On Satisfaction of the EPP in the Minimalist Program

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On Satisfaction of the EPP in the Minimalist Program

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"*One moon rising is reflected in a thousand streams.*

Can we then say there are a thousand moons?"

- Anon.

When I opened the first few pages of a certain book, I was so shocked that I could not help yelling to myself; "THIS is IT!" Then, I read it for 3 days. That certain book was 'Transformational Grammar' by Andrew Radford. Finishing the book, I realized the theory in the book was initiated by a linguist named Noam Chomsky. So, I decided to go to a graduate school and now I am here at Sogang.

The Minimalist Program, a recent trend of generative syntax, may also be one of the moons reflected in a thousand streams. However, I believe that we can reach our destiny if we continue to modify and develop this program like a seafaring man following the stars. What if not? Human language deserves to be studied out of curiosity if nothing else. It is no less stimulating than the mysteries of outer space and subatomic matter that absorb the attention of the pure scientist, whether his investigation promises to yield practical results or not. It is a field of intellectual exploration and adventure, and these are fundamental human yearnings.

Now, it is time to express my gratitude. First and foremost, I would like to express my deep gratitude to my thesis adviser, Prof. Hong-Bae Lee. Throughout my MA courses, he has constantly taught me how to do it my way. Further, his warm encouragement and confidence in my work have provided me with a comfortable feeling and his insightful comments have broadened my perspectives on linguistics. Without his help, academically and financially, I would not have been able to write the acknowledgements. I am also deeply grateful to Prof. Young-Seok Kim, a member of my thesis committee, who has given me clear and elegant lectures on phonology. My gratitude also goes to Prof. Sook-Whan Cho, a member of my thesis committee, who was willing to take pains in reading my thesis and gave me invaluable advice.

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Finally, I extend my special thanks to my family and relatives, although I know there are no words to express the full measure of my gratitude to them. I owe my deepest thanks to my father, Nahm-Sup Shim. the only way I can repay him is to be just like him, my mother, Pahn-Sook Chae, she is the smartest person I know, and my younger sister, Yearn Shim for taking care of my parents instead of me, furthermore, to my wise-old grandmother-in-law, Seok-E O. I am also indebted to my relatives, Hyo-Young Choe and Ok-Soon Kim. Without my extended family's unlimited support, my study would not be possible. Thus, this thesis is dedicated to them.

December, 2001

Jae-Young Shim

For my parents who gave me language

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국문초록

본 논문의 목적은 Chomsky(1995, 1998, 1999)에서 가정되고 있는 시제 구문에서의 확대투사원리(Extended Projection Principle) 충족방법에 대한 새로운 제안을 하고자 하는데 있다.

우선, 확대투사원리의 생성과정을 개관하고, 이와 함께 원리-매개변항(Principles and Parameters) 초기 이론에서의 중요개념과 지금의 최소주의 이론(Minimalist Program)에서의 중요 개념들을 개관할 것이다. 또한, 확대투사원리의 문법에서의 역할과, 이와 관련된 경제성원리(economy principle)도 살펴볼 것이며, 특히 허사구문(expletive construction)과 확대투사원리의 관계에 대해 많은 논의를 하게 될 것이다.

확대투사원리 충족방법에 대한 새로운 제안을 위해 Chomsky(1999)에서 제안된 방안(Alternative (II))을 새롭게 조명해 볼 것이며, 또한 Lee(1999b)의 확대투사원리에 대한 범주선택적(category-selectional) 분석방법과 Waller(1997)의 허사-인상(expletive raising) 분석 방법들도 살펴 볼 것이다. 본 논문은 Chomsky(1995, 1998, 1999)의 주장과는 달리, 확대투사원리는 이동(Move)만으로 만족될 수 있다는 주장을 펼칠 것이다. 이와 같은 주장으로 Chomsky (1998, 1999)의 결함범주 간섭 효과(Defective Intervention Effect)와 관련되어 발생할 수 있는 제 문제점들에 대해서도 해결안을 제시할 것이다.

On Satisfaction of the EPP

in the Minimalist Program

ABSTRACT

This thesis is aimed at the ways of satisfying the EPP of T(ense) within the framework of the Minimalist Program (Chomsky 1995, 1998, 1999)

For the purpose of this thesis, we will review the historical background of the Extended Projection Principle (EPP) as well as conceptual changes from the earlier version of the Principles and Parameters Theory to the recent one called the Minimalist Program. In so doing, we will investigate the role of the EPP, the relationship between the EPP and expletive *there*, and some economy principle related to the EPP. We will also examine various economy principles. We will then examine the assumptions in recent views, as follows: (1) Chomsky's (1999) Alternative (II) which associates □-completeness with the EPP, (2) Lee's (1999b) category-selectional approach to the EPP-feature, and (3) Waller's (1997) expletive raising analysis. Turning our attention to the operation Move and Agree, we will show that Move and Agree are independent operations. We will also pay attention to some of the problems within Chomsky's (1998, 1999) Defective Intervention Effect and seek to explore a solution to these problems. Finally, we will propose to replace Chomsky's (1995, 1998, 1999) disjunctive definition of the satisfaction of the EPP with a uniform definition: the EPP is satisfied only by Move (not by Merge).

Chapter I

Introduction

1.1. Goal

The Minimalist Program, outlined in Chomsky (1991c, 1993) and further elaborated in Chomsky (1995, 1998, 1999), assumes that linguistic phenomena should be accounted for by simple and nonredundant mechanisms. For this reason, he attempts to reduce various principles postulated in the earlier version of the Principles and Parameters (P&P) Theory to conceptually more natural interface conditions (i.e., PF and LF interface). These interface conditions require that elements which cannot be interpreted at interface levels be eliminated. One of these uninterpretable elements is the so-called EPP-feature of a functional head. According to Chomsky (1995, 1998, 1999), the EPP-feature can be eliminated either by Merge of an element to the specifier position of a corresponding head *or* by Move of an element to that position.

This thesis, conducted within the framework of the Minimalist Program (Chomsky 1998, 1999), investigates the ways of satisfying the EPP (Extended Projection Principle) of T(ense) and shows some of the problems within Chomsky' s way of satisfying the EPP. The central goal of this thesis then is to answer the question: "How is the EPP of T satisfied?"

Our discussion is largely based on English *there*-expletive constructions and ECM (Exceptional Case Marking) constructions. By analyzing these constructions, we aim to show that the EPP is satisfied *only by Move*, not by Merge. Showing also that the operation Move and Agree are independent operations, we will try to explore a solution to the problems of Chomsy's (1998, 1999) Defective Intervention Effect. Chapter 4 is concerned with these issues.

To achieve our goal, we adopt (1) Chomsky's (1999) Alternative (II) which associates the EPP with □-completeness (i.e., a full complement of □-features), arguing that the EPP is obligatory for T and V with a full complement of □-features, (2) Waller's (1997) analysis of *there*-expletive constructions, where the expletive *there* is generated in SPEC-D, and (3) Lee's (1999b) category-selectional approach to the EPP-feature.

1.2 Outline

Chapter II, entitled "Before the Minimalist Program," is the launch pad for the remaining chapters. In this chapter, we provide theoretical background for the advent of the EPP that requires clauses to have a subject. In so doing, we are also concerned with the relationship between the expletive *there* and the EPP and deal with the role of the EPP in grammar. Our discussions here are conducted within the earlier version of the P&P Theory, i.e., the Extended Standard Theory (EST) in the 1980's.

Chapter III, entitled "Within the Minimalist Program," is devoted to the advent of the Minimalist Program, another version of the P&P Theory, and thus overviews fundamental assumptions proposed in Chomsky's (1995) Minimalist Program. In this chapter, we provide the reasons for the reinterpretation of the EPP as an uninterpretable feature, not a principle. We are also concerned with two ways of satisfying the EPP (i.e., Merge *or* Move) within the framework of the Minimalist Program. We conclude this chapter by dealing with the effect of the economy principle on the satisfaction of the EPP.

Chapter IV, entitled "Since 1995: Chomsky's (1998, 1999) Minimalist Program," briefly overviews basic assumptions proposed in Chomsky (1998, 1999). In this chapter, we highlight some problems found in Chomsky's definition of Move. We then propose to replace Chomsky's disjunctive definition of the satisfaction of the EPP with our uniform one. We further argue that the EPP is satisfied *only by Move*, not by Merge. We conclude this chapter by giving some solution to the problems found in Chomsky's Defective Intervention Effect.

Chapter V summarizes our new approach to the satisfaction of the EPP and concludes this thesis.

Chapter II

Before the Minimalist Program

2.1 Introduction

The main goal of this chapter is to provide background knowledge of the EPP, which requires that the subject position be filled, within the earlier version of the P&P Theory, i.e., EST, in the 1980's.

For this reason, we will first investigate the nature of Phrase Structure (PS) rules and the role of subcategorization frames in section 2.2. Then, we will focus on some serious redundancies found between (part of) the PS rules and the lexicon in 2.2.1. After the elimination of these redundancies, in 2.3, we will focus on the role of the Projection Principle, a substitute for subcategorization frames and (part of) the PS rules. Then, in 2.4, we will examine the necessity of the EPP that requires clauses to have a subject. Finally, in 2.4.1 and 2.4.2, we will investigate the role of the EPP in grammar.

Before we move to the next section, let us briefly examine the basic assumptions and the four linguistic levels postulated within the EST framework.

For generativists of the Chomskian tradition, it has been assumed that human beings are born equipped with some internal unconscious knowledge of grammar: UG (Universal Grammar). In other words, human beings have a genetic endowment (i.e., UG) that enables them to learn language.[1]

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[1] For this reason the term 'learning' is often replaced by the term 'acquisition'.

UG is assumed to consist of a set of universal principles of language, some of which are rigidly fixed,[2] some of which parameterized.[3] Being equipped with UG (with its parameters to be set) and exposed to a language, a child can construct the grammar of the language he is exposed to. In view of this, we can say that the acquisition of language is triggered by the exposure, the child's linguistic experience.

These principles of UG are closely related to fundamental components, i.e., the four linguistic levels. The first one is called the D-Structure, which is directly associated with the lexicon[4] and where all categories are in the positions where they are expected to be, by virtue of the Projection Principle. The second is known as the S-structure, which reflects the more superficial properties of the sentence: the actual ordering of the elements in the surface string. These two linguistic levels are related to each other by means of movement transformations, or Move-□[5]: elements which originate in some position at D-Structure may be moved elsewhere at S-Structure, leaving traces coindexed with their antecedents. The third level is called the Phonetic Form (PF), where a phonetic representation is assigned to a sentence. The last one is known as the Logical Form (LF), which is concerned with the interpretation of a sentence. These four levels can be graphically represented as follows:

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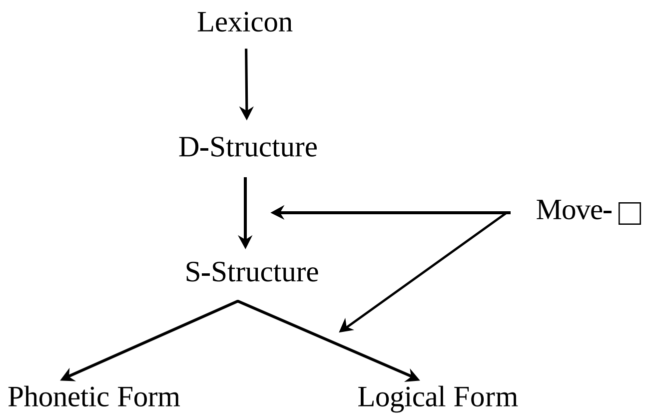
[2] **According to Chomsky (1981), these principles interact so closely and are so interdependent. For more explanation of them, see Chomsky (1981: 5).**

[3] **They are called parameters (to be fixed). According to Chomsky (1981), UG provides a finite set of parameters, each with a finite number of values.**

[4] **According to Chomsky (1981), the lexicon specifies the abstract morpho-phonological structure of each lexical item and its syntactic features, including its categorical features and its contextual features.**

[5] **In fact, Move-α** can apply at various levels of representation: at S-Structure and at LF. On the LF movement, see May (1977, 1985) among others.

(1)



In short, we can say that D-Structures are mapped to S-Structures and the latter are mapped independently to PF and LF.

2.2 The Nature of Phrase Structure Rules

After outlining the basic ideas assumed within the EST framework, let us now consider the rules that generate D-Structure representations.

In order to generate sentences as in (2), the following Phrase Structure (PS) rules in (3) are suggested, which generate phrasal categories and terminal nodes:

(2) The boy kicked the ball.

(3) a. S □ NP (AUX) VP

b. VP □ V (NP) (PP)

c. NP □ (Det) N (PP)

d. V □ sit, kick, put, …

e. Det □ the, …

f. N □ ball, boy, book, shelf, …

Using the PS rules in (3), we can generate a large number of grammatical sentences. With the same PS rules, however, we can also generate an equally large number of ungrammatical ones as follows:

(4) a. *The boy [$_{VP}$ put].

b. *The boy [$_{VP}$ put [$_{NP}$ the book]].

c. The boy [$_{VP}$ put [$_{NP}$ the book [$_{PP}$ on the shelf]]].

