \*John says himself criticises someone everyday.

The reflexive in this sentence is located in a nominative position, and the sentence is ungrammatical. One might suggest that the ungrammaticality of the sentence should be attributed to a locality effect. That is, the relevant syntactic dependency cannot be established across a CP boundary, and the reflexive does not have an antecedent within the sentence. However, attributing the absence of reflexives from nominative positions to a failure of satisfaction of a binding function is problematic. Recall that I proposed in Chapter 4 (section 3.3) that English reflexives are ambiguous: one type of reflexive introduces a binding function, the other type being a locally free reflexive, which does not introduce such a function. If the fact that English bound reflexives cannot appear in nominative position is attributed to a general property of syntactic dependencies, then we should expect that a locally free reflexive, whose reference is assigned in pragmatics, should be able to appear in that position.

However, as Baker (1995) observes, even locally free reflexives cannot appear in nominative position. This strongly suggests that the ungrammaticality of the sentence in (1) is nothing to do with the failure to establish a syntactic dependency across a CP boundary.

The problem is brought into sharper focus by the following Icelandic sentence, in which locality cannot be a factor at all:

- (2) \*Henni finnst sig/sin/sér veik.  
Her-DAT finds self-NOM sick.  
“She considers herself sick.” (Eveaert 1990, 281)

In this sentence, the subject bears dative case, and the object bears nominative. Although there is no CP boundary between the subject and the reflexive, the sentence is ungrammatical. Therefore, the ungrammaticality of the sentence seems to have nothing to do with the locality of binding.

Then what is the reason for the ungrammaticality of sentences with a nominative reflexive? Rizzi (1990) suggests the following generalization, which he calls the Anaphor-Agreement Effect:

(3) **The Anaphor-Agreement Effect**

Anaphors do not occur in syntactic positions construed with agreement.

(Rizzi 1990, 27)

A large number of languages observe the Anaphor-Agreement Effect, (henceforth AAE), and so this generalization seems to be correct.<sup>1</sup> For instance, both in English and in Icelandic, like in other European languages, nominative arguments agree with their predicates, and it is therefore expected, according to the AAE, that reflexives do not occur in nominative positions in these languages. This is a correct prediction, as we can see in (1) and (2).

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<sup>1</sup> I will discuss some exceptions later in this chapter.

Although the generalization seems to be correct, we should ask why this should be so. There have been several attempts to explain why anaphors in nominative positions are not allowed in some languages, many of them not without problems.<sup>2</sup> However, the approach suggested by Everaert (2001) and Reuland (2001a), to be discussed in section 2, seems to be promising, particularly since it ties in very well with Rizzi's generalization. These authors propose that AAE is a result of  $\phi$ -feature deficiency of reflexives. That is, an anaphor that does not contain a full set of  $\phi$ -features cannot appear in an agreeing position because it cannot enter a proper agreement relation with its associated predicate. In section 3 I will consider what implications the AAE has for case theory (henceforth referred to as the theory of argument marking). More specifically, I will contrast a GB-type approach (cf. Chomsky 1981 and 1982) to argument-marking with its minimalist counterpart (cf. Chomsky 1993, 1995b and 2001), and will consider which of these is best placed to capture the AAE. Finally, in section 4, I will explore how the AAE can be implemented within the framework of the theory of syntactic dependency adopted in this dissertation.

## **2 $\Phi$ -Feature Deficiency and the Anaphor-Agreement Effect**

Reuland (2001a) and Everaert (2001) propose that the AAE is a result of  $\phi$ -feature deficiency of anaphors. More specifically, they argue that, because some anaphors are  $\phi$ -feature deficient, they cannot enter into a proper agreement relation with a predicate. I will call  $\phi$ -feature deficiency PFD, and I will henceforth refer the view that the AAE is caused by the PFD nature of anaphors as the 'PFD approach'. Let us consider examples of the AAE. The morphologically simplex Icelandic reflexive lacks number and gender features, and the PFD approach predicts that this reflexive cannot appear in nominative position. The sentence in (2), repeated here as (4), illustrates that this is the correct prediction.

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<sup>2</sup> For example, Chomsky (1981 and 1986), Huang (1982), Lebeaux (1983) and Rizzi (1990). See Shiraki (2004a) for the discussion of the problems for their accounts.

## Chapter 5: On Agreement, Case and the Distribution of Reflexives

- (4) \*Henni finnst sig/sin/sér veik.  
Her-DAT finds self-NOM sick.  
“She considers herself sick.” (Eveaert 1990, 281)

If it is correct that PFD anaphors show the AAE because they cannot enter a proper agreement relation, it is expected that we do not observe the AAE if anaphors are not PFD (cf. Everaert 2001). This prediction seems to be borne out. Consider the following Greek sentence:

- (5) [O eaftos tu]<sub>1</sub> tu<sub>1</sub> aresi [tu Petru]<sub>1</sub>  
the:NOM self:NOM his:GEN CL:DAT like:3SG the:DAT Peter:DAT  
“Peter pleases himself.” (Anagnostopoulou and Everaert 1999, 108)

The reflexive *o eftos tu* ‘the self of him’ is a full DP whose head is a third person, masculine singular noun (cf. Iatridou (1988) and Anagnostopoulou and Everaert 1999). As expected, the AAE is absent here.

Georgian is a similar case. According to Harris (1981), Georgian reflexives always trigger third person singular agreement on the verb. For instance, even when the reflexive is bound by a second person antecedent and could be called a second person reflexive, it triggers third person agreement. This peculiar property of Georgian reflexives is nothing to do with their anaphoric nature. The reflexive (*tavi*) can be used non-anaphorically, and when it is used non-anaphorically it means ‘head’. When *tavi* is used with this meaning, it also triggers third person agreement. This suggests that *tavi* must be specified for 3<sup>rd</sup> person singular and triggers third person, masculine, singular agreement in the regular way, as Everaert (2001) claims.<sup>3</sup> The sentences in (6) and (7) are examples from Georgian:

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<sup>3</sup> Woolford (1999) suggests that reflexive agreement in Georgian is an instance of default agreement, and such agreement would not count for the AAE. However, as Everaert (2001) argues, there is no reason to assume that Georgian applies a default agreement strategy in the case of reflexives: these cases manifest regular agreement between the verb and the reflexive, determined by the nominal head of the phrase.

- (6) Prezidentama<sub>i</sub> Ø-ixsn-a [tavis<sub>i</sub> tavi]<sub>1</sub>.  
 president-ERG him-i-saved-he head's-NOM head-NOM  
 “The president saved himself.” (Everaert 2001, 107)
- (7) [tavisma tavma] Ø-ixsn-a presidenti.  
 head's-ERG head-ERG him-i-saved-he president-NOM  
 “It was the president who saved himself, no one else is responsible for saving him.” (Everaert *ibid*)

Georgian has both object and subject agreement, and it is expected that *tavi* displays the AAE in neither position. The sentences in (6) and (7) show that this prediction is borne out.

So far the PFD approach seems to successfully account for the presence and absence of the AAE. In the case of English, however, the correlation between the PFD and the AAE is blurred at first sight. English reflexives are formed by compounding a pronoun and the morpheme *-self*, and since English pronouns have a full set of  $\phi$ -features, one might expect that English reflexives can appear in nominative position. However, as shown in (1), repeated here as (8), English reflexives can in fact not appear in that position. I propose to account for this by assuming that English reflexives are headed by the SELF-morpheme, as illustrated in (9), and that this internal structure prevents them from entering into a full agree relation. Crucially, the *-self* only inflects for number and not for person or gender, while the verbal inflection reflects both number and person features.<sup>4</sup>

- (8) \*John says himself criticises someone everyday.

- (9)
- ```

      -self/selves
     /          \
pronoun         -self/selves
  
```

|                |       |                  |
|----------------|-------|------------------|
| (10) I         | like  | myself.          |
| You (singular) | like  | yourself.        |
| He/She         | likes | himself/herself. |
| We             | like  | ourselves.       |
| You (plural)   | like  | yourselves.      |
| They           | like  | themselves.      |

If the head of English reflexives lacks a full set of  $\phi$ -features, they should be counted as PFD anaphors, so that the fact that they do not appear in nominative position is compatible with a PFD approach to the AAE.

### 3 What Anaphors Tell Us about Agreement and Case

In the previous section, I argued that the PFD approach explains the presence of the AAE in some languages (for instance, Icelandic, English, etc.) and the absence of the AAE in others (for instance, Greek, Georgian, etc.) In this section, I would like to explore the implication the PFD approach has for the theory of case and agreement

In the GB era (Chomsky 1981, 1982, and related work), it was assumed that arguments have to be ‘marked’ in order to be visible for  $\theta$ -assignment, and it was considered that it is Case/agreement relations that mark arguments in the relevant way (see Chomsky 1986 and Nichols 1986 for discussion). In GB the nominative case was treated differently from the other cases (at least in the Germanic and Romance languages). That is, nominative was assigned under spec-head agreement; the other cases were assigned under government.

In the minimalist program (see Chomsky 1993, 1995b and subsequent work), on the other hand, case/agreement relations were dissociated from argument marking; instead it is assumed that case makes a DP as ‘active’ for agreement-related processes of Checking Theory. Checking Theory was proposed in an attempt to overcome a conceptual problem with GB case theory, i.e., the problem of asymmetry

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<sup>4</sup> It does not seem to me that gender features play any role in English syntax and neither in Dutch, and I will therefore ignore gender when I discuss English and Dutch agreement.

between nominative and other cases. It is claimed in Checking Theory, that case is a reflex of agreement, and that all case relations look like agreement relations.

