

Minimalist Aspects of the Syntax of Closed Class Elements

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Zusammenfassung in deutscher Sprache

Diese Diplomarbeit („Minimalistische Aspekte der Syntax von Elementen der geschlossenen Klasse“) beschäftigt sich mit der Fragestellung einerseits, welche Rolle die Elemente der geschlossenen Klasse in einem grammatik-theoretischen Ansatz wie dem *Minimalistischen Programm* spielen. Andererseits wird die grundlegende Frage gestellt, was *Elemente der geschlossenen Klasse* sind, bzw. welche spezifischen Eigenschaften ihnen zukommen.

Im Minimalistischen Programm (MP) (Chomsky 1993, 1994) findet man einen neuen Ansatz zur Erklärung von Wortstellungsvariation in verschiedenen Sprachen. Die verschiedenen möglichen Wortstellungsvariationen zwischen den Sprachen (SVO, SOV etc.) ergeben sich aus einer Interaktion zwischen invarianten universalgrammatischen Prinzipien, und bestimmten morphosyntaktischen Eigenschaften lexikalischer Elemente. Die morphosyntaktischen Eigenschaften (auch morphosyntaktische Merkmale (M-Merkmale) genannt) sind diesbezüglich essentielle Bestandteile der Theorie. Bewegungsoperationen werden ausgelöst und beschränkt durch M-Merkmale und invariante Ökonomie-Prinzipien.

Geht man davon aus, daß es sich bei den sog. M-Merkmalen um Elemente einer Teilmenge der geschlossenen Klasse handelt, stellt sich die Frage, wie diese Teilmenge der geschlossenen Klasse im Sinne des MP spezifiziert werden kann, und welche Funktion Elemente der geschlossenen Klasse im Rahmen des MP generell haben.

Diesbezüglich ist die in dieser Arbeit diskutierte Hypothese, daß die geschlossene Klasse in (mindestens) zwei Teilmengen eingeteilt werden muß, deren syntaktische Funktion sich im Sinne des MP grundlegend unterscheidet. Dabei wird folgende Unterteilung motiviert:

- (1) a. **Funktionale Elemente** (functional items)
 - i. Funktional Elemente sind parametrisiert.
 - ii. Sie repräsentieren abstrakte morphosyntaktische Merkmale im Sinne des MP, die verantwortlich sind für Wortstellungsvariationen zwischen Sprachen.
- b. **Funktionale Wörter** (functional words)
 - i. Funktionale Wörter haben die Eigenschaft, bestimmte M-Merkmale, für die sie spezifiziert sind, zu „checken“ (d.h. bei Übereinstimmung zu löschen).

- ii. Die Merkmalspezifikation von funktionalen Wörtern ist nicht parametrisiert, d.h. die M-Merkmale funktionaler Wörter sind grundsätzlich schwach.
- iii. Sie können in die syntaktische Struktur nur „eingeführt“ werden, wenn sich die „Zielposition“ in der „Checking-Domäne“ einer Kopf-Kategorie befindet, die ein starkes M-Merkmal enthält.

Während angenommen wird, daß funktionale Elemente für Wortstellungsvariationen zwischen verschiedenen Sprachen verantwortlich sind, wird angenommen, daß funktionale Wörter bei Wortstellungsvariationen innerhalb einer Sprache maßgeblich beteiligt sind. Dies wird an verschiedenen empirischen Datenfeldern veranschaulicht:

- i. Expletiv-Einsetzung im Englischen und Deutschen
- ii. Klitisierung in slawischen Sprachen

In beiden Fällen sind M-Merkmale involviert, die eigentlich Bewegungsprozesse von Kopf-Kategorien oder Phrasen in eine bestimmte Position auslösen. Diese Bewegungsprozesse jedoch sind in manchen Fällen nicht möglich oder quasi-optional, und in genau diesen Fällen muß ein funktionales Wort in diese Position eingesetzt werden.

Das sich so ergebende Bild über die Funktion der Elemente der geschlossenen Klasse führt zu bestimmten möglichen und/oder notwendigen Erweiterungen des theoretischen Rahmens, wie er im MP (Chomsky 1993) vorgeschlagen wurde. Verschiedene mögliche Operationen, die Strukturen betreffen, wie z.B. Move-, Insert- und Project- α , werden unter eine globale Operation *Introduce- α* zusammengefaßt, die durch ein generelles Prinzip der Derivation, *Altruismus*, beschränkt wird.

Die Auswirkung dieser theoretischen Annahmen wird, gemeinsam mit den formulierten Hypothesen, auf die empirische Adäquatheit hin überprüft.

Die Arbeit ist wie folgt aufgebaut. In Abschnitt 2 werden die Hauptbestandteile des Minimalistischen Programms erläutert, wie es in Chomsky (1993) formuliert wurde.

In Abschnitt 3 werden die Hypothesen bez. funktionaler Elemente und funktionaler Wörter formuliert. Es wird erläutert, warum anzunehmen ist, daß funktionale Elemente parametrisiert sind, während funktionale Wörter Elemente darstellen, die in funktionale Projektionen eingesetzt werden, die durch ein (oder mehrere) starke

M-Merkmale spezifiziert sind. Abschnitt 4 befaßt sich mit dem Thema der Expletiv-Einsetzung, im Rahmen der formulierten Hypothesen und Annahmen. Das Wechselspiel zwischen Anhebung von Nominalphrasen und Einsetzung von Expletiva wird zurückgeführt auf die Notwendigkeit, ein starkes M-Merkmal zu „überprüfen“. Und schließlich wird in Abschnitt 5 der Auslöser für Verb-Voranstellung in den sogenannten *Long Head Movement*-Konstruktionen im Kroatischen im Rahmen des MP einer Analyse unterzogen. Dabei wird ein möglicher Zusammenhang zwischen den morphosyntaktischen Auslösern für LHM und Verb-Zweit im Deutschen hergestellt.

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1 Introduction

The Minimalist Program (MP) (Chomsky 1993, 1994) offers a new prospect of the explanation of word-order variation. Cross-linguistic word-order variation is understood as a result of an interaction between invariant principles of UG and certain morphosyntactic properties (i.e. morphosyntactic features) of lexical items. Morphosyntactic features (M-features) are essential in this respect. Movement operations are triggered and constrained on the basis of M-features and invariant economy principles.

If M-features are taken to be elements of a subset of the closed class, the question is, how this subset of the closed class can be specified, and what the role of elements of the closed class in the model proposed in the MP is.

The main hypothesis in this paper is, that the closed class has to be divided into (at least) two subsets, which have different syntactic properties in sense of the MP:

- (2) a. **Functional items**
 - i. Functional items are the locus of parametrization.
 - ii. They represent abstract morphosyntactic features in the sense of the MP, which are responsible for cross-linguistic word-order variation.

- b. **Functional words**
 - i. Functional words have the ability to check certain M-features they are specified for.
 - ii. Their feature specification is not parametrized, i.e. their M-features are universally weak.
 - iii. They can only be introduced into a syntactic structure in a checking domain of some head-category that contains strong M-features.

While functional items are deemed to be responsible for *cross-linguistic* word-order variation, functional words are assumed to interact in *intra-linguistic* word-order variation of a given language. These hypotheses will be exemplified with the following data:

- i. Expletive-insertion
- ii. Cliticization and *Long Head Movement*

In all two cases there is an M-feature involved that usually triggers movement of a head- or phrasal category to a certain position. However, this movement is in certain cases not possible or “quasi-optional”, and in these cases functional words have to be inserted into these positions.

Certain extensions of the MP will be proposed that concern the general question, how lexical items are introduced into a syntactic structure. With regard to this point, there will be elaborated the above described distinction between functional items, functional words and substantives (closed class elements). To capture the common properties of operations like *move-* and *insert- α* , these operations will be subsumed under one general operation, which affects syntactic structure, called *introduce- α* . This operation is assumed to be constrained by the principles of economy of derivation, i.e. *Procrastinate* and *Altruism*. Altruism is proposed to be a fundamental principle which substitutes *Greed* (cf. Chomsky 1993).

The paper is organized as follows. Section 2 will give an introduction to the main parts of the Minimalist Program as presented in Chomsky (1993). Section 3 discusses the hypotheses concerning functional categories and functional words, stating that functional categories (in the above sense) are the locus for parametrization, while functional words are elements inserted in functional projections that have strong M-features. Section 4 is concerned with expletive insertion, with respect to the formulated assumptions in the previous section. The interaction between raising of overt DPs vs. insertion of expletives will be reduced to checking of involved strong M-features. These strong M-features can be checked via DP raising or insertion of an expletive into the checking domain of a functional projection. And finally, in section 5 the trigger for so called *Long Head Movement* in combination with cliticization will be analyzed in terms of the MP.

2 The Minimalist Program

The development of generative grammar exhibits a tendency to minimize the theoretical apparatus through an insight into complex connections between several different modules of the language capacity. The main goal is to gain more explanatory adequacy for the models of language faculty. Early transformational grammar, for example, made use of phrase structure and transformational rules, which were highly specific with respect to given languages and constructions. This model was extremely descriptive, but not very much explanatory adequate. The specific rules just described what the constituents of a given sentence with given properties have to be. Given specific phrase-structure- and transformation-rules, this model was not confronted with the problem of overgeneration. Recognizing that many specific transformational rules share certain properties, the properties have been subsumed under more general filter and control mechanisms, thus reducing the number of phrase-structure- and transformation-rules. This led to the problem of overgeneration through a loss of language and construction specific rules (cf. Chomsky & Lasnik 1977).

This was a step towards reducing the entire set of transformational rules to one general transformation rule, move- α . In the Principles & Parameters framework, independent modules, principles and filters are used to constrain the possible applications of move- α . Language specificity was reduced to a set of specific values for certain parameters that constrain the application of principles of grammar. Cross-linguistic variation, concerning for example word order, in this framework is an effect of specific parameters which interact with fixed principles of UG.

From a rather descriptive model of transformational grammar there was a development of a more abstract and complex model, with less (language specific) rules or principles and with more explanatory force.

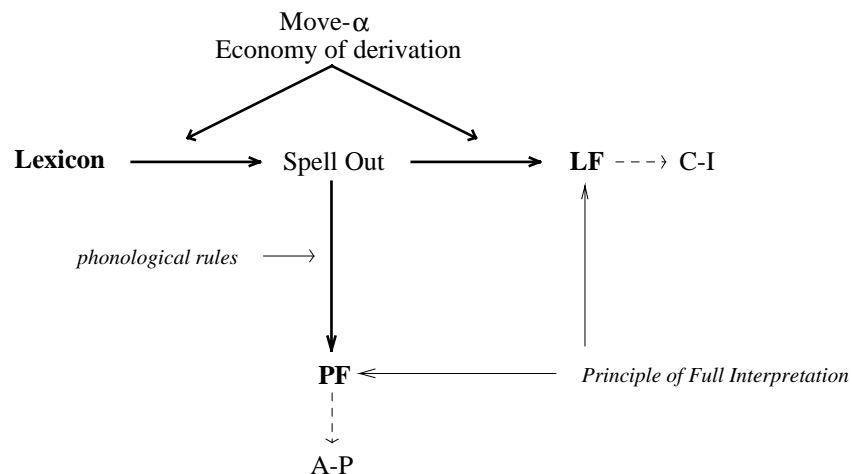
The Minimalist Program (MP) (Chomsky 1993, 1994) is an attempt to reduce this whole set of principles again to a smaller set of more general principles, and to reduce the model specific hypotheses and assumptions to these which are conceptual necessary. The first conceptual necessity is, on the one hand the fact that language is embedded into the cognitive system, linked with a component related to the meaning and interpretation of linguistic objects, i.e. the conceptual-intentional system (C-I), and on the other hand with a component concerned with the form of linguistic objects, i.e. the articulatory-perceptual system (A-P). The C-I system is responsible for the interpretation of utterances and their linking to the individual world knowledge, while the A-P system manages the processing of perceptual input or articulatory output. Further, it seems necessary to assume that there is

some sort of language specific mental lexicon. Confronted with these basic necessities, the question addressed in the MP is how to explain with as few as possible specific assumptions and theoretical considerations the links between these three components of language capacity. The assumption is that the lexicon, the conceptual-intentional system, and the articulatory-perceptual system are directly linked with each other through a computational system.

2.1 An outline of the model

In MP syntax is taken to be the computational system that maps a set of lexical entries onto a *structural description* (SD). An SD consists of two representations¹ that form the input for the interfaces to the C-I and the A-P performance systems, as described in (3).

(3)



Compared with the *Extended Standard Theory* (EST) (cf. Chomsky 1981, 1986b) this model recognizes only two levels of representation. There is a direct link from the lexicon to the two levels of representation, LF and PF, via the computational system. In previous versions of the model of grammar, the assumption was that these two levels are linked with the lexicon via two syntax internal levels of representation, D-structure and S-structure. D-structure was assumed to be the level at which thematic relations between lexical items in a syntactic structure are fixed through θ -Theory and the Projection Principle, while S-structure was the level at

¹ In fact, an SD consists of three components, namely a syntactic, a semantic, and a phonological specification.

which certain filters and modules apply, like for example Case-Theory, the Stray Affix Filter etc., fixing the surface word order of a given sentence.

The question addressed in the MP is, whether these assumptions, principles etc. are really necessary, or rather could be eliminated, in favor of more general principles that explain the facts, these modules have been designed to explain. In this sense, “minimalist” means, on the one hand as few as possible theory internal assumptions, principles, rules, etc., and on the other hand, as much as possible explanatory capacity.

However, the MP recognizes only two representational levels, LF and PF. Only at these levels well-formedness principles apply to syntactic objects. The representations build at these levels, have to fulfill the *Principle of Full Interpretation* (4) (cf. Chomsky 1986b, 1991, 1993), which is a representational economy-principle, stating that the derived representations have to be *optimal* with respect to the interface levels.

(4) **Principle of Full Interpretation (FI)**

Interface representations must be fully interpretable for the relevant performance systems. In particular:

- i. A PF-representation may contain no symbol that is not interpretable for the articulatory-perceptual system (A-I).
- ii. An LF-representation may contain no symbol that is not interpretable for the conceptual-intentional system (C-I).

The computational system projects lexical items onto X-bar-trees and performs operations on them (e.g. move- α). At a certain point in the derivation, named *Spell Out*, the PF-relevant part of the SD is stripped from the LF-relevant part. The derivation of the PF-representation after *Spell Out* (*phonological component*)² may only involve phonological rules, while the derivation of the LF-representation after *Spell Out* (*covert component*) may involve syntactic operations (e.g. Move- α). To guarantee the compatibility of the PF-representation and the LF-representation, it is assumed that there is no lexical insertion after *Spell Out*.³

² In recent work by Halle & Marantz (1993) an intermediate level is assumed to build the link between *Spell Out* (roughly corresponding to S-structure in previous approaches (e.g. Chomsky 1981, 1986)) and PF. More on this idea in section 3.2.1.

³ Chomsky (1994: 8) assumes that after *Spell Out*, i.e. after stripping the phonological part of an SD from the LF-relevant part, insertion of lexical items either during the derivation of an LF-representation, or the derivation of a PF-representation, would introduce semantic, phonological and formal features to the respective representation, thus leading to a violation of FI (4) at the relevant level of representation.

The *Spell Out* point in a derivation is determined by the interaction of economy principles (FI and *Last Resort*) and by certain triggers. *Spell Out* is not a level of representation, i.e. no well-formedness principles apply to linguistic objects at this level. But, like at S-structure in the Principles & Parameters framework, the overt word order is fixed at the *Spell Out* point.

Concerning invariance across languages, the model described in the MP is guided by the following working hypotheses:

- (5) **Guiding hypotheses** (Wilder & Cavar 1994a: 50)
- i. The structure of sentences (and other phrasal categories) is identical in all languages.
 - ii. A movement operation which takes place in a given construction in one language prior to *Spell Out* (and thus manifests itself in the word order of the PF-representation) may occur in another language following *Spell Out* but prior to LF (and hence will not be reflected in the PF-representation).
 - iii. LF-representations don't vary across languages.

The application of movement operations is determined by an interplay between the constraining economy principle of *Last Resort* (6b) (cf. Chomsky 1991, 1993) and a set of triggers for movement. Movement operations are not only constrained, but also necessitated by economy principles, namely the principle of *Full Interpretation* (6a). The MP uses two notions of economy, given in (6). Economy of representation is the source of triggers for movement. All movement operations are triggered by the need for certain principles to be met. Economy of derivation is the source of constraints, i.e. a movement operation can be blocked, if certain principles can be satisfied without it (cf. Wilder & Cavar 1994a: 51 for a more detailed discussion).

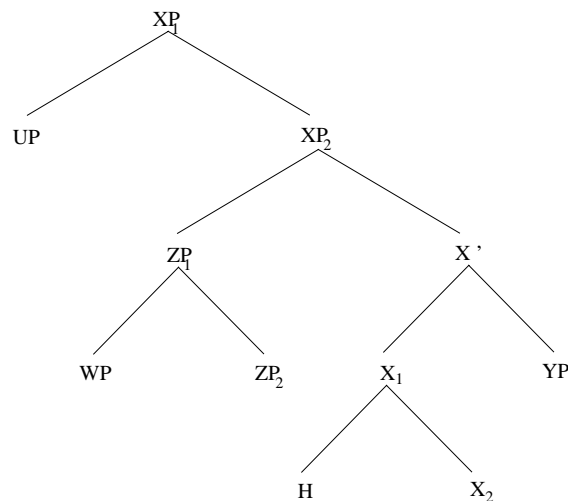
- (6) a. **Economy of Representation** (FI)
 “no superfluous symbols in a representation”
- b. **Economy of Derivation** (Last Resort)
 “no superfluous steps in a derivation”

(6a) was formulated first in Chomsky (1986b), while (6b) was first introduced in Chomsky (1991).

2.2 Basic structural relations

Transformations and the principles of economy operate on linguistic objects. The assumption is that UG renders an array of items from the lexicon “in a form accessible to the computational system” (Chomsky 1993: 6), i.e. a structural representation in the sense of X-bar theory. This representation is then modified by the computational system. In order to describe structural relations between elements in a X-bar-tree, the MP seeks to refer only to “local relations”. In a structure like (7), there are three local relations, the Spec-head relation (X, ZP), a head-complement relation (X, YP), and a head-head-relation (X, Y = head of YP).

(7)



The assumption is that there is no relation between a head X and some phrase inside of ZP or YP, so there is not a structural relation like head-government. All possible relations should now be reduced to these described in (8).

- (8)
- a. Spec-head-relation \rightarrow ZP - X⁰
 - b. head-complement-relation \rightarrow X⁰ - YP
 - c. head-head-relation \rightarrow X⁰ - Y⁰

While head-government plays a crucial role in several modules in the Principle & Parameters framework, for example in Case theory, this has to be reformulated now, in terms of the possible local relations.

On the other hand, basic elements of a representation are chains. A trivial case of a chain is a one membered chain, i.e. a single head in situ. Another case is the chain CH = {H, ..., t} in structure (7), formed through raising of the head H to an adjoined position to X. The idea is, that only this chain enters into a local head- α

relation, and not H in isolation. The local relations established are defined for H and for X in their base-position, but in (7) there is no new local relation for H, only for the chain $CH = \{H, \dots, t\}$.

One basic relation is *dominance*, as defined in (9).

(9) **Dominance**

α dominates β if every segment of α dominates β .