The ungrammaticality of (4a-b) has to do with the properties of individual lexical items; the verb *put* requires both an NP and a PP as its complements. To prevent these ungrammatical sentences from being generated, we have to make our grammar include information about whether verbs require a complement, what kind of complement they require, if any, and so on:

(5) a. sit: [V; __]

b. kick: [V; __ NP]

c. put: [V; __ NP PP]

(5a-c) specifies the categorical status of lexical items and the environment in which they can occur, called subcategorization frames. Adding these subcategorization frames to our grammar, such ungrammatical sentences as (4a-b) are excluded; they violate the subcategorization frame of the verb *put* in (5c).

2.2.1 Redundancy

In 2.2, although we succeeded in noticing the fact that subcategorization frames are required for each lexical item to occur in its right position, we failed to notice two serious redundancies in our success.[6]

Any theory of grammar should have a lexicon as its essential component and a set of lexical entries should be included in the lexicon. Apart from the lexical entries, the lexicon will also include information concerning the environment where lexical items may appear. In other words, a certain class of subcategorization frames does exist in the lexicon. This is the first redundancy between subcategorization frames and the lexicon, which we failed to notice.

The second redundancy is found when we take a closer look at the relationship between subcategorization frames and PS rules:

(6) a. sit: [V; __]

b. kick: [V; __ NP]

c. put: [V; __ NP PP]

(7) a. VP $\rightarrow$ V

b. VP $\rightarrow$ V NP

c. VP $\rightarrow$ V NP PP

---

[6] On the redundancy between the rules of the categorial component and the lexicon, see Chomsky (1981).

(6) and (7) represent subcategorization frames of verbs and their corresponding PS rules respectively. A fact we can notice in (6) and (7) is that the PS rules duplicate information already specified in subcategorization frames. The subcategorization frame of *kick* in (6b), for example, implies the PS rule in (7b). This is the second redundancy, which we want to and have to eliminate from our grammar.

2.3 The Projection Principle

We saw, in 2.2.1, that the same information about the constituent structures of phrasal categories spreads over three components of grammar: in subcategorization frames, PS rules, and the lexicon. Two of the three must be eliminated, since they are redundant. If so, what can be the candidates for the elimination and how can we exclude such ungrammatical sentences as in (4) after the elimination?

We know that the lexicon is an inevitable component in any theory of grammar. Thus, even if we eliminate both subcategorization frames and PS rules,[7] we can find the

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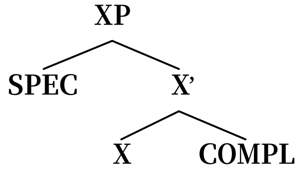
[7] We do not mean the elimination of all PS rules, but some of them. In view of this, this is not the elimination but the reduction of PS rules. After the elimination of all PS rules, the structural representation of lexical and non-lexical categories is determined by the following X-bar schemata:

(1)



On the elimination of all PS rules and the extension of X-bar theory to the nonlexical categories, see Chomsky (1986a).

same information about the class of subcategorization frames in the lexicon alone. This is the answer to the first question raised above.

Second, how can we get the information after the elimination? Waiting for the answer, consider the following sentences:

(8) a. Mary [$_{VP}$ kicked [$_{NP}$ the ball]].

b. *Mary [$_{VP}$ kicked].

c. kick: [__ NP]

Since subcategorization frames and (some of) the PS rules are both eliminated, we now have no way of excluding the unwanted sentence in (8b).[8] Note, however, that the desired result can be achieved simply by requiring that the lexical properties of lexical items, as represented in (8c), be reflected in (or 'projected onto') structural representations. In fact, Chomsky (1981) proposes the following principle that will act as a condition on the structural representation of lexical categories:

(9) Representations at each syntactic level (i.e., LF, and D- and S-structure) are projected from the lexicon, in that they observe the subcategorization properties of lexical items. (Chomsky 1981: 29)

To put the above (9) differently, it states that the bracketing indicated in (8c) must appear at every syntactic level. The verb *kick*, for example, is characterized as a transitive verb in

[8] On the separation of the lexicon from the syntax, see Chomsky (1986b).

the lexicon and thus it must have an object at every syntactic level. (8b) is now excluded, since it violates the above principle (5); it does not observe the subcategorization property of the verb *kick* represented in the lexicon.

The above principle, called the Projection Principle, now performs the function of subcategorization frames and (some of) the PS rules.

2.4 The Extended Projection Principle

We saw, in 2.3, that, although we eliminated subcategorization frames and (part of) PS rules from our grammar, such ungrammatical sentences as in (8b) can still be excluded by the Projection Principle.

Now, consider the following data:

(10) a. *kicked [$_{NP}$ the ball].

b. Mary kicked [$_{NP}$ the ball].

c. *is [a man in the room].

d. There is [a man in the room].

e. There [seems to be a man].

It has been claimed that predicates such as verbs have their argument structures and these argument structures follow from the meaning of the predicates.[9] The verb *kick*, for

[9] For more views about the argument structure, see Grimshaw (1990).

example, takes two arguments, i.e., AGENT ('the kicker') and PATIENT ('the kicked').[10] This property of predicates is formulated as follows:

(11) Each argument bears one and only one □-role, and each □-role is assigned to one and only one argument. (Chomsky, 1981: 36)

The definition in (11) is known as the Theta-Criterion, which must not be violated. The ungrammatical sentence in (10a) is then excluded, since one of the □-roles of the verb *kick* (i.e., AGENT) is not assigned to the proper argument. This □-related explanation, however, cannot account for the ungrammaticality of (10c) because the predicate *be* does not assign any □-role to its subject position. As seen in (10d), (10c) can be rescued by inserting the expletive *there* in the empty subject position, even though the expletive *there* is semantically empty (i.e., semantically vacuous *there* cannot be assigned any □-role and thus has nothing to do with the Theta-Criterion). Therefore, we can say that the requirement of those constructions to have a subject is not derived from □-theory. This requirement cannot be derived from the consideration of subcategorization, either; verbs do not subcategorize for subjects.[11]

From the considerations above, we can conclude that the constructions in (10) require subjects for some structural reason. This structural requirement is not the one that is specific to individual lexical items, but it is a general grammatical property of all

[10] The θ-role assigned to the subject position is called the external (i.e., outside VP) θ-role and the θ-role assigned to the complement position is called the internal (i.e., inside VP) θ-role.
[11] For a more detailed discussion, see Chomsky (1981, 1986b)

sentences. In view of this, the requirement is an addition to the Projection Principle requiring that complements of heads must be represented at each syntactic level. In other words, not only must lexical properties of lexical items be projected onto every syntactic level, but in addition, sentences must have subjects, regardless of their argument structure (i.e., [Spec, IP] must be filled).[12] The latter requirement is known as the EPP and is sometimes defined as follows:

(12) **Extended Projection Principle**

Clauses must have a subject.

With the above principle (12), we can now exclude such ungrammatical sentences as in (10); as each of them lacks the subject position.

2.4.1 On the Role of the EPP

In the previous section, we were concerned with the necessity of the EPP. Let us now consider the following sentences to examine the role of the EPP in grammar:

(13) a. It was believed [$_{CP}$ that [$_{IP}$ John had destroyed the evidence]].

b. The robber was arrested.

c. [$_{IP}$ [e] was arrested [$_{NP}$ the robber]].

---

[12] **Simply (but not exactly), we can say that the Projection Principle is a condition on subcategorized categories (i.e., complements) and the EPP is a condition on subjects.**

d. [$_{IP}$ The robber$_i$ was arrested t_i].

The D-Structure of (13b) is (13c), and its S-Structure is (13d). The subject position in (13c) is empty, since passive verbs do not assign a -role to the subject position.[13] This fact is confirmed in (13a), where the subject position is filled with the semantically vacuous expletive *it*.

Taking a closer look at the D-structure in (13c), we can find something interesting; the subject position is already generated even though the passive verb does not assign any external -role. This is the very role that the EPP plays in our grammar, i.e., it imposes that the subject position be generated.

Move- applies to (13c) to generate the S-Structure in (13d), since the NP *the robber* would violate the Case filter if it remained in the object position.[14] The moved NP is assigned nominative Case in the subject position by tensed I. The Case filter can be defined as follows (taken from Chomsky 1981):

(14) **Case Filter**

*NP if NP has phonetic content and has no Case.[15]

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[13] Further, passive verbs are not able to assign structural Case to their complement. On the assumption that passive morphology absorbs Case and external θ-role, see Jaeggli (1986) and on the correlation of Case with θ-role, see Perlmutter (1978) and Burzio (1986) among others.
[14] For the Case theory, see Vergnaud (1982) and Chomsky (1981, 1986b) among others. For studies of various Case systems, see Marantz (1984), among others.
[15] An NP is assigned Case if governed by lexical heads. The definition of government is as follows (taken from Haegeman 1995):

(1) Government
A governs B iff

Considering the movement of the NP *the robber* in (13d), we may ask what exactly is the trigger for the movement; is the movement caused by the EPP or Case, or both? It seems that the EPP and Case requirement both cause the movement. In view of this, we can say that the role of the EPP and the Case Filter overlaps.[16]

2.4.2 Expletives, Successive Cyclic A-movement, and the EPP

Previously, we examined one of the roles of the EPP, leaving the problem of overlapping open. Here, we will be concerned with phenomena caused solely by the EPP. Consider the following examples:

(15) a. There arrived three men at the hotel.[17]

b. There$_i$ seems [$_{IP}$ t_i to be a man in the room].

c. [$_{IP}$ John$_i$ seems [$_{IP}$ t'_i to be arrested t_i]].

(i) A is a governor;
(ii) A m-commands B;
(iii) no barrier intervenes between A and B.
where
(a) governors are the lexical heads (V, N, P, A) and tensed I;
(b) maximal projections are barriers.

[16] On the redundancy between Case and the EPP, see esp. Martin (1999).

[17] We may ask how the NP *three men* satisfies the Case requirement; the unaccusative verb *arrive* does not assign structural accusative Case. Various answers to this question have been suggested. On the LF replacement/adjunction analysis, see Chomsky (1986b, 1991c, 1995). For different approaches, see Belletti (1988), Bošković (1997), Groat (1997), Lasnik (1995), Waller (1997), among others.

Verbs of movement and change of state (e.g., *come*, *go*, *return*, *arrive*, and *die*) are called unaccusative verbs because they do not assign accusative Case to their complement like passive verbs.[18] Also, they do not assign the external □-role.

As seen in (15a), the subject position must be generated and filled (even with the expletive *there*), even though it is not required by the theta theory; the reason – the EPP. (15c) is a case of successive cyclic movement: the NP *John* moves step by step until it arrives at the final landing site. If the Case requirement were the only reason for the movement, the NP would not have to move to the subject position of the lower clause.[19] However, it does move to the final landing site 'via' the subject position of the infinitival clause; why? – the EPP.

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[18] On unaccusativity, see the works cited in note 10.
[19] By definition, infinitival I does not assign any Case. See note 12.

Chapter Ⅲ

Within the Minimalist Framework

3.1 Introduction

This chapter will be concerned primarily with the basic ideas assumed within the Minimalist framework and thus based in large part on Chomsky's (1995) Minimalist Program (hereafter MP).[20] In so doing, various non-trivial technical details are glossed over where they are not directly relevant.

According to Chomsky (1995), there are two leading questions that guide the Minimalist Program:

(1) [W]hat are the general conditions that the human language faculty should be expected to satisfy?[21]

(2) [T]o what extent is the language faculty determined by these conditions, without special structure that lies beyond them?

Furthermore, he argues that the question in (1) has two aspects: "what conditions are

[20] The Minimalist Program is outlined in Chomsky 1991c, 1993, and further elaborated in Chomsky 1994a, 1995. The first chapter of MP is written jointly with Howard Lasnik.

[21] The language faculty is assumed to be a component of the human mind/brain dedicated to language interacting with other systems. And the initial state of the language faculty is assumed to be uniform for the species. See Chomsky (1995).

imposed on the language faculty by virtue of:

(3) its place within the array of cognitive systems of the mind/brain, and

(4) general considerations of conceptual naturalness that have some independent plausibility, namely, simplicity, economy, symmetry, nonredundancy, [etc]."

The general conditions asked in (1) are called *bare output conditions* imposed by the (performance) systems that make use of the information provided by the cognitive system of the language faculty (FL). The condition (or principle) of Full Interpretation (FI), which requires that there be no superfluous symbols in representations, can be one of those conditions asked in (3). In other words, the FI requires that the cognitive system of the FL generate only the information that can be interpreted (or 'legible') by the performance systems. As for the question (2), Chomsky answers that language is a 'perfect' system and thus it meets those conditions as well as possible.

From the discussions above, it can be said that the Minimalist Program (MP, henceforth) is another version of the P&P model, which seeks to explore the possible answers to those questions raised in (1) and (2)

The organization of this chapter is as follows. In section 3.2, we will summarize the basic assumptions of MP. In section 3.2.1, we will be concerned with the nature of the principles of economy in MP, which can be an answer to the question (4) raised in 3.1. Then, in section, 3.2.2, we will focus on the subcomponents of the cognitive system of the FL, i.e., the lexicon and the computational system and deal with the fundamental operations of the computation system. We will then turn our concern to the phrase structure assumed in MP, called *bare phrase structure*, in section 3.2.3. In section 3.2.4

we will deal with the operation Move and related economy principles such as Last Resort, Minimal Link Condition, and the principle of Procrastinate and also overview the conceptual shifts found in changes from Move □ to Move F to Attract F. Finally, in section 3.3, we will be concerned with the role of the EPP, examining two ways (i.e., Merge and Move) of satisfying the EPP and an economy principle related to the EPP.