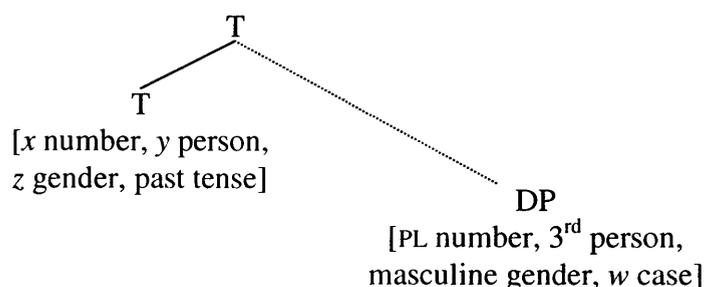
In this section, I will discuss both Checking Theory (section 3.1) and GB-type theories of case/agreement (section 3.2) and explore which of these two approaches to case and agreement is best suited to express the PDF theory of the Anaphor Agreement Effect.<sup>5</sup>

### 3.1 The PFD and Checking Theory

#### 3.1.1 How Could Standard Minimalism Explain the AAE

In minimalism, case is a reflex of agreement, and all arguments are licensed through checking of agreement and case (Chomsky 1993, 1995b, among many others). Recent incarnations of this proposal are based on the operation ‘Agree’ (Chomsky 2000 and 2001). Under Agree, a probe H with unvalued  $\phi$ -features establishes agreement with a goal DP carrying an unvalued case feature. If the DP can value the  $\phi$ -features of H, H values the case feature of the goal. Consider the diagram in (11).

(11)



Here, the probe T has unspecified number, person, gender features, and the goal DP, whose number, person and gender features are specified, has unvalued case feature. Under Agree, the number, person and gender features on T are valued, and the case of the DP is valued by T:

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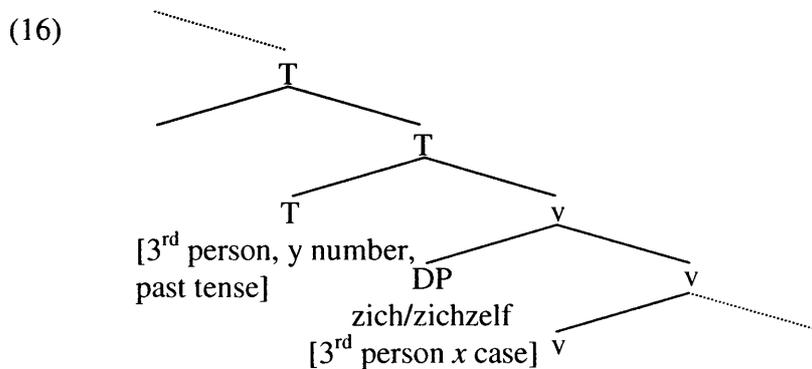
<sup>5</sup> In this section, I will largely ignore non-PFD anaphors, because their behaviour cannot tell us much about the theories of case and agreement.



The same analysis may apply to Dutch. Consider the sentence (15).<sup>6</sup>

- (15) \*Jan<sub>1</sub> zag dat zich<sub>1</sub>/zichzelf<sub>1</sub> haar schilderde.  
 John saw that self/self-self her painted  
 “John saw that he painted her.”

The structure of the relevant part of the sentence is shown in (16):



Dutch reflexives do not contain a number feature. They only have a person feature specified for the 3<sup>rd</sup> person. Hence, in (16), the values of these features on the head T are not fixed. As a result, the value of the case feature on *zich* cannot be fixed, as shown in the above diagram. Therefore, the corresponding example in (15) is ungrammatical.

### 3.1.2 Exceptions

As we have just seen, Checking Theory seems to be capable of explaining the lack of reflexives in nominative positions in Dutch and English. In this section, I turn to four apparently exceptional cases: Japanese (section 3.1.2.1), English/Dutch accusative anaphors (section 3.1.2.2), Swahili (section 3.1.2.3) and Kannada (section 3.1.2.4).

<sup>6</sup> The ungrammaticality of this sentence might also involve the failure of the satisfaction of a binding function. See section 4 for discussion.

### 3.1.2.1 Japanese

In Chapter 4, I discussed four types of Japanese reflexives: *zibun*, *zibun-zisin*, [pronoun + *zisin*] and [proper name + *zisin*]. Among these reflexives, it might be the case that [pronoun + *zisin*] and [proper name + *zisin*] are headed by the pronoun/proper name parts, which contains a full set of  $\phi$ -features. If this is the case, these reflexives as a whole should be considered to have a full set of  $\phi$ -features.<sup>7</sup> Therefore, I will not discuss these reflexives here. Instead, I will use the PDF anaphors *zibun* and *zibun-zisin* to probe the AAE in Japanese.

Let us consider if *zibun* and *zibun-zisin* are PFD reflexives or not. As demonstrated in Chapter 4 section 4.1 and 4.2, *zibun* and *zibun-zisin* can refer to a male 3<sup>rd</sup> person, a female 3<sup>rd</sup> person, the speaker, and in some cases the addressee. In addition, the following sentence shows that Japanese reflexives can also refer to a plural entity:

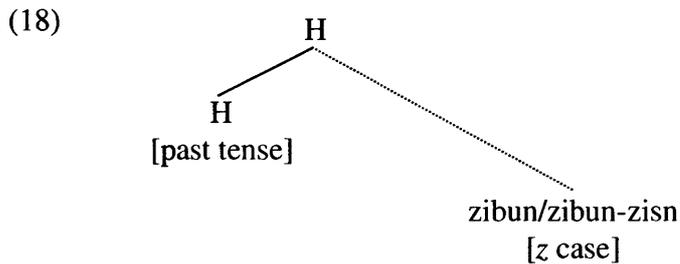
- (17) John-to Mary-ga zibun/zibun-zisin-no ie-o tate-ta  
 John-and Mary-NOM self/self-self-GEN house-ACC build-PST  
 “John and Mary built their own houses.”

Taken together, these facts strongly suggest that *zibun* and *zibun-zisin* are not specified for  $\phi$ -features at all. That is, the data above suggests that these reflexives are radically PFD.

Recall that, in Checking Theory, case is a reflex of agreement. If an argument cannot value the  $\phi$ -features of the head of an appropriate functional category, the case feature of that argument cannot be valued. Given that *zibun* and *zibun-zisin* are PFD reflexives, they should fail to value the  $\phi$ -features of an appropriate functional category, and their case features should remain unvalued.<sup>8</sup>

<sup>7</sup> Although it is not decisive, it might also be the case that [pronoun + *zisin*] and [proper name + *zisin*] are headed by the morpheme *-zisin* and that this morpheme is PFD. Then, these reflexives as a whole are PFD, like English reflexives. However, even if this is the case, it would not affect the arguments presented here.

<sup>8</sup> Japanese predicates do not reflect person, number or gender either, and hence there is no evidence for functional categories that carry  $\phi$ -features in this language. In the absence of  $\phi$ -features, it is not clear how Agree could operate in this language.



Checking Theory assumes that all arguments enter into Agree relations. Hence, *zibun* and *zibun-zisin* should not occur in any argument position. However, as can be seen in the following sentences, these reflexives, unlike their counterparts in Germanic and Romance languages, can appear freely in any argument position, including a nominative argument position. In (19), these reflexives appear in the nominative, while in (20) they appear in the accusative.

(19) John-ga [zibun/zibun-zisin-ga Mary-o seme-ta to]  
 John-NOM self/self-self-NOM Mary-ACC blame-PST COMP  
 it-ta.  
 say-PST  
 “John said that he blamed Mary.”

(20) John-ga [Mary-ga zibun/zibun-zisin-o seme-ta to]  
 John-NOM Mary-NOM self/self-self-ACC blame-PST COMP  
 it-ta.  
 say-PST  
 “John said that Mary blamed him.”

It is not clear how these examples can be treated in Checking Theory. It might be possible to assume that *zibun* and *zibun-zisin* are ambiguous lexical items that may vary in  $\phi$ -features, (for instance, *zibun*<sup>1</sup> could be specified for [1<sup>st</sup> person, singular, masculine], *zibun*<sup>2</sup> for [3<sup>rd</sup> person, plural, feminine], and *zibun*<sup>3</sup> for [3<sup>rd</sup> person, singular, masculine], etc.) and that they undergo the operation Agree with a functional category:



circular. Similar remarks are in order for Dutch reflexives and their ability to occur in the accusative.

### 3.1.2.3 Swahili

Swahili has a different way of expressing reflexivisation than Japanese, Dutch and English. In this language, a reflexive in argument position induces a special reflexive agreement morpheme *-ji* (cf. Vitale 1981 and Woolford 1999), as shown in (23).

- (23) Ahmed a-na-ji-penda mwenyew.  
Ahmed he-PRS-REFL-love himself  
“Ahmed loves himself.” (Vitale 1981, 137)

It is not clear how Checking Theory could deal with data like the one in (23) because the morpheme *-ji* does not seem to be a true agreement morpheme; rather it looks like a reflexiviser. I will discuss the reflexive agreement morpheme of Swahili in section 3.2.2.1.

### 3.1.2.4 Kannada

Reflexives in Kannada seem to be PFD anaphors: they are specified for third person but not for other  $\phi$ -features (cf. Amritavalli 2000). Then, as in the case of Japanese, Dutch and English, it should be expected that reflexives in this language should not be allowed in argument positions. Nevertheless, they do appear in some argument positions. In (24), a reflexive is in the embedded nominative position, and in (25) a reflexive is in the accusative position.