Now, a segment of some category α is one node contained in the set of nodes of one category. If we take the category XP in (7), then XP does not dominate UP, because XP_2 does not dominate UP. But XP dominates ZP, and every node, that is dominated by ZP. Based on the definition of *dominance*, *containment* is defined as follows:

(10) **Containment**

α contains β , if some segment of α dominates β .

Given (9) and (10), which can be compared with the definitions of *inclusion* and *exclusion* in Chomsky (1986a), XP in (7) does not dominate UP, but it contains UP, and every node that UP contains. And, concerning the head categories, X contains H, but does not dominate it.

The least full-category maximal projection for a head α dominating α is defined in (11) as $\text{Max}(\alpha)$:

(11) **Max(α)**

For a head α , $\text{Max}(\alpha)$ is the least full-category maximal projection dominating α .

To find out what $\text{Max}(\alpha)$ of the heads H and X in (7) is, one has to follow the projection line until the first maximal category is reached, $XP = \{XP_1, XP_2\}$. Now, the *domain* of a head α is defined as the set of nodes contained in $\text{Max}(\alpha)$, after deletion of all nodes on the projection line.

(12) **Domain**

The domain of a head α is the set of nodes contained in $\text{Max}(\alpha)$, that are distinct from and do not contain α .

The domain of the head X then contains the nodes $\{UP, ZP, WP, YP, H\}$, and every node that these nodes contain. The *complement domain* is defined in (13):

(13) **Complement Domain**

The complement domain of α is the subset of the domain reflexively dominated by the complement of the construction.

The *residue* of α contains the nodes contained in the domain of α , minus the nodes contained in the *complement domain* of α .

(14) **Residue**

The residue of α is the domain of α minus the *complement domain* of α .

The residue of X , for example, is the set of nodes contained in the domain of X , minus the nodes contained in the complement domain, i.e. YP and every node that YP dominates. The residue of a head contains obviously specifiers and adjuncts (phrasal or head-adjuncts).

Now, in order to limit the “operative relations” to local relation, the just defined relations have to be defined for a minimal subset, that includes only categories that are locally related to a certain head. So, if S is taken to be any set of categories, this is done by applying (15) to this set:

(15) **Min(S)**

$\text{Min}(S)$ is the smallest subset of K of S , such that for any γ element S , some β element K reflexively dominates γ .

This is how deeper contained nodes are excluded, concerning *minimal* relations.

One of the operative or basic relations is the relation between a head and its complement, defined as the minimal complement domain of α , called α 's *internal domain*:

(16) **Internal Domain**

The internal domain of α is the minimal complement domain of α .

Another basic local relation, the relation between a head and its specifier (or adjunct, phrasal or X^0),⁴ is defined as the minimal residue of α , or α 's *checking domain*:

(17) **Checking Domain**

The checking domain of α is the minimal residue of α .

The internal and the checking domain of α are uniquely defined, if α is moved, there is no redefinition of the internal and checking domain.

$\text{Min}(S(\alpha))$ has to be understood *derivationally*, not *representationally*, it is defined for α as part of the process of introducing α into the derivation, either through lexical insertion, or through a movement operation. The head H in (7) has neither an internal, nor a checking domain, because it is raised from some other position to form the chain $\text{CH} = \{H, \dots, t\}$ and has already been assigned these subdomains in the position now occupied by the trace t. Such subdomains are defined for a head or a chain once during the derivation, and do not change. If the complex head $[_X H X]$ is raised to form the chain $\text{CH}' = \{[_X H X], t'\}$, $\text{Min}(S(\alpha))$ will be defined as part of the operation for $\alpha = \text{CH}'$, but not for $\alpha = X, H$, or CH .

For further discussion, the notions of *checking* and *complement domain* will be the only necessary. Nevertheless, it is necessary to introduce the other definitions to derive the definitions of these notions.

2.3 Deriving word order

This section is concerned with how word order is explained in the MP framework. This topic is twofold now, given that on one hand, cross linguistic word order variation like SVO vs. SOV etc. has to be explained, and on the other hand, language internal word order variation of categories of the same type.

In the Principles & Parameters framework movement is motivated by several filters and principles, e.g. the Case-Filter motivates movement of NPs. The standard assumption is that e.g. the subject has to move to a specifier position of a functional projection (AGR), to get Case assigned or checked in a specifier-head configuration with this head.

⁴ It is (possibly) important to remember that, as defined, not only specifiers are positions in the checking domain of a head, but also adjoined positions, either head or phrasal adjuncts, because there is a widespread limitation to specifiers and head-adjuncts as checking positions in the literature.

X^0 movement is motivated by the Stray-Affix Filter (Baker 1988) (also known as Lasnik's Filter (Pesetsky 1989), or Affix Principle (Ouhalla 1988)), which states that affixes without a host are illegitimate objects at the interfaces. Therefore, a verb has to raise to a higher functional head (TNS and AGR) in order to pick up the functional morphemes subcategorized for the verb.

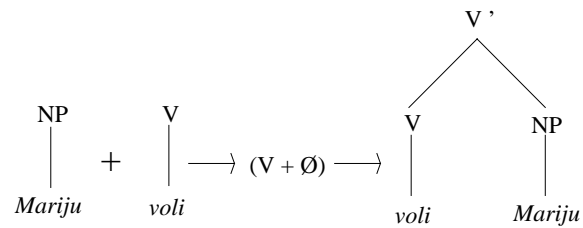
However, in the MP, cross-linguistic and intra-linguistic word order variation is subsumed in a more general way. The main trigger for movement in this approach is the principle FI (4). The underlying idea is that lexical elements are introduced into the derivation bearing all their morphological features (M-features), e.g. a verb with AGR- and TNS-features or a DP with Case- and AGR-features. These features now appear twice in the SD of a given sentence, once as an inherent feature of a base-generated lexical element, verb or DP, and once as an inherent feature of a functional category in a functional head. Movement has then to take place in order to eliminate features that are not interpretable at the interface levels, i.e. to avoid a violation of FI (4) at LF and/or PF. Elimination, i.e. *checking* of these features takes place if a pair of features in a checking configuration, i.e. in the checking domain (cf. (17) and (18) above) of a head match. If there is matching of features in the checking configuration, these features will be deleted, therefore are not existent in the representation at the interface levels. And they have to be deleted, because they are assumed not to be interpretable at the interface levels.

In order to understand these basic mechanisms, it is necessary to introduce the basic assumptions concerning the structure building process.

2.3.1 Generalized Transformation

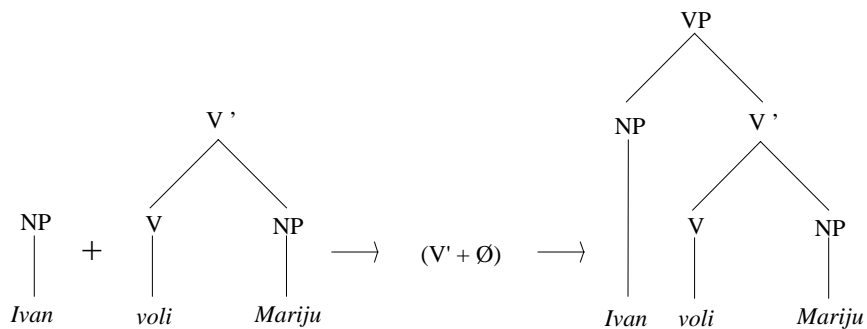
Lexical items are introduced into the structure through an operation called *Generalized Transformation* (GT). GT is a binary operation that targets one tree, and adds to this tree another tree, and giving the result as a new build tree. For example GT builds the VP of the sentence *Ivan voli Mariju* ("Ivan loves Mary") through the following steps. First, an already projected NP (or DP) is combined with the verb by adding an empty position to the verb-tree (a GT internal operation), and then substituting the empty position with the NP.

- i. X^0 -tree and YP-tree project to X' (head-complement)



Then, the projected V' tree is combined with the already projected NP-tree (Ivan) by adding an empty position to the V' -projection and substituting this position with the NP-tree, thus projecting to a VP tree.

- ii. X^1 -tree and YP-tree project to XP (specifier-head)



The GT operation obeys the strict cycle. The relevant assumption is that GT must extend the targeted tree, i.e. it is not possible to insert a tree somewhere into another tree, except in the case of adjunction.⁵ The resulting tree has to contain the targeted tree as a proper part. This additional condition on the operation of GT holds only till the point of *Spell Out*, i.e. as long as lexical insertion is possible.

Move- α can be seen in the same way, with the main difference that it is a unary operation, targeting one tree K , and moving another tree, element of K to some position, resulting in another tree K^* .

In the following, for reasons of simplicity, the movement and structure building operations will be described in traditional terms, but in all cases, it is assumed that the underlying operation is GT.

⁵ If the structure is determined in terms of categories, adjunction does not change the category label, and therefore not the structure.

2.3.2 Checking

As described above, certain M-features have to be checked in a special checking configuration, i.e. adjunct-head agreement (where the adjunct may be a phrase or a head) (18b) and Spec-head agreement (18a), against a corresponding feature borne by another element. This is the motivation for movement in the MP.

(18) **Checking Configurations**

- a. Specifier-head configuration
- b. Adjunct-head-configuration (X^0 - or XP-adjunction)

Compared with the motivation for movement in e.g. the Principles & Parameters framework, this can be seen as a shift from a “assignment theory”, where certain morphosyntactic properties, e.g. the requirement for NPs to have a certain Case feature, forced movement operations, to a “checking theory”, where lexical elements, already bearing appropriate morphosyntactic features, have to check these against corresponding features. Under the “checking” view, e.g. Case is “shared” (cf. Wilder & Ćavar 1994a), rather than “assigned” or transferred in a special configuration. The morphosyntactic correspondence requirements, as proposed in the MP, restrict the possible triggers for movement in UG, i.e. movement is only triggered by this correspondence requirement. Possible triggers depend on the morphosyntactic properties of lexical items. These properties are expressed through morphosyntactic features, as listed in (19):

(19) **Morphosyntactic features** (Wilder & Ćavar 1994a: 53)

- Case features (Nom, Acc, ...)
- ϕ -features (Pers, Num, Gen)
- Tense-features (Pres, Past, ...)
- also: *wh*-features etc.

However, *Checking* has to take place in the checking-domain of a head. *Checking* means, “deletion” of M-features under identity, i.e. if matching, in the appropriate configuration. If features match in the checking configuration, they will be deleted, and they have to be deleted in order to lead to a well-formed LF- and PF-representation.

An element has to move to a position in a checking domain of some head, in order to eliminate all the M-features it has. The effect is, that in the LF representa-

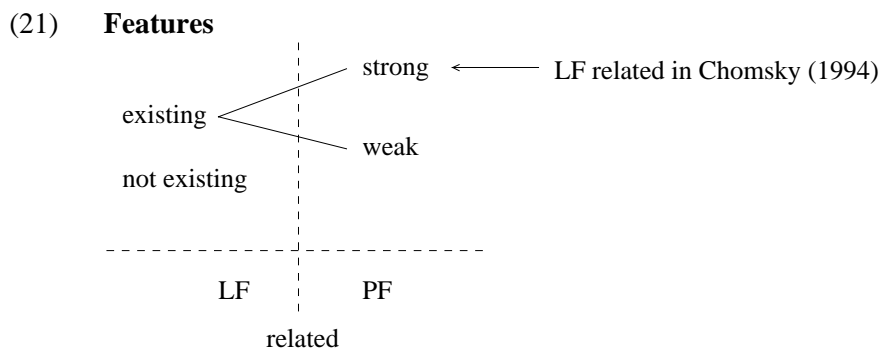
tion, the verb, and all its arguments have to end up in some position in the tree, that is not the base-generated position.

The question now is, what determines whether a given movement operation (for checking) applies before or after *Spell Out*? Concerning this question, the account rests on three assumptions:

- (20)
- i. PF-representations are subject to FI.
 - ii. Certain m-features have the property of being *invisible* in PF-representations, others are visible in the PF-representation.
 - iii. Movement after *Spell Out* is preferred by the computational system.

Given the assumption, that PF-representations are subject to FI (20i), one would expect, that all features have to be checked prior to *Spell Out* via movement, in order to avoid a generation of PF-representations which contain uninterpretable M-features.

Related to this, the MP makes a distinction between PF-invisible “weak” features, that have to be checked at latest at LF, and PF-visible “strong” features, that have to be checked via move- α or maybe another operation, prior to *Spell Out* (20ii). The possible distribution/configuration related to features is given in (21). At LF every existing M-feature (that is not interpretable) causes a violation of FI, while at PF only strong M-features cause a violation of FI.



It is important to note here, that the weak/strong property of certain M-features does not mean that both M-features of the involved pair, i.e. the M-feature of a lexical element (cf. a verb), and a functional head, are strong or weak, but rather one of them. More detailed discussion concerning this point will be presented in section 2.4 below.

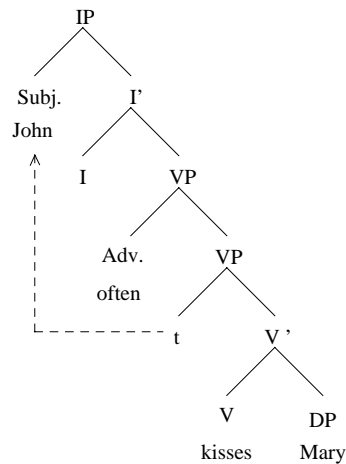
The effects of the principle of FI, i.e. the need to check M-features during the derivation of the interface representations through movement operations, can be

exemplified with the well-known English/French verb-placement asymmetry in (22):

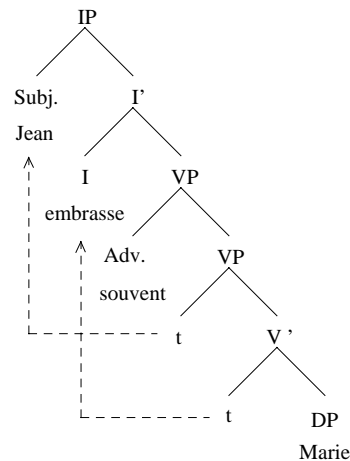
- (22) a. *John often kisses Mary.*
 b. * *John kisses often Mary.*
 c. *Jean embrasse souvent Marie.*
 J. kisses often M.
 d. * *Jean souvent embrasse Marie.*
 J. often kisses M.

The data indicate that the finite verb raises to INFL (AGRs⁰) before *Spell Out* in French, while the verb remains in V⁰ in English, and raises to INFL only after *Spell Out*. Therefore the conclusion has to be that the V-features in INFL-heads in English are weak: the verb does not have to raise and check these features prior to *Spell Out*. In French the presence of strong V-feat. in AGR forces the finite verb to raise prior to *Spell Out*.

(23) English



French



In English, the fact that an English verb is not permitted to raise to some functional head prior to *Spell Out* does not follow from the assumption that PF-representations are subject to FI or that certain M-features are “invisible” in the PF-representation. The idea is that movement operations are only possible if necessary. Movement of the verb in English to a higher functional head is only allowed (and necessary), if either the verb or the functional head contain a strong M-

feature that has to be checked prior to *Spell Out*, in order to derive a well formed PF-representation. If the relevant M-feature is weak, checking of the feature through movement into an appropriate checking-configuration is delayed after *Spell Out*, during the derivation of the LF-representation. Movement after *Spell Out*, during the derivation of an LF-representation is assumed to be less costly than *overt* movement. This constraint, named *Procrastinate*, is formulated in (24).

(24) **Procrastinate**

A given application of move- α must occur after *Spell Out*, unless its earlier application is necessary to ensure convergence of the derivation at PF.

Overt raising of a finite verb in English (22a) represents a violation of *Procrastinate*, while overt raising of the finite verb in French (22c) does not violate *Procrastinate*, since delaying V-raising to the covert syntax would cause a violation of FI at PF, due to a strong (and therefore uninterpretable) M-feature in the PF-representation.

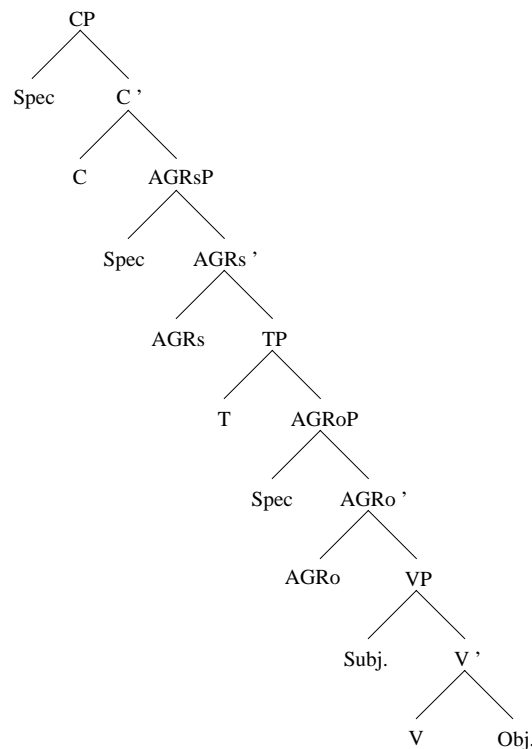
The interaction between the distribution of strong and weak M-features and the principle *Procrastinate* can serve as a basis for the account of word order variation between languages. How word order is handled in this model concerning the possible surface positions of arguments (i.e. subjects and objects), will be discussed in the following section.

2.3.3 Example: Case Theory

As mentioned above, the standard assumption concerning the motivation of NP-movement was based on the Case Filter. A NP (i.e. a subject) has to move to a certain position, i.e. Spec-IP, to get Nominative Case assigned. The standard assumption is that structural Case to the subject is assigned in a Spec-head-relation to an INFL-head, while the object receives Case via head-government from the verb head.

In the MP, structural Case is assumed to be generally assigned in a Spec-head-relation to a functional head, AGRs for Nominative to the subject, AGRo for accusative to the object. The basic structure assumed is given in (25):

(25)



AGR is taken to be a head that contains the ϕ -features for Gender, Number and Person. Structural Case and agreement is then a manifestation of a Spec-head relation between NP and AGR.

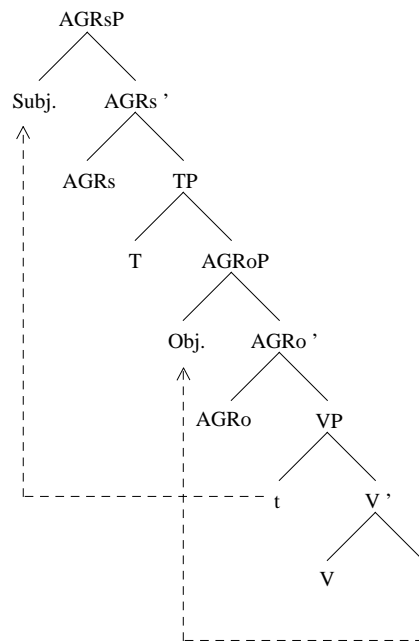
However, Case depends on the heads T (for Tense) and V. Therefore the assumption is that T raises to AGRs, V to AGRo, so that the complex heads in (26) contain the ϕ -features of AGR and the Case-features of T and V (respectively):

- (26) i. $[_{AGRs} T AGRs]$
 ii. $[_{AGRo} V AGRo]$

Now Case- and AGR-checking takes place in a symmetric configuration (26), i.e. the relation between the relevant NP and the Case assigning element (i.e. the verb or T) is mediated via the AGR-head, while agreement depends on the ϕ -features of the AGR⁰-head.