3.2 An Overview of the Minimalist Program: (Chomsky 1995)

In this section, we will outline a minimalist view of language design in which the guiding ideas and relevant assumptions of the Minimalist Program are briefly reviewed. In so doing, we will focus, in particular, on the final chapter of Chomsky (1995).

According to Chomsky (1995), a particular language is an instance of the initial state of the FL with options specified. The FL has (at least) two components: (1) a cognitive system that stores information, and (2) performance systems that access that information and use it in various ways. The former interacts with the latter by means of levels of linguistic representation. Unlike the earlier P&P model, MP assumes only two levels of linguistic representation, i.e., PF and LF.[22] The level of PF is an interface with the *articulatory-perceptual* (A-P) system, and the level of LF, an interface with the *conceptual-intentional* (C-I) system.

[22] The elimination of the D- and S-Structure will be dealt with in the next section. For further discussion, see Chomsky (1995: 186-199).

The cognitive system of the FL generates structural descriptions (SDs)[23]: each SD is a pair (□, □).[24] □ stores information to be sent to the PF interface and that information is eventually interpreted by the corresponding performance system, i.e., the A-P system. The same process holds for □: it contains information to be sent to the LF interface and that information is finally interpreted by the C-I system.

The pair (□, □) must consist of legitimate objects in order to receive some proper interpretation at the relevant interface level. If it consists entirely of such objects, we say that it satisfies the condition of Full Interpretation (FI) and thus *converges* at the relevant interface level; otherwise, it *crashes*.[25]

3.2.1 Economy Principles

The spirit of economy has long had effects on the theory of generative grammar. In the early theory of the grammar, it was reflected by simplifying the rule systems of language, i.e., reducing complex and superfluous rules to simple universal principles.[26] Since then, the principles have fallen into two general categories: (1) principles that apply

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[23] Thus, it is sometimes called a ‘generative procedure’.

[24] SDs are the expressions of the language and specifies the full array of phonetic, semantic, and syntactic properties of a particular linguistic expression. In the EST, each SD is assumed to be a sequence (δ, σ, π, λ), representations at the D-Structure, S-Structure, PF, and LF levels, respectively. For further discussion, see Chomsky (1995) among others.

[25] Satisfaction of the principle of FI is, in fact, not sufficient. It must also satisfy certain natural economy conditions. See the next section.

[26] For example, language- and construction-particular PS rules were reduced to a simple X-bar theory and construction-specific transformational rules were simplified into the general operation Move-α.

to construct ‘derivations’ and (2) principles that apply to ‘representations’. The principles that belong to (1) are movement, deletion, and insertion, which are constrained by such conditions as locality.[27] The principles that belong to (2) are also known as licensing conditions, which apply to the external interface levels PF and LF.

Since the late 1980’s, there have been various attempts to find more general principles, i.e., to search for principles that can unify other principles, with wide-ranging effect. According to Chomsky (1991c), “[s]ome of these principles have a kind of *least effort* flavor to them, in the sense that they legislate against *superfluous elements* in *representations* and *derivations*.”

One of the principles that apply to representations (i.e., the former legislation) is the principle of FI which requires that representations be minimal. The principle of FI can be defined as follows ((5a) is a negative version of it and (5b), a positive one):

(5) **The Principle of Full Interpretation**

a. There cannot be any superfluous elements in representations.

b. Every element of representations must have an interpretation.

An example to which the FI applies is the constructions with expletive *there* below in (6):

(6) a. *there* is a man in the house.

b. *there* are men in the house.

[27] For more general operation called Affect-α, see Lasnik and Saito (1984).

According to Chomsky (1991c), the expletive *there* receives no interpretation and therefore is not licensed as an appropriate element at the LF representation by the FI. Thus, he argues that the NP adjoins to it to make *there* be given interpretation.[28] Since the FI is the principle that applies to the interface levels, it is also called the interface condition.

Next, one of the principles that apply to derivations (i.e., the latter legislation) is the principle of Last Resort (LR), which requires that computational operations must be driven by some condition on representations (e.g., the FI), as a last resort to overcome a failure to meet such a condition. The LR therefore has an effect of eliminating superfluous steps in derivations. Another one is called the Minimal Link Condition (MLC) that requires the link of a chain be minimal. Consider the following examples to see the role of the MLC:

(7) a. [$_{CP}$ Whom$_1$ did [$_{IP}$ John persuade t_1 [to visit *whom*$_2$]]]?

b. [$_{CP}$ *Whom$_2$ did [$_{IP}$ John persuade *whom*$_1$ [to visit t_2]]]?

c. [$_{IP}$ *John$_i$ seems [it is likely [t_i to solve the problem]]]

(7b) is a violation of the Superiority condition and (7c), that of the Relativized Minimality.[29] Looking at these phenomena in terms of the MLC, some element has failed to make the shortest link in (7b) and (7c).[30] That is, in (7b), the movement of *whom*$_2$ to

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[28] For more discussion, see the works cited in note 18 and see also Burzio (1986).
[29] For more discussion of the Superiority condition, see Chomsky (1973), Jaeggli (1980), and Pesetsky (1987). On the Relativized Minimality, see esp. Rizzi (1990).
[30] Within MP, the word 'economic' is synonymous with 'minimal' and 'short'. Therefore, the shorter, the more economical.

[Spec, CP] is longer than the movement of *whom*$_1$ to this position. In (7c), the movement of *John* to [Spec, IP] is longer than the movement of *it* to this position. In both cases the moved element has skipped a position it could have reached by a shorter move, had that position not been filled. The ungrammatical sentences in (9), which were once excluded by the independent conditions, are now excluded by the more natural condition alone, i.e., the MLC.

Such principles as the FI are called the principles of economy of representations, since they require that there be no extra element in representations. And the principles like the LR are called the principles of economy of derivations, since they require that there be no extra steps in derivations.[31] Thus, we can say that derivations and representations conform only to these economy criteria.

In fact, Chomsky (1995) argues that UG is a simple and elegant theory, with 'fundamental principles' that have an intuitive character and broad generality. These fundamental principles are nothing but the principles of economy mentioned above.

Another part of the grammar, on which the notion of economy has an effect, is one relating to the linguistic levels. As for these linguistic levels and the notion of economy, Chomsky (1993) argues as follows:

[31] Another important economy principle of derivations is the principle of Procrastinate, which favors covert operations over overt ones. We will return to this matter in 3.2.4.2. For the problems related to the principle of Procrastinate, see Collins (1997) among others.

(8) Each derivation determines a linguistic expression, and SD, which contains a pair (□,□) meeting the interface [i.e., PF and LF] conditions. *Ideally, that would be the end of the story*: *each linguistic expression is an optimal realization of interface conditions expressed in elementary terms*, a pair (□,□) satisfying these conditions and generated in the most economic way. Any additional structure or assumptions require empirical justification.

(Chomsky 1993: 19)

As Chomsky (1993) points out, a linguistic expression is a collection of sound and meaning. The sound and meaning of a linguistic expression are represented at the PF and LF level, respectively. Thus, in terms of economy, D- and S-Structure are (conceptually) unnecessary part of the grammar.[32] Consequently, within the Minimalist framework, a syntactic representation consists not of the familiar four levels, D- and S-Structure, PF, and LF, but rather, only the latter two – the interface levels.

Concluding this section, we can say that, in one respect, search for the characteristics of these economy principles unifying other principles has led to a recent trend of generative grammar - the Minimalist Program.

3.2.2 The Cognitive System of the Language Faculty

The cognitive system, one component of the FL, is assumed to consist of a single lexicon and a single computational system C_{HL} for human language.

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[32] **For empirical evidence against D- and S-Structure, see esp. ch.3 of MP.**

As a repository of all idiosyncratic properties of particular lexical items that enter into the computational system, the lexicon specifies, for each such element, the phonetic, semantic, and syntactic properties that are idiosyncratic to it. The computational system uses these elements to generate derivations and SDs. Thus, we can say that the derivation of a particular linguistic expression involves a choice of items from the lexicon and a computation that constructs the pair of interface representations.

3.2.2.1 The Lexicon

In the lexicon, each lexical item is contained in the form of features: phonological, semantic, and formal features.

According to Chomsky (1995), there are two types of lexical features: those that are given an interpretation only at the A-P interface (i.e., the level of PF) and those that are given an interpretation only at the C-I interface (i.e., the level of LF).[33] The former are called phonological features. The latter are called formal features, which are divided again into two: those that are accessible in the course of the computation and those that are not. Again, the former are called formal features, the latter, 'pure' semantic features.[34] Formal features of a lexical item (LI) include categorial features such as [±N],

[33] According to this assumption, if any phonological features enter the LF level, the derivation will crash, violating the FI. Thus, we need an operation which applies at some point of derivation to separate phonological features from the rest of the features. This operation is called Spell-Out, to which we will return in the next section. For more discussion, see esp. ch.4 of Chomsky (1995).

[34] Formal features are sub-divided into interpretive and uninterpretive ones at the LF level, to which we will return in 3.2.4.1. See also ch.4 of Chomsky (1995).

□-features such as [±plural], Case features, etc. The collection of formal features of an LI is represented as FF(LI). A formal feature may or may not be strong (see section 3.2.4.2). The lexical entry for *arrow*, for example, contains three collections of features: phonological features such as [begins with vowel], (pure) semantic features such as [artifact], and formal features such as [nominal]. Among these three features, it is the formal features that are accessible to C_{HL}, neither semantic nor phonological ones.

3.2.2.2 Operations of the Computational System

The computational system (for human language; C_{HL}) is assumed to access some array of lexical choices from which a derivation proceeds to form PF and LF representations (i.e., the pair (□, □)).[35] 'Some array of lexical choices' is called a numeration (henceforth N), which contains information about what the lexical choices are and how many times each is selected in forming the pair (□, □).[36] In view of this, we can say that C_{HL} maps N to (□, □).[37]

Suppose that *apple* is chosen as part of the array. Then, it would be contained in the numeration in the form of (*apple*, *i*), where *i* is the index of *apple*, understood to be the number of times that *apple* is selected. Then, C_{HL} selects the LI from N and reduces its index by 1, then performing permissible computations; this is the first operation of C_{HL} called *Select*.

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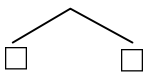
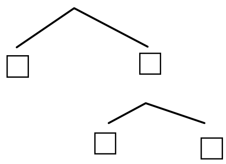
[35] Some array functions as a reference set for evaluating derivations in terms of economy. Therefore, we consider only alternative with the 'same' numeration.
[36] For a diffenent point of view to the numeration, see Collins (1997).
[37] We will focus primarily on the computation N $\rightarrow$ λ. For reasons, see MP.

The second operation is called *Merge*, which combines selected LIs as below in (8):

(8) a.  b. 

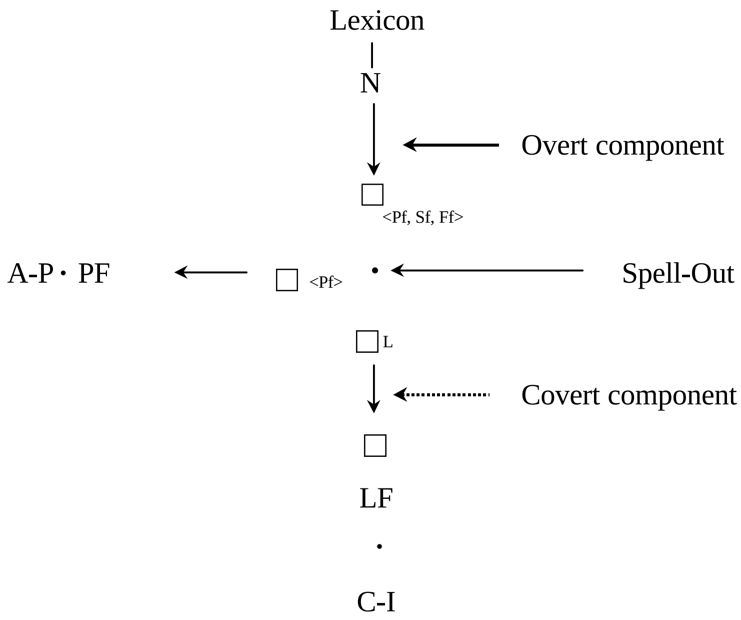
Suppose that there is a numeration like {(□, 1), (□, 1), (□, 1)}. C_{HL} would select from the N, reducing its index by 1, and introduce it into the derivation. Let us call this selected LI a syntactic object (SO_i). Next, C_{HL} would select another LI, , and introduce it into the derivation. Again call it SO_j. Then, the operation *Merge* takes the pair of syntactic objects (SO_i, SO_j) and replaces them by a new combined syntactic object SO_{ij}, i.e., in (8a). The operation *Select* must apply (recursively) until it exhausts the initial N, otherwise the derivation will crash. The operation *Merge* has the same property: it must apply (recursively) until it leaves us with a single syntactic object, since a set {SO_1, ..,. SO_n} of syntactic objects (call them □) can be interpreted only if it consists of a single syntactic object.[38]

At some point of the computation to LF, there is an operation Spell-Out that applies to the structure □ already formed and strips away from □ those elements relevant only to □, leaving the residue $□_L$, which is mapped to □ by operations of the kind used to from

[38] According to Chomsky (1995), Select and Merge are costless in terms of economy; if Select does not exhaust the numeration, then no derivation is generated and consequently no questions of convergence or economy arise and if Merge does not apply sufficiently, then the derivation fails to yield an LF representation at all. For different approaches, see Kitahara (1997) among others.