- (24) raama<sub>1</sub> [taanu<sub>1</sub> tumba jaaNa anta] heeLuttaane.  
Rama self very clever COMP says  
“Rama<sub>1</sub> says that he<sub>1</sub> is very clever.” (Amritavalli 2000, 57)

- (25) raama<sub>1</sub> tannannu oLLeyavanaagi tiLididdaane.  
Rama self-ACC good man thinks  
“Rama<sub>1</sub> thinks himself<sub>1</sub> to be a good man.” (Amritavalli 2000, 57)

A more interesting and puzzling aspect of Kannada is that a reflexive even appears in an overt agreement position. In this language, a predicate (overtly) agrees with its subject, and the agreement reflects person, number and gender (cf. Sridhar 1990). This property contrasts with Japanese, English and Dutch.

## 3.2 The PFD and GB-based Theories of Case and Agreement

### 3.2.1 How Could GB-based Theories Explain the AAE

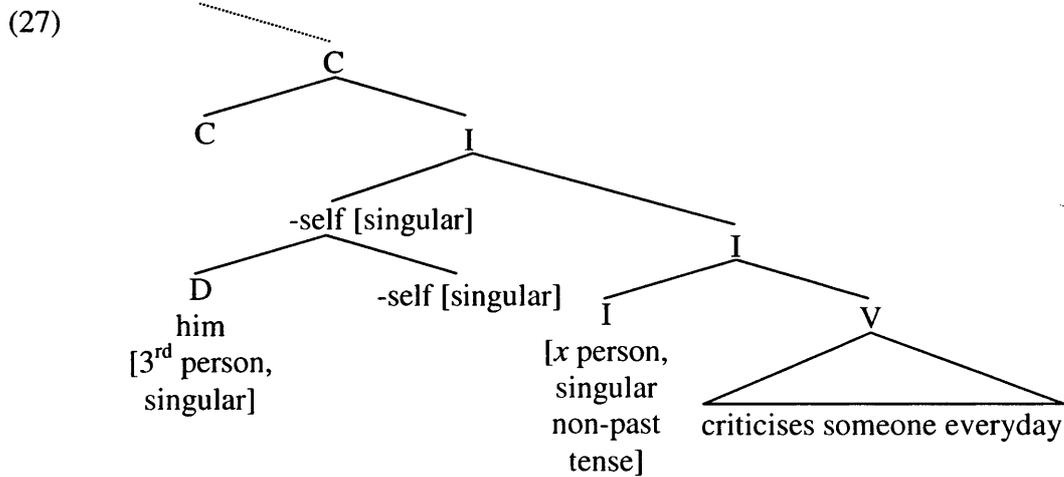
In the previous section, I discussed how the minimalist Checking Theory combined with the PFD approach could account for the AAE. In this section, I will turn to GB-based theories of argument marking and illustrate that, when the PFD approach to the AAE is combined with such theories, the distribution of reflexives follows with very few additional assumptions.

In GB, case is not a reflex of agreement. This implies that, in principle, case and agreements can be dissociated and that arguments can be marked by either case or agreement. For instance, in the case of the Germanic and Romance languages, it is considered that ‘agreeing’ nominatives are case-marked in virtue of spec-head agreement between the argument and INFL (Chomsky, 1981 and Sportiche, 1988) whereas accusative arguments are licensed by a case-relation with V, which is not a relation of agreement.

In this section I will discuss three languages: English, Dutch, Japanese and Kannada. Let us begin with the analysis of English. As I have already suggested, English reflexives are PFD because they are headed by the morpheme *-self/selves*, and this morpheme does not contain a full set of  $\phi$ -features. In this language, a nominative argument agrees with INFL/I (or a verb). Being PFD anaphors, English reflexives in nominative positions are ruled out by more or less the same logic that was used in the minimalist account. That is, they cannot agree with their predicate (or rather with the  $\phi$ -features in I). Consider the sentence in (8), repeated here in (26).

(26) \*John says himself criticises someone everyday.

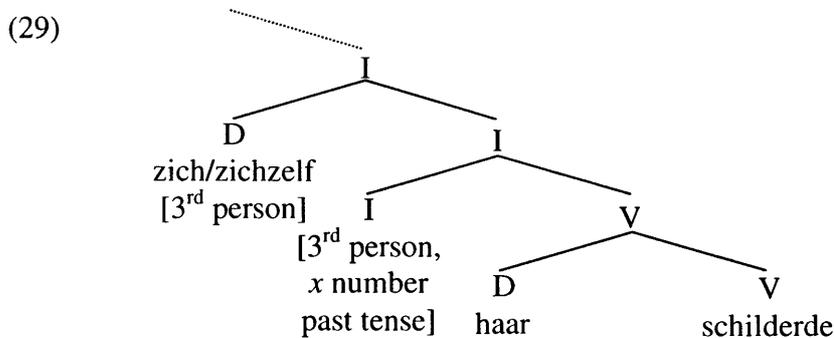
The partial tree of the sentence in (26) is in (27).



The reflexive *himself* as a whole is specified only for the number feature. Since I contains a person feature as well, the reflexive cannot properly support the agreement relation, and the sentence is ungrammatical.

A similar analysis applies to nominative reflexives in Dutch. Consider the sentence in (15), repeated here as (28).<sup>9</sup>

- (28) \*Jan<sub>1</sub> zag dat zich<sub>1</sub>/zichzelf<sub>1</sub> haar schilderde.  
 John saw that self/self-self her painted  
 "John saw that he painted her."



<sup>9</sup> See footnote 6.

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The reflexive *zich/zichzelf* in (29) is located in a nominative position and should establish an agreement relation with I under spec-head relation. However, because *zich* and *zichzelf* are PFD reflexives, which contain only a person feature, they cannot enter into a proper agreement relation with I. Therefore, the sentence in (28) is ungrammatical.

Now let us turn to reflexives in accusative positions, which have to be treated as exceptions in the minimalist Checking Theory. Recall that, in Checking Theory, accusative arguments must also establish an agreement relation with a relevant head, and otherwise unmotivated assumptions are needed to explain the legitimacy of Dutch and English reflexives in accusative positions. On the other hand, in GB-based theories of argument marking, the legitimacy of Dutch and English reflexives in accusative positions can be accounted for in a straightforward way. Consider the Dutch sentences in (30) and (31) and the English sentence in (32).

(30) Jan wast zich.  
John washed self  
“John washed himself.”

(31) Jan bewondert zichzelf.  
John admires self-self  
“John admires himself.”

(32) John admires himself.

The reflexives in all the sentences above may be assumed to have been marked by accusative case, which is assigned by the verb. Crucially, there is independent evidence from pronominal forms in the language that complements of the verb do indeed receive accusative case. Therefore, the PFD status of these reflexives is irrelevant here and no anaphor agreement effect is expected. Indeed, the sentences in (30)-(32) are all fully grammatical.

In the minimalist program, it is assumed that even languages without overt agreement such as Japanese establish agreement relation between each argument and

some functional head. Like Dutch and English reflexives in the accusative position, Japanese reflexives in argument positions are problematic for Checking Theory and some ad hoc assumptions are needed to overcome the problems.

Contrary to the minimalist Checking Theory, in a GB-style approach, case can license a non-nominative argument in the absence of agreement. Neeleman and Weerman (1999) argue that, in Japanese, also nominative arguments are licensed by case without agreement. Let us consider the case paradigm of Japanese in (33). This table shows that Japanese, in contrast with the Germanic and Romance languages, has a full set of morphological cases that includes an affixal form for nominative.<sup>10</sup>

|      |                   |        |
|------|-------------------|--------|
| (33) | <b>Japanese</b>   | 'book' |
|      | <i>NOMINATIVE</i> | hon-ga |
|      | <i>GENITIVE</i>   | hon-no |
|      | <i>DATIVE</i>     | hon-ni |
|      | <i>ACCUSATIVE</i> | hon-o  |

The fact that there is no agreement in predicates combined with the fact that there is a full set of morphological cases suggests that all arguments in this language are 'dependent-marked' in the terminology of Nichols (1986). In other words, unlike in Dutch and English, in Japanese all arguments are licensed by case without agreement, even nominative arguments. This approach to argument-marking predicts that the Anaphor-Agreement Effect should be absent in languages in which nominative is a true case. As we have already seen in (19) and (20), repeated here as (35) and (34) respectively, this prediction is correct for Japanese.

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<sup>10</sup> For instance, classical Latin and middle Dutch do not carry a case affix whereas lexical items bearing other cases do.

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- (34) John-ga [Mary-ga zibun/zibun-zisin-o seme-ta to]  
John-NOM Mary-NOM self/self-self-ACC blame-PST COMP  
it-ta.  
say-PST  
“John said that Mary blamed him.”

- (35) John-ga [zibun/zibun-zisin-ga Mary-o seme-ta to]  
John-NOM self/self-self-NOM Mary-ACC blame-PST COMP  
it-ta.  
say-PST  
“John said that he blamed Mary.”

The Japanese nominative anaphor in (35) is no less well-formed than its accusative counterpart in (34). To sum up, although *zibun* and *zibun-zisin* are PFD reflexives, the example in (35) is fully grammatical because agreement is irrelevant to argument marking in Japanese.

Kannada is a language that appears to be present counterexamples to the AAE. As I illustrated in section 3.1.2.4, reflexives in Kannada are PFD anaphors, and the language has subject-predicate agreement. Nevertheless, a reflexive can appear in subject position. At first sight this seems to be a problem for the GB-based approach. However, careful observation of the agreement system in this language indicates that, rather than being a counterexample to the AAE, Kannada may actually confirm it in striking fashion.