If the subject is base-generated in VP-Spec (cf. Kitagawa 1986, Sportiche 1988, etc.), the question is why the subject has to raise to AGRs-Spec, and the object to AGRo-Spec. The raising of the subject and the object to the relevant Spec positions leads to crossed, rather than to the expected nested dependencies observed in e.g. cases with *wh*-movement, as described in (27):

(27)



First of all, it is necessary to explain the effects the *Empty Category Principle* (ECP) was designed to explain. In the *Relativized Minimality* framework (Rizzi 1990), this type of crossing dependencies is excluded as a violation of Relativized Minimality, i.e. the subject cannot govern its trace, because a potential governor intervenes between the trace of the subject and the subject itself etc. Therefore, crossed dependencies in a structure like (27) would be excluded as a violation of the ECP, i.e. unlicensed traces. Similar effects explained as an ECP-violation (i.e. violation of Relativized Minimality) through crossed dependencies are Superiority (28a-b), Superraising (29), effects of the *Head Movement Constraint* (HMC) in (32), and *wh*-islands (30) vs. (31):

(28) Superiority

a. *Whom*₁ *did John persuade* t₁ [*to visit whom*₂]b. * *Whom*₂ *did John persuade whom*₁ [*to visit t*₂]

(29) Superraising

* *John*_i *seems that it is likely* [t_i *to win*]

In (29) there is an ECP violation, because the specifier of the embedded IP *it* blocks antecedent-government between *John* and the trace of *John*. In the same way the *wh*-island effects (Huang 1982) are explained:

- (30) a. ?? [*Which problem*]_i *do you wonder* [*how*_k [*John could solve* t_i t_k]]
- b. * [*Which student*]_i *do you wonder* [*how*_k [t_i *could solve the problem* t_k]]
- c. * [*How*]_i *do you wonder* [[*which problem*]_k *John could solve* t_k t_i]]
- (31) a. [*Which problem*]_i *do you think* [t_i [*John could solve* t_i]]
- b. [*Which student*]_i *do you think* [t_i [t_i *could solve this problem*]]
- c. [*How*]_i *do you think* [t_i [*John could solve this problem* t_i]]

In the examples (30) the intervening *wh*-phrase in the embedded Spec-CP blocks antecedent-government between the *wh*-phrase in the matrix Spec-CP and the trace.

The HMC-effect is also subsumed under Relativized Minimality (Rizzi 1990), i.e. a moved head may not cross an intervening head, because the intervening head blocks government between the moved head and the trace of it, resulting in a violation of the ECP, as in (32b):

- (32) a. *Could*_i *they* t_i *have left*?
- b. * *Have*_i *they could* t_i *left*?

Chomsky (1993) assumes, that under economy-considerations, in all the “bad” examples an element has not chosen the “shortest” possible movement. In (28b) the movement of *whom*₂ to Spec-CP is in a “natural sense” longer than movement of *whom*₁ to this position, or movement of *could* in (32a) is shorter than movement of *have* in (32b).⁶

Due to this observation, the assumption is that concerning derivation, another principle of economy, namely a “Shortest Step” requirement rules out examples like (32b), because a shorter derivation is possible, as in (32a).⁷

⁶ However, to exclude the possibility of a derivation like (32b), it is necessary to recall that the raising of *have* with later insertion of *could* into the structure is excluded because of the extension requirement on GT, i.e. the strict cycle.

⁷ I will not go further into the discussion of the status of the “Shortest Step” requirement here, not only because it is not necessary for further discussion, but also because it introduces a notion of

2.3.4 Apparent conflict

As introduced in Chomsky (1991), there seems to be a conflict between two natural notions of economy, i.e. if a derivation consists of shorter movement operations, it has more steps, and with viewer steps, the movement operations are longer. Chomsky (1991) offers a solution, assuming that the basic transformation operation is not Move- α , but Form-Chain. Form-Chain is an operation, that consists of one step, i.e. it's a single step operation, that builds (33ii) out of (33i), with the resulting chain in (33iii):

- (33) i. e seems [e to be likely [$John$ to win]]
- ii. $John$ seems [t' to be likely [t to win]]
- iii. CH = ($John$, t' , t)

The same is assumed to be true for other cases of successive cyclic movement.⁸

Now, there is no conflict between the constraints that a derivation be limited to fewest steps and to shortest links (“shortest moves”). But the question still is, why the subject moves to Spec-AGRs and the object to Spec-AGRo, and why it is allowed for the object to cross the trace of the subject or the subject in situ, thus violating Relativized Minimality.

In former standard assumptions concerning objects, nobody “dreamed of objects raising to Spec-AGRo”,⁹ so Rizzi (1990) assumed that objects remain in situ, therefore the question of crossing never appeared, only Vikner (1990) mentioned that this could be a problem for *Relativized Minimality*.

“transderivational” evaluation into the theory, that is not acceptable from conceptual grounds. A discussion of the *pro*'s and *contra*'s of such a notion would be beyond the scope of this paper.

⁸ Here again, it is necessary to recall the extension condition on GT, and the notion of “cyclicality”. The structural sequences projected through GT are (briefly): i. *to be likely to win*, ii. *John to be likely to win*, iii. *seems John to be likely to win*, iv. *John seems to be likely to win*. Therefore, the empty positions in (33a) are not really “there”, rather they are created as positions filled with the moved element *John* through GT. In this sense, the idea of Form Chain as a one-step operation requires a higher level of abstraction.

⁹ Originally from Gisbert Fanselow (p.c.).

However, the assumptions are that the object has to raise to Spec-AGRo for Case-checking, crossing the subject or the trace of it, leading to a violation of Relativized Minimality, or here of the “Shortest Move” Condition.

Now, if we assume that the verb does not raise, like in English, raising of the subject is unproblematic, if we assume that there are no specifiers available during the generation of the functional projections through GT. While projecting AGRsP, the subject has to move to Spec-AGRs, the next and only available specifier position. Therefore no violation of a “shortest movement” requirement would occur.

But, if a specifier of AGRo would be projected, and the subject would move to this position, the next available landing site for the object would be Spec-VP. But this position is already occupied by the trace of the raised subject, so there is no possibility for the object to raise, without violating the shortest move requirement. In order to make raising of the object to Spec-AGRo possible, Chomsky (1993) introduces the notion of *equidistance*:

(34) **Equidistance**

If α , β are in the same minimal domain, they are equidistant from γ .

Due to (34), if the verb does not raise, the subject position and the object position are in the same minimal domain, and therefore equidistant. But, if the verb raises to AGRo⁰, the minimal domain of the new build chain {V, t} will contain the Spec-AGRo position, the Spec-VP position, and the object position. Therefore, all these positions would then be equidistant.

If the subject occupies the Spec-AGRo position, still there is no position available for the object to raise to, since the Spec-AGRo position is occupied by the subject and the Spec-VP position by the trace of the subject. If now the complex AGRo-head raises still further to T⁰, the minimal domain from the perspective of the object will not change. Recall, that the raising of V to AGRo is a single-step operation Form Chain. V itself does not raise further, the next movement is movement of AGRo to T⁰. Therefore, the so build chain is not a chain headed by the V-head, but by the complex AGRo-head. The new minimal domain of the chain build by movement of the complex AGRo-head, will contain Spec of TP, Spec-AGRo and VP. The positions inside the VP are in the domain of the new build complex head T, but not in the minimal domain. Therefore, the positions inside VP are equidistant, Spec-VP is equidistant from Object, but not the positions outside of VP.

If the subject raises to Spec-AGRo, the derivation will crash because the M-features of the object cannot be checked, and this leads to a violation of FI at the

interface levels (i.e. at LF in English). In this case, the object is simply trapped in its base-position.

Another situation would arise, if the subject moves first to a specifier position higher than Spec-AGRo. In this case, again, if the verb doesn't raise, the Spec-VP position is the only available landing site for the object. But, if the verb moves to AGRo⁰, the minimal domain of the so formed chain will contain Spec-AGRo. This position is then available as a landing site for the object. There is now one major prediction, namely that the direct object can only move to Spec-AGRo, if the verb moves first, at least to AGRo⁰.

Concerning this mechanism, there are a lot of other predictions, e.g. if the verb moves higher than AGRo before *Spell Out*, the object has to move too before *Spell Out* to Spec-AGRo, otherwise the same problem would occur, like with subject raising to Spec-AGRo. If the chain build by raising of V to AGRo is no longer "visible", we would expect the extension relation concerning the minimal domain to be no longer available. But, this point is still unclear, because it is unclear what status the trace of the raised AGRo-head has. But in the outline of the model given in Chomsky (1993), it looks like the extension of the minimal domain after further raising is lost.

There are still problems concerning double object constructions. It is unclear, whether the indirect object has to check Case in a checking configuration like the direct object. If this is the case, there is no possibility for one of the objects to leave VP, cf. Wartena (1994) for further discussion.

2.4 Economy of derivation

In this section the economy principles constraining possible derivations in the MP, i.e. *Greed* and *Procrastinate*, are introduced in more detail, with a further extension proposed in Wilder & Ćavar (1994a) concerning the possibility of *altruistic* movement.

If *Last Resort* (6b) is taken to be a fundamental notion of Economy constraining derivations, the following paradigm, Chomsky argues, motivates a strengthening of the notion of *Last Resort*:

- (35) a. *e seemed to John that it was raining*
- b. * *John seemed (to) t that ...*

- c. *It seemed to John that ...*

(35a) is ungrammatical as it stands, because it does not constitute a well-formed input to the PF-component. Chomsky assumes that the presence of a strong (nominative) Case feature in T^0 is responsible for the EPP effects in English. So one possibility to save this derivation from ungrammaticality could be movement of the NP *John* to the subject position (35b). Although, this would not be a superfluous movement, because it would rescue the derivation from a violation of FI at PF, it is blocked, and expletive insertion is forced.

The reason why the NP-movement is blocked is that the NP itself can satisfy its own Case requirements in situ. This gives the impression that move- α cannot apply where the moved element does not need to move to satisfy its own requirements.

Last Resort seems to have a “self-serving” property. Chomsky names this *Greed*, assuming that *Greed* constrains all applications of move- α :

(36) **Greed**

Move- α must result in satisfaction of requirements of α .

Chomsky notes, that *Greed* restricts the class of permissible derivations so that there can be no purely “altruistic” movement. This means that an element cannot move to a position just to save the derivation from ungrammaticality, without checking some M-feature of its own. At first sight, it looks like any kind of “altruistic” movement is excluded in this system.

However, “altruism” seems to be possible. As noted in Wilder & Ávar (1994a), “greedy” movement generally has “altruistic” side-effects. This becomes clear, if we imagine a situation like in (37):

(37) **Altruism**

- a. α itself has a feature F
- b. α 's feature F is weak
- c. β in position A has a strong feature F that needs to be checked prior to *Spell Out* against α 's F.

Although Chomsky does not address this issue directly, it looks like the application of *Greed* to move- α is not intended to be sensitive to the strong/weak distinction in M-features of α . And it is obvious that *Procrastinate* does not prohibit early raising of an element that itself only has weak features. For example, it is

clear that overt raising of NPs to the subject position (Spec-AGRs) (38b) and of *wh*-phrases to Spec-CP (38) is not driven by strong features in the moved phrase, but by strong features in the functional heads, which contain the relevant features (nominative Case-feature in INFL or *wh*-feature in C^0), because these elements may appear in their base position in some contexts.

In sentences with multiple *wh*-phrases (38a) only one *wh*-phrase has to move to Spec-CP and it is possible to leave a nominative NP in situ and insert an expletive (*there*) in the Spec-AGRs position (38b):

- (38) a. *Who saw whom?*
 LF: *whom-who saw t*
- b. *There is a man in the house.*
 LF: *A man-there is t in the house*

The conclusion now is, *early altruistic* movement of α is possible in order to save the derivation from a violation of FI at a relevant level. And, *Greed* still holds. Such an operation of move- α must result in checking of some (weak) feature that α has. “Early Altruism” (Wilder & Ćavar 1994a: 60) on the part of α must be “re-warded” by LF at the latest.¹⁰

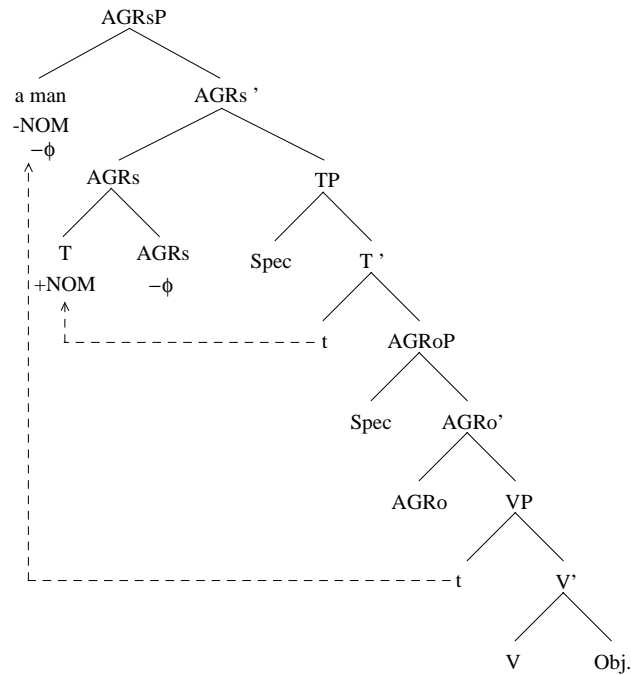
(39) **Early Altruism**

Move α early to avoid a violation of FI at PF.

The characteristic consequences of “altruistic movement” are different distributions of elements within a given language. For example, the fact that a nominative NP in English may appear lower than Spec-IP (38b) is a result of the fact that the features it bears and checks in Spec-IP are weak, raising of a nominative to Spec-IP is early altruistic movement (40) (“-“ and “+” indicating “weak” and “strong” respectively).

¹⁰ The formulation of *Early Altruism* in (39) differs from the formulation in Wilder & Ćavar (1994a) in one small point. While in Wilder & Ćavar (1994a) *Early Altruism* was formulated in a way that one strong feature is involved at the landing site of the movement operation, here it is more liberal, allowing movement operations to positions where both, the landing site, and the moved element have only a weak feature. Why this formulation is necessary will be clear in the discussion of LHM in section 5.1.

(40) *A man is in the garden.*



The same is true for *wh*-movement in multiple *wh*-questions.

The “altruism” effect is strongly connected with the effect of “optional” movement within a single language.

The same situation appears in cases of X^0 -movement, as the V2-effect caused by raising of finite verbs to C^0 in German:

- (41) a. *Peter liebt Maria.*
 P. loves M.
 “Peter loves Mary.”
- b. * *Peter Maria liebt.*
- c. ..., *daß Peter Marialiebt*
 that P. M. loves
- d. * ..., *daß Peter liebt Maria*

The fact that the finite verb may remain in final position in the embedded clause (41c) could indicate that, whatever the features are that it checks in C^0 in the matrix clause (41a), these features are weak, so that overt V-raising to C^0 in the matrix-clause would be early altruistic movement.

To sum up, the main points necessary for the further discussion are, that FI in combination with M-features is the main trigger for movement operations. The possible parametrization of M-features for strong/weak leads to cross-linguistic word order variation. And, we have seen how the principles *Procrastinate* and *Greed* constrain the possible derivation, while *Early Altruism* is still a possible option in this model, and even the standard case concerning overt movement.

3 The role of closed class elements in the MP

In this section I will describe the basic ideas concerning the role of closed class elements in the MP. On the one hand, I will motivate a distinction between two types of closed class elements, namely *functional items* and *functional words*.

As described above, M-features play a crucial role for explaining cross-linguistic word order variation in the MP. In the following, I will refer to M-features as *functional items*, claiming that these are the locus for parametrization, responsible for cross-linguistic word order variation. *Functional words*, on the other hand, are assumed to be elements of the closed class, that are not parametrized, but are involved in intra-linguistic word order variation, because of their ability to check certain M-features. This property they share with open class elements, i.e. *substantives*.

3.1 Properties of closed class elements

A discussion of the role of closed class elements presupposes a definition of the closed class, or at least criteria of distinction between closed and open class elements.

The major difference between *substantives* (i.e. open class elements) and closed class elements, is that substantives have uniform properties across languages (Chomsky 1991: 419; Ouhalla 1991). The lexical item *give* for example, is ditransitive across languages, i.e. it always requires two internal arguments.¹¹

Closed class elements are known to differ from language to language (cf. Emonds 1985). For example negation in closely-related Slavic languages like Slovak and Croatian is expressed in different ways. Like in most Indo-European languages,¹² negation is a prefix, attached to a verb, in both Slovak and Croatian. In Croatian this verb is always the finite verb, i.e. the finite main verb (42a) or the

¹¹ This is of course more complicated. As coined to me by Paul Gorrell, there is a possibility to drop arguments of *give*, if these are D-linked (i.e. linked in the discourse representation), but it is not possible with *put*. Therefore, more conditions seem to be operative, concerning the question of c- and s-selectional properties of verbs. Maybe, the formulation should be that a ditransitive verb cannot have more than two internal arguments, in the sense that one or both may be dropped, if they are D-linked.

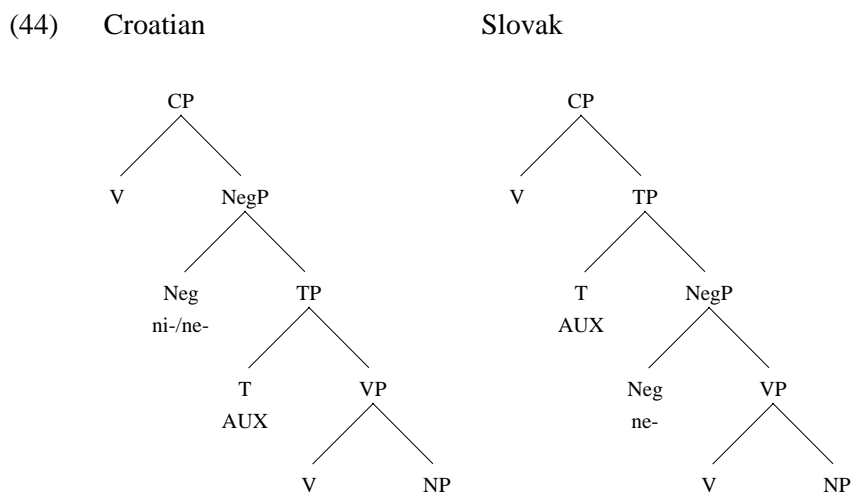
¹² In Old-German the negation was a prefix on the verb, that became a combination of a prefix and an independent word *nicht* (“not”). In High-German the negation is only expressed through the independent word *nicht*. A similar situation can be seen in French. While in Old-French the negation was a prefix *ne-*, attached to the verb, it became a combination of *ne- ... pas*, and in modern French, there is often only *pas* used (cf. Ouhalla 1990).

finite auxiliary (42b), while in Slovak the negation prefix is always attached to the main verb, either finite or infinitive (e.g. participle) (43).

- (42) a. *Ivan nevoli ruže.*
 I. NEG-love-3sg roses
 “Ivan does not like roses.”
- b. *Ivan nije volio ruže.*
 I. NEG-be-3sg love-ptc roses
 “Ivan didn’t like roses.”