□. These processes can be graphically represented as follows:

(9)



3.2.3 Phrase Structure in the Minimalist Program

According to Chomsky (1994a, 1995), if Merge applies to syntactic objects □ and □, it forms a new object K, projecting either □ or □. He further argues that we need something that identifies the type to which K belongs, since verbal and nominal elements, for example, are interpreted differently at LF and behave differently at PF. The thing which is needed is called the *label* of K, which is the head of either □ or □.

Suppose that □ and □ are merged and □ projects. Then we have the structure as follows:

(10) a. (= K, H(K))

□ □

b. K = { H(K), {□, □}}, where H(K) is the head of □ and its label as well.

Following Muysken (1982), Chomsky (1994a, 1995) further suggests that being maximal or minimal projection is relational properties of categories, not the properties inherent to them. These properties of categories can be described as follows:

(11) a. A category that does not project any further is a maximal projection.

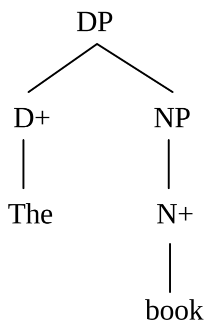
b. A category that is not a projection at all is a minimal projection.

c. Any other is an intermediate projection.

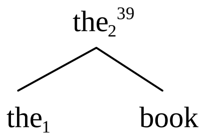
Given the descriptions in (11), categorial status is now determined from the structure in which categories appear. Thus, minimal and maximal projections are not identified by any special marking such as XP (X^{max}), X', and X^{min}.

Furthermore, within the Minimalist framework, neither non-branching projection nor partial projection is assumed, since there is no way to project from a lexical item □ a subelement H(□) consisting of the category of □ and whatever else enters into further computation. H(□) is the actual head and □ is the lexical element itself - no more. Consequently, we have such structures as (12b), known as *bare phrase structure*, in place of traditional (12a):

(12) a.



b.



According to the properties described in (11), *the_1* in (12b) is a minimal projection because it is not projected from any other category and *the_2* is a maximal projection because it does not project any further.

Consequently, the standard X-bar theory is largely eliminated in favor of bare essentials.

3.2.4 The Operation Move

We saw, in section 3.2.2.2, two operations of C_{HL} (i.e., *Select* and *Merge*). Consider now the following data:

(13) a. [$_{TP}$ was [$_{VP}$ arrested John]].

b. [$_{TP}$ John was arrested t_{John}]

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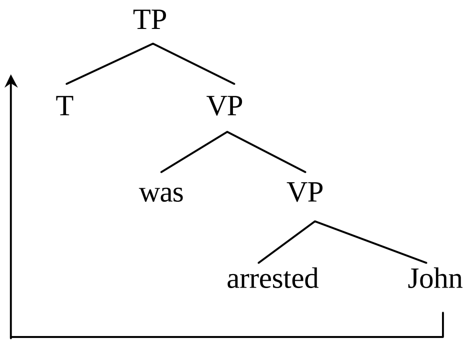
[39] These subscripts are used only for expository purposes.

c.



The NP *John* receives an object interpretation (i.e., *the arrested*), while it is pronounced in the subject position.[40] This positional difference between interpretation and pronunciation has been known as a central property of human language, which is called the ‘displacement’ property. To determine why human language, unlike other symbolic systems, has this property and how it is realized, the operation called *Move* has been assumed in the generative grammar: in (13), the NP *John* receives an interpretation in the object position (also called ‘base position’) and then ‘moves’ to the subject position ‘for some reasons’ that we will investigate in the following sections.[41]

[40] There has been a proposal that the head of noun phrases is D(eterminer). This proposal is called the DP hypothesis. However, we do not make any distinction between DP and NP here, since it is not quite relevant to our topic. We will continue to use the term NP, using DP where appropriate. On the DP hypothesis, see Abney (1987) and Fukui (1986), among others.

[41] In fact, operations can be applied only if they are driven by necessity: they are last resort, applied if they must be, not otherwise. In other words, operations without any reason violate the spirit of Minimalism. In the case of the operation Move, the necessity is morphological: certain features must be checked in the checking domain of a head, or the derivation will crash. For more discussion see esp. ch.3 and 4 of MP.

3.2.4.1. Interpretability of Features

As discussed earlier, an LI has its formal features (FF) (e.g., categorial features, □-features, Case features, etc.) as well as its phonological and (pure) semantic ones. It is these FF that are accessible to C_{HL}. Further, it is assumed that some of these FF are interpretive and others are not at the LF interface. For a more vivid picture, consider the following sentence:

(14) We eat apples.

FF(*we*) include its categorial feature [nominal], Case feature [Nom], □-features such as [1 person] and [-plural]. FF(*apples*) consist of [nominal], [Acc], [3 person], and the like. FF(*eat*) include [verbal], [assign Acc], and □-features such as [+plural].

Among these formal features, categorial features of all LIs and □-features of nominals are interpretable features, namely, those that can be interpreted at the LF interface level. Uninterpretable features (henceforth –Int) are the Case-assigning features of T and V, the Case features of nouns, and the □-features of verbs and adjectives.[42] These –Int features must be eliminated in the course of derivations, since they cannot be interpreted at the LF interface.

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[42] Consider the following sentences:

(1) a. I expect that *she* will pass the exam.
b. I expect *her* to pass the exam.

The Case form of the pronoun 'she' does not seem to make any contribution to the interpretation of (1a) and (1b). For this reason, Case features are assumed to be uninterpretable.

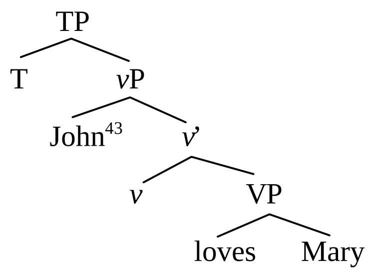
3.2.4.2 Checking Theory and Feature Strength

In the previous sections, we investigated the displacement property of human language and saw that certain features of certain categories are –Interpretable. In this sub-section, we will discuss the operation Move in more detail and the theory of checking that connects the uninterpretability to the displacement property.

Consider now the following data:

(15) a. John loves Mary

b.



Let us now examine the –Int features of the LIs represented in (15b) one by one: First, T has –Int -features and (nominative) Case-assigning feature. Second, the DP (see note 40) *John* has –Int (nominative) Case feature. Third, the light verb *v* has –Int□-features and (accusative) Case-assigning feature. Finally, the DP *Mary* has –Int (accusative) Case feature. All of these –Int features must be eliminated in the course of derivations, otherwise the derivation will crash at the LF interface level. Then the question of 'how' remains.

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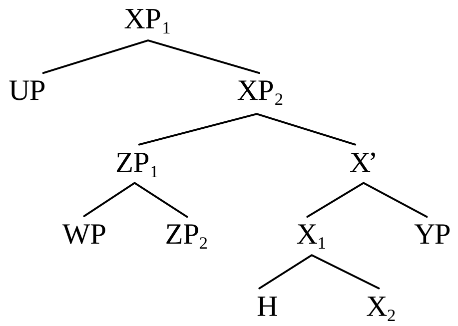
[43] Within MP, the VP-internal subject hypothesis (VSIH) is assumed, where the subject is generated in [Spec, VP]. On the VSIH, see Koopman and Sportiche (1991) and Kuroda (1988), among others.

According to Chomsky (1995: 177), –Int features can be eliminated (or ‘checked’) in a certain specific configuration, not everywhere:

(16)



In (16), UP, ZP, WP, and H are the only positions where a –Int feature can be checked (and thus eliminated) by the head X. Therefore, the domain including UP, ZP, WP, and H is called the ‘checking domain’ of X. Simply (but not exactly), we can say that the checking domain of a head includes its specifier and another head adjoined to it.[44]

Presenting the following definition in (17), he further argues that distinction between a checking *configuration* and a checking *relation* must be made:

(17) Feature F’ of FF[F] is in a *checking configuration* with f; and F’ is in a *checking relation* with f if, furthermore, F’ and f match. (Chomsky 1995: 310)

According to the above assumption, a DP with a Case feature, for example, must appear in the specifier position of a corresponding Case assigner (i.e., T or *v*) in order to have its

[44] **For details about the checking configuration and other related domains, see esp. ch.3 of MP.**

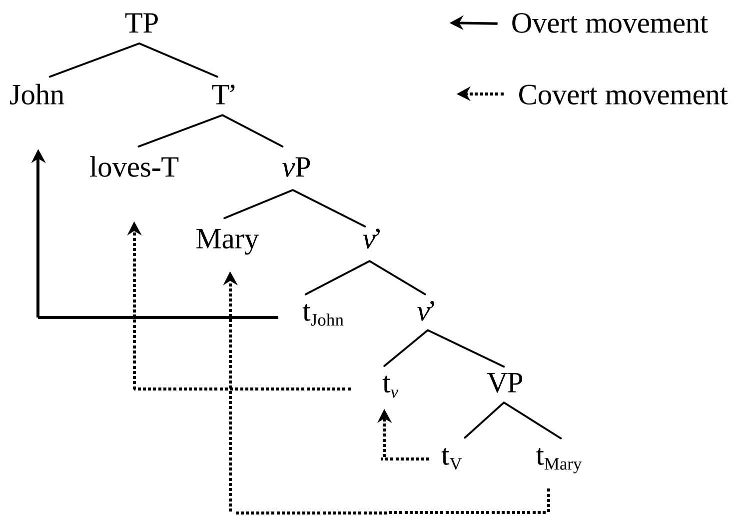
Case feature checked. This relationship is an instance of ‘ feature checking’ .

Now, let us go back to (15b), repeated here as in (18):

(18) [$_{TP}$ T [$_{vP}$ John [$_{VP}$ loves Mary]]].

In (18), T has a –Int Case-assigning feature and the DP *John* also has a –Int Case feature to be checked. Therefore, if *John* raises to the [Spec, TP], the Case feature of *John* will be in a checking relation with that of T and thus these Case features can be eliminated. The same holds for the DP *Mary*: it raises to the outer [Spec, *v*P] and its Case feature is checked by the light verb *v*. These processes can be represented as follows:

(19)



Here, we may ask two questions: (1) why does only *John* undergo ‘ overt’ movement? (2) what exactly is the trigger of movement? We will deal with the first question here and try to give an answer to the second question in the next section.

First, in (19), the subject *John* raises to the [Spec, TP] overtly unlike the object *Mary* and the verb *loves*, in spite of the violation of the principle of Procrastinate as below:

(20) **The Principle of Procrastinate**

Movement occurs as late as possible in the derivation

The principle of Procrastinate can be motivated in terms of economy if we assume that early movements are more costly, in computational terms, than late movements, in particular, LF movements.[45] Given this economy principle, the DP *John* must raise covertly at the LF level as the DP *Mary* does. However, why is this not the case?

In order to solve this problem, Chomsky (1995) presents the following proposals:

(21) a. If F is strong, then F is a feature of a nonsubstantive [i.e., functional] category and F is checked by a categorical feature.[46]

b. D[erivation] is canceled if □[with a strong feature F] is in a category not headed by □.

c. F carries along just enough material for convergence.[47]

Chomsky (1995) further argues that the functional category T has a strong D-feature to be

[45] For a more vivid picture, see (9) in section 3.2.2.2.

[46] Functional categories are T, C, D, *v*. Feature strength of these functional categories is one element of language variation: a formal feature may or may not be strong. For more discussion, see esp. ch.4 of MP.

[47] According to Chomsky (1995: 233), a strong feature is one that a derivation cannot tolerate: a derivation $D \rightarrow \Sigma$ is canceled if Σ contains a strong feature. Thus, we may think of a strong feature as some kind of virus destroying the system. See Uriagereka (1998).

eliminated.[48] Then, this strong D-feature of T must be eliminated as soon as it is introduced to the derivation, otherwise the derivation will crash according to the condition (21c). If so, the minimalist assumption would be that, in (19), only the categorical feature of the DP *John* involved in this feature checking raises to this position, leaving the rest of the DP unaffected. However, the categorial feature of *John* alone cannot raise to [Spec, TP] because of the economy condition in (21c).

According to Chomsky (1995), the economy condition in (21c) follows from the requirement at the interface level, i.e., PF: isolated features and other scattered parts of words cannot receive an interpretation at the PF level, that is, they are unpronounceable. Therefore, in the case of (19), the rest of the DP is automatically carried along when its categorial feature moves to [Spec, TP] by virtue of the economy condition (21c). Consequently, an 'overt' movement takes place. In the case of the object *Mary*, however, its categorial feature does not have to carry along the rest of the DP, since the D-feature of *v* is weak in English.[49] Consequently, a 'covert' movement takes place.