To begin with, the subject-verb agreement found in this language exhibits properties that are rather unexpected. For instance, singular subjects can induce plural agreement marking on the verb so as to express respect toward the subject. Furthermore, with “nonrational beings” such as animals, ghosts, and children (which are grammatically neuter nouns), the verb may optionally occur without a plural marker even when these nouns are marked for plural (Sridhar 1990). These discrepancies in subject-verb agreement are not indicative of the kind of *syntactic* relation between the subject and the verb found in languages like English and Dutch,

but instead suggests that agreement marking has a semantic basis. If so, the relevant subject-predicate relation may well not suffice for argument marking.

My tentative conclusion about the Kannada agreement system receives support from the case paradigm. According to Sridhar, although most nominative nouns are unmarked, there is a sporadic tendency to mark nominative nouns with *-u* in this language. Indeed, the nominative reflexive pronoun is *always* marked by *-u* as shown in the following table:

|      |              |          |                        |
|------|--------------|----------|------------------------|
| (36) | Nominative   | taanu    |                        |
|      | Accusative   | tannannu |                        |
|      | Dative       | tanage   |                        |
|      | Possessive   | tanna    |                        |
|      | Locative     | tannalli |                        |
|      | Instrumental | tanninda | (Amritavalli 2000, 52) |

It seems, then, that nominative anaphors in Kannada are completely on par with their Japanese counterparts: they are licensed in subject position because they are marked by case rather than by agreement.

### 3.2.2 Exceptions

In this section, I will discuss languages for which GB-based theories do not seem to offer straightforward explanations. However, closer inspection suggests that these languages may not present true counterexamples in most of the cases. I will discuss Swahili and Swedish here.

#### 3.2.2.1 Swahili

Swahili has optional overt object agreement, as shown in (37) and (38).<sup>11</sup>

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<sup>11</sup> An object agreement morpheme obligatorily appears on the verb if the object is a member of the so-called Class 1 or 2 or of it is an animate noun of other classes. Non-animate objects optionally trigger object agreement on the verb in emphatic contexts, in derived structures with non-canonical word order, in certain types of locatives, etc. (cf. Vitale 1981).

- (37) Juma a-li-mw-a-a fisi.  
Juma he-PST-him-kill hyena  
“Juma killed a hyena.” (Vitale 1981, 17)

- (38) wanakijiji wa-me-m-cheka Juma.  
villagers they-per-him-laugh Juma  
“The villagers laughed at Juma.” (Vitale 1981, 19)

This might suggest that the licensing of a Swahili accusative argument involves head-marking. That is, it could be based on an agreement relation with the verb, just like nominative in English. If that were indeed the case, then the sentence in (23), repeated here as (39), apparently illustrates that Swahili is an exception for the AAE.

- (39) Ahmed a-na-ji-penda mwenyew.  
Ahmed he-PRS-REFL-love himself  
“Ahmed loves himself.” (Vitale 1981, 137)

To account for data like that in (39), Woolford (1999) proposes that Swahili does in fact display the AAE, because normal object agreement never occurs with anaphoric objects, and instead a reflexive in object position triggers the presence of the reflexive object morpheme, *-ji* on the verb, as shown in (39). Woolford modifies Rizzi’s characterisation of the AAE in (3) as follows, so as to reflect the Swahili data:

- (40) **Woolford’s Anaphor-Agreement Effect**  
Anaphors do not occur in syntactic positions construed with agreement,  
unless the agreement is anaphoric. (Woolford 1999, 264)

Here I would like to propose an alternative analysis to Woolford’s. However, before proceeding to my argument, it is necessary to have a look at some other properties of Swahili. Let us consider the following sentence first:

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- (41) kasha lenyewe li-li-fika.  
box itself 3SUBJ-PST-arrive  
“The box itself arrived.” (Vitale 1981, 137)

The morpheme *-enyewe* is what Vitale (1981) calls an “emphatic reflexive”. In (41), *lenyewe* ‘itself’ emphasises the subject *kasha* ‘box’, and this reflexive must be in a non-argument position.

Next, let us consider the sentences in (42)-(45).

- (42) Juma a-li-u-fungua.  
Juma 3.SG-PST-3OBJ-open  
“Juma opened it.” (Vitale 1981, 24)

- (43) Fantuma a-na-ya-panda.  
Fantuma 3.SG-PRES-3.OBJ-plant  
“Fantuma plants them (i.e., flowers).” (Vitale, *ibid*)

- (44) \*Juma a-li-fungua.  
Juma 3.SG-PST-open  
“Juma opened.”<sup>12</sup> (Vitale, *ibid*)

- (45) \*Fantuma a-na-panda.  
Fantuma 3.SG-PRES-plant  
“Fanta plants.” (Vitale, *ibid*)

These sentences show that objects in transitive sentences may be deleted in Swahili as long as the predicate carries an object agreement morpheme. In (42) and (43), although there is no object argument, the sentences are still grammatical because there are object agreement morphemes on the verbs. On the other hand, the sentences in (44) and (45) contain neither an object argument nor an object agreement

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<sup>12</sup> Vitale translate *funfua* as “close” in this sentence. However, I believe that the translation for this word should be ‘open’, and I modified the relevant part of the sentence accordingly.

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morpheme although the verbs in these sentences are transitive verbs. Hence, the resulting sentences are ungrammatical.

Finally, consider the following pair of sentences:

- (46) Ahmed a-na-ji-penda mwenyewe.  
 Ahmed he-PRS-REFL-love himself  
 “Ahmed loves himself.” (Vitale 1981, 137)
- (47) Ahmed a-na-ji-penda.  
 Ahmed he-PRS-REFL-love  
 “Ahmed loves himself.” (Vitale 1981, 137)

These sentences show that when the reflexive morpheme *-ji* appears in a verb, a reflexive such as *mwenyewe* can be omitted. In (46) both *-ji* and the reflexive argument *mwenyewe* appear whereas in (47) only *-ji* appears but not *mwenyewe*, and both sentences are grammatical.

From the above observations, I conclude that *-ji* is the real reflexive, while the combination [pronominal element + *enyewe*] is an intensifier. One way of implementing this proposal is to assume that affixation with *-ji* affects the semantic structure of a predicate in the way indicated below:

$$(48) \quad \lambda y \lambda x [x y] \xrightarrow{\text{affixation with } -ji} \lambda x [x x]$$

In (48), the resulting predicate is monadic and is therefore associated with a single theta function (or single theta role) in the syntax. The view defended here implies that the realization of reflexivity in natural language may vary. It may be expressed syntactically through application of a binding function such as  $f_{\text{self}}$  or  $f_{\text{SE}}$  or word-internally through affixation with an affix like *-ji* in Swahili that affects the argument structure of a verb. Reflexivisation by a verbal morpheme is certainly not a unique property of Swahili. It can also be observed in Kannada (cf. Lidz 1995 and

his subsequent works) and Finnish (cf. Sells, Zaenen and Zec 1987), among other languages.

Insofar as the suggestions made here are on the right track, we may conclude that the Swahili data do not present a counterexample to the AAE.

### 3.2.2.2 Swedish

Swedish presents another potential exception for the PFD approach based on GB-type theories of case and agreement.<sup>13</sup> This language lacks overt subject-verb agreement. This might suggest that subject arguments are licensed by case but not by agreement as in the case of Japanese (cf. section 3.2.1). If this is so, we should expect that a reflexive can occur in subject position in Swedish. However, as the following sentence illustrates, this is not the case:<sup>14</sup>

- (49) \*Han<sub>i</sub> firade att sig hade utnämnts till kapten.  
He celebrated that self had been appointed as captain  
“He celebrated that he had been appointed captain.” (Anward 1974)

At first sight, this appears to be a problem for GB-based theories of agreement and case. However, I will argue that there is covert agreement in Swedish verbs and that the data in (49) does not necessarily pose a problem for GB-based approaches. Although there is no overt subject-verb agreement in this language, predicative adjectives agree overtly with their subject in number and gender in Swedish, as shown in (50)-(52).

- (50) Marten är god.  
[UTR.SG] [UTR.SIG]  
“The food is good.” (Cooper 1986, 42)

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<sup>13</sup> In fact, it might be the case that the ungrammaticality of the sentence in (49) does not necessarily have to be derived from the AAE, but might simply be derived from other factors such as the impossibility of syntactic binding across CP (cf. Woolford 1999 and Everaert 2001).

<sup>14</sup> There is also no overt marking for nominative on DPs in this language unlike Japanese.

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- (51) Bordet är stort.  
[NEUT.SG] [NEUT.SIG]  
“The table is big.” (ibid)
- (52) Ficorna är snälla.  
[PL] [PL]  
“The girls are nice.” (ibid)

Data with subject-adjective agreement allow the language learners to postulate that subject-predicate agreement is a general feature of the language. That is, it might be the case that, based on data like those in (50)-(52), language learners postulate covert agreement between a subject and the predicate. This would suffice to explain why reflexives, which are PFD, do not appear in nominative positions in this language. A similar generalization must be assumed to account for the AAE with past tense verbs in Dutch and English. In these languages, the past tense forms of the verbs do not reflect  $\phi$ -feature agreement, and it should be the case that the presence of agreement with present tense verbs is generalized to past tense contexts.

### 3.2.3 Some Notes on Georgian

As mentioned earlier, Georgian reflexives are non-PFD anaphors and agree with the predicate. Therefore, these reflexives can appear in agreement positions (Everaert 2001), and this language does not say much either about GB-type theories of argument marking or about Checking Theory in minimalism. However, Georgian has a further interesting property that is worthwhile discussing here.