- (43) *Ne-napisal som list.*
 NEG-write-ptc be-1sg letter
 “I have not written the letter.”

This difference is explained in Rivero (1991) as a result of different selectional properties of the functional category NEG. The underlying idea is that functional categories may be represented as independent projections in the syntactic structure (cf. Pollock 1989, Chomsky 1991, Ouhalla 1991). While in Croatian NEG selects a TP, it selects VP in Slovak:



However, traditionally lexical categories are divided into two major classes, the closed and the open class. The open class contains the major lexical categories V, N, and A,¹³ that is referred to as *substantives*. The rest of the categories, like de-

¹³ A discussion of the appropriate classification of prepositions, would be beyond the scope of this paper.

terminers, auxiliaries, complementizers, and inflectional categories etc. belong to the closed class. Related to this class, as mentioned above, I will make a distinction in the following between *functional items* and *functional words*.

Functional items are assumed to be head-categories in the syntactic structure that represent M-features (in the sense of the MP), which lack a phonological specification, i.e. don't have a visible PF-representation. Morphosyntactic features like agreement- (AGR) (or ϕ -features), tense-features (TNS) etc. belong to this set (cf. (19) in section 2.3.2 above). Their function concerns cross-linguistic word order variation, in that they mediate the matching between M-features of substantives and/or functional words, i.e. they have some sort of "transmitter"-function. Furthermore, it is assumed that only *functional items* are the locus for parametrization.

The function of *functional words*, on the other hand, concerns language-internal word order variation. These elements have the ability to check certain M-features, they are specified for. Their feature specification is not parametrized, as in the case of substantives. It is assumed that the features of substantives and functional words are universally weak. The elements belonging to this class are complementizers (*that, if* etc.), expletives (*there*), determiners (*the*) etc.

How the difference between *functional items* and *functional words* is motivated in terms of the MP and *Distributed Morphology*, will be explained below. But, the terminology may be misleading, if compared with the terminology usually used in the literature. While the term *functional category* in e.g. Ouhalla (1991) refers to the whole set of closed class elements, the same term here will refer only to those elements that represent abstract M-features in the sense of MP, namely *functional items*.¹⁴

First, a distinction between the closed class and the open class elements has to be formulated. As pointed out by Emonds (1985), there are two major distinctions:

- (45) a. Open class elements have indefinitely many members in the lexicon, while the number of closed class elements is fixed for a given language.
- b. Conscious coining of new lexical entries by speakers is allowed only in the open class.

Tsimpli & Ouhalla (1990), based on observations of this type, assumed that there should be a difference between two notions of the lexicon, one *grammatical lexi-*

¹⁴ Therefore, the term *closed class elements* will be used, if there is no explicit distinction in the cited literature, or in cases where a distinction would be irrelevant for further discussion.

con that contains the closed class elements and is part of UG, and a *mental lexicon*, that contains substantives, independent of UG.

Another distinction between substantives and functional categories can be expressed with respect to properties concerning the ability to assign θ -roles (Ouhalla 1991). While a verb can have a θ -grid (Stowell 1981, Chomsky 1981), on which the number of arguments depend, it must be assumed that functional categories like AGR and TNS lack a θ -grid, i.e. they do not take arguments. Ouhalla (1991) pointed out that functional categories lack a θ -grid, and that they have no s(ematic)-selectional properties. Substantives, however, have a θ -grid, i.e. can assign a thematic role to their arguments. And, they have s-selectional properties. Verbs can assign θ -roles to their arguments, nouns in possessor constructions to the possessor phrase, and adjectives to nouns (cf. Higginbotham 1985).

Ouhalla (1991) argues further, that functional categories are lexically specified for c(ategorial)-selection, while substantives are not. Chomsky (1986a) argues that c-selection is redundant, and that the c-selectional properties of lexical items (i.e. substantives) can be predicted from their s-selectional properties, if the notion of *canonical structural realization* (CSR) (cf. Grimshaw 1981) is assumed. In this sense, semantic categories are then realized as specific syntactic categories. However, in Ouhalla's (1991) approach it is argued that substantives may lack c-selectional properties, but functional categories may not. The c-selectional properties of functional categories are assumed to play a crucial role in determining not only the derived word order, but also the structural properties of constructions. Therefore, the assumption is that another difference between closed class elements and substantives is, that the former have c-selectional properties, while the later do not.

Now, further possible distinctions are related to the proposal that functional categories are mostly affixal in nature. In former models it was assumed that e.g. agreement morphemes are the overt representation of a functional category AGR, base generated in a certain head-position. This assumption led to the generalization that functional categories are (mostly) bound morphemes that attach to other categories (cf. Ouhalla 1991). This point of view is based on certain theoretical assumptions that will be the topic in the following.

3.2 Lexicon or syntax

The question related to the view that functional categories are mostly affixes in nature, is whether word formation is to be explained as a syntactic process, or

rather as a lexical, or post-syntactic process, or as a combination of all these processes.

In early transformational grammar, morphology was assumed to be a component of syntax. Word formation was taken to be part of the syntactic process. Certain base rules applied to lexical items, forming structures, and transformational rules have been assumed to apply to the resulting structures. In order to restrict possible transformations, Chomsky (1970) set the basis for a new view, where some morphological processes are assumed to take place in the lexicon, with the aim to restrict the power of transformations for reasons of learnability. The *Strong Lexicalist Hypothesis* was then an extreme development of these ideas. These hypothesis considered all morphological processes to be lexicon internal, and elements inserted in a phrase marker to be morphologically complete words.¹⁵

Related to this point of view, there was and still is an ongoing discussion. Work by e.g. Baker (1988) convincingly showed that at least some morphological processes should be explained in syntactic terms, and therefore located in the syntax. The Mirror Principle (Baker 1988: 13) expressed a strong link between the order of (inflection) morphemes and structural relations in the syntax between I(nflectional) projections, affecting syntactic processes.

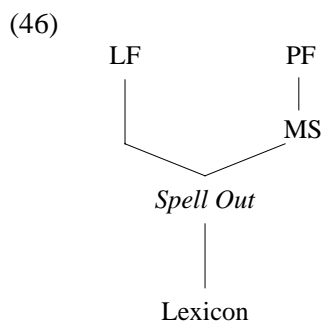
However, the assumptions in the MP, concerning this point, could be understood as a step back to the *Strong Lexicalist Hypothesis*, because the assumption again is that lexical items are inserted into a phrase marker with all their morpho-syntactic features. This could mean that morphological operations take place in the lexicon, or post-syntactically. While the computational system in the MP does not make use of the morphophonological shape of lexical items, it can be assumed that operations in the syntax only “see” morphosyntactic features, and that the phonological shape of linguistic objects is fixed after the *Spell Out* point, maybe at a level of Morphological Structure (Halle & Marantz 1993). This would be, as far as I can see, fully compatible with the MP. A more detailed discussion of the ideas presented in Halle & Marantz (1993) will be presented in the following section.

3.2.1 Functional categories and Distributed Morphology

In the *Distributed Morphology* (DM) framework, Halle & Marantz (1993) assume (following Anderson 1992, Beard 1991, Aronoff 1992) that terminal elements involved in the syntax are separated from their phonological realization. Agreeing

¹⁵ Several other models took word-formation processes to apply in the syntax (cf. Aronoff 1976, Di Sciullo & Williams 1987).

with the lexeme-based morphology, the basic assumption then, is that terminal nodes lack phonological features at the syntactic levels LF, D- and S-structure, or in terms of the MP, at LF and during the derivation till *Spell Out*. In this sense, affixes are assumed to be the by-product of morphophonological rules, called *word formation rules* (WFR). The WFRs are sensitive to features associated with the lexical categories, called lexemes. Insertion or “formation” of the phonological form of a terminal happens after S-structure or *Spell Out* at the level of Morphological Structure (MS), i.e. Vocabulary-insertion.¹⁶



Furthermore, the assumption is that the phonological realization of terminal elements in the syntax is governed by lexical entries that relate bundles of morphosyntactic features to bundles of phonological features. The organization of the terminal elements at D-, S-structure and LF is assumed to differ from their organization in MS and PF. In the former there is “only a hierarchical nesting of constituents”, while the “linear order of morphemes at PF is established by rules and principles that relate S-structure (or *Spell Out*) to MS (and PF)”. In addition, morphemes may be inserted in MS, motivated by universal and/or language-specific well-formedness conditions.

These assumptions are used to explain the lack of isomorphism between PF and S-structure (or *Spell Out*), i.e. the fact that there is often no one-to-one relation between terminal elements in the syntax and terminal elements in MS.

This framework leads to a fundamentally new view of morphology. What traditionally was called morphology, now is no longer concentrated in a single component of the grammar, but distributed among different components. “Word formation” in the DM framework may take place at any level of grammar, through syntactic processes like head movement, or adjunction, and through processes like *Merger*, or just through linear adjacent heads. Diverging from the traditional view, the elements involved in the process of word formation are not assumed to be in-

¹⁶ The authors do not make use of the theoretical concept presented in Chomsky (1993), but there is no conceptual reason that would rule it out.

variant, they can change in the course of derivation. Processes involved could be *Merger* or *Fusion*.

Interesting for the discussion here, is that *Merger* is distinguished from *Fusion* in the following way. Like head-to-head, *Merger* combines two terminal nodes under one X^0 category node but maintains two independent terminal nodes under the X^0 category. If Vocabulary insertion takes place, two separate Vocabulary items have to be inserted under the derived X^0 category. *Fusion*, on the other hand, combines two terminal nodes, sister nodes, and fuses them into one single node. Thus, Vocabulary insertion has to insert only one item into the resulting node which has a subset of the morphosyntactic features of the fused node, including the features of both input terminal nodes. Through *Fusion*, the number of terminal nodes in a tree is reduced, while after *Merger* the number of terminals keeps the same. This point is interesting in the discussion of clitics and clitic clusters in Croatian in the following sections.

Thus, this framework is an affixes-less morphological theory that operates with morphosyntactic features, much like the MP. The consequence of these assumptions is that the closed class can be assumed to contain only abstract morphosyntactic features and functional words, while “affixes” are the by-product of processes at the level MS.

3.3 Language variation and closed class elements

Language variation in the Principle & Parameters framework was explained by assuming that the values of certain parameters vary between languages. Concerning the locus of parameters, there have been several different opinions. One assumption, formulated in Chomsky (1981) & (1986b), was that parameters are associated with principles of UG.

Another opinion, first formulated in Borer (1984), was that parametric variation affects only the *inflectional system* of languages. Borer's hypothesis was an attempt to reduce all cross-linguistic variation to properties of the inflectional system of languages. Parameters in this approach are associated with individual lexical items, as part of the information included in their lexical entries, and as such are linked with the syntactic properties of lexical elements. As a consequence,

more than one value of a given parameter could be instantiated via different lexical items (cf. Wexler & Manzini 1987).¹⁷

Chomsky (1991) formulated this idea even sharper, assuming that only functional elements are parametrized. Ouhalla (1991) presented a more elaborated approach, concerning Borer's ideas. In this approach, parameters are associated with individual lexical items, but the set of lexical items, parameters are associated with, is limited to the class of inflectional/functional categories, i.e. closed class elements of the lexicon. In this sense, "functional categories represent the flesh and blood of grammar", because they are taken to be the locus of "grammatical information which determines the structural representation of given constructions, as well as the various grammatical processes they may undergo" (Ouhalla 1991: 8). The underlying observation that substantives have universal properties across languages led to the idea that specific syntactic properties of a given language can be reduced to properties of the functional categories of this language.

However, the main assumption in this approach is that functional categories are the locus for parametric variation. The question then is how this idea can be expressed in terms of the MP. This is the topic of discussion in the following section.

3.3.1 Parametrization in the MP

The question addressed in this section will be how the underlying ideas of parametrization in the Principle & Parameters framework could be formulated in terms of the MP, i.e. what the locus for parametrization in the MP framework could be.

Cross-linguistic variation in the Principles & Parameters framework was accounted for in terms of variation of values of certain parameters. Concerning the nature and locus of parametrization, there have been several different opinions. Chomsky (1986b) made the assumption that parameters are associated with principles of UG.

Borer (1984), on the other hand, assumed that parametric variation affects only the "inflectional system" of languages. Cross-linguistic variation was seen as an effect of properties of the "inflectional system". Parameters, in this framework, are associated with individual lexical items, which contain the relevant information in

¹⁷ The *Lexical Parametrization Hypothesis* formulated in Wexler & Manzini (1987) still assumes that principles of UG are parametrized, but the parameters are not fixed for a whole language, rather for specific elements of a given language (cf. Grewendorf 1991).

their lexical entry. This hypothesis is referred to with “lexical parametrization hypothesis”.

One important aspect of the assumption that syntactic variation follows from parametrized morphological properties of lexical items, has to do with learnability. Since the properties of lexical items are relevant at PF, they are “visible”, and so deducible from the PF-representations. Moreover, while a language specific lexicon has to be assumed, the possible parameters then are limited to this language specific component (which must, in any event, be learned and/or fixed) leaving the principles of grammar as invariant. Concerning the learnability problematic, it then has to be assumed that the relevant part of the lexicon is a part of UG or just a predefined set, in the sense of Tsimpli & Ouhalla (1990). Without this assumption it would be unclear, how the process of language acquisition could take place in languages where the strength of some M-feature of an element cannot be deduced from intra-linguistic word-order variation.

Nevertheless, the idea that parametrization affects the lexicon was adopted by Chomsky (1991), who reduced the possible locus for parameters even further, assuming that parametric variation affects only the invariant part of the lexicon, i.e. functional categories. This assumption predicts that the process of language acquisition, or acquisition of a particular grammar, is nothing more than learning the lexical items of functional categories, and so fixing the parameters associated with the properties of these functional categories, and encoded in the information contained in these lexical entries. Therefore, this assumption gives a plausible answer to the learnability problem.

As described above, in the MP word order variation is a side-effect of an interplay between parametrized morphological features of lexical entries and invariant economy principles. If we adopt the “lexical parametrization hypothesis”, which claims that lexical items are the locus of parametrization, and limit this even further to the invariant part of the lexicon, the closed class elements, and then even further to functional categories (Chomsky 1991; Wilder & Ćavar 1994a), then syntactic variation follows from parametrized morphological properties, i.e. the *weak/strong* distinction of these categories. In this sense, one part of the closed class elements is responsible for cross-linguistic variation, and interestingly, it’s the “invisible” part.

While the MP recognizes only two levels of representation, LF, the link to the C-I interface, and PF, the link to the A-P interface, it follows, on the assumption that the C-I performance system is invariant, that the interface representation LF is largely identical in all languages. On the other hand PF-representations vary from language to language. So, it seems reasonable to assume that the PF-related part of

lexical items is responsible for cross-linguistic word-order variation. If we combine this with the assumptions made in Chomsky (1991) and Ouhalla (1991), we could even sharpen the formulation by assuming that only closed-class elements are parametrized for the *weak/strong* distinction, with respect to their morphosyntactic properties.

However, according to the MP (Chomsky 1993) the *strong features* are *visible* at the PF-interface, with the consequence that a representation containing a strong feature will lead to a violation of the principle of *Full-Interpretation*, i.e. *crash* at PF. This is extended to the level of LF in Chomsky (1994), with a further assumption, that “strong” features cannot be checked after *Spell Out* in the derivation of an LF-representation. Concerning this point, the standard assumption is that, if all strong features are *checked* before the derivation of the LF representation forks from the derivation of the PF-representation, at the point *Spell Out*, the PF- and the LF-representation will fulfill the *Principle of Full-Interpretation*. But there seems still to be a possibility of checking strong features on the way of the derivation of a PF-representation, if processes like expletive insertion etc. may take place on a level like MS (cf. section 3.2.1 and section 4 for a discussion concerning this possibility).

However, as already described in the section above, the choice between the values “weak” and “strong” for M-features that are properties of lexical items, interacting with the representational and derivational principles of economy is responsible for cross-linguistic word order variation (cf. the French/English contrast in (22)). Now the question is, what elements may have different values of certain M-features. If open class elements would be parametrized concerning this property, we would hardly be able to deduce the properties of certain M-features from the surface position of some lexical item, that doesn’t appear in any other position. In e.g. (47a) in German, on the other hand, the finite verb appears in the second position in the clause, while it appears in finite position in (47b). If the assumption would be that the finite verb has a strong M-feature, we would expect (47b) to cause a violation of FI at PF, because of a strong M-feature in V, not interpretable at the PF-interface.

- (47) a. *Peter trank gestern zwei Bier zuviel.*
 P. drink-past yesterday two beer to-much
 “Yesterday Peter drunk two beer to much.”
- b. ..., *daß Peter gestern zwei Bier trank*

that P. yesterday two beer drink-past

But, if the locus of parametrization of M-features would be the open class elements, overt V-raising of the finite verb in German (47) or the finite verb in French (22) could be due to the ϕ -features of the verb, or of the corresponding functional head (AGR), being strong. Then it would be impossible to decide whether the relevant M-features are strong in the functional category or in the verb that raises (or in both). Independent evidence would be available only where the verb raises in some contexts but not in others.

If we, on the other hand, adopt the alternative idea, that only functional elements are parametrized (cf. Chomsky 1991, Ouhalla 1991, Wilder & Ávar 1994a), the choice is clear. If some element moves to a certain position, i.e. a position in the checking domain of a functional category that contains the appropriate M-features, the relevant M-feature in the involved functional category has to be strong. Furthermore, the possibility of insertion of functional words into a certain position, where another substantive ends up in the surface-structure, gives further evidence for the assumption that the nature of the involved M-feature in the head of the checking domain of the landing site is strong. Thus, functional words are important for the language internal evidence for properties of functional items. Consequently, M-features of inflected lexical categories, i.e. closed class elements, are universally weak.

In this sense, movement of lexical categories is always *early altruistic* movement. The question, what further role functional words play in this scenario, will be discussed in more detail in the following sections.

For the time being, we can hold on to the conclusion that the class of parametrized lexical items can now be reduced to the “really” invariant part of the lexicon, namely the functional items (M-features), not to the functional words or substantives.¹⁸

If the assumption then is that all lexical entries, i.e. the open and the closed class elements have default “weak” features, language acquisition then could be understood as the process of learning which functional item (M-feature) is strong.¹⁹ This is a logical conclusion given the observation that M-features of inflected lexical categories can be weak (English and German finite verbs). So the

¹⁸ There is a possibility to consider e.g. prepositions (= functional words) to be elements that can be acquired. This is the reason why I named functional items the “really invariant” part of the lexicon.

¹⁹ The basic idea that language acquisition could be understood as the process of fixing the value of M-features, was coined by Chris Wilder (p.c.).

idea is, that overt raising of lexical heads universally constitutes “early altruism” triggered by strong M-features in functional heads, i.e. strong functional items.

3.4 Closed class elements in an extended MP

As described in section 2.3.2, movement operations in the MP are motivated by the need for features to be checked, in order to fulfill the principle FI. In the version of the MP presented in Chomsky (1993), it was assumed that features may be “weak” or “strong”. If features are strong, the checking operation has to take place before *Spell Out*, in order to fulfill the principle of FI at PF, because it was assumed that “strong” features in a PF-representation are not interpretable at this level.