Now, we can define the consequences of the operation Move as follows:

(22) a. FF[F] raises along with F

b. A category □ containing F moves along with F only as required for [PF] convergence.

c. Covert operations are pure feature checking. (Chomsky 1995: 270)

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[48] The functional categories C and D are also assumed to have a strong D-feature. For more discussion, see Chomsky (1995).

[49] Even in this case, the categorial feature carries along FF(*Mary*). According to Chomsky (1995), formal features of an LI function as a 'unit'.

Note that the operation Move seeks to raise *just* F. FF[F] and a category containing [F] is required only for convergence, in other words, they are ‘pied-piped’. Therefore, we can use the term Move *F* instead of Move □.[50]

When summarizing the operation Move and feature checking, suppose that there is a category with a –Int feature. If it is a strong feature, it must be checked by a category with full feature collection, i.e., its phonological and semantic features as well as formal features. Thus, the movement is ‘overt’. If the –Int feature is not strong, it can be checked by only the collection of formal features of an LI. Thus, the operation is ‘covert’.

3.2.4.3 Move F to Attract F

Consider the sentence in (18), repeated here as in (23):

(23) $[_{TP}$ T $[_{vP}$ John $[_{VP}$ loves Mary]]].

In the previous section, we said that the DP *John* raises to [Spec, TP] and its –Int Case feature is eliminated in a checking relation with T having –Int Case-assigning feature. Recall that the operation Move is applied as a last resort: it is driven by the morphological requirement. But which morphological requirement is the driving force for the movement? In the case of (23), for example, is the movement of *John* driven by the –Int features of T or by the –Int feature of the DP *John* itself? The answer to this question

[50] According to Chomsky (1995: 262), the operation Move seeks to raise just F. Whatever “extra baggage” is required for convergence, i.e., bare output conditions determine just what is carried along, if anything, when F is raised.

would be the one to the second question raised in 3.2.4.2.

First, Chomsky (1994a) discusses the following example:

(23) a. T-seems [(that) John is intelligent].

b. *John seems [(that) *t* is intelligent].

In (23a), the matrix T has a strong D-feature to be checked. If Move were to take place to benefit other elements, the ungrammatical (23b) would not be blocked; the DP *John* raises to [Spec, TP] to check off the strong D-feature of T. He therefore presents the following principle called Greed:

(24) Move raises □ only if morphological properties of □ 'itself' would not otherwise be satisfied in the derivation. (Chomsky 1995: 261)

Given the above principle Greed, the DP *John* in the embedded clause cannot raise to the matrix [Spec, TP], since its morphological requirements is already satisfied in its base position. Thus, the ungrammaticality is due to the violation of the principle Greed.

However, Lasnik (1995) presents a different idea. Consider the following examples:

(25) a. A strange man is *t* in the garden.

b. is a strange man in the garden.

c. There is [a strange man] in the garden.

In (25a), *a strange man* must have its Case feature checked. Chomsky (1994a) thus argues for the principle Greed. However, Lasnik (1995a), *contra* Chomsky, argues that this alone cannot allow overt movement, given the principle of Procrastinate, which requires that movement take place in the LF component if possible. The Case feature of a DP can be checked in the LF. This fact is verified in (25c), where the Case feature of □ is checked covertly.[51] He thus argues that it is the strong D-feature of T that renders overt movement necessary in (25a) and makes a proposal which he call "Enlightened Self Interest":

(26) **Enlightened Self Interest**

An item can move to satisfy either (i) its own requirements or (ii) those of the target it moves to. (Lasnik 1999: 74)

Chomsky (1995) takes Lasnik's (1995) idea even further, insisting on (ii) as the only driving force for movement. Thus, instead of thinking of □ as raising to target K, he considers K to attract the closest appropriate □. The definition that reinterprets the operation Move as *Attract* is as follows:

(27) **Attract**[52]

K attracts F if F is the closest feature that can enter into a checking relation with a sublable of K.[53] (Chomksy 1995: 297)

---

[51] For the covert movement of DP in *there* construction, see the works cited in note 17.
[52] For expository purposes, we will use the terminology *Move* with *Attract* so far as it does not make any difference.
[53] An X^0 (zero-level) category is a head or a category formed by adjunction to the head X, which projects. The maximal zero-level projection of the head H refers to,

We can infer from (27) that when the Case feature of an LI is raised to target K by Attract F other features of FF(LI) may also enter into checking relations with sublabels of K as ‘free riders’. And we also infer that the above definition incorporates the MLC (i.e., ‘closest’) and Last Resort (i.e., a ‘checking relation’) defined in 3.2.1.

3.3 The Role of the EPP: from principle to feature

Let us first consider the following examples:

(28) a. T [$_{vP}$ John loves Mary].

b. John T [$_{vP}$ t_{John} loves Mary].[54]

When the subject *John* is introduced into the derivation, FF(*John*) includes D and specific choices of □-features and Case. Since T has a strong D-feature, the categorical feature of *John* raises overtly to its checking domain, pied-piping the entire DP. The Case feature of *John* is checked by T as a free rider, as are the □-features.

We can thus infer from (28a-b) that the EPP, which requires [Spec, TP] be realized, now reduces to a morphological property of T: strong D-feature. This fact is further extended to the following sentence:

---

say, the T head of TP with V and perhaps more adjoined, which is represented as H^{0max}. A sublabel of K is a feature of $H(K)^{0max}$.

[54] Irrelevant structures are omitted here for ease of exposition.

(29) John is likely to [t_3 to be asked [t_2 to [t_1 kick the ball]]].

Overt raising of *John* from t_1 to t_2 accesses D to satisfy the EPP in the most deeply embedded clause.[55] Categorial feature D is Interpretable, thus unaffected by checking.[56] It is accessed again to raise *John* to t_3, satisfying the EPP in the intermediate clause. Further raising from t_3 to the matrix [Spec, TP] can access any of the features that enter into a checking relation there. Chomsky (1995) therefore argues that all values of T induce the EPP in English, including infinitives.

Note two things permitted under these assumptions: (1) the EPP is now divorced from Case, and (2) double agreement and double satisfaction of the EPP (e.g., (29)) by a single DP is, in principle, possible, since categorial and □-features of a DP is Interpretable, hence still accessible even after checking. Case feature, however, is different: it is erased when checked, hence not accessible any further.[57]

3.3.1 The EPP and Expletives

Suppose that a derivation has reached the construction (30a) below and the nemeration contains an expletive *there* so that we can derive (30b):

---

[55] This is the only possibility since the raising infinitival does not assign Case.
[56] According to Chomsky (1995), Interpretable features need not enter checking relations, since they survive to LF in any event. In particular, Categorial and -features of a DP need not be checked.
[57] However, multiple Case checking is indeed found in some languages like Japanese. On this matter, see Chomsky (1995) and Ura (1994), among others.

(30) a. T seems [that John is brave].

b. * there T seems [that John is brave].

According to Chomsky (1995), the reason why (30b) is ungrammatical is that the expletive *there* has only categorial feature [D] to satisfy the EPP of the matrix T and thus the Case and □-features of the matrix T cannot be checked.[58] If *there* had a Case feature, it could enter into a checking relation with the Case feature of the matrix T; as a result only the -features of T remain unchecked. These □-features of T can be checked by covert raising of FF(*John*), since the □-features of *John* are Interpretable and thus still available even after checking. Consequently, the derivation converges, contrary to fact.

Furthermore, presenting the following sentence, Chomsky (1995) argues that *there* also lacks □-features:

(31) *there T-seem to be [a man] in the room

If *there* had □-features and further its □-features did not match those of its associate, the unwanted derivation, as in (31), would not be blocked; the □-features of the matrix T are erased by those of *there* and the Case feature of the matrix T is erased by covert raising of *a man*.

Examining the relationship between the EXPL and the EPP of T in (31) and (32), we have confirmed once again that the EPP is nothing but the strong D-feature of T.

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[58] Furthermore, the expletive *there* is assumed to lack semantic features, hence it is called a ‘pure’ expletive. For different approaches to *there*, see the works cited in note 17, 2.4.2.

3.3.2 The EPP and Economy

Let us now examine an economy principle related to the safisfaction of the EPP, also considering other ways of safisfying the EPP:

(33) a. A man is *t* in the garden.

b. There is [a man in the garden].

c. *There seems (to me, often) [$_{TP}$ someone to be $t_{someone}$ in the garden].

d. There seems [t_{there} to be [someone in the garden].

As seen in (33a), the EPP of T is satisfied by the 'overt movement' of the DP *a man*. The EPP of T can also be satisfied by the insertion (or Merge) of the expletive *there*. Therefore, we can infer that the EPP can be satisfied either by movement or by Merge.

However, such inference cannot account for the ungrammaticality of (33c), where the EPP of the embedded T is safisfied by the raising of *someone* and that of the matrix T by the insertion of *there*.[59] To solve this problem, consider first (33c) and (33d), specifically, the structure that is common to the two derivations:

(34) [$_{TP}$ to be [someone in the garden]]

---

[59] However, different phenomena are found in ECM constructions:

(1) a. I expected [someone to be [*t* in the room]].
b. *I expected [*t* to be [someone in the room]].

The embedded subject does raise overtly to a position analogous to *t* in (33d), where it is barred; and cannot remain in situ as it does in (33d). Chomsky (1995) argues that these contradictory phenomena has to do with θ-theory. See Chomsky (1995: 345-347).

The next step must safisfy the EPP of the infinitival T. Given the derivations in (33a) and (33b), there are two possibilities: we can insert *there* in [Spec, TP] or raise *someone* to this position. The latter choice violates the principle of Procrastinate; Merge is costless, while Move is not. Therefore, the first option is chosen, constructing (35):

(35) [$_{TP}$ there to be [someone in the garden].

At a later stage in the derivation we have the structure below:

(36) [$_{TP}$ seems [$_{TP}$ there to be [someone in the garden].

Now, the EPP of the matrix T must be satisfied. Only one legitimate option remains: to raise *there*, constructing (33d), repeated here as (37):

(37) [$_{TP}$ There seems [t_{there} to be [someone in the garden].

In sum, the EPP can be satisfied either by Merge or Move. The choice depends on whether the initial numeration contains an expletive.

Chapter Ⅳ

Since 1995: Chomsky (1998, 1999)

4.1 Introduction

A large part of the fundamental assumptions discussed in MP is still maintained, while some are not. Thus, in this section, we will briefly review the basic assumptions still maintained as well as some new terminologies and then move further in the next section.

First, it is assumed that there is a faculty of language (FL), which is regarded as a language organ. According to Chomsky (1998), the FL has an initial state S_0 that is an expression of the genes and uniform for human beings. It undergoes state changes under triggering and shaping influences of the environment. UG is the theory of this initial state of the FL and particular grammars are theories of attained states.

The FL consists solely of a cognitive system that stores information about sound, meaning, and structural organization.[60] Performance systems, i.e., sensorimotor systems and systems of thought, access this information and put it to use. On these assumptions, language L is taken to be a device that generates expression EXP = <PHON, SEM>, where PHON provides the instructions for sensorimotor systems and SEM for systems of

[60] In this respect, performance systems are external to the FL.

thought by means of levels of linguistic representation.[61] For the instructions to be usable, they must meet the conditions imposed by the performance systems – ‘legibility conditions’, which is the minimal condition the FL must satisfy.

At this point, Chomsky (1995, 1998, 1999) raises a question in (1) and, at the same time, gives an answer in (2):

(1) How well does the FL satisfy the legibility conditions?

(2) Language is an optimal solution to legibility conditions. (Chomsky 1998: 9)

Chomsky (1998) calls the proposition (2) ‘the strongest minimalist thesis’ SMT. To put the SMT differently, it states that language satisfies the legibility conditions in an optimal way. As Chomsky (1991c, 1995, 1998) repeatedly points out, these legibility conditions have a kind of least effort (i.e., economical) flavor to them, in the sense that they seek to eliminate anything unnecessary both in representations (e.g., FI) and in derivations (e.g., LR). Thus, we can say that what the Minimalist Program constantly pursues is to formulate and study such propositions as (1) and (2).

This chapter is organized as follows. In section 4.2, we will summarize the basic operations of C_{HL}, i.e., Merge, Agree, and Move and examine important new notions such as Core Functional Categories and Phase. In section 4.3, we will apply these new notions to real linguistic data, introducing some new terminologies such as probe and goal. In so doing, we will also investigate the characteristics of the expletive *there* and its relation to the EPP-feature, introducing a new condition called the Defective Intervention Constraint.

[61] **For a different approach, see Epstein et al. (1998), where performance systems access the computation itself, dispensing with levels of representation.**

Finally, in section 4.4, we will first summarize Chomsky's (1999) Alternative (II) which associates the EPP with -completeness, and then find out some defects related to it. Then, we will focus on the operation Move, arguing that Move is an independent operation of Agree. We will also deal with the definition of satisfaction of the EPP, trying to propose a uniform definition of it. In so doing, we will adopt Waller's (1997) assumption that the expletive *there* is generated in [Spec, DP]. We will also be concerned with the problems of Chomsky's (1998, 1999) Defective Intervention Effect, giving a solution to them.