A problem for the proposal that attributes the grammaticality of nominative anaphors in Georgian to the non-PFD property of Georgian reflexives is that it is not clear how it can explain why anaphoric binding does not seem to require c-command in this language. Consider the sentences in (6) and (7), repeated below as (53) and (54). In (53) the reflexive bears nominative case and is located in a post-verbal position whereas in (54) the reflexive bears ergative case and is located in a pre-verbal position. Although the reflexive in (54) does not seem to be c-commanded by its antecedent, the sentence is still grammatical.

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- (53) Prezidentama<sub>1</sub> Ø-ixsn-a [tavis<sub>i</sub> tavi]<sub>1</sub>.  
president-ERG him-i-saved-he head's-NOM head-NOM  
“The president saved himself.” (Everaert 2001, 107)

- (54) [tavisma tavma] Ø-ixsn-a presidenti.  
head's-ERG head-ERG him-i-saved-he president-NOM  
“It was the president who saved himself, no one else is responsible for saving him.” (Everaert *ibid*)

Interestingly, as Boeder (1989) observes, Georgian has the properties of a non-configurational language, some of which are listed below:<sup>15</sup>

- (55) (a) Free word order  
(b) Possible omission of all grammatical functions  
(c) The possibility of having discontinuous NP.

This might indicate that the apparent arguments are actually adjuncts and that theta requirements of predicates are satisfied by agreement (cf. Jelinek 1984). Hence, in (53) and (54), the reflexives and their antecedents in apparent argument positions could actually be adjuncts, in which case these lexical items themselves do not establish binding dependencies in the syntax. Rather, the reflexivisation takes place at the morphological level in this language, and perhaps the morpheme *-i*, which is, according to Boeder (1989), a reflexive agreement morpheme, has the same function as Swahili *-ji*. That is, *-i* affects the semantic structure of a predicate and causes two distinct theta roles (or theta functions) to be associated with each other, as schematised in (48) in section 3.2.2.1.

### 3.3 Summary

The purpose of section 3 was to establish what approach to case and agreement is best suited to express the PDF theory of the Anaphor-Agreement Effect. In section

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<sup>15</sup> See Hale (1983) for the properties of non-configurational languages.

3.1, I demonstrated that the minimalist assumption that case is a reflex of agreement poses a problem for Japanese reflexives and Dutch/English accusative reflexives. In order to account for these reflexives, we had to make additional assumptions. In section 3.2, I showed that, in the GB based approach to argument marking, we do not have to make any additional assumptions to explain the AAE in Dutch/English and Japanese, because case and agreement are dissociated in this framework. I also discussed other languages. It was argued that Swedish subjects enter into a covert agreement relationship on the basis of subject-predicative adjective agreement, and this covert agreement gives rise to anaphor agreement effect in this language. I also proposed alternatives to Woolford's (1999) account of Swahili reflexives and Everaert's (2001) account of Georgian reflexives. Finally, it was argued that Kannada, a language sometimes presented as a clear counterexample to the AAE, actually corroborates this generalization in striking fashion.

The conclusion that can be drawn from the discussion in this section is that the GB-style case and agreement theory is better suited to the PFD explanation of the AAE than the minimalist checking theory; the latter requires more unmotivated assumptions than the GB type approach.

#### **4 Implementing the Anaphor-Agreement Effect**

In the previous section, I compared the minimalist Checking Theory and GB-based theories of case and agreement, and I concluded that the PFD approach to the AAE shows that GB-based theories are preferable.

In this section, I will discuss how the GB-based approach can be implemented within the theory of dependencies adopted in this dissertation. I take a particular version of the theory of argument marking, namely, that proposed by Nichols (1986).<sup>16</sup> On this view, argument marking is not a uniform phenomenon: an argument may be marked by either case or agreement.

In section 4.1, I develop the claim that agreement and case involve a syntactic dependency, and I will argue that arguments with case and predicates with an agreement morpheme are dependent elements and hence introduce functions.

Then, I will discuss how the AAE in English and Dutch can be accounted for in terms of the theory of syntactic dependency developed here in section 4.2 and how the lack of the AAE in Japanese is explained in section 4.3. Section 4.4 will summarize the proposal.

#### 4.1 Agreement and Case as Syntactic Dependencies

As I have mentioned in the previous chapters, according to Koster (1987) syntactic dependencies show a cluster of properties. These are:

- (56)
- (a) A dependent must have an antecedent. (obligatoriness)
  - (b) The antecedent must have only one antecedent. (uniqueness)
  - (c) The antecedent must c-command the dependent. (c-command)
  - (d) A dependent must have its antecedent within its local domain.  
(locality)
  - (e) An antecedent can have more than one dependent. (non-uniqueness)

In this section, I propose that case and agreement relations also involve a syntactic dependency.

Nichols (1986) argues that argument marking is not a uniform phenomenon and that an argument may be marked by either case or agreement. She further argues that there are two types of argument licensing: one is head-marking and the other is dependent marking. Verbal agreement is an instance of head-marking and case is an instance of dependent marking. I propose to embed Nichols' proposal in the wider outlook defended here by attributing argument marking to function satisfaction: case is a dependent element whose antecedent is an appropriate licenser for the case (for instance, accusative case looks for a V head), and agreement on a predicate is a dependent element whose antecedent is an agreeing argument:

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<sup>16</sup> See also Kerstens (1993), Bittner and Hale (1996) and Neeleman and Weerman (1999).

(57) DP [ $\phi$ -feature]                      Predicate [agreement element]

(58) DP [case]                                      Verb/Tense/Preposition/, etc.

The data in (59) and (60) support this proposal. The sentences in (59) show the five properties of dependency for agreement, listed in (56). In (59a), there is no antecedent for the predicate agreement. That is, the verb does not have a subject that agrees. The uniqueness property of agreement is observed in (59b). In this Dutch sentence, the plural agreement on the verb takes *Jan* and *Marie* as split antecedents, and the sentence is ungrammatical. The sentence in (59c) illustrates that a predicate that agrees with a constituent has to be c-commanded by that constituent. In this sentence, the verb is not c-commanded by *his*, which has the  $\phi$ -features compatible with the verb. The property of locality is shown in (59d) where the embedded verb agrees with the matrix subject. In (59e), both of the verbs agree with the subject, and this shows the property of non-uniqueness of dependents.

- (59) \* (a) You loves Bill. (obligatoriness)  
 \* (b) dat Jan<sub>1</sub> Marie<sub>2</sub> zagen<sub>1+2</sub>. (uniqueness)  
           that John Mary saw+3PL  
 \* (c) His<sub>1</sub> friends blames<sub>1</sub> Bill. (c-command)  
 \* (d) John<sub>1</sub> said that they likes<sub>1</sub> Bill. (locality)  
       (e) John<sub>1</sub> studies<sub>1</sub> and plays<sub>1</sub> at home. (non-uniqueness)

The sentences in (60) illustrate that case licensing also has these five properties of a syntactic dependency. In (60a), the accusative pronoun *him* is not licensed by anything. The property of uniqueness is demonstrated in the Japanese sentence in (60b). Here, the object in the embedded clause is doubly case licensed: the nominative by embedded T and the accusative by embedded V itself. In (60c), the

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accusative pronoun *him* is not c-commanded by the accusative case assigner, i.e., a verb, and the sentence is ungrammatical. The property of locality is illustrated in the German example in (60d). In this sentence, the DP *die Ferien* has the accusative form licensed by V. The sentence is ungrammatical because the case of this DP should be licensed by the closer head P (*in*). The non-uniqueness of dependents is shown in (60e). In this sentence, two accusative pronouns, *him* and *her* are licensed by the same verb *believe* and the sentence is grammatical.

- (60) \* (a) John is envious him. (obligatoriness)
- \* (b) John-ga [Bill-ga Tom-ga-o seme-ta to]  
 John-NOM Bill-NOM Tom-NOM-ACC blame-PST COMP  
 it-ta. (uniqueness)  
 say-PST
- \* (c) Him<sub>1</sub> loves<sub>1</sub> John. (c-command)
- \* (d) Frank hat in die Ferien seinen Sohn  
 Frank has in the-ACC-PL holidays son visited  
 besucht. (locality)  
 visited
- (e) John believe<sub>1</sub> him<sub>1</sub> to be sensitive and her<sub>1</sub> to be melancholic. (non-uniqueness)

If the relationship between agreement/case and an argument involves a syntactic dependency as the sentences in (59) and (60) suggest, then naturally we should expect this dependency relation to involve functions. I propose that an agreeing predicate introduces an agreement function,  $f_{Agr}$ , and this function is satisfied by  $\phi$ -features. If an argument without case fails to satisfy an agreement function, this argument is invisible for theta-marking at LF. An argument with a case shell introduces a case function,  $f_{Acc}$ ,  $f_{Nom}$ , etc., and this function is satisfied by an appropriate node. For instance, the accusative case in English is satisfied by V while the nominative case in Japanese is satisfied by T.<sup>17</sup> If a case function fails to be

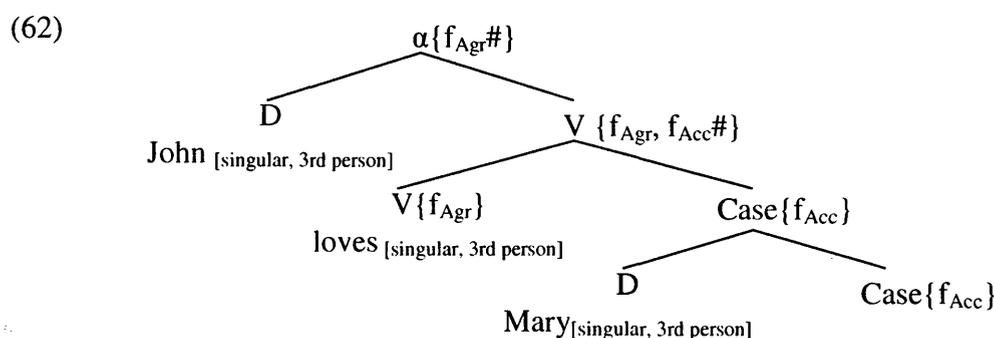
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<sup>17</sup> I will discuss argument marking of Japanese nominative in section 4.3.

interpreted, the argument that introduced it will not be argument-marked and not visible for theta-marking at LF.