This assumption is extended in the version of MP in Chomsky (1994). There, it is assumed that strong features cannot be checked after *Spell Out* during the derivation of an LF-representation, because insertion of an item with strong features after *Spell Out* has to be excluded. The additional assumption that insertion of lexical items after *Spell Out* would introduce semantic, phonological and formal features to the respective representation (cf. footnote 3) excludes the process of lexical insertion after *Spell Out* completely.

However, these assumptions do not seem to be necessary. There is no need to ban lexical insertion after *Spell Out*, if the only well-formedness principle FI explains the impossibility of certain types of lexical insertion after *Spell Out*. If functional words e.g. are inserted into the structure after *Spell Out*, during the derivation of a PF-representation, that introduce only formal and phonological features, this process would not lead to a violation of FI at PF, if the formal features are eliminated during the derivation of the PF-representation. The same could happen during the derivation of an LF-representation after *Spell Out*, where only semantic and formal features are involved. Therefore insertion of functional words, for example during the derivation of a PF-representation could be permissible under certain circumstances.

This, however, cannot be assumed for substantives. Substantives always introduce all three types of features, i.e. formal, semantic and phonological features. Thus, any insertion of substantives after *Spell Out*, either during the derivation of an LF- or a PF-representation, would in case cause a violation of FI at the interfaces.

It is important to note that functional items may only be projected through the operation GT, which can only apply before *Spell Out*, i.e. after *Spell Out* there is no possibility to access GT, therefore also no possibility to add a functional item

to the structure. This is so, because insertion of a functional item in some position in the projected structure would lead to a violation of FI, or could never satisfy the *checking requirement*. This will be shown in more detail in the following section.

In this sense, FI does not only function as the basic economy principle triggering movement operations (cf. the discussion in section 2.1), but also constrains, as a side-effect, the possibility of lexical insertion after *Spell Out*. No additional assumptions are necessary. More on this topic will be discussed in section 3.2.1.

The first question to be answered is what the role of functional items and functional words in the MP is. To answer this question, let us first recall the assumptions made in the MP. Under the assumption, that lexical items are inserted in the derivation with all their morphological features that have to be checked against their counterpart born in the head of some functional projection, it follows that the lexicon should contain functional features that are abstract properties of functional projections, maybe the heads of the functional projections themselves. The main idea concerning M-features and checking is that M-features are present pair-wise, as part of a substantive item, and as part of a functional projection. Then, a functional projection containing the counterpart of an M-feature of a substantive represents a designated landing site for the substantive.

As assumed above, only functional items are parametrized for the strong/weak distinction, i.e. only functional items may be specified for being “strong”. Therefore, all movement operations of substantives in order to check these M-features are *early altruistic* (cf. 39), with substantives only having weak M-features.

So far, the role of functional items in the MP is clear, i.e. they are parametrized for strong/weak, and they are the main trigger for movement operations.

Functional words, now, play a crucial role in language internal word-order variation. The examples in (48) show this for the expletive *there*.

- (48) a. *A man is in the garden.*
- b. *There is a man in the garden.*
- c. * [_{IP} *is* [_{VP} *a man in the garden*]]

Under the assumption that the complex AGRs-head, formed through raising of T⁰ to AGRs, contains the weak ϕ -features of the AGRs-head and the strong Case-features of the T-head, either the subject has to raise to the Spec-AGRs-position (48a) to check the strong Case-feature, or an expletive *there* has to be inserted

(48b) to check this feature, before *Spell Out*. The former option would be a case of *early altruistic* movement, while the second could be analyzed as a case of partitive Case assignment (Belletti 1988) to the subject *a man* in VP-Spec, with subsequent raising of *a man* during the derivation of the LF-representation after *Spell Out*, in order to check the AGRs-features in Spec-AGRs, as assumed in Lasnik (1993) or Chomsky (1994). If none of these operations take place before *Spell Out*, FI at PF would be violated with a resulting ungrammaticality of an example like (48c).

This language internal variation between movement of a substantive and insertion of a functional word shows two interesting things. First, we could think of insertion of expletives like *there* as a “last resort” operation. It has to take place in order to rescue the derivation from a violation of FI at PF. Second, the insertion of the expletive takes place into a position that contains a (strong) M-feature. Thus, it looks like the underlying principle guiding insertion of expletives has to fulfill the checking requirement, formulated as *Greed* for move- α . Abstracting away from the real notion of *Greed*, this checking requirement can, for the purposes here, be seen as some sort of *Greed*-requirement on insertion operations.

Another possibility to explain example like (48b) could be to assume that *there* does not check the strong Case-feature, but gives this M-feature an appropriate “Spell Out”, i.e. makes the relevant feature “weak”, and therefore interpretable at PF. For the purposes here, I would reject this possibility, and try out how far it is possible to maintain the following hypothesis:²⁰

(49) ***There-Insertion (I)***

There-Insertion must fulfill the checking requirement.

As far as cases of *there*-insertion suggest, it seems to be not only licensed in positions where an appropriate M-feature can be checked, but it takes only place if the relevant M-feature is strong, i.e. it seems to be a “last resort” operation. (49) can therefore be supplemented with the assumption that *there* may only be inserted in positions with a strong M-feature, i.e. the *checking requirement* and *Procrastinate* may not be violated:

(50) ***There-Insertion (II)***

There-Insertion may not violate *Procrastinate*.

²⁰ As was brought up to me, Watanabe (1993) formulated a similar assumption, but unfortunately I was not able to add this to the discussion here.

(50) is contrary to Chomsky's (1994: 38) assumption that insertion of *there* does not represent a violation of *Procrastinate* in certain contexts. This assumption has to do with the stipulated concept of a *numeration set* and the assumption that the EPP requires a subject in Spec-IP in the embedded infinitive. I will avoid completely the reference to something like a *numeration set*, and furthermore assume that there is no strong Case-feature available in the infinite T-head, which seems plausible under the perspective that no overt subject is "licensed" in Spec-AGRs (or Spec-TP) in standard cases of infinitives in English. Therefore, there is no need to place a checking DP in the checking domain of this head before *Spell Out*. In fact this option is excluded by *Procrastinate*.

Concerning *there*-insertion, it has to be checked whether conditions (49) and (50) hold for other cases of insertion of functional words. The question now is, what exactly is "lexical insertion".

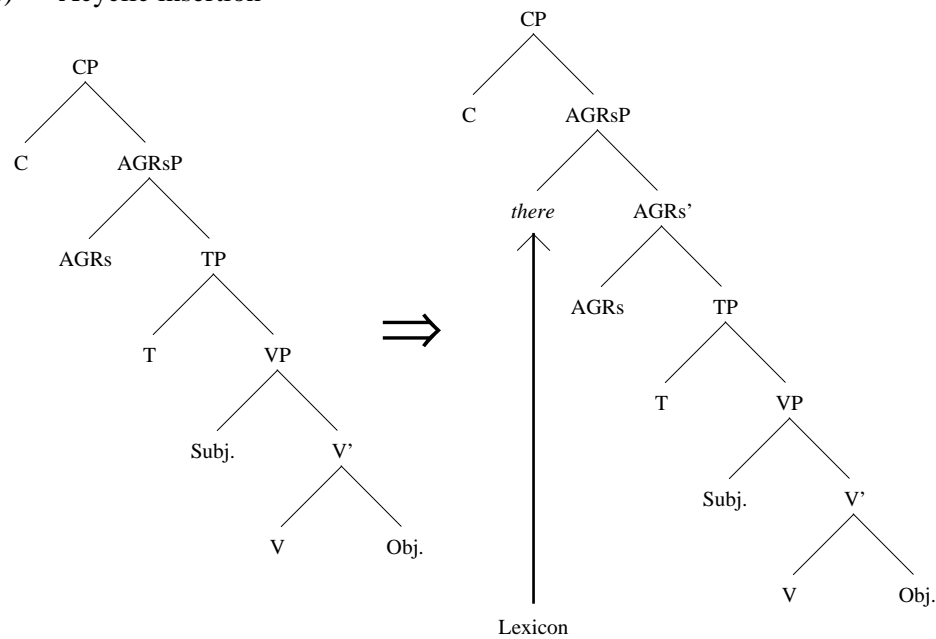
3.4.1 Lexical insertion, movement, and GT

The question is, if functional words are inserted in the structure, how is this to be understood in terms of the possibilities given in the MP. On the one hand, there does not seem to exist lexical insertion of lexical items in the traditional sense. As described in section 2.3.1 above, substantives are introduced into the structure through the operation of GT. This operation cannot be understood as lexical insertion, rather as some sort of *project- α* (cf. Wilder 1994).

In the domain of VP, therefore, it seems not reasonable to assume that this operation of introducing substantives into the structure obeys *Greed*, because items are taken from the lexicon and simply projected, by combining already projected trees with these items, i.e. there is no insertion of lexical items into positions in a already projected structure through GT.

On the other hand, if the process of introducing functional words into the structure is taken to be a process of "last resort", i.e. only possible, if a strong M-feature is base-generated in the appropriate head-position of the checking domain, or rather part of this head, there are to possibilities. This could either be an operation taking place post-syntactically, i.e. some sort of acyclic process of insertion (cf. (51)), or an operation before *Spell Out*, as a cyclic introduction into an already projected phrase marker (through GT), headed by e.g. an expletive.

(51) Acyclic insertion

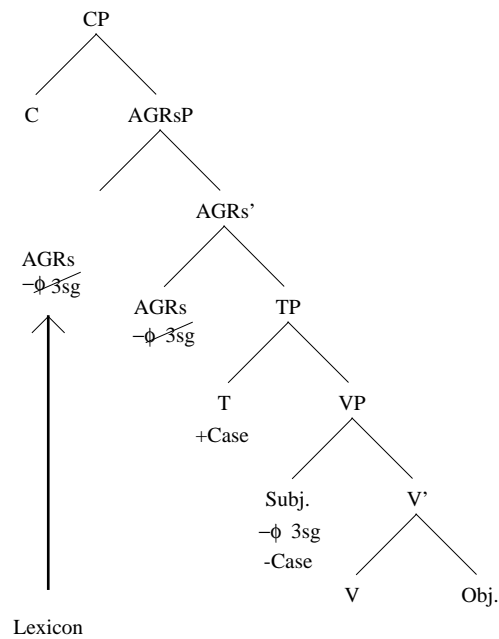


For the further discussion, it is not important whether the insertion of *there* adjoins to AGRsP or creates a new specifier position in the AGRs-projection. In both cases *there* would be in the checking domain of the AGRs-head (cf. section 2.3.2).

As noted in section 2.3.1, the extension-condition on GT (till *Spell Out*) forces the assumption that (lexical) insertion of an expletive *there* as in the example (51) cannot take place in the overt syntax, i.e. before *Spell Out*. As noted in the last section, such an operation should not be excluded as a possibility. Recall, that insertion of substantives is independently excluded through FI. Insertion of functional words may take place, if this does not violate FI at the relevant level of representation.

But it is still unclear, why insertion of functional items is excluded after *Spell Out*. Chomsky (1994), concerning this point, assumes that checking of “strong” features cannot take place after *Spell Out*. Neither during the derivation of a PF-representation, nor of an LF-representation. In order to explain why insertion of functional items is independently excluded, much like in the case of insertion of substantives, consider the first case, where some functional item is inserted into the checking position of a functional head, and both involved features are matching:

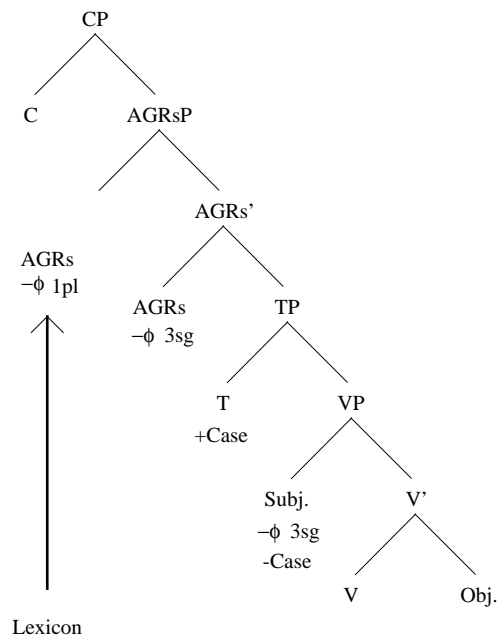
(52)



The situation described in (52) is of course simplified for a case where some functional item containing an ϕ -feature is involved, but the logic of the system proposed in the MP, with its modifications proposed here, allows the generalization that insertion of functional items after *Spell Out* (52) is impossible.²¹ Although the M-features of the inserted functional item and the head of the checking domain of the landing site match, i.e. the *checking condition* is fulfilled, this operation would lead to a representation that contains an unchecked M-feature in another category, e.g. in the subject DP. This then leads to a violation of FI at the relevant level of representation. Again, FI rules out the possibility to insert a functional item into a structure during the derivation of an LF-representation. Concerning the derivation of a PF-representation, this would be trivially irrelevant. The next possibility would be insertion of a functional item into the checking domain of a functional head that does not contain a matching feature:

²¹ Insertion of a functional item after *Spell Out* has to be acyclic, as insertion of functional words or substantives.

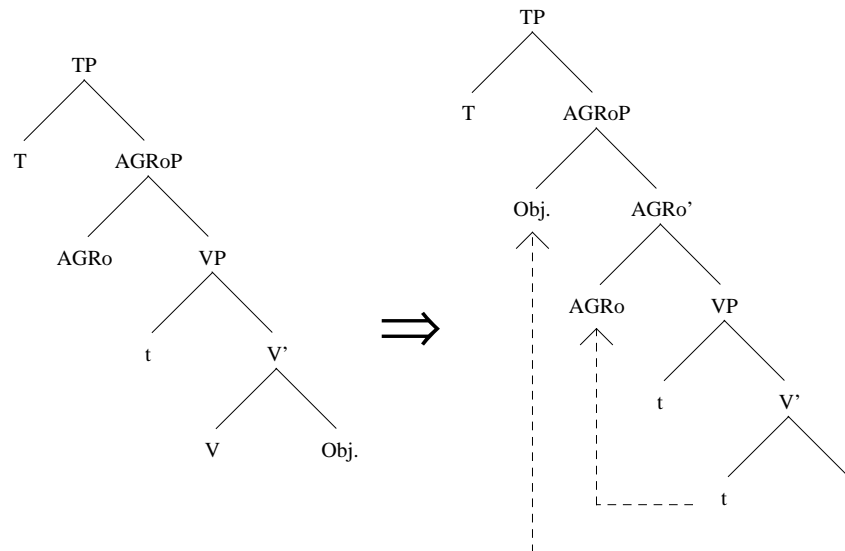
(53)



In this case however, the *checking requirement* cannot be fulfilled, therefore we would end up with a representation that contains a superfluous M-feature, leading to a violation of FI at the LF-interface, or if the involved M-feature introduced through the inserted functional item is strong, to a FI violation at PF. Weak M-features on the other hand, are irrelevant at the PF-interface, only the *checking requirement* could be the relevant component excluding processes of insertion into a position where no relevant (i.e. matching feature) could be checked. This is done by the definition of *Greed* for movement operations. Thus, as argued in the paragraphs above, stipulations on insertion of wither functional items, functional words or substantives are simply superfluous, because the principle of *Full Interpretation* and the *checking requirement* are constraining possible processes of this type anyway.

However, the assumption still is that the operation GT is only operative till *Spell Out*, i.e. the *Spell Out* point can be understood as the point where the GT-operation is no longer accessible. After the *Spell Out* point, only acyclic operations on the structure are allowed, because only GT can, and in fact must extend the structure, i.e. a projection. As described above, one possible operation after *Spell Out*, is assumed to be insert- α . Another operation allowed after *Spell Out* is move- α . The only restriction assumed, is that move- α after *Spell Out* is only operative during the derivation of an LF-representation.

Move- α after *Spell Out* has the same properties as insert- α , i.e. it has to be acyclic:

(54) Acyclic Move- α 

(54) shows acyclic movement e.g. of the object in English, as assumed in Chomsky (1993) (cf. section 2.3.3 for a detailed discussion). Concerning this property, insertion and movement look the same after *Spell Out*, i.e. both are acyclic.

While there is no extension of the structure after *Spell Out*, i.e. only GT may extend the structure, move- α and insert- α can be subsumed under one general operation, namely the operation *introduce- α* , with *introduce- α* as the process of putting some category into a local relation to a projected head. Now α may be some element already present in the structure, as in the case of movement, or some element taken out of the lexicon, i.e. insertion.

3.4.2 Functional words and economy of derivation

However, GT operations do not seem to be sensitive to M-features. Move- α on the other hand, must always obey *Greed* and *Procrastinate*, i.e. must result in checking of some M-feature, and may only take place if one involved M-feature has the property of being strong.²² If insertion of expletives happens after *Spell Out*, this is a new type of operation, with properties of move- α . Now, this operation is one possible instantiation of *introduce- α* .

²² The definition of *Early Altruism*, given in (39) allows the possibility that movement takes place before *Spell Out* if both involved features are weak, but an external condition forces “early” movement in order to avoid a violation at PF. This could be the case in LHM-constructions as discussed in section 5.1 below.

However, it looks as if (49) is the only plausible assumption concerning the process of *there*-insertion. It seems desirable to formulate this as a general property of functional words, and to see how far it is possible to maintain this hypothesis.

In this sense, it will be assumed that *introduce* of some element, substantive or functional word obeys the *checking condition*. Thus, movement and insertion are assumed to be constrained by the same condition, while the condition for movement is still formulated in a different way, namely *Greed*. Furthermore, it is desirable to extend the hypothesis (50) also to all functional words, i.e. the *checking condition* and *Procrastinate*. In their strong formulation, these hypothesis are given below as (55) and (56).

(55) **Introduce- α hypothesis I**

Introduce- α must fulfill the *checking requirement*.

(56) **Introduce- α hypothesis II**

Introduce- α may not violate *Procrastinate*.

But, insertion of expletives could not be motivated by the need of the expletive to check an M-feature of its own. Why should an element be taken out of the lexicon to check some M-feature of its own? It can only be introduced to the structure in order to fulfill some requirements of the position it is inserted in. If this view would be extended to move- α too, we have to rethink the definition of *Greed*. Moreover, as described above, all movement operations are “altruistic” in that they always represent “early altruistic” movement (cf. (39) in section).

In this sense *Greed* should be reformulated as a condition on checking of some M-feature in the landing site, not of some M-feature in the moved or inserted element. This means that introduce- α is only possible, if checking of some M-feature in the landing site takes place, or if the head of the targeted checking domain benefits from this operation. Therefore *Greed* should be replaced by *Altruism* as defined below:

(57) **Altruism²³**

Introduce- α must result in satisfaction of requirements of β .

²³ For reasons of simplicity, this definition is kept short. The precise version of the definition of *Altruism* has to be: Introduce- α into the structure in a position in the checking domain of β must result in satisfaction of requirements of the head of β .

Now we can eliminate the former definition of Greed (36) and take (57) to be the basic principle constraining operations like move- α , or insert- α .

The definition (57) takes any of the two possible operations, i.e. move- α and insert- α , to be an operation of the type “introduce- α ”. Then, any sort of operation, introducing some element into the structure, either through cyclic, or acyclic insertion or movement, has to result in checking of some M-feature of the head of the targeted checking domain. Informally speaking, this means that any category (phrasal or head-category) can only move to some position, if it has something to offer to this position.