4.2 An Overview of the Minimalist Program: Chomsky (1998, 1999)

Recall that, in order to be readable (or usable) by the performance systems, what the FL generates must meet the minimal conditions (i.e., 'legibility conditions') imposed by those external systems. To put a different interpretation on it, we can say that the information the FL provides includes something 'unreadable' by the performance systems. Then, we may ask two questions: (1) What exactly is this 'something unreadable', and (2) why does language have this property, given that it is a 'perfect' system?[62]

First, as said in 3.2.4.1, an LI contained in the lexicon is a collection of phonological, semantic, and formal features.[63] Among them, the formal features are subdivided into

[62] See the introduction of ch.3 and also 3.2.4.1.
[63] Among these features, the formal features are accessible in the course of the narrow-syntactic derivation. Narrow syntax refers to the derivation from N $\rightarrow$ LF excluding PF. For reasons, see Chomsky (1995, 1998, 1999) among others.

two: interpretable and uninterpretable. It is these –Int formal features that cannot be readable by the performance systems. They must be eliminated in the course of computation of LF to satisfy the legibility conditions and even further they must be eliminated in an optimal (i.e., the most economical) way.

Second, why does language have these –Int features? According to Chomsky (1998, 1999), these –Int features are one of the imperfections of language and further related to another imperfection of language, i.e., 'displacement (or dislocation) property'.[64] Then, the imperfections that language has can be described as follows:

(3) a. Uninterpretable features of lexical items
b. The dislocation property (Chomsky 1998: 33)

In order to eliminate these –Int features and account for the dislocation property, the Minimalist Program once employed the operation Move/Attract and now employs the operation called *Agree* as well as Move.[65]

Now, let us further investigate the operation Move and Agree and some new ideas relating to them, beginning with the operations of the computational system.

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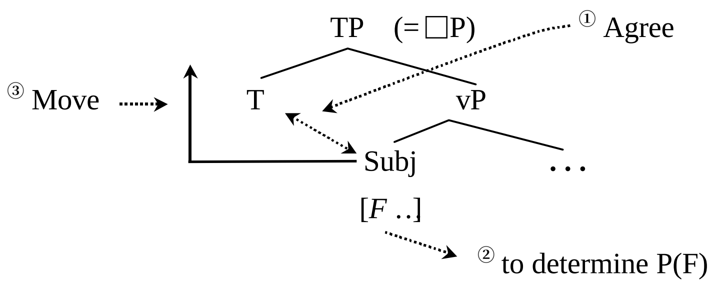
[64] The displacement property refers to the phenomenon that the surface phonetic relations are dissociated from the semantic ones. For more discussion, see Chomsky (1995, 1998) and also section 3.2.4.

[65] However, the reason why –Int features do exist in language seems to remain unresolved. Chomsky (1998, 1999) is also not specific about this question, just saying that –Int features 'might' themselves be required by design specifications and that they 'might' be devices to be used to yield the dislocation property. For different views, see Lee (1999a,b) and Park (1999).

4.2.1 Operations of the Computational Procedure for Human Language

The first operation of the C_{HL} is called Merge, which takes two syntactic objects (□, □) and forms K(□, □). The second is called Agree that Chomsky (1998, 1999) assumes establishes a relation (agreement, Case-checking) between an LI □ and a feature F in some restricted search space (i.e., its domain).[66] The third is called Move, which Chomsky (1999) assumes establishes 'agreement' between □ and F and 'merges' P(F) to P.[67] These processes can be represented as follow:

(4)



As seen in (4), the operation Move is more complex than Merge or Agree, since Merge and Agree are subcomponents of Move. Further, Move is more complex than even the combination of Merge and Agree, since it involves an additional step of determining P(F), i.e. Pied-Piping.[68] Therefore, Chomsky (1998, 1999) argues that Move is pre-empted where possible by the simpler operations such as Merge and Agree.

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[66] In the structure of HP = [α[H β]], β is the domain of H and α its edge.
[67] P(F) is a phrase determined by F.
[68] Chomsky (1999) claims that the operation Move is a composite one that consists of Agree/Pied-Pipe/Merge.

4.2.2 Core Functional Categories

Lexical items are divided into two categories: substantive (e.g., V, P, N, A) and functional (e.g., C, T, v, D).[69] Among them, Chomsky (1998, 1999) is concerned especially with C, T, and v, calling them 'core functional categories' (CFC), in the sense that the (uninterpretable) □ -features these CFCs may have constitute the core of the system of (structural) Case-agreement and dislocation (i.e., Move).[70]

According to Chomsky (1998), these CFCs select one another according to their selectional properties. C, for example, selects T, while T and v select verbal elements.[71][72] T selected by C is assumed to have a full complement of □-features ($□_{comp}$) and called T_{comp}. And T selected by V is called defective T (T_{def}).[73] He further argues that each CFC allows an extra SPEC beyond its s(emantic)-selection and that the extra SPEC is required by the EPP of each CFC.[74]

In sum, basic structural properties of CFCs are illustrated as follows:

(5) □ = [XP [(EA) H YP]]

---

[69] v corresponds to *v* in Chomsky (1995).
[70] Further, -features are obligatory for T and V.
[71] According to Chomsky (1998), these selectional properties are semantic selection. See Pesetsky (1982) among others.
[72] Chomsky (1998) further argues that v may also select a nominal phrase NP/DP as its external argument EA.
[73] To be more specific, C can be unselected, while v and T cannot. C is selected by substantive categories, v only by a functional category.
[74] For C, the extra SPEC is a raised wh-phrase; for T, the surface subject; for v, the phrase raise by Object Shift (OS). According to Chomsky (1998), the EPP-feature of T might be universal and that of v/C varies parametrically among languages. For different views, see Chomsky (1999) among others.

In the above configuration of (5), H is the CFC, XP is the extra SPEC selected by its EPP-feature, and EA is the external argument selected by H = v.

Now, let us turn our concern to the ways of satisfying the EPP of each CFC, beginning with (6) below:

(6) If H is v/C, XP is not introduced by pure Merge.[75]

To put (6) differently, it states that the EPP of v/C can be satisfied only by Move.[76] The EPP of T, however, can be satisfied by either Move or pure Merge, as below in (7a) and (7b), respectively:

(7) a. A man is [*t* in the garden].

b. There is [a man in the garden].

If so, why is the below sentence (8b) blocked even though the EPP-feature of the embedded T is satisfied by the movement of the DP *a proof*?

(8) a. There is likely [$_{TP}$ *t* to be a proof discovered].

b. *There is likely [$_{TP}$ a proof to be $t_{a\ proof}$ in the room].

(taken from Chomsky 1998: 17-18)

The ungrammaticality of (8b) is due to Chomsky's (1998, 1999) assumption below:

---

75 **Pure Merge refers to Merge that is not part of Move.**

76 **However, we wonder what Chomsky has in mind for 'whether'.**

(8) Move is pre-empted where possible by the simpler operations such as Merge and Agree (henceforth MoM, short for Merge over Move).[77]

That is, Merge of *there* is preferable to Move of *a proof* in satisfying the EPP-feature of the embedded T. Then, how can we account for the ungrammaticality of (10b) below?

(10) a. I expected [$_{TP}$ a proof to be $t_{a\ proof}$ discovered].

b. *I expected [$_{TP}$ t_{I} to be a proof discovered].

Although, in (10b), the preferable operation Merge applies to satisfy the EPP-feature of the embedded T, (10b) is ungrammatical. In other words, the grammatical derivation (10a) chooses Move over Merge, which means a violation of MoM. To solve this problem, Chomsky (1998: 16) adapts the theta-theoretic principle proposed in Hale-Keyser (1993) as below:

(11) Pure merge in theta position is required of (and restricted to) arguments.

To put (11) differently, it states that arguments are required to be pure-merged only in theta positions. (10b) is now excluded, since the argument *I* is merged in non-theta position (i.e., [Spec, TP]). Therefore, the above principle can account for the choice of Move over Merge, not Merge over Move, in the case of (10a).

---

[77] **Preference of Agree over Move yields much of the empirical basis for Procrasinate.**

Unfortunately, this is not the whole story. Consider the following examples:

(12) a.*There is likely [□ a proof to be $t_{a\ proof}$ discovered].

b. It' s fun [□ PRO to [*t* go to the beach]].

(12a) is excluded by a violation of MoM, i.e., the expletive *there* should have taken the place of *a proof*. (12b), however, tells a different story in which Move beats Merge, yet it is grammatical. To solve this problem, Chomsky (1998) employs the notion of ' phase' with which we will deal in the next section.

4.2.3 The Notion of Phase

Consider again (12), repeated here as (13):

(13) a.*[□ There is likely [□ a proof to be $t_{a\ proof}$ discovered]].

b. It' s fun [□ PRO to [*t* go to the beach]].

As a solution to (13), Chomsky (1998: 19-20) assumes, "[W]e select LA as before; the computation need no longer access the lexicon. Suppose further that at each stage of the derivation a subset LA_i is extracted . . . and submitted to the procedure L. When LA_i is exhausted, the computation may proceed if possible. Or it may return to LA and extract LA_j, proceeding as before. The process continues until it terminates."

The subset (or subarray) LA_i is also called a *phase* (PH), which refers to (1) a verbal phrase with full argument structure (v*P)[78] or (2) a full clause including tense and force, i.e., CP.[79] Chomsky (1998) further suggests the following condition called the 'phase-impenetrability condition' (PIC):

(14) In PH □ with head H, the domain of H is not accessible to operations outside □, but only H and its edge. (Chomsky 1998: 22)

With (14) in mind, let us go back to the examples in (13). In (13a), the PH is □, not □. The PH □ contains the expletive *there*, hence the EPP of the embedded T must be satisfied by Merge of *there* because of MoM. However, in (13b), the PH is □ that contains no expletive.[80] Therefore, the EPP-feature of the embedded T can be satisfied by Move of PRO.[81]

So far, we have investigated some answers to the question about why Move is chosen in spite of the MoM violation; one is the theta-theoretic principle (11) and the other, the PIC.

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[78] Actually, v*P is called a 'strong' phase in Chomsky (1999). However, we will continue to use vP, instead of v*P, to refer to the verb phrase with full argument structure, since the distinction between them is not relevant here.
[79] Therefore, neither TP nor weak verbal phrases lacking external arguments (e.g., passives, unaccusatives) can be a phase.
[80] According to Chomsky (1998), control infinitivals fall together with finite clauses, headed by C selecting nondefective T
[81] For different approaches to PRO, see Lee (1999), where it is assumed that PRO does not undergo movement.

4.3 Applications

In the previous section 4.2, we examined (1) basic operations of C_{HL} (i.e., Merge/Agree/Move), (2) the CFCs (i.e., C/T/v), and the notion of PH (i.e., CP/vP).

Now, let us apply these mechanisms to real linguistic data, investigating the processes in which –Int features of Lis are deleted.

4.3.1 Probe and Goal

Let us begin with the following simple sentence:

(15) T-was arrested the robber.

There are three kinds of –Int features in (15): (i) the set of □-features (henceforth □-set) of T, (ii) the EPP-feature of T, and (iii) the structural Case feature of the DP *a robber*. The □-set of T is called a *probe* that seeks *a goal*, namely, *matching* (i.e., *identical*) features that establish agreement.[82] For the □-set of T in (15), there is only one choice of matching features: the □-set of *robber*. Locating this goal, the probe values (i.e.,

[82] **Matching is originally defined as feature 'identity'. However, Chomsky (1999) says that matching is not strictly speaking identity, but 'nondistinctness: same feature, independently of value. We will continue to use the term 'identity', since the distinction is not quite relevant here.**

[Nominative]) and deletes structural Case for the goal under matching.[83] Also, the goal values (e.g., [3rd person]) and deletes the □-set of T (with or without movement) under matching. The valuing and deletion of –Int features of probe and goal is called the operations *Agree*. Two of the –Int features, are eliminated (i.e., the □-set of T and the Case feature of DP).

Now, it is time to think about the EPP-feature of T. It is satisfied by pied-piping of a phrase determined by the goal of T's probe (i.e., *the robber*), which merges with (15), becoming [Spec, T]. Therefore, Chomsky(1999: 7) claims as follows:

(16) The combination of Agree/Piped-Pipe/Merge is the composite operation Move, pre-empted where possible by the simpler operations Merge and Agree.

We now deleted all the –Int features; the □-set of T and Case feature of DP by the operation Agree, and the EPP-features of T by Move.[84]

All these processes can be graphically represented as follows:

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[83] Chomsky (1998: 39) argues that "Manifestation of structural Case depends on interpretable features of the probe: finite T (nominative), v (accusative), control T (null), . . . We therefore regard structural Case as a single undifferentiated feature. The same would be expected for the uninterpretable □-set of the probe."

[84] This means that we no longer need such notions as Attract, feature-movement, and Procrastinate assumed in MP; checking now reduces to deletion under matching. Note further that Case feature is deleted *in situ*.

(17) T [*probe*] DP [*goal*]

-[□-set] ← MATCH → +[□-set]

?[85] → *Value* & *Delete* → -[Case]

-[EPP]

Move

Note that matching is taken to be identity. If so, Case and lexical category cannot enter into Agree or Move, since the probes do not manifest these features.[86] Then, why do these features exist at all?