As discussed earlier, I adopt Nichols' (1986) and Neeleman and Weerman's (1999) view of case and agreement, according to which in many languages, including Germanic and Romance languages, the nominative is the manifestation of the absence of case, and an argument in a nominative position is marked through agreement.<sup>18, 19</sup> Let us consider the following example and its associated structure in (62):

(61) John loves Mary.



In (61), the nominative argument *John* is marked by agreement. This argument marking is established through function satisfaction. As illustrated in (62), the predicate introduces the agreement function  $f_{Agr}$ , and this function is satisfied by the  $\phi$ -features in the subject *John*.

Contrary to a nominative argument, an argument in an accusative position is licensed by case, and Neeleman and Weerman propose that arguments bearing case are topped by a case shell (cf. Chapter 4 section 2.2.1).<sup>20</sup> In (61), therefore the case shell on the D *Mary* introduces a case function associated with the accusative as

<sup>18</sup> See also Jakobson (1933/1966).

<sup>19</sup> See Neeleman and Weerman (1999) for evidence that nominative is the manifestation of lack of case in Romance and Germanic languages.

<sup>20</sup> The proposal that DPs have a case shell or a case phrase can also be found in Lamontagne and Travis (1987) and Bittner and Hale (1996).

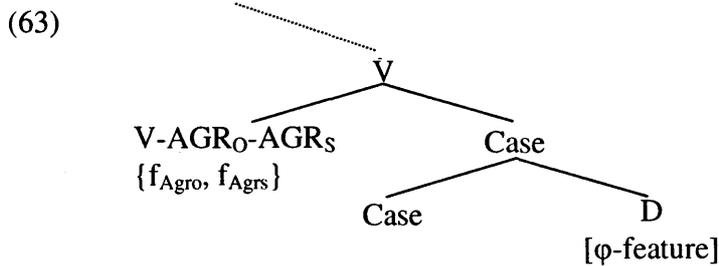
shown in (62), and this function is copied up to the upper V node and satisfied by the head V.

Notice that the agreement function of V should not be satisfied by the  $\phi$ -features in the accusative argument *Mary* or it will not be able to enter into a relation with the subject. It must therefore be the case that the  $\phi$ -features of D do not percolate to the case shell. If they do not, then the agreement function in the maximal projection of V cannot access the  $\phi$ -features of *Mary* (Recall that relations between nodes are constrained by Accessibility, which restricts the domain in which nodes can enter into any syntactic relation to immediate domination; Neeleman and van de Koot (2002a, 532.)<sup>21</sup>

Although at first sight it might appear as if I were proposing that case and agreement are in complementary distribution, I am not implying this here. In fact, in some languages, such as the Bantu languages and some of the ergative-absolutive languages, a predicate apparently agrees with an argument that bears case. Does this mean that the argument is doubly argument-marked? Consider a structure in which a verb agrees with both its subject and object, while the object has a case shell as well. As we have just seen in connection with the structure in (62), a case shell does not inherit the  $\phi$ -features of the nominal projection it tops. If it did, a verb could not simultaneously agree with its subject and license the accusative case of its object. This being so, the agreement function  $f_{AgrO}$  in (63) cannot be satisfied without violating Accessibility. Assuming it cannot be satisfied by the subject, it follows that it will not be satisfied at all, causing the structure to be ungrammatical. It must therefore be the case that the verb does not introduce  $f_{AgrO}$  after all, despite the fact that it shows agreement with the object.

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<sup>21</sup> A potential problem for this proposal is that, if a case shell is an extended projection of N in Grimshaw's (1991) sense, the  $\phi$ -features of N might percolate to the case shell, so that  $f_{Agr}$  would be satisfied by that node. It is, however, not always the case that all features of a lexical head percolate to the uppermost extended projection. For example, theta-related information in V does not seem to percolate to C (p.c. Ad Neeleman). It is therefore, not an implausible assumption that the  $\phi$ -features of N do not percolate to its case shell.



Is this conclusion problematic? It is clear, on independent grounds, that we must distinguish between what might be called “anaphoric” agreement and “pronominal” agreement. The latter type of agreement does not involve a grammatical dependency and therefore lacks the defining characteristics of dependencies. For example, it can apply across sentence boundaries and therefore can be said not to require the presence of an antecedent (64a), it does not require c-command (64b), it does not obey locality (64c), and it also does not obey uniqueness (64d).

- (64)
- (a) John<sub>1</sub> entered the room. He<sub>1</sub>/\*They<sub>1</sub> looked tired.
  - (b) John’s<sub>1</sub> mother likes him<sub>1</sub>/\*them<sub>1</sub>.
  - (c) John<sub>1</sub> thinks that Mary likes him<sub>1</sub>/\*them<sub>1</sub>.
  - (d) John<sub>1</sub> told Mary<sub>2</sub> that they<sub>1+2</sub> should get married.

Anaphoric agreement, on the other hand, shows the properties of a syntactic dependency, as was shown in (59). Given the existence of pronominal-type agreement, there is, then, no reason to expect that argument-marking with a case function can never be accompanied by pronominal agreement.

## 4.2 The Anaphor-Agreement Effect in English and Dutch

### 4.2.1 English

The approach taken in this dissertation to the AAE is that it is the result of the PFD nature of reflexives in some languages, rather than an issue of binding theory *per se*. More specifically, the AAE results from a failure of argument marking: an agreement relation fails to be established because due to a lack of  $\phi$ -features in the

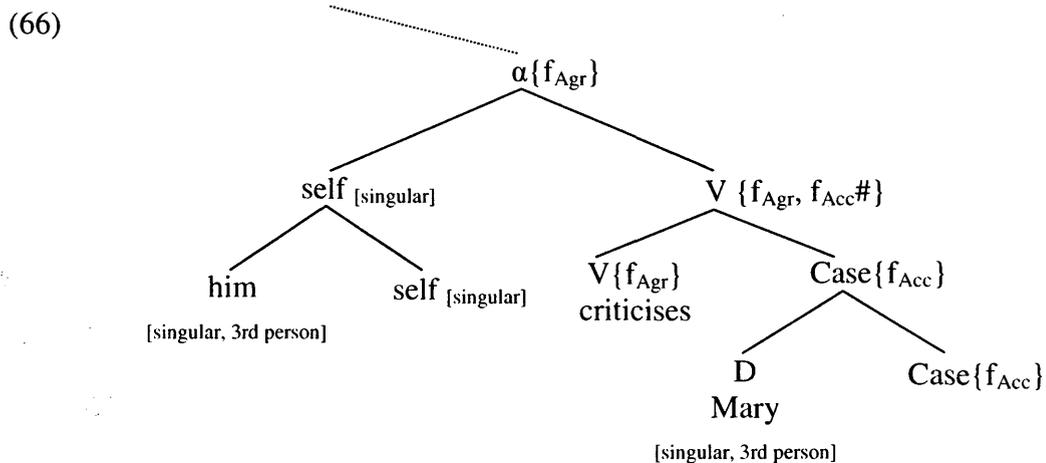
## Chapter 5: On Agreement, Case and the Distribution of Reflexives

reflexive. In this section and the next, I will discuss how the AAE falls out from the theory of argument-marking developed in section 3, once this theory is combined with appropriate assumptions about the internal structure of anaphors. The AAE in English and in Dutch will be discussed in this section and the next, respectively, while section 4.3 will discuss the absence of the AAE in Japanese.

Consider once more the English sentence in (1), repeated here as (65), in which a reflexive occupies a nominative position.

(65) \*John says himself criticises someone everyday.

The structure of the embedded clause in this sentence is shown below:



The agreement function introduced by the verb is copied up to the node  $\alpha$ . This node dominates a node *self* that potentially satisfies this agreement function. However, *self* does not contain a full set of  $\phi$ -features, and because of this, the agreement function cannot be satisfied. One might argue that the pronoun part of the reflexive, i.e., *him*, contains a full set of  $\phi$ -features, and that this  $\phi$ -feature set should be able to satisfy the agreement function introduced by the verb. However, Accessibility restricts the environment for satisfaction of the agreement function to direct domination, and

therefore  $f_{Agr}$  cannot “see” these  $\phi$ -features.<sup>22</sup> Example (65) is therefore ungrammatical, because the reflexive fails to be argument marked.

#### 4.2.2 Dutch

Unlike English, the Dutch reflexives, *zich* and *zichzelf*, always introduce a binding function to establish binding dependency at syntax. Taking into account that a syntactic dependency cannot be established across a CP boundary, this implies that it is not entirely conclusive what causes the ungrammaticality of the sentence in (67). That is, the ungrammaticality of the sentence might be attributed to the fact that a binding function cannot be copied across a CP node or to the nominative PFD reflexive failing to enter a proper agreement relation with the predicate. Because both of these factors are well grounded, it is safe to conclude that both of these factors contribute to the ungrammaticality of the sentence. In this section, I will consider how the mechanism of argument marking defended here explains the ungrammaticality of example (67).