Concerning the scope of (57), there could be the possibility that introducing some element to some position may be allowed, if no M-feature is available in the head of β , and a position is available in the checking domain of β , i.e. this position does not contain a trace. The assumption could be that in such a case this version of *Altruism* is fulfilled per se.²⁴ To allow movement or insertion of some element into a position where no appropriate M-features could be checked or is available, (57) could be extended in a way that Introduce- α must result in checking of *existing* M-features of β . This idea will not be further elaborated here, I will rather concentrate on the analysis of functional words in the scope of the above formulated hypotheses.

To sum up, it is assumed that the process of insertion of functional words obeys the same constraints as the process move- α . Moreover, it can be generalized that all processes operating on structure, i.e. move- and insert- α , have to be triggered by the need to check certain M-features. Though, it seems reasonable to summarize all these processes under one general operation, named *introduce- α* , and formulate the constraining principle *Greed* in a way that it has scope over this one operation. *Introduce- α* can be understood as a process of introducing some element from the lexicon into a syntactic structure. While the definition of *Greed* captures the operation of move- α in an appropriate way, it fails to explain the insertion of some element into the structure. The “last resort” character of e.g. *there*-insertion can only be understood as some sort of “altruistic” operation. This is the motivation for the reformulation of *Greed* in favor of *Altruism* as defined in (57). *Altruism* differs from *Greed* in that the head of the checking domain of the targeted position has to benefit from the fact being targeted.

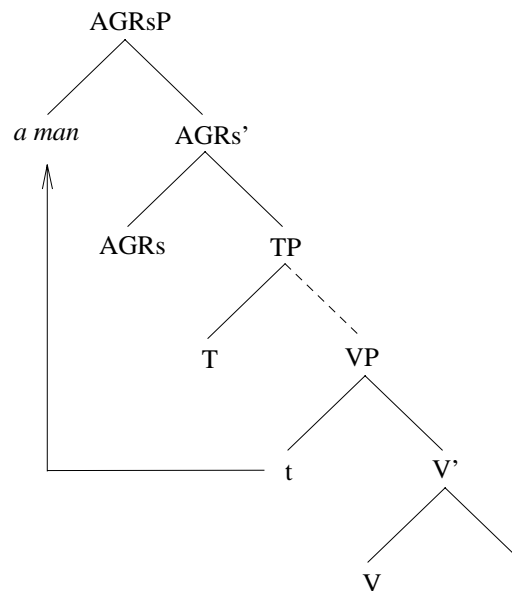
²⁴ The possibilities allowed by the replacement of *Greed* through *Altruism* include for example movement of some element to adjoined position of some functional projection, if all relevant features of this projection are already checked. This could be the case in so called Scrambling-constructions.

In the following, three cases of interaction between movement or insertion of substantives and functional words will be examined. In section 4 the interaction between expletive-insertion and overt subject/object raising will be looked at in more detail. This is a case where an XP may be inserted in a position where another XP via movement checks a certain feature. Cases where enclitic pronouns and auxiliaries, i.e. X^0 -categories are involved in checking of some M-feature that usually gets checked by an phrasal category will be illustrated in section 0.

4 Expletives²⁵

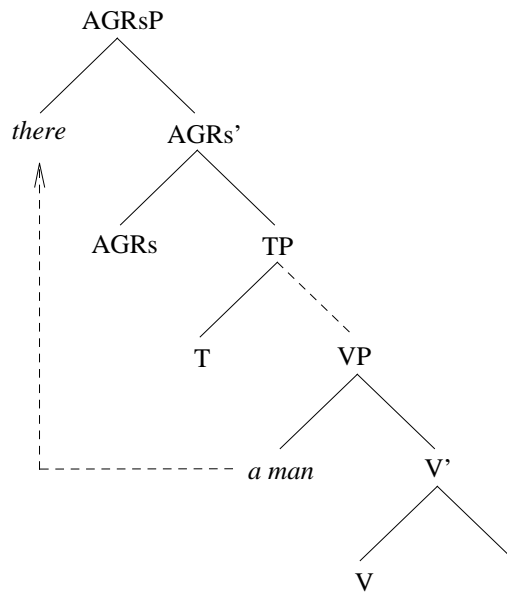
Under the assumption that subjects are base generated in the specifier position of VP, the interaction between raising of a subject and insertion of an expletive into a designated subject position has to be answered in terms of the MP and of the extensions formulated in the previous section. Concerning the designated surface position of subjects in languages with overt subject raising, the assumption is that subjects raise to Spec-AGRsP to check Case- and ϕ -features. Thus, in the following examples, the subject either occupies the Spec-AGRsP position (58a), or stays in situ (58b):

- (58) a. *A man is in the garden.*



²⁵ Although in this paper all (or nearly all) functional words are taken to be some sort of "expletives", in the following only *there* and *it* (and their counterparts in other languages) will be referred to with this term.

- b. *There is a man in the garden.*



The assumption in Chomsky (1993) is that *a man* in (58a) has to raise to Spec-AGRsP before *Spell Out* to check the strong Case-feature born in the T-head, that raised to AGRs⁰. Now, an expletive *there* can be inserted in the checking position, i.e. the landing site of a raised subject, and raising of *a man* can take place after *Spell Out*. Raising of *a man* after *Spell Out* during the derivation of an LF-representation is triggered by the LF-affixal character of *there* (cf. Chomsky 1986b, Lasnik 1993), and the need to check a weak ϕ -feature of AGRs.

The questions to be answered is, how the insertion of the expletive *there* in (58b) is licensed, and what the syntactic function of *there* is. As assumed above, functional words may only be inserted in the *checking* domain of a head that contains an appropriate strong M-feature.

It is obvious, that after the insertion of an expletive into the Spec-AGRsP, the PF-representation of (58b) is well formed. This means in terms of the MP that the strong Case-feature in AGRs is no longer uninterpretable at the PF-interface. The question is, whether the relevant M-feature in this case is checked, or whether its property of being *strong* has changed through insertion of the functional word.

Chomsky (1993) argues that $\alpha = a\ strange\ man$ in (59a) (or *a man* in (58b)) “is not in a proper position for Case checking, therefore it must raise at LF, adjoining to the LF affix *there* and leaving the trace *t*.” The resulting structure will leave α in the *Checking domain* of the matrix INFL.

- (59) a. *There is [α a strange man] in the garden*

- b. *There seems to* [α *a strange man*] [*that it is raining outside*]

The resulting LF-representation of the matrix subject is then [α -*there*], which is “an LF word with all features checked but interpretable only in the position of the trace *t* of the chain (α , *t*), its head being invisible word-internally”. If the Case property of *a man* has to be checked at LF, i.e. the subject does not receive Case in situ, the assumption has to be that *there* in (59a) is unable to check the strong N-features of the complex head [$_{\text{AGRs}}$ T AGRs], but it makes the strong feature interpretable at the PF-interface.

In (59b), however, Chomsky assumes that α 's Case properties have been satisfied internal to the PP. Raising of α is therefore not permitted, because it would otherwise violate *Greed*.²⁶ The result is that there is a freestanding *there* left. However, the assumption is, that *there* in (59b) is “a legitimate object, a one-membered A-chain with all its morphological properties checked”. (59b) is assumed to be “a convergent derivation with no coherent interpretation, because the freestanding *there* receives no semantic interpretation and is unable to receive a θ -role even in a θ -position”.

The just described assumptions concerning *there*-insertion in Chomsky (1993) are therefore inconsistent. Concerning (59a), it has to be concluded that *there* can neither check the strong N-feature (i.e. the Case feature) in Spec-AGRs, nor the weak AGR-features, because this would lead to a violation of FI at LF, due to unchecked AGR- and Case-features of *a man*. In (59b), on the other hand, *there* is inserted in a position with a strong Case-feature and weak AGR-features, that have to be checked latest at LF, and the assumption is that no other DP has to raise to this position to ensure convergence at LF. Both, (59a) and (59b), are convergent at the interface levels, therefore the conclusion has to be that in both cases the involved features are checked at LF and invisible at PF.

The point is, if the assumption would be that *there* in (59a) checks the strong Case-feature, then a DP with Case-features left (i.e. *a man*) would cause a violation of FI at LF. If, on the other hand, *there* in (59a) and (59b) doesn't check the relevant features, these features would cause a violation of FI, latest at LF in (59b).

This problem can be solved, if the assumption is that the subject receives Case in the base-position in (59a), i.e. partitive Case (cf. Belletti 1988). Then insertion of *there* is forced to check the strong Case-feature of the finite T⁰, otherwise a violation of FI at PF and LF would occur. The subject still has to raise to Spec-AGRs to check the weak ϕ -feature at LF in (59a).

²⁶ This was the motivation for the sharper reformulation of *Last Resort* through the notion *Greed* in the overview given above.

If *there* in (59a) is able to check the strong N-feature in subject-position, we would expect the same to be true for *there* in (59b). And in fact, this seems to be the most plausible solution. *There* in (59a) checks the strong Case-feature of T, i.e. it is specified for default Case and able to check a Case-feature. Raising of *a man* after *Spell Out* is still necessary in order to check a weak ϕ -feature of AGRs. This assumption is supported by the fact that the verb shares the same ϕ -features with the subject in situ, not with *there* (compare (59a) with (60)).

(60) *There are some strange men in the garden.*

✧ ✧
pl. ——— pl.

Raising of *some strange men* is therefore necessary to avoid a violation of FI at LF, the status of *there* at LF plays no role as a trigger for this operation here, i.e. there is no need to assume that *there* is an LF-affix that triggers raising of *some strange men* in order to give this element support at LF.

However, the question is, how to explain “the deviant interpretation” of (59b). Now it is necessary to recall the definition of *Altruism* in (57). If we assume that the requirements of *a man* in (59b) are fulfilled inside the PP, i.e. all M-features are checked in situ, raising of *a man* to a position requires that some feature in the head of the landing-site gets checked. Recall now that the checking operation is a two-step operation that consists of *matching* of features in some checking domain, and *deletion* of these, if they match. Therefore raising of *a man* to Spec-AGRs in (59b) would violate *Altruism*, because *a man* has nothing to offer for the landing site.

Moreover, *there* is assumed to be able only to check a Case-feature. Then, (59b) represents a violation of FI at LF because of an unchecked (weak) ϕ -feature in AGRs. The PF-representation converges, only the LF-representation crashes. Again, the assumption that *there* represents an LF-affix is superfluous.²⁷

But, this system makes predictions concerning the status of expletives. If the assumption is that *there* is only able to check a Case-feature, we are forced to assume that *it* in (61a) is able to check both, a strong Case-feature and the ϕ -feature in AGRs:

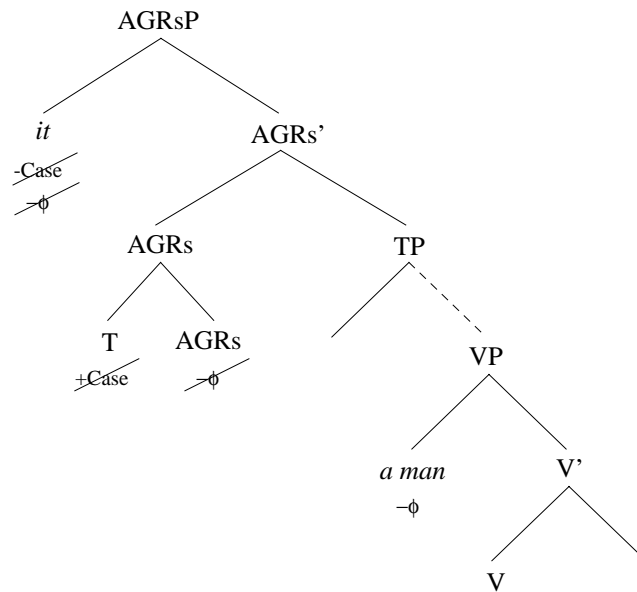
(61) a. *It seems to a man that it is raining outside.*

²⁷ Therefore (59b) should be “decorated” with a star.

- b. * *It is a man in the garden.*

And exactly this property of *it* is responsible for the ungrammaticality of (61b). While the ability of *it* to check a Case- and a ϕ -feature leads to convergence in (61a), it leads to a violation of FI at LF, because of an unchecked ϕ -feature in *a man*. This is exemplified in the following tree:

(62)



Raising of *a man* to Spec-AGRs in (62) is not allowed because no M-feature could be checked through this process, i.e. it would be a violation of *Altruism*. Note that if *Altruism* would be formulated as proposed above, with the extension that it does not apply to positions with all their features already checked, this example would still be excluded as a violation of FI because of an unchecked ϕ -feature in *a man*.

In the same way the converging examples (63a-b) can be explained:

- (63) a. *There seems to be a man in the room.*

- b. *There seem to be some people in the room.*

In both cases *there* is checking the strong Case-feature in matrix Spec-AGRs, while *a man* in (63a) and *some people* raise after *Spell Out* to check the ϕ -feature in matrix Spec-AGRs. Again, the assumption has to be that these phrases fulfill their Case-requirements in situ, i.e. get Case assigned in the sense of Belletti (1988).

The following example is excluded (compare with Chomsky 1994: 37, ex. (57)) because movement of *a man* took place inside of the embedded sentence, that is not triggered by some M-feature, therefore states a violation of *Altruism*:

(64) * *there seems (to me) [a man to be in the room]*

Movement of *a man* to some higher position inside the embedded clause, i.e. Spec-AGRs (or Spec-TP) violates *Altruism*, because *a man* has nothing to offer to some functional projection inside the embedded sentence, while it has to offer a ϕ -feature to the matrix AGRs. In this sense (64) is a violation of *Altruism*.

4.1 The C/case of ECM-constructions

A bit more complicated are examples like (65) with epistemic verbs like *believe* and *consider*, which are assumed to govern into a subordinate clause and exceptionally Case-mark its subject-position:

- (65) a. *I believe a man to be in the room.*
 b. *I believe there to be a man in the room.*
 c. * *I believe to be a man in the room.*

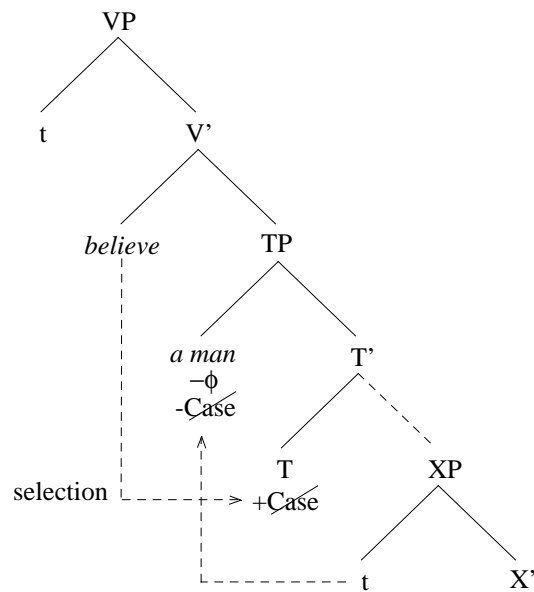
In these examples again, it looks as if the DP *a man* is forced to raise to some position, higher than the base-position, (65a) vs. (65c). Nevertheless, it is possible to insert an expletive *there* into the surface-position of *a man*, resulting in a converging representation (65b).

As assumed above, *there* is able to check strong Case-features. Though the examples in (65) induce that a strong Case-feature is involved, triggering either raising of *a man* (65a), or insertion of the expletive *there* (65b), and leading to a violation of FI at PF, because of an uninterpretable strong M-feature in (65c). As noted in e.g. Haegeman (1991: 158), the infinitival clause should be analyzed as IP, because it is not possible to insert infinitival complementizers like *for*. Now, the possible candidate for Case-assignment seems to be the transitive verb *believe* (Haegeman 1991: 159):

(66) *I believe the story.*

The MP, however, does not make use of the notion “Case assignment” anymore, but Case-checking and *Selection*. For examples like (65a-b) we could then assume that verbs like *believe* select a Case-feature in the head of its complement, whatever this complement could be, i.e. AGRsP or TP. This type of selection belongs to the legitimate local structural relations as noted in (8). If we now assume that the selected head is a T-head, we end up with a “surface”-structure like (67) for (65a):

(67)



This Case-assignment (= Case-selection) could be understood as selection of (inherent) Case, while the involved Case-feature has to be strong. It is not the verb *believe* that selects a strong Case-feature, it rather selects a head of the complement that is specified with the relevant Case-feature. Raising of *a man* or insertion of *there* has to take place before *Spell Out*, in order to check the strong M-feature to avoid a violation of FI at PF. The question, Whether *a man* has to raise to some matrix Spec-AGRoP or not, then, is irrelevant here.

But, there is still an alternative analysis for these constructions. As proposed in Ouhalla (1991a) and Johnson (1990), there seems to exist short-raising of the verb in English. Data of the following type, with heavy NP-shift, seem to indicate this analysis:

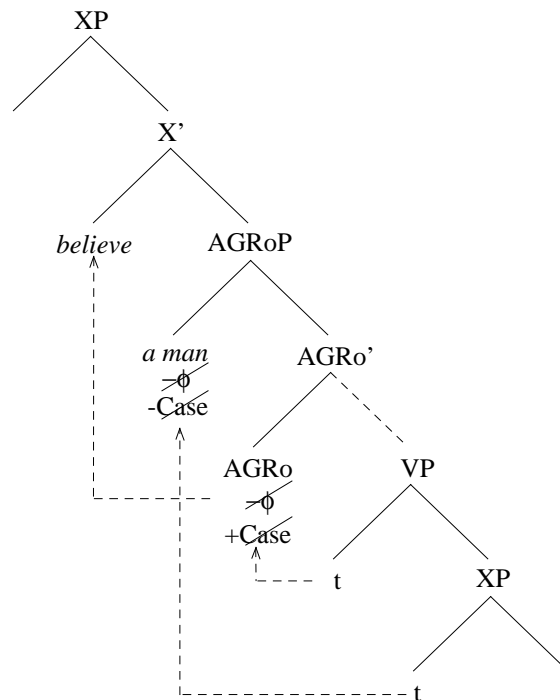
(68) a. *John put in the fridge* [_{NP} *all the bottles of beer*].

- b. *Jeeves introduced to the guests* [_{NP} *the famous detective from Belgium*].

(cf. Haegeman 1994: 419)

Thus, it could be the case that the verb does not occupy its base-position in the surface, but some higher position, maybe above of AGRo:

(69)



The landing site of the main verb could be some projection of ASP (aspect) as suggested in Ouhalla (1991a). The ECM-subject could then occupy the Spec-AGRo position and check the relevant Case- and ϕ -features. An expletive may be inserted into this position to check the strong Case-feature, while the ECM-subject remains in situ, with partitive Case assigned by “to be”. Further support for this solution for ECM by *believe*, could be the fact that *believe* can be passivized:

(70) *A man is believed to be in the room.*

Under the assumption that structural Case is assigned/checked in a Spec-head configuration with an appropriate head, (70) could be analyzed as a standard case of absorption of structural Case, namely the accusative. Then, the ECM-subject has to raise to matrix Spec-AGRs to check nominative Case.

There are still some conceptual problems for this analysis. In no other case, an expletive *there* could occupy the Spec-AGRo position in English. If *believe* as-

signs the accusative Case, it is unclear, why this Case-feature should be strong, while other accusative Case-features are weak. On the other hand, if we assume that the Case assigned by *believe* is not a “normal” accusative, but some inherent Case, it would be possible to assume that the selected Case-feature is strong. To explain the possibility of *there*-insertion in these constructions in terms of the MP, one would have to stipulate that an additional strong feature is involved etc.