Chomsky (1998) suggests an answer for Case: it *activates* the goal of a probe and thus allows the goal to implement such operations as Agree and Move. Extending the role of –Int Case feature as an *activator* to all –Int features, Chomsky (1999) consequently argues that:

(18) Probe and goal must both be active for Agree to apply.[87] (Chomsky 1999: 4)

According to (18), DP, for example, is active only when it has structural Case feature.

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[85] -Int features are valued by their corresponding interpretable features. However, it is not clear what is the corresponding interpretable feature of –EPP and –Case feature. On –Case feature, Chomsky (1998) argues that Case is a reflex of an interpretable □-feature. For more discussion, see Chomsky (1998, 1999) and Park (1999).

[86] This means that operations are no longer induced by Case-checking requirements. Thus, structural Case is demoted in significance.

[87] This is also known as the Activization Hypothesis. See Lee (1999b) and Yang (1999).

This in turn means that once the Case value is determined, DP no longer enters into agreement relations (i.e., it is *inactive* or *defective*). The operation Agree and Move require a goal that is active. This fact is verified in the following example:

(19) *John to seem [t_{John} is clever].

The Case value of *John* is already determined in the position of t_{John}. Hence, it cannot enter into any relation (i.e., Agree or Move).

From the discussions above, it seems that DP without its activator (i.e., Case feature) is useless. However, it does have its own role which we will deal with in section 4.3.3.

4.3.2 Expletive *there* and the EPP

In the previous section, it was argued that –Int features render the probe and goal active and allow them to implement the operation Agree or Move. Consider now the derivation of (20) below:

(20) There seems to be a man in the room.

At some stage of the derivation of (20), we will have a structure like (21) as its intermediate structure:

(21) T-seems [there to be a man in the room].

In (21), matrix T has –Int EPP-feature , which is deleted by movement of *there* to matrix [SPEC-T]. Note that, given (18), the expletive *there* must have some –Int feature to activate it until erased. Thus, Chomsky argues that the expletive *there* has –Int [person] feature which can render the expletive *there* active. Consequently, the expletive *there* moves to the specifier position of the matrix T, generating the structure in (20).

Note that the expletive *there* must have its activator (i.e., -[person]) when in the SPEC of the embedded T. From this fact, we can infer that the embedded T cannot delete the –Int feature of *there*. This is an unexpected result, given that the finite T as in (15), unlike infinitival T, values and deletes –Int feature of its goal. Then, what is the difference between the finite T and the embedded (i.e., infinitival) T?

As for this question, Chomsky (1999: 3) answers as follows:

(22) must have a complete set of □-features (it must be□ -complete) to delete uninterpretable features of the paired matching element .[88]

Recall that T selected by C has a full complement of □-features ($□_{comp}$) and is called T_{comp} and T selected by V is called defective T (T_{def}).[89] The embedded T in (21) is T_{def}, since it is selected by V (i.e., *seem*). According to Chomsky (1998, 1999), this T_{def} has only –Int [person] feature, which means that it has an ' incomplete' set of □-features and thus cannot delete –Int features of the paired matching element. For this reason, –Int [person]

[88] We are not sure whether -completeness holds for both probe and goal, or only for probe. However, Chomsky (1999) seems to suggest that it holds only for probe, given Chomsk' s (1998) argument, "When [expletive *there*] raise to SPEC-Tdef, *the probe deletes* under matching . . . "
[89] See section 4.2.2.

feature of *there* in (21) can still remain to activate the goal.

4.3.3 Defective Intervention Effect

Consider the following structure, where □ and □ match □ , but □ is inactive and > refers to c-command:

(23) □ > □ > □

[*inactive*]

In the above structure, □ cannot take part in any operation, since it is defective (i.e., without its activator). Nevertheless, its □-features remain ‘visible’ to the probe of □ so that they block the effects of matching between □ and □. This is what Chomsky (1998, 1999) call (*defective*) *intervention effect*. The empirical evidence he presents is as follws:

(23) *There T-were decided [□PRO to stay with friends].

In (23), PRO is inactive, its structural Case feature having been valued and deleted in □ . Its □ -features, however, remain visible and thus block association of the matrix T to *friends*.

4.4 Some Problems

In the following sub-sections, we will examine several problems in the notions proposed in Chomsky (1998, 1999), beginning with the problem of the definition of his

Move. In so doing, we will try to present some solutions to these problems.

4.4.1 The Operation Move Revisited

In Chomsky (1999: 7), the operation Move is defined as follows:

(23) The combination of Agree/Pied-Pipe/Merge is the composite operation Move, pre-empted where possible by the simpler operations Merge and Agree.

According to the definition in (23), the operation Agree is assumed to be a subcomponent of Move. In other words, the operation Move presupposes the operation Agree. He further claims that a phrase to be pied-piped is determined *by the goal* of a probe (see Chomsky 1998: 37, 52).

However, we will argue, *contra* Chomsky (1998), that (1) Agree need *not* be presupposed for Move to take place,[90] and (2) a phrase to move is *not always* determined by the goal of a probe. Note that these arguments imply that Move and Agree should be reanalyzed as independent operations.

Consider first the following expletive construction:

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[90] According to Chomsky (1995, 1998, 1999), the EPP can be satisfied by either Merge or Move as seen below:

(1) a. There is a man in the garden.
b. A man is *t* in the room.

Therefore, our argument (1) implies that Agree need not be presupposed for the EPP to be satisfied. For this reason, we present the example (26) as empirical evidence.

(24) There seems to be a man in the garden.

At some stage of the derivation of (24), we will have a structure like (25) as its intermediate structure:

(25) T-seems there to be a man in the garden.

Under the assumptions in Chomsky (1998), the □-set of the matrix T (i.e., probe) seeks a goal for agreement so that the probe and the structural Case of *a man* are both deleted. Then, another –Int feature of T (i.e., the EPP-feature) is deleted by the raising of *there* to the specifier position of the matrix T, constructing the structure in (24).

Note that what really raises to [Spec-T] for the EPP-reason is not the phrase *a man* determined by the goal, but the expletive *there* which has nothing to do with Agree. In other words, the operation Agree takes place between the matrix T and the goal *a man*, while the operation Move is related only to *there*. This expletive construction really supports our arguments that Agree need *not* be presupposed for Move to take place and that a phrase to move is *not always* determined by the goal of a probe.

The following sentence also shows that the phrase determined by a goal has nothing to do with the phrase that merges to [SPEC-T] to satisfy the EPP.

(26) There is a man in the garden.

At some stage of the derivation, we will have the following structure:

(27) T-is a man in the garden.

In (27), the goal of the probe □-set of T is the □-set of *a man*, but what really merges to Spec-T is *there*, instead of raising *a man* determined by the goal. This again supports our arguments.

From these considerations above, we can conclude that the operation Move does not necessarily presuppose Agree. That is, Move and Agree are independent operations: the former takes place only to satisfy the EPP and the latter to (value and) delete –Int features of probe and goal.[91]

4.4.2 Satisfaction of the EPP

Before we examine the ways of satisfying the EPP, let us briefly summarize Chomsky's (1999) Alternative (II) which associates the EPP with □-completeness and which we will use in analyzing the nature of the EPP. Consider first the following property:

(28) C is □-complete; T is □-complete only necessary. (Chomsky 1999: 6)

Chomsy's basic assumptions are that; (1) C is always $□_{comp}$, and v is v_{comp} (v*) only if it has full argument structure; (2) a category has a complete set of □-features (i.e., $□_{comp}$) when selected by another category with $□_{comp}$; (3) a category with $□_{comp}$ allows an EPP-feature.

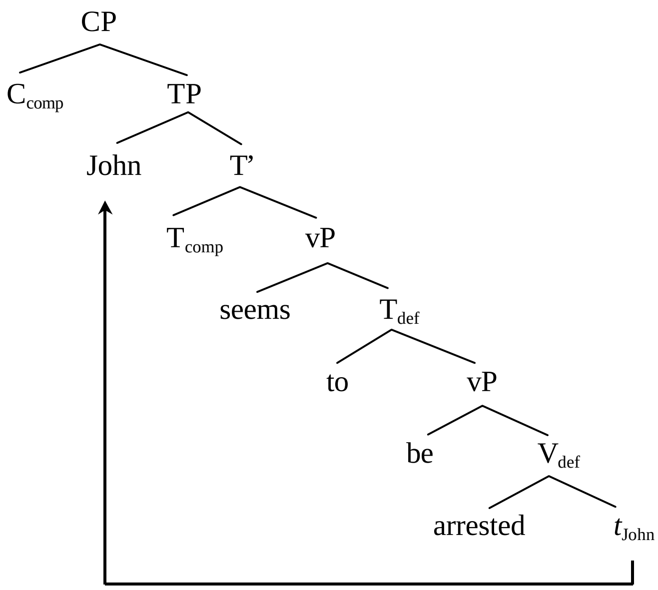
[91] For more discussion, see Lee (1999a,b).

Given the assumption (2), T selected by C_{comp} is T_{comp} and V selected by v_{comp} is V_{comp}. Both T_{comp} and V_{comp} allow an EPP-feature as well as C and v*, given the assumption (3). Chomsky (1999) further assumes that this EPP-feature of T_{comp} and V_{comp} is obligatory. A category that does not follow the assumption (2) is assumed to be defective, in the sense that it does not enter into Case-agreement and has no EPP-feature. Therefore, T and V that are not selected by C and v* are defective and represented T_{def} and V_{def}, respectively.

Let us now examine a new procedure of derivation under these assumptions, considering the following sentence:

(29) a. John seems to be arrested.

b.



Note that there is no internal raising to [SPEC-T_{def}], since T_{def} cannot have an EPP-feature. In other words, raising is now one fell swoop in such constructions as (29b). For this reason, Chomsky's Alternative (II) seems to be interesting. However, it too has its own defect, considering the following example:

(30) I believe [$_{\text{Tdef}}$ *there* to be a man in the garden].

The above structure (30) cannot be generated under his Alternative (II), since T_{def} cannot bear an EPP-feature. However, if our new definition of the satisfaction of the EPP below is adopted, this defect can be overcome. So, let us now examine the ways of satisying the EPP assumed in Chomsky (1998, 1999).

According to him, the EPP can be satisfied by either Merge *or* Move (i.e., a *disjunctive* definition), as seen in (31a) and (31b), respectively:

(31) a. There is a man in the garden.
b. A man is *t* in the garden.

However, we are suspicious of such a disjunctive definition of satisfaction of the EPP, since it suggests that we have not captured a true generalization. Note further that the expletive *there* in (31a) has –Int [person] feature when it is merged to [SPEC-T]. According to Chomsky (1998, 1999), it is the task of Agree to delete –Int features, not that of Merge. Thus, he assumes that the expletive *there* is an X^0 head, hence its [person] feature probe its domain T', locating the□-set of T as the closest goal. Consequently, the –Int probe is deleted. All of this, however, seems to increase complexity of computation. If we can replace the disjunctive definition of satisfaction of the EPP with a uniform one, the complexity of computation will be greatly decreased.

Then, we have two options for the definition of satisfaction of the EPP: (1) the EPP is satisfied only by Merge or (2) it is satisfied only by Move. Now, which one?

Waller's (1997) analysis of English *there* helps us to choose the former.[92] Under his assumptions, the expletive *there* is generated in the Spec of the corresponding DP as seen below in (32):

(32) a. T-is [$_{DP}$ there [$_{D'}$ a [$_{NP}$ man]] in the garden.

b. There T-is [$_{DP}$ *t* [$_{D'}$ a [$_{NP}$ man]]] in the garden.

According to him, the expletive *there* in (32a) moves to [SPEC-T] for the EPP-reason. If so, we can now give a uniform account to the sentences in (31): the expletive *there* in (31a) and *a man* (31b) *both moves* to [SPEC-T] to satisfy the EPP of T. Therefore, we now suggest the following definition of satisfaction of the EPP, liberating the EPP from the disjunctive defect:

(33) The EPP is satisfied *only by Move*.

With this in mind, let us now go back to (30) that is problematic under Alternative (II), repeated here as (34):

(34) I believe [$_{Tdef}$ there to be a man in the garden].

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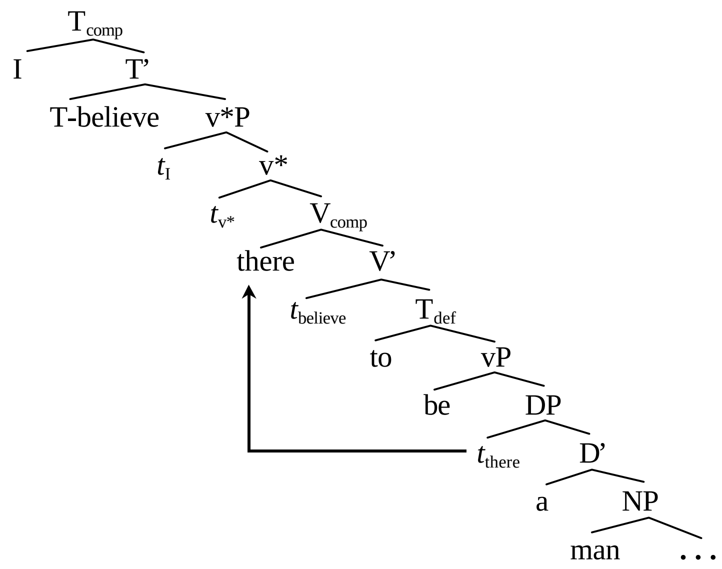
[92] For similar approaches to *there*, see den Dikken (1995), Hoekstra and Mulder (1990), McCloskey (1991), and Stroik (1991). For different views, see the works cited in note 17, section 2.4.2.