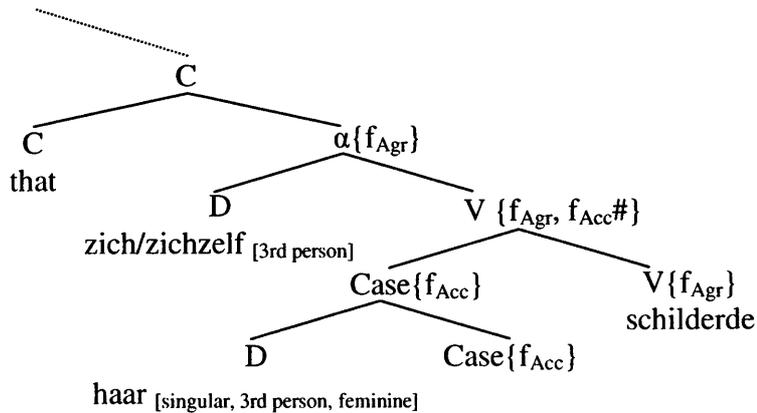
- (67) \*Jan<sub>1</sub> zag dat zich<sub>1</sub>/zichzelf<sub>1</sub> haar schilderde.  
John saw that self/self-self her painted  
“John saw that he painted her.”

The structure of this sentence is shown in (68).

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<sup>22</sup> Although I have no explanation for this, anaphoric agreement relations are never established across CP boundaries. The question of why the agreement function is not satisfied by the matrix subject does therefore not arise.

(68)



A similar account of the AAE in English applies here. In (68), the verb *schilderde* introduces an agreement function,  $f_{Agr}$ , which is copied up to the  $\alpha$  node where it directly dominates *zich/zichzelf*, a potential satisfier of this function. However, both *zich* and *zichzelf* are  $\phi$ -feature deficient and therefore unable to satisfy  $f_{Agr}$ . For reasons we have already discussed, the pronoun *haar* in the accusative position cannot satisfy the agreement function, either.

Contrary to *zich* and *zichzelf*, [pronoun + *zelf*] and [proper name + *zelf*] can appear in a nominative position, as shown in (69).

- (69) Hijzelf/Janzelf gaat liever naar school.  
 he-self/John-self go rather to school  
 “He/John himself prefers go to school.”

The PFD approach to the AAE correctly predicts that (69) is grammatical. In Chapter 4, I assumed that these types of reflexives are headed by a pronoun/proper name. That in turn implies that these reflexives are not  $\phi$ -feature deficient and behave identically to *hij* and *Jan* for agreement purposes.<sup>23</sup>

<sup>23</sup> I believe the same analysis applies to non PFD reflexives in other languages such as Greek reflexives.

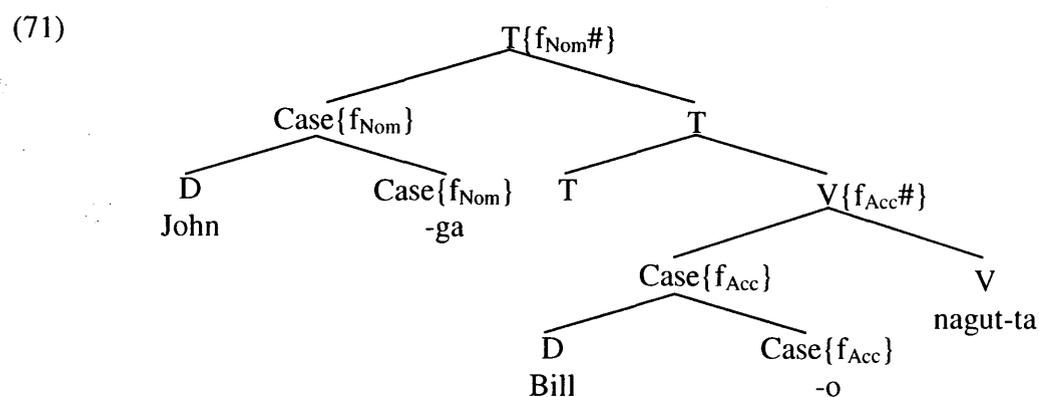
### 4.3 The Anaphor-Agreement Effect in Japanese

#### 4.3.1 The Argument Marking and Nominative Reflexives in Japanese

As discussed earlier, there is no strong evidence that there is (syntactic) agreement in Japanese. If it is correct that this language lacks agreement, then all arguments in this language must be marked by case. This conclusion is supported by the fact that Japanese has a full range of morphological case, including nominative case (cf. section 3.2.1). To illustrate how the arguments are actually marked, let us consider the following sentence:

- (70) John-ga Bill-o nagut-ta.  
 John-NOM Bill-ACC hit-PST  
 “John hit Bill.”

The structure of this sentence is shown below:

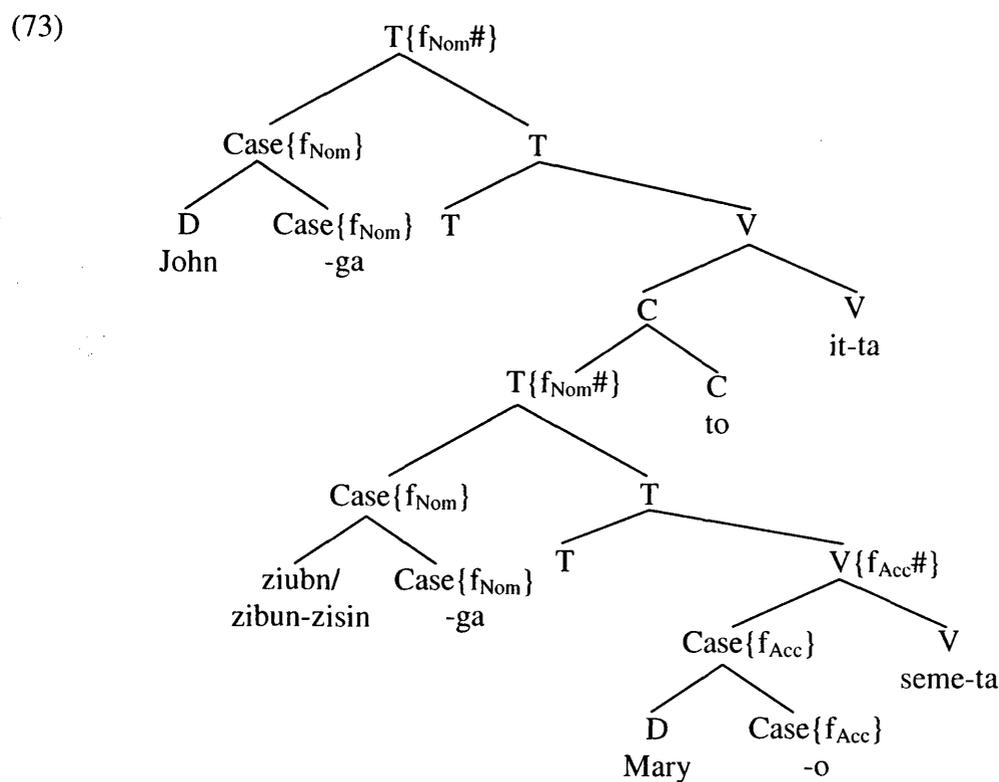


Because arguments are not marked by agreement but by case, the verb does not introduce an agreement function and all arguments are topped with a case shell. The case shell containing the accusative argument *Bill* introduces a case function  $f_{Acc}$ , which is satisfied by the verb. The case shell containing the nominative argument *John* introduces a case function  $f_{Nom}$ . It has been assumed that in Japanese the nominative case is licensed by Tense (Takezawa (1987), among many others). In line with this view, I assume that the case function  $f_{Nom}$  is licensed by T.

Now, let us move on to a sentence with a reflexive in a nominative position. As we have already seen, *zibun* and *zibun-zisin* appear in a nominative position, although they are PFD reflexives (cf. sections 3.1.2.1 and 3.2.1):

- (72) John-ga [zibun/zibun-zisin-ga Mary-o seme-ta to]  
 John-NOM self/self-self-NOM Mary-ACC blame-PST COMP  
 it-ta.  
 say-PST  
 “John said that he blamed Mary.”

This is readily explained if the mechanism of argument marking explained above is on the right track. Consider the structure of the sentence in (72) shown below:



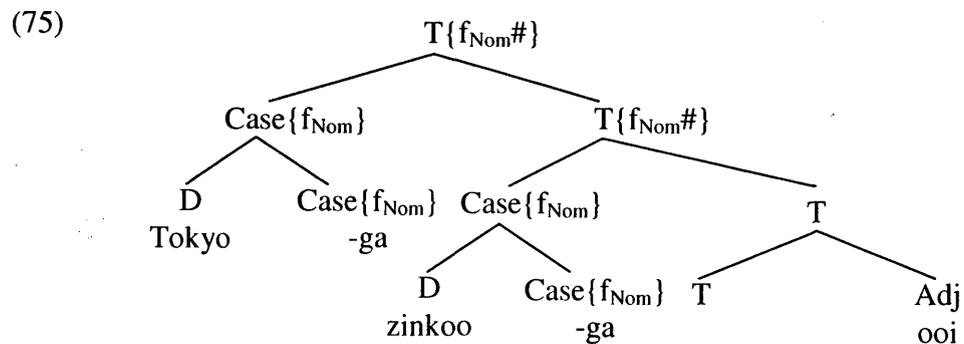
In the above structure, the case head whose sister is the reflexive introduces a case function, and this function is satisfied by tense. Therefore, all arguments, including

the nominative reflexive, are successfully argument marked by satisfaction of case functions, and the sentence is grammatical.