Adopting the “selection”-analysis for the time being, we can conclude that due to the properties of GT, we have to assume that the combination of an infinite TP (or AGRsP) with a V-head like *believe* leads to a crash at LF, because of unchecked Case-features of e.g. *a man* in (65a).

Nevertheless, an interesting case appears in passivized ECM-constructions with *there*-insertion. Compare (71) with (65) above ((70) repeated here as (71a)):

- (71) a. *A man is believed to be in the room.*
- b. *There is believed to be a man in the room.*
- c. * *There is believed a man to be in the room.*
- d. *There is a man believed to be in the room.*

(71d) could be analyzed as a copula constructions (cf. Wilder 1994), with “*a man believed to be in the room*” as a complex DP. The status of this example will not be discussed further, because of this reason. Concerning examples (71a-c) it is interesting that not only an expletive *there* may appear in the surface-position of the derived subject (71a) vs. (71b), but also the fact that the derived subject may not appear in the surface-position of the active counterpart (71c). The passivized ECM-constructions will be discussed in more detail in the following section.

4.2 *There*-insertion in passives

Concerning passive constructions, summarized briefly, the so called “syntactic passive construction” is analyzed as a structure build after *absorption* of the subjects θ -role and the Accusative Case of the verb (cf. Chomsky 1981, Jaeggli 1986, Roberts 1987). The object then is forced to raise to some position (Spec-IP) to get

nominative Case assigned, i.e. to fulfill the requirements of the Case-Filter, while a “deep” subject is not licensed due to the absorption of the relevant θ -role.

Related to the above described analysis of *there*-insertion, and the question of passivized ECM-constructions (71), a similar picture can be drawn concerning the interesting case of *there*-insertion in passives of transitive verbs, as in (72):

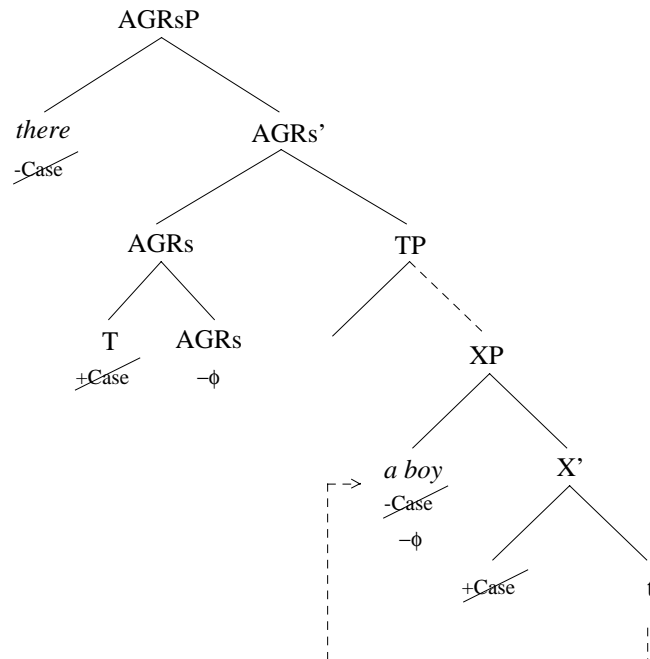
(72) *There was a boy beaten (by some hooligans)*

Again, *there* is inserted in the checking-domain of a head that contains a strong Case-feature, and it has to be assumed that the syntactic subject raises at LF to this position to check the ϕ -features of AGRs. But, if the derived-subject analysis of passives is correct, the interesting observation is that the “deep” object occupies a position to the left of the participle, while in the active counterpart it appears to the right of it. Moreover, the “deep” object may not appear in its base-position:

(73) * *There was beaten a boy (by some hooligans)*

This, however, indicates that there is indeed some raising (or insertion) of the “deep” object to the “deep” position of an active subject. This could be raising to some Case-position, namely exactly that position where the subject in examples like (59a) is assumed to receive Case (i.e. Partitive in the sense of Belletti (1988)):

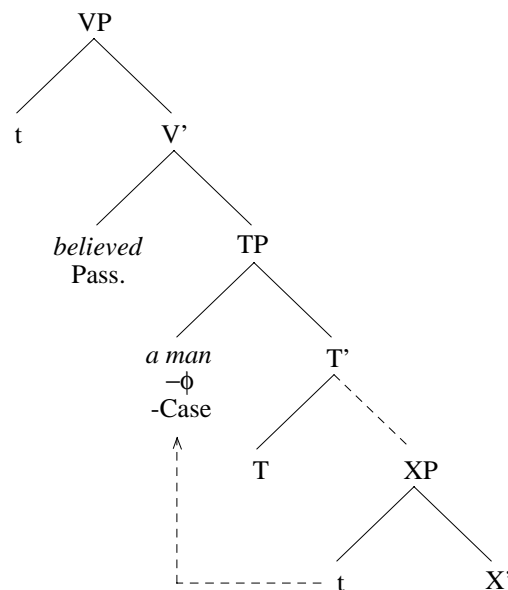
(74)



However, it looks as if the syntactic subject in passive constructions with *there*-insertion has to occupy a derived position, whatever this position could be, i.e. Spec-VP or some checking position in a higher functional projection. And furthermore, it seems reasonable to assume that the raising (or base-generation) the syntactic subject in these constructions is motivated by the need to check a relevant Case-feature. While this derivation takes place before *Spell Out*, the assumption has to be that the triggering Case-feature is strong in the head of the landing site. This is necessary whether we assume the derived-subject analysis or the base-generation analysis of passive constructions. The latter possibility means that the passive construction may be analyzed as a process of base-generation of the “deep” object into the base-position of the subject in the active counterpart.

Examples (71a-c) indicate that, whatever the Case is, *believe* selects, it is no longer available, like in the standard cases of dethematization and Case-absorption in passives. If no Case is selected from *believe* in the passive-construction, raising of some DP to the checking domain of the head, where in the active counterpart Case is checked, is excluded ((67) vs. (75)):

(75)



Raising of *a man* could be excluded, because T contains a weak Case-feature. Early altruistic raising of *a man* would cause a violation of *Procrastinate*. Insertion of *there* into this position is excluded because of the same reasons.

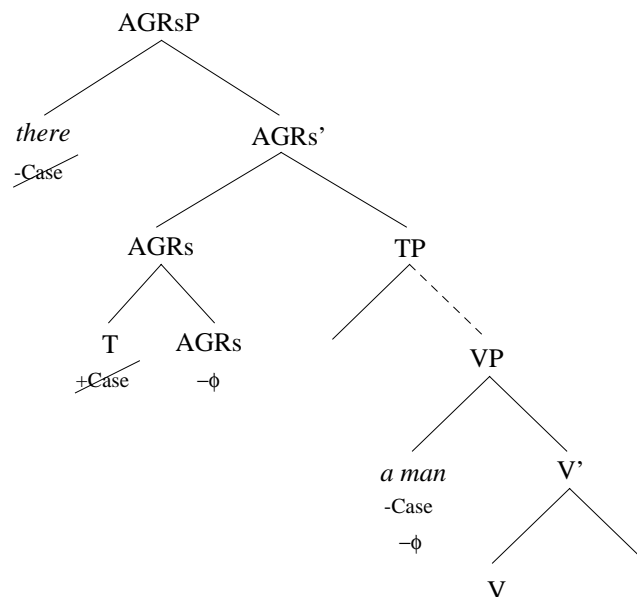
One prediction made by this analysis, is that it should be possible to get two expletives in one sentence, if two strong Case positions are available. This how-

ever, never happens in English, as far as I can see. An example like (76) is ruled out in English:

(76) * *There has a man believed there to be boys in the garden.*

The ungrammaticality of (76) results out of an unchecked Case-feature in *a man*, because *have* is not able to assign partitive Case and *a man* is therefore not in a Case-checking position. The PF-representation of (76), however, is well-formed, because there is not strong M-feature in the PF-representation, only a violation of FI at LF leads to a crash:

(77)



There is still more to say about expletive-insertion, especially about ECM-constructions and expletive-insertion. In the following section I will introduce briefly the German examples with expletive-insertion.

4.3 Expletives in German

German has a completely different expletive-system from English, where it seems that the expletive “*es*” does not occupy a strong Case-position, but rather a strong topic-position as in the examples (78):

- (78) a. *Es hat der Peter gestern behauptet, daß es schneit.*
 it have-3sg P. yesterday claim-ptc that it snow-fall-3sg
 “Yesterday Peter claimed that snow falls.”
- b. *Gestern hat der Peter behauptet, daß es schneit.*
 yesterday have-3sg P. claim-ptc that it snow-fall-3sg

(78a) indicates that *der Peter* occupies the Spec-AGRs-position, while an expletive *es* is inserted in Spec-CP. If some other element, c.f. an adverbial (78b), is topicalized, this type of expletive-insertion is not allowed. Insertion of *es* in (78b) is impossible. The analysis that this feature-checking has to take place in the CP-domain, is supported by the fact that in such cases, the expletive *es* may not appear in embedded finite contexts following an overt complementizer:

- (79) ..., *daß (*es) der Peter behauptet hat, daß es schneit*
 that (*it) P. claim-ptc have-3sg that it snow-fall-3sg

The analyses for such cases of expletive-insertion could refer to a strong TOP-feature (topic-feature) in C^0 , forcing either insertion of the expletive *es*, or movement of an appropriate XP into this position, resulting in checking of the TOP-feature.

I will not go deeper into the discussion of expletive insertion in German, because of time and space limitations here, rather just add a further possibility of expletive-insertion in German. In the following examples, an expletive *es* has to occur in subject-position in sc. “Wetter-*es*”-constructions, in matrix and embedded clauses:

- (80) a. *Es hat gestern geregnet.*
 it have-3sg yesterday rain-ptc
 “Yesterday it has rained.”
- b. *Gestern hat es geregnet.*
 yesterday have-3sg it rain-ptc
- c. ..., *daß *(es) gestern geregnet hat*
 that it yesterday rain-ptc have-3sg

In (80b) the expletive *es* has to appear, although another XP is topicalized, and it has to appear in finite embeddings, following the complementizer (80b).

These cases indicate that in “Wetter-*es*”-constructions, where an overt subject is missing, an expletive has to be inserted in the Spec-AGRs position to check both, the strong Case-feature of T and the ϕ -features of AGRs. In this sense, there is no need to refer to some quasi-argumental status of *es* in such constructions. The expletive has to appear in these constructions overt before *Spell Out*, because it has to be assumed that the nominative Case-feature in German is strong.

4.4 Conclusion

In this section, I tried to show that the assumption that expletives like *there* are only inserted into positions in the checking domain of a head that contains a strong M-feature. This M-feature can be a strong Case-feature like in English, or a strong TOP-feature and a strong Case-feature as in German. So far, the hypothesis postulated in section 3 could be maintained concerning expletives like *there* in English, and *es* in German.

Due to the limitations of this paper, the discussion of German expletives is limited to the presentation of brief ideas. This topic has, of course, to be analyzed in more detail.

5 Cliticization and verb movement in Croatian

Croatian shows several types of clitic elements. The examples in (81) contain enclitic pronouns (81a), enclitic auxiliaries (81b), and the enclitic question morpheme *li* (81c).²⁸

- (81) a. *Ivan joj daje ruže.*
 I. her give-3sg roses
 “Ivan gives her roses.”
- b. *Ivan je Mariji dao ruže.*
 I. be-3sg M. give-ptc roses
 “Ivan gave Mary roses.”
- c. *Daje li Mariji ruže.*
 give-ptc QM M. roses
 “Does he give Mary roses.”

The clitics cluster together and appear in second position in the finite clause (82). This phenomenon of clitic placement is traditionally referred to as the “Wackernagel effect”.

- (82) *Što li joj je Ivan dao?*
 What QM her be-3sg I. give-ptc
 “What might Ivan have given her?”

The main generalizations are, first, that the clitic cluster may not appear in absolute string initial position (83a), and second, that it may not appear in a position deeper than second position (83b) in the clause:

- (83) a. * *Joj je Ivan dao ružu.*
 Her be-3sg I give-ptc rose
- b. * *Ivan dao joj je ružu.*
 I. give-ptc her be-3sg rose

²⁸ Concerning this discussion, proclitic prepositions, which exist in this language too, will be ignored.

These generalizations hold for finite matrix clauses, as well as for finite embedded clauses:

- (84) a. ..., *da li joj je Ivan dao ružu*
 that QM her be-3sg I. give-ptc rose
- b. * ..., *li joj je da Ivan dao ružu*
 QM her be-3sg that I. give-ptc rose
- c. * ..., *da Ivan li joj je dao ružu*
 that I. QM her be-3sg give-ptc rose

The clitic-cluster in (84a) appears directly following the complementizer *da*. It can neither appear in initial position inside of the embedded clause (84b), nor in a deeper position than second position (84c). It looks like clitics are strong adjacent with the complementizer in embedded clauses. So far, the following generalizations can be formulated:

- (85) a. Clitics in Croatian appear in second position in the clause.
 b. They may not appear in absolute string initial position.
 c. They may not appear in a position deeper than second position in the clause.
 d. They are strong adjacent with an overt complementizer.

For further discussion of the data cf. Wilder & Ćavar (1994b) and Ćavar & Wilder (1994).

Similar effects can be observed in other Slavic languages (cf. Rivero 1991), but for Croatian. In special, we are confronted with two effects concerning the external order of clitics or clitic clusters, i.e. the “Wackernagel effect” and the “Toubler-Mussafia effect”, and one concerning the internal order, the more or less fixed order of clitics inside the cluster.

(86) **External Order**

- a. **Wackernagel effect** (cf. Wackernagel 1892)
 Clitics appear after the first word or constituent in the clause, they may not appear deeper down in the sentence.
- b. **Toubler-Mussafia effect** (cf. Mussafia 1898)
 Clitics may not appear in string initial position in the clause.

Internal Order

c. **Cluster Ordering of Clitics** (cf. Spencer 1990: 356)

The clitic-cluster has a (more or less) strict internal order:

li — Aux. — Dat. — Acc. — Refl. — *je*

An explanation of the observation in (86c), potentially seems to require a morphology based account. Whether the effects in (86a-b) can be explained as morphological, syntactical, phonological, or as an interaction between some of these components of grammar, is the matter of ongoing discussions in the area of generative linguistics.

Wilder & Ćavar (1994b) and Ćavar & Wilder (1994) offered an analysis of clitic placement concerning (86a-b) on the basis of the generalizations in (85), where it is assumed that clitics are X^0 -categories that right adjoin to C^0 . This is assumed to be the syntactic explanation for the “Wackernagel-effect”. This analysis therefore makes the correct prediction that a clitic cluster may only follow a head, or a phrasal category, i.e. either some head occupies, or is base-generated in the C^0 -head, or some XP occupies the Spec-CP-position.

But, this is not enough to explain the fact that clitics in Croatian may not appear in string initial position in the clause (86b). This effect is closely related with verb fronting, also in clauses with enclitic finite auxiliaries, which will be the topic of the following section.

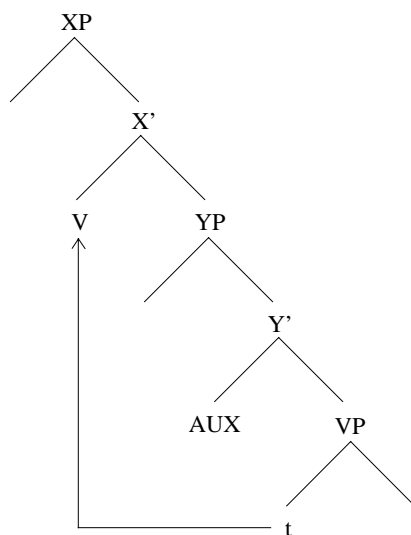
5.1 Long Head Movement

In examples (87) it seems that in cases with a *pro*-subject the main verb participle (87b) or the auxiliary participle (87c) can be fronted, crossing the finite auxiliary clitic *je*:

- (87) a. *Ivan je plivao u moru.*
 I. be-3sg swim-ptc in see
 “Ivan was swimming in the see.”
- b. *Plivao je u moru.*
 swim-ptc be-3sg in see
- c. *Bio je plivao u moru.*
 be-ptcbe-3sg swim-ptc in see

Would this be the case, examples like (87) would raise a problem in the Principle & Parameters framework for standard versions of the ECP which includes the HMC. The HMC-generalization states that a moved head cannot skip an intervening head (cf. section 2.3). This follows from the ECP as a consequence of the requirement of antecedent-government on the trace, which itself presupposes a Minimality Condition on government stating that a head X may does not govern a head Y across an intervening head Z (cf. Rizzi 1990, Chomsky 1986a). Due to this, examples like (87b-c) should be ungrammatical, because the trace of the fronted main verb (87b) or the fronted participial auxiliary (87c) cannot be governed because of an intervening auxiliary head, under the assumption that the finite auxiliary occupies some deeper head position:

(88) **Long Head Movement?**



The sentences in (87b-c) have an unmarked reading, i.e. there is no special interrogative reading like in other examples with verb fronting. And, furthermore, without verb fronting the examples (87b-c) would be ungrammatical.

As mentioned above, a strong adjacency condition holds between an overt complementizer and clitics. This condition also holds between fronted verbs and clitics or the enclitic auxiliary. There is no possibility for material to intervene between the “long-head” moved verb and the auxiliary clitic in (87b-c).²⁹ If the structure of these examples would look like in (88), this observation would be a mystery, because Croatian as a scrambling-language allows XP-adjunction to some IP-projection, i.e. we would expect material to intervene between the fronted verb

²⁹ Cf. Wilder & Ćavar (1994b) for a detailed argumentation concerning this point.

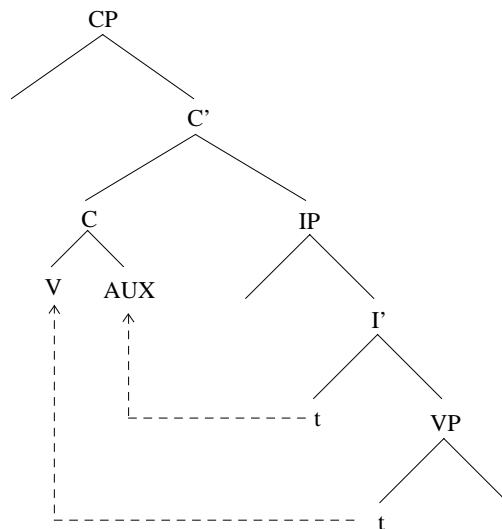
and the enclitic auxiliary, or we would have to stipulate somehow that this is excluded.