### 4.3.2 A Prediction

The proposal that nominative arguments in Japanese are marked by case rather than by agreement offers an interesting explanation for the fact that Japanese can have multiple nominatives, as observed by a number of researchers (cf. Tateishi (1991), Takahashi (1994) and Vermeulen (2005), among many others). Consider the following sentence with multiple nominatives, whose tree representation is shown in (75):

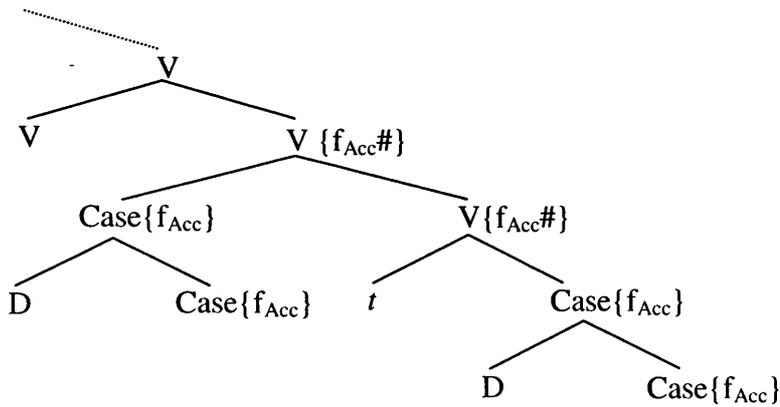
- (74) Tokyo-ga zinkoo-ga ooi.  
 Tokyo-NOM population-NOM many  
 “Tokyo’s population is large.”



In (75), both nominatives, i.e., *Tokyo-ga* and *zinkoo-ga*, introduce a case function, and these functions are successfully satisfied by T.

This account of multiple nominatives can be extended to the analysis of multiple accusatives. Consider the case of double objects in English, where there is no evidence for an accusative-dative case distinction. English objects are licensed by case and, because arguments introducing case functions are dependents, such arguments do not have to be unique:

(76)



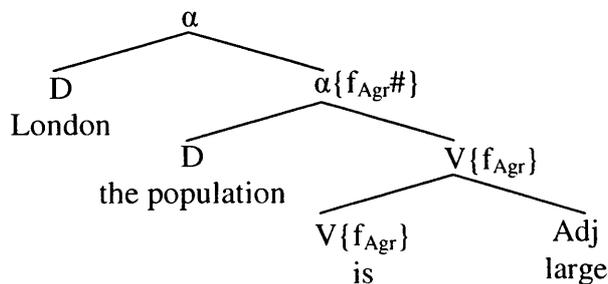
Similar considerations apply in other languages with multiple accusatives, such as Korean (see Sim 2003).

The theory presented here also explains why a verb can agree with only one phrase outside the VP. That is, the theory also predicts that there are no multiple nominatives in languages in which nominative arguments are licensed by agreement. Consider the sentence in (77), whose intended interpretation is that *London's population is large*.

(77) \*London the population is large.

The tree structure of (77) is shown below:

(78)



As can be seen, the agreement function introduced by the verb is copied up to the dominating V node, and this function is copied further up and satisfied by *the population* in the lower segment of the node  $\alpha$ . Once a function is satisfied, it cannot

be copied and satisfied again. Therefore, in the above structure, *London* cannot establish a relation with the predicate and cannot be argument marked.<sup>24</sup>

#### 4.4 Summary

In this section, I discussed how the AAE can be implemented within the theory of syntactic dependencies adopted in this dissertation. First, I demonstrated that case and agreement have the defining properties of a syntactic dependency and that these relations can successfully be encoded using functions. I then showed how anaphor agreement effects can be captured in this theory. Finally, I discussed Japanese reflexives, and argued that their ability to occur in nominative positions despite being  $\phi$ -feature deficient follows from the way they are argument-marked, namely by case rather than by agreement. This account was then shown to yield the correct prediction that multiple nominatives are only found in languages such as Japanese in which nominatives are marked by case.

### 5 Conclusion

This chapter was entirely devoted to the Anaphor-Agreement Effect (AAE). I adopted the  $\phi$ -feature deficiency (PFD) approach to the AAE (Everaert 2001 and Reuland 2001a). That is, the PFD nature of reflexives prevents them from entering into a proper agreement relationship with a predicate (section 2). In section 3 I discussed what implication the PFD approach to the AAE has for the theory of argument marking. I compared two approaches: the minimalist Checking Theory and the GB-based theories of case and agreement. The conclusion I reached was that the GB-based approach is better suited to the PFD theory of AAE, as it requires less unmotivated assumptions.

In section 4, I demonstrated how the PFD approach to the AAE together with the GB-based approach to argument marking can be made to fit the theory of

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<sup>24</sup> The verb also cannot introduce more than one 'external' agreement function. See Neeleman and van de Koot 2002a for extensive discussion of this point, which underlies the explanation of one defining property of grammatical dependencies, namely that of uniqueness of the antecedent.

## Chapter 5: On Agreement, Case and the Distribution of Reflexives

syntactic dependencies discussed in the previous chapters. I adopted a particular version of the theory of argument marking, namely, the one proposed by Nichols (1986) and Neeleman and Weerman (1999). Then, I argued that argument marking should be considered a syntactic dependency and should therefore be expressed through function satisfaction. I proposed that a case shell introduces a case function that is satisfied by an appropriate node (for example, V for case function introduced by accusative case) and that an agreeing predicate introduces an agreement function that is satisfied by an argument. We saw that these mechanisms of argument marking explain the absence of nominative reflexives in English and Dutch and the presence of such reflexives in Japanese.

The minimalist Checking Theory assumes that case is a reflex of agreement, and all arguments are marked in the same way. This is often considered theoretically more elegant than the asymmetric theory of argument-marking adopted in GB-based theories. However, as we have seen in this chapter, it is precisely the assumption that argument-marking is uniform that makes Checking Theory ill-equipped to deal with the AAE. Indeed, it seems that, as far as the theory of case and agreement is concerned, Checking Theory is no more “minimalist” than GB case theory after all.

## CHAPTER 6

### CONCLUDING REMARKS

At the beginning of this dissertation, I discussed the uncertain position of binding theory in a minimalist setting. In particular, I asked the following two questions: how much of binding theory must be attributed to syntax proper and what exactly is the role of cross-modular competition? This dissertation has sought an answer to these questions in two main ways. On the one hand, I have attempted to clarify which aspects of binding must be attributed to syntax. On the other hand, I have considered the properties of individual anaphoric expressions in three languages, i.e., Dutch, English and Japanese, to determine to what extent the division of labour that is inherent in a cross-modular competition theory succeeds in accounting for the distribution of these elements. The inquiries into these issues also led us to the consideration of case and agreement theories in connection with the distribution of nominative reflexives.

As discussed throughout this dissertation, syntactic dependencies differ from relations established at the C-I interface and beyond in displaying a characteristic cluster of properties, the configurational matrix (Koster 1987). We saw that there is considerable evidence for the view that the Dutch anaphors *zelf*, *zich*, *zichzelf*, and the English anaphors *himself*, *herself*, etc., show this cluster of properties, and I therefore concluded that these reflexives establish binding relations in syntax. However, contrary to Dutch and English, some languages have reflexives that are not bound in syntax. Japanese is an example of this type of language. None of the Japanese reflexives show the properties characteristic of syntactic dependencies, and I concluded that these anaphors must enter into a relation at the C-I interface or in pragmatics. Locally free reflexives in English (cf. Zribi-Hertz (1989) and Baker

(1995)) are a similar case. My overall conclusion about the nature of binding thus contrasts with the view held by some minimalist linguists that binding phenomena are an issue of the interface and confirms Reuland's (2001a) claim that syntax plays a central role in the binding of (at least some) reflexives.

The second main conclusion of my work is related to the cross-linguistic variation in the properties of anaphoric expression. In particular, we have seen that the effects of economy constraints in binding differ from language to language, precisely because of this variation. Thus, while so-called Condition B effects are the result of economy-motivated competition, the levels at which this competition is played out differ from language to language depending on what kind of anaphoric expressions are available. In Dutch and English, it is competition between syntax and the C-I interface that yields the Condition B effect, while in Japanese, which lacks syntactic binding, Condition B effects are the result of competition between the C-I interface and pragmatics.

A third conclusion of my work is that we can explain the absence of condition B effects in certain environments if we assume that the evaluation of economy conditions is always restricted to a relatively small domain. I dubbed this the Local Evaluation of Economy.

The distribution of reflexives can be by and large explained by the interaction of (i) differences in the nature of binding relations established in syntax, at the C-I interface, and beyond, (ii) cross-linguistic variation in the stock of anaphoric expressions, and (iii) economy. There also appears to be some scope for a partial pragmatic explanation of the distribution of self-anaphors. In particular, there is evidence that a discourse-related interpretive effect associated with SELF-morphemes also affect the distribution of reflexives.

All these factors combined shed no light whatsoever on the general absence of nominative anaphors. In the final chapter of this thesis I suggested that Everaert (2001) and Reuland (2001a) are right in attributing this property of anaphors to their  $\phi$ -feature deficient nature. Taking this as my point of departure, I explored what the distribution of nominative reflexives tells us about the theory of argument marking (case theory). The conclusion I reached was that the traditional view of the

## Chapter 6: Concluding Remarks

relationship between agreement and case as essentially complementary is to be preferred over the minimalist view that case is a reflex of agreement.

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