Looking for a solution, one could have the impression that this verb fronting has something to do with *pro*-subjects, but examples like (89) with the subject in some deeper position exclude this option:

- (89) *Plivao je Ivan u moru.*
 swim-ptc be-3sg I. in see

But, as assumed above, clitics right adjoin to C^0 in Croatian. Following this analysis, the auxiliary clitic is always adjoined to the C^0 position:

- (90) **No Long Head Movement!**



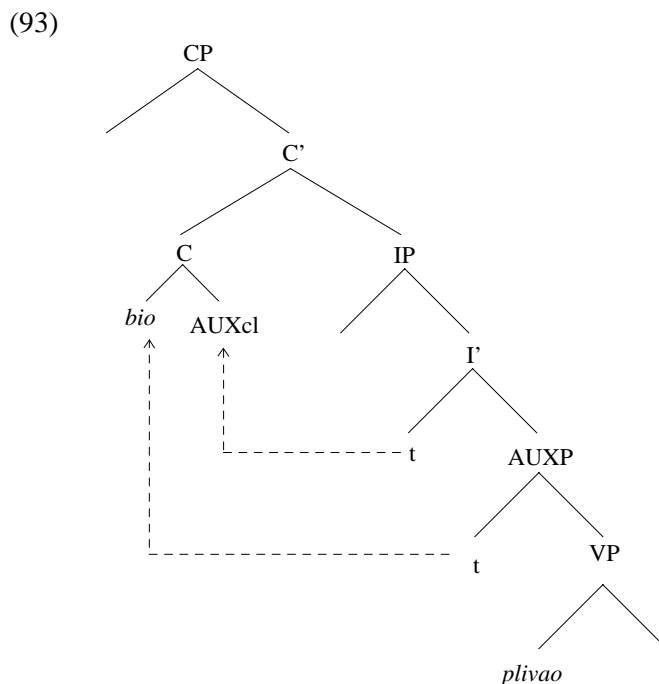
The fact that clitics may not appear in string initial position in Croatian, i.e. the “Toubler-Mussafia effect”, is analyzed in Wilder & Ćavar (1994b) and Ćavar & Wilder (1994) (following Zec & Inkelas 1990) as a phonological effect. Due to phonological properties of clitics in Croatian, which require a phonological word to appear left of them, a non-clitic verbal head has to move in front of the clitics (so called *Long Head Movement (LHM)*), if no other element appears in front of them. This phonological requirement is formulated as a phonological subcategorization frame (91), which is assumed to be part of the lexical information of entries for clitics in this language (Zec & Inkelas 1990):

- (91) $[[\]_w \text{ Cl. }]_w$

For the purposes here, I will abstract away from cases of LHM in infinite contexts (cf. Ćavar & Wilder 1994), and concentrate on LHM in finite contexts. So far, I will adopt the generalization that LHM is only possible in finite contexts (cf. Wilder & Ćavar 1994a), i.e. LHM is a Root-phenomenon, blocked by the presence of an overt complementizer. This property motivates the assumption that the fronted verb ends up in C^0 in the LHM-constructions. However, the assumption for clitic placement is that clitics right adjoint to C^0 . This is motivated by the strong adjacency condition between overt complementizers and clitics. Concerning LHM now, a plausible assumption made by Wilder & Ćavar (1994b) is that the next available head has to raise to adjoined position of C^0 (87b-c) to rescue the derivation from a violation of FI at the PF-level. And it has to be the next available head, i.e. raising of the main verb in (87c) leads to ungrammaticality (at least in Croatian³⁰):

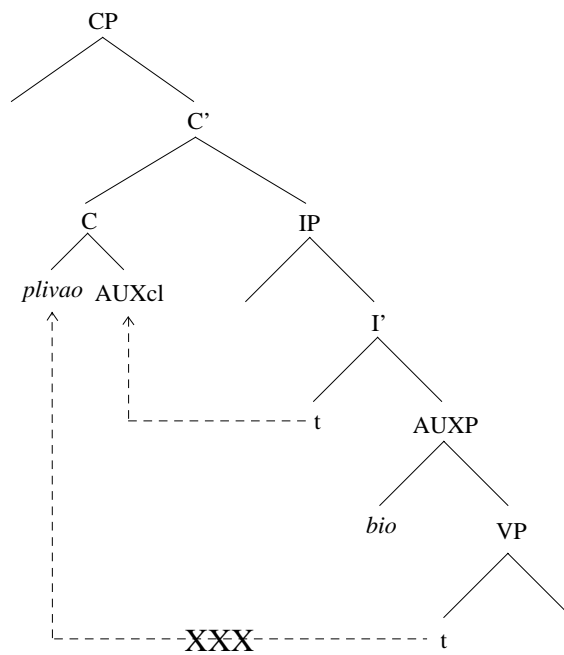
- (92) * *Plivao je bio u moru.*
 swim-ptc be-3sg be-ptc in see

This however can be formulated in terms of the Principle & Parameters framework, as a violation of the HMC. The participle cannot cross the intervening participle auxiliary head, i.e. government of the trace of the moved participle would be blocked by the intervening head in terms of Relativized Minimality (93) vs. (94):



³⁰ As I was told by Lily Grozeva, this type of examples exists in Bulgarian.

(94)



On the other hand, verb fronting of this type is not possible, if the Spec-CP position is independently filled with a *wh*-phrase (95) or a topicalized phrase (96):

(95) a. *Šta je Ivan dao Mariji?*
 what be-3sg I. give-ptc M.
 “What did Ivan give Mary?”

b. * *Šta dao je Ivan Mariji?*
 what give-ptc be-3sg I. M.

(96) a. *Sinof je Ivan kupio zelenu auto.*
 yesterdaybe-3sg I. buy-ptc green car
 “Yesterday Ivan bought a green car.”

b. * *Sinof kupio je Ivan zelenu auto.*
 yesterday buy-ptc be-3sg I. green car

Thus, two types of economy principles seem to be operative here, i.e. some sort of *Last Resort*, forcing verb fronting only in cases where otherwise the derivation would lead to a violation of FI at PF, and some sort of *Shortest Step* principle, allowing only the cheaper derivation, where cheaper means a derivation in which some head makes a shorter step than another (cf. section 2.3.3 above).

Now, concerning an apparent violation of the ECP (or HMC), because of a head moving “long” in the well-formed LHM-constructions, the assumption is that, while both heads, i.e. the enclitic auxiliary and the fronted verb, end up in one head-position, this does not cause a violation of the ECP, if all traces are coindexed at S-structure, and the ECP applies at LF. The representation of the chain $CH = \{ [C \ V \ AGR], t, t \}$ does not violate the ECP/HMC.³¹

If we now assume that the fronting of the main verb in e.g. (89) is only triggered by the need for the enclitic auxiliary to get phonological support, i.e. to fulfill (91), the relevant question to be answered in terms of the MP is, why the fronting of the main verb is possible in terms of the MP, and the extensions given in section 3 above. This type of verb-fronting may not violate *Altruism* as defined in (57), i.e. the *checking condition* may not be violated.

5.1.1 Long Head Movement and Economy of Derivation

As already described in section 2.4, “altruistic” movement is possible in the MP, but it has to be *Greed* compatible. This is just reformulated under a new view in definition (57) of *Altruism*. In order to fulfill the *checking requirement*, checking of some M-feature in the head of the checking domain of the landing site has to result from this movement.

The assumptions so far are, that the fronted verb and the enclitic auxiliary in LHM-constructions are adjoined to C^0 . The theoretical considerations in the MP are forcing the assumption that some M-feature checking of a verb-feature has to take place. This M-feature has to be weak, because LHM is only triggered if clitics are present, and only in Root-contexts, where no other element gives phonological support to the clitics.

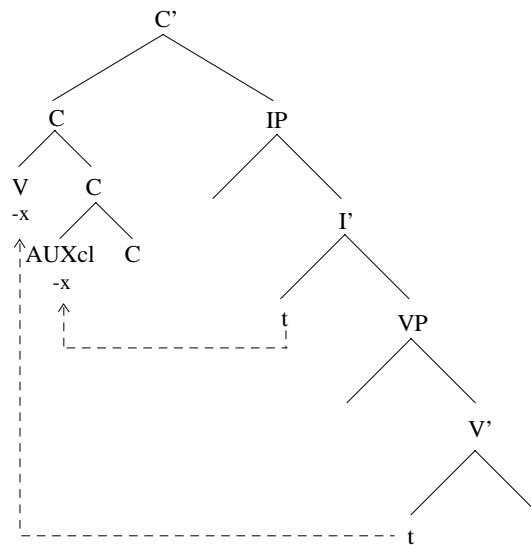
As formulated in (39), such a movement operation has to be “early altruistic”, if the reason is to avoid a violation of FI at PF, and if at least one feature is checked as an effect of this movement, due to the checking requirement of *Altruism* (57). The first condition is given in the case of LHM, if we assume that (91) would cause a violation of FI at PF, if not met. Such a movement does not violate *Procrastinate* (24). Due to the fact that LHM examples like (87) are convergent derivations, we have to assume that there is some feature checked, or take this data

³¹ For a detailed argumentation, why LHM is not “remnant VP-topicalization” the reader is referred to Wilder & Ćavar (1994b).

as a counterexample for a principle of *Greed*, and therefore also as a counterexample for *Altruism*.

One possible trigger for LHM-verb-fronting could be the auxiliary clitic itself. If we assume that auxiliaries and the main verb in periphrastic tenses share a feature, as a representation of the selection relations between these heads, the assumption could be that LHM is allowed if the participle (main verb or auxiliary) checks this shared feature in the auxiliary, as proposed in Wilder & Čavar (1994a):

(97)



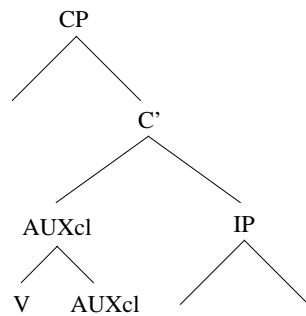
If we take the resulting structure to be (97), and assume furthermore that the head-categories are left-adjoined to C^0 , the adjoined V-head would be in the checking domain of the AUXcl-head, thus checking of the relevant M-feature is possible. Wilder & Čavar (1994) named this feature [AUX]. For the purposes here, I will refer to it as feature “x”.

Concerning the question, what the licensing M-feature of LHM-verb-fronting could be, this seems to be a plausible analysis. The participle may be fronted to support the phonological property (cf. (91)) of the enclitic auxiliary, as a purely “altruistic” operation, and the required “toll” is paid to the enclitic auxiliary head.

However, things cannot be simple as described above. First of all, the participle is not adjoined to the AUXcl-head, as described in (97), but to the C^0 -head. The targeted position for movement of the V-head is the complex head C^0 . Therefore, we would expect the fronted V-head to pay its “toll” to the C^0 -head, and not to the AUXcl-head, i.e. check an M-feature contained in C^0 , if *Altruism* (57) has to be understood in the stronger sense, namely applying locally to the targeted projection and the moved category.

To make things more explicit, the assumption here is that head-internal structure is neither accessible for movement operations, nor for the operation *introduce- α* . This excludes not only “excorporation” of parts of heads (cf. Roberts 1991), but also the possibility to target head-internal structure as a landing-site. Then, V could only adjoin to AUXcl in the base-position of AUXcl, or if AUXcl substitutes C⁰:

(98)



But, a structure as in (98) is excluded through X-bar-theory. An AUXcl as a head of a CP is not allowed.

Nevertheless, there seems to be a further argument against such a licensing of LHM. In examples without an enclitic auxiliary (99), the finite main verb has to move to C⁰ in front of a clitic cluster that contains only pronominal clitics, if no other head or phrasal category supports the clitics.

- (99) *Daje ga Mariji.*
 give-3sg it M.
 “He gives it to Mary.”

Concerning example (99), there does not seem to exist any plausible reason for combining some “pronominal” head with the V-head, i.e. it is unclear what kind of M-feature these heads should share.

However, Wilder & Ćavar (1994a) offered another possible analysis concerning V-fronting to C⁰ in such cases. The assumption is that a finiteness-feature (F-feature) occupies the C⁰-position. The F-feature is weak, therefore V-to-C-raising takes place after *Spell Out*, except, there is a good reason to raise before *Spell Out*, to avoid a violation of FI at PF. This reason is given, if clitics occupy C⁰.

According to *Altruism*, checking of some feature in C⁰ has to take place after raising of V to C. This condition is fulfilled in example (99), if we assume that finite verbs are specified for such a feature. There is also no violation of *Procrastinate*, because the “early” movement of V avoids a violation of FI at PF. Now, we

have to recall that *Altruism* does not require checking of some M-feature of the pronominal clitic.

Nevertheless, LHM-examples like (100) with an enclitic auxiliary in C^0 are still unexplained.

- (100) *Plivao je u moru.*
 swim-ptc be-3sg in see
 “He was swimming in the see.”

As assumed above, a F-feature in C^0 may license or trigger movement of the finite enclitic auxiliary to C^0 . Whatever the real motivation for the raising of the finite auxiliary is, it is then an operation that does not violate *Altruism*, because the targeted head-position gets rid of a weak F-feature through this operation. The question now is, how the fronting of the participle could be licensed.

The possible extension of *Altruism* that the checking requirement is only operative, if the head of the targeted checking domain has a relevant M-feature, could be the explanation for such a movement. If we assume that the weak F-feature of C^0 is checked, and that no other M-feature is available in C^0 , targeting C^0 as a landing site for movement is allowed. Furthermore, it has to be assumed that all the M-features of the fronted participle are checked before it ends up in C^0 .

LHM of the infinite verb could then be purely altruistic movement, only triggered by the need of the enclitic auxiliary to fulfill requirement (91), and therefore to avoid a violation of FI at PF. Fronting of the finite main verb or finite full-form of the auxiliary in front of a clitic-cluster that only contains pronominal clitics, on the other hand, is not purely “altruistic”, because checking of the F-feature of C^0 and the fronted finite verb takes place. This type of fronting could only be understood as “early altruistic” movement, triggered by the requirement for the pronominal clitics to get phonological support, and resulting in checking of two weak F-features.

5.1.2 V-fronting and complementizer-insertion

Interestingly, there is another possibility to give phonological support to the clitic cluster, as in examples (101):

- (101) a. *Da li je Ivan plivao u moru?*
 that QM be-3sg I. swim-ptc in see
 “Did Ivan swim in the see?”
- b. *Da mi ga pozdraviš!*
 that me him greet
 “You are to great him.”

(101a) represents a yes/no-question where a complementizer occupies a position, which cannot be occupied by the participle as in example (102a). Only a finite verb may occupy the C^0 -position in interrogative contexts (102b). (101b) on the other hand, is only possible with a complementizer in C^0 , if the verb has this type of morphology (cf. (103a)). However, if the verb got imperative morphology, the only possibility is raising of the verb to C^0 , in front of the clitics (103b).

- (102) a. * *Plivao li je Ivan u moru?*
 swim-ptc QM be-3sg I. in see
- b. *Pliva li Ivan u moru?*
 swim-3sg QM I. in see
 “Does Ivan swim in the see?”
- (103) a. * *Pozdarviš mi ga!*
 great-imp (to-)me him
- b. *Pozdravi mi ga!*
 great-imp (to-)me him

(102a) is excluded, because it has to be assumed that there is some Q-feature present in C^0 . Fronting of the participle therefore cannot fulfill the checking requirement of *Altruism*, because it has no M-feature to offer for C^0 . Raising of the finite main verb in (102b) fulfills the checking requirement, because the finite verb checks a F-feature in C^0 . In both cases, however, some phonological word is required in front of the clitic cluster. Therefore, in (102a) only insertion of an “expletive” complementizer is possible, while in (104b) vs. (102b) either raising of the finite verb may take place, or insertion of a complementizer.³² (102a) cannot

³² This looks like “optionality”, but it is not. Raising of the finite verb leads to a different interpretation, than insertion of a complementizer. If the intonation of both examples does not involve

be explained, if we assume that the fronted participle checks a feature of the enclitic auxiliary.

Concerning the examples in (103), it has to be assumed that some M-feature indicating the imperative is contained in C^0 , and the main verb can only occupy this position if it can offer the counterpart of this feature to the landing site. Otherwise, an expletive complementizer has to be inserted, checking the imperative feature.³³

There is of course more to say about the interaction of V-raising and insertion of a complementizer into the C^0 -position, but due to the limitations of time and space, I cannot go deeper into the discussion. An important question, concerning the trigger for raising or insertion of pronoun clitics into the C^0 -position, has to remain unanswered. Still there are some interesting points to conclude out of the presented analysis. On one hand, it seems obvious that purely phonological properties of enclitic elements, or PF-requirements, which do not refer to the “strong”-property of syntactic elements, may trigger syntactic movement. This movement has to obey the restrictions formulated in the definition of *Altruism*.

stress on e.g. the PP, a possible answer to (102b) could be: “No, he is sleeping at home.”, while this is no possible answer to a question “*Da li Ivan pliva u moru?*”. A possible answer to the second question could be: “No, he walks on the water (on the see).” or “No, he swims only in lakes.”. Thus, it could be that other M-features are involved, with the result that V-raising would not be able to check this feature.

³³ Note, that Croatian has only one overt complementizer “*da*”, which is used in finite embedded contexts, in interrogatives, and in imperatives. Therefore, it has to be assumed that this complementizer may be specified for different M-features.

6 Conclusion

Concerning the main question addressed in this paper, namely the question what the role of closed class elements could be under “minimalist aspects”, following points can be made. First, the closed class has to be divided in (at least) two sets, the *functional items* and the *functional words*.

The role of functional items in the MP is simple and essential. This subset of the closed class represents the locus of parametrization. It is responsible for cross-linguistic word-order variation. There is nothing more of importance to say about these elements.

On the other hand, functional words, as elements involved in intra-linguistic word-order variation, offer interesting insights in intra-linguistic syntactic processes, and in the distribution and the properties of functional items. While these elements have properties of substantives, namely the ability to check M-features, combined with their general weak M-feature specification, it is assumed that they are introduced into the structure in a position in the checking domain of a head that contains the “strong” counterpart of the feature these functional words are specified for.

The resulting effect is that the interaction between movement of substantives and insertion of functional words gives overt evidence for the property of the M-feature, which is part of the projection of the landing-site.

The proposed extensions of the MP, especially the substitution of *Greed* through *Altruism* allows different possible movement and insertion operations. On the one hand, movement or insertion processes have to take place, in order to avoid a violation of FI at the relevant level of representation, if some M-feature is “strong”. On the other hand, movement and insertion is also possible, if the involved M-features are weak, or if no M-feature is present in the head of the checking domain of the landing site. This is possibly relevant for the analyses of LHM-constructions in Croatian (and Bulgarian). However, if the involved M-features are weak, or if there are no M-features present, movement or insertion needs some “external” reason to take place. One possible reason could be a phonological requirement, as in the case of cliticization and LHM in the section above.

Furthermore, an extension of the MP is proposed, in order to eliminate certain stipulations made in Chomsky (1993, 1994). As assumed in Chomsky (1994), insertion of substantives and functional items after *Spell Out* is excluded, because on the one hand, insertion of substantives would introduce semantic, phonological and syntactical features into the structure, and therefore lead to a violation of FI at the

representation-levels. On the other hand, it has to be assumed that checking may not take place after *Spell Out*, in order to exclude insertion of strong functional items. Concerning these points, it was proposed here, that insertion of certain elements may take place after *Spell Out*, if this does not violate FI. FI in this sense is not only responsible for derivation, i.e. forcing derivation in order to get a well-formed representation, but has also consequences for the possibility of movement and insertion operations.

Concerning the different sets of lexical items, it was shown that the three postulated sets have different properties in terms of the MP framework. While FI and the limitation of the operation GT give the result that substantives cannot be inserted after *Spell Out*, as well as functional items, functional words could in principle be inserted after *Spell Out*.

The formulated hypotheses concerning the properties of functional items and functional words have to be examined further, concerning all the different types of functional words. The set of functional words may even further be separated in different sets, if e.g. properties of prepositions or determiners are considered.

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