Under our assumption, the derivation of (34) is represented as follows:

(35)



As seen in the above, the expletive *there* is generated in [Spec, DP], moving to the Spec of V_{comp} with an EPP-feature to be deleted. Under our assumption, it is not problematic to generate the structure (34) which was a troublemaker under Chomsky’ s Alternative (II).

4.4.3. The Nature of the EPP

In the previous sections, we argued that Move is no longer a composite operation consisting of Agree and Move. Further, it was argued that Move is an independent operation whose only task is to satisfy the EPP of a functional head. We also argued that the EPP can be satisfied *only by Move* even in expletive constructions as seen below:

(36) a. There is [$_{DP}$ *t* [$_{D'}$ a man]] in the room.

b. A man is *t* in the room.

Then, let us now try to give an answer to the question about 'what property an element has to have in order to satisfy the EPP.'

First, let us briefly summarize Lee's (1999b) c(ategory)-selectional analysis of the EPP-feature which we will assume. Consider the following examples:

(37) a. *Go to the movies I.

b. *Proud of her is he.[93]

c. The building is very high.

In (37a) and (37b), each [SPEC-T] is filled with VP *go to the movies* and AP *proud of her*, respectively, while, in (37c), it is filled with DP *the building*. From this fact, we can infer that a category which can appear in the specifier position of a function head is c(ategory)-selected by the head, i.e., not every category can appear in that position. Consider some other examples:

(38) a. *There arrived* three men at the post office.

b. **There bought* three men a car.

c. **There slept* three men in the room.

d. *At the table sat* three judges wearing dark robes.[94]

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[93] **Here, (37b) is a construction that has nothing to do with 'topicalization'.**
[94] **According to Collins (1997), the EPP of T can be satisfied by PP as well as DP:**

As seen in (38a-c), T allows the expletive *there* as its specifier only if it has a projection of an unaccusative verb (e.g., *arise*, *emerge*, *ensue*, *occur*, etc.). Further, so-called locative inversion is allowed only if T has a projection of an accusative verb as in (38d). From this discussion thus far, Lee (1999b) concludes that categories of the expression that may appear in the specifier position of a functional head is c-selected by the head 'plus' its complement (i.e., X-bar). According to his assumptions, unlike Chomsky (1998, 1999), the expletive *there* need not have an –Int [person] feature to activate it, since the EPP is sensitive only to categorial information. Let us adopt these assumptions.

Now, recall our previous argument that Move is an indepent operation of Agree. The only task of the former is to satisfy the EPP and that of Agree is to value and delete –Int features. If so, it is possible to assume that –Int□-set involved in Agree and the EPP-feature involved in Move are distinct probes, as if Agree and Move are separate operations. Then, let us call the –Int□-set of T an 'Agree-probe' and the EPP-feature of T an 'Move-probe.' Agree-probe is sensitive only to□-features, while Move-probe is sensitive only to categorial information (e.g., [D]). With this in mind, let us go back to (36), repeated here as (39):

(39) a. There is [$_{DP}$ *t* [$_{D'}$ a man]] in the room.

b. A man is *t* in the room.

At some point of derivation of (39), we will have the following structures:

---

(1) ***Down the hill*** **rolled John.**

(40) a. T-is $[_{DP}$ there $[_{D'}$ a man]] in the room.

b. T-is $[_{DP}$ a man] in the room.

In (40a), each probe of T (i.e., Agree-probe and Move-probe) seeks to find its goal. The first element founded by Move-probe is the expletive *there* with categorial feature [D]. Thus, Move-probe selects it, merging it to [SPEC-T]. Agree-probe, however, skips the expletive *there*, since *there* has no □-features to be seen by Agree-probe. Finally, Agree-probe finds *a man* with □-features, valuing and deleting structural Case feature of *a man* as well as its own □-features. Consequently, the structure in (39a) is generated. In (40b), the first element found by Move-probe is the same one found by Agree-probe, i.e., *a man* with □-features as well as categorial feature [D]. Therefore, *a man* merges to [SPEC-T]. Consequently, a –Int feature to activate the expletive *there* is not needed any more.

4.4.4 Defective Intervention Effect Revisited

Let us now examine some problems found in Chomsky's (1998, 1999) intervention effect that is induced in a structure like (36) below:

(36) □ > □ > □

[inactive]

(36) states that if □ and □ match the probe □, but □ is inactive, then □ blocks the matching effect between □ and □. Consider the following examples to see if (36) gives the correct

judgment to them.

(37) a. There T-seems [*t* to be a man in the garden].

b. I v-believe [there to be a man in the garden].

(37a) will have the following structure at some stage of its derivation:

(38) T-seems there to be a man in the garden.

Under Chomsky's (1998) so-called Activization Hypothesis,[95] the expletive *there* in (38) must have some –Int feature to activate it in order to move to Spec-T. If *there* indeed has –Int [person] feature at all, how can (37b) *with* an –Int feature (i.e., the [person] feature of *there*) be a convergent derivation? And if not, how can the expletive *there*, in (37a), *without* its activator take part in the operation Move and further why does it not induce the intervention effect in (37b) when the probe of v seeks matching goal (i.e., *man*)?

Similar problems are also found in the following example (taken from note 94 in Chomsky 1998):

(39) *There T-seem there to be three men in the room.

As for the ungrammaticality of (39), Chomsky (1998) states that "[t]he perennial trouble-maker [(39)] falls into place if the (undeleted) [person] feature of embedded *there* bars

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[95] **Chomsky (1998: 43) says that "uninterpretable features activate the goal of a probe, allowing it to implement some operation (Agree or Move)." See also (18) in section 4.3.1.**

association of matrix T to *a man*." Given his statement, *there* in embedded clause has a –Int feature. Again, we cannot account for the convergence of (37b) with a –Int feature of the expletive *there*.

To solve all these contradictory problems of the intervention effect of the expletive *there*, Chomsky suggests a principle as follows:

(40) Maximize matching effects. (Chomsky 1999: 12)

As for the above principle, Chomsky (1999) says that "if local (P[robe], G[oal]) match and are active, their [–Int] features must be eliminated at once, as fully as possible; there is no option of partial elimination of features under Match followed by elimination of the residue under more remote Match. In particular, if probe requires Move (i.e., has an EPP-feature), then the operation must be carried out as quickly as possible." Consider the structure (33), repeated here as (41), to see the role of the so-called Maximization Principle (40):

(41) T-seems there to be a man in the garden.

According to the principle (40), the expletive *there* agrees with matrix T and raises to [SPEC-T]. The operation deletes the EPP-feature of T and the [person] feature of *there*, but the □-set of T remains intact because *there* is incomplete (see (22) in 4.3.2). This means that matching effects are not maximized. Therefore, Agree again holds between the probe T and the more remote goal *a man*. This kind of Agree is what Chomsky calls *double agreement*, which we think just adds complexity to computation.

In addition to its complexity, the so-called Maximization Principle cannot also account for the ungrammaticality of (42) which appeared to be explained in Chomsky (1998):

(42) *There T-seem there to be three men in the room.

Recall that the ungrammaticality of (42) was due to the –Int [person] feature of the expletive *there*. This kind of explanation is not possible any more, given the principle in (40). That is, the expletive *there* of the matrix clause acts as a probe to agree with the □-set of the matrix T. The –Int [person] feature of *there* is deleted, while the □-set of the matrix T is not because of the □-incompleteness of *there*. Thus, the probe of T seeks to find a goal, locating *there* in the embedded clause. The □-set of T, however, still remains because of the same reason, i.e., the □-incompleteness of *there*. Therefore, Chomsky' s double agreement takes place between the matrix T and the DP *three men*. Consequently, every –Int features in (42) is deleted and thus (42) proves to be convergent, contrary to fact.

Let us then try to solve these problems with our mechanisms. Consider the problematic examples (37), repeated here as (43):

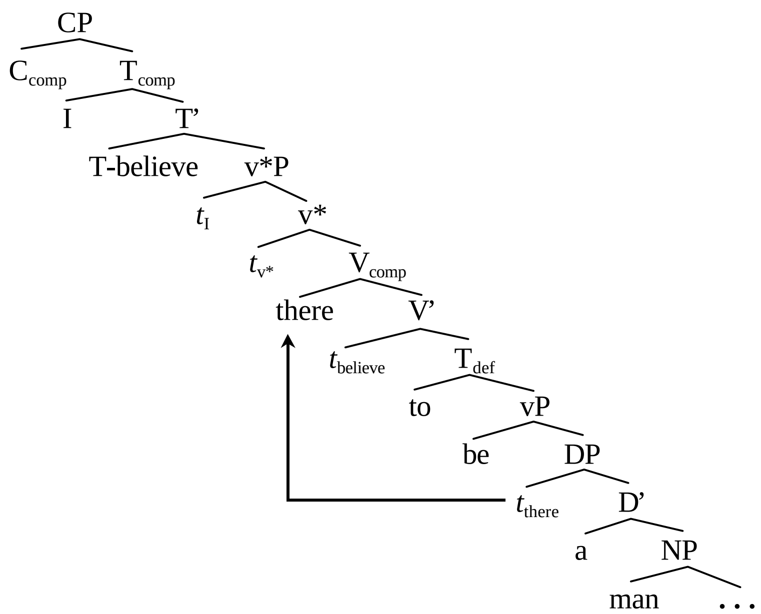
(43) a. There T-seems [□ *t* to be a man in the garden].
b. I v-believe [□ there to be a man in the garden].

First, (43a) will have the structure below as its intermediate structure:

(44) a. T-seems [$_{Tdef}$ to be [$_{DP}$ there [$_{D'}$ a man]] in the garden.

In (44), Move-probe of matrix T selects *there* as its goal, hence merges it to SPEC-T. Agree-probe selects *a man* as its goal, hence values and deletes structural Case of *a man* as well as its own □-features. No intervention effect is induced, since what Agree- and Move-probe are sensitive to is different. The same holds for (44b), where Move-probe and Agree-probe of V_{comp} seeks to find their goal. The first element found by Move-probe is the expletive *there* with categorical feature [D], hence *there* raises to SPEC-V_{comp}. Agree-probe, however, skips over *there*, since *there* has no □-features that Agree-probe can see. The element found by Agree-probe is thus *a man* with □-features. Consequently, the agreement takes place between Agree-probe of V_{comp} and the DP *a man*. All these processes can be graphically represented as follows:

(45)



Our analysis can also prevent the ungrammatical sentence (42), repeated here as (46), from being generated[96]:

(46) *There T-seem there to be three men in the room.

At some stage of the derivation of (46), we will have a structure like (47) as its intermediate structure:

(47) T_{comp}-seem [$_{Tdef}$ to be [$_{DP}$ there [$_{D'}$ three men] in the room]].

In (47), Move-probe of the matrix T selects *there* as its goal and Agree-probe, *three men* as its goal. Consequently, the following structure is constructed:

(48) There T-seem [$_{Tdef}$ to be [*t* three men in the room]].

All of these consequences are brought about by our assumptions that the expletive *there* bears no formal features apart from its categorial feature and what Move-probe is sensitive to is different from that of Agree-probe. This in turn also means that Chomsk' s Maximization Principle and Activization Hypothesis also need some modifications.

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[96] Note that our analysis 'prevents' the construction of (46) from being generated. This does not mean that our analysis 'explains' why (46) is ungrammatical. Nonetheless, we can relate the ungrammaticality of (46) to Chomsky' s statement, "If Select does not exhaust the numeration, no derivation is generated and no questions of convergence . . . arise."

Chapter V

Conclusion

Up to this point, we have examined: (1) the necessity of the Extended Projection Principle in grammar in chapter II, (2) the conceptual change of the EPP from a principle to an (uninterpretable) feature in chapter III, and (3) the role of the EPP within the framework of Chomsky's (1998, 1999) Minimalist Program in chapter IV.

Especially in chapter IV, we have focused on the ways of satisfying the EPP. Under Chomsky's (1995, 1998, 1999) assumption, the EPP is satisfied by either Merge (e.g., of the expletive *there*) or Move (e.g., of a nominal expression). However, we have proposed that the EPP is satisfied in one way, i.e., *only by Move*. To eliminate Merge from Chomsky's (1995, 1998, 1999) ways of satisfying the EPP, we have argued, following Waller (1997), that the expletive *there* is base-generated in the specifier position of DP and then *moved*, just like other nominal expressions, to the specifier position of TP for the EPP-reason.

With this *there*-raising anaysis, we have also solved the problem in Chomsky's (1999) Alternative (II): since defective T does not have an EPP-feature under his Alternative (II), it is impossible to generate sentences with the expletive *there* as the subject of their embedded clauses (e.g., *I believe [$_{TP}$ there to be a man in the room]*). In our analysis, however, it is indeed possible: the expletive *there* is base-generated in the specifier position of DP and then moves to the specifier position of V_{comp} for the EPP-reason, i.e., *I believe [$_{Vcomp}$ there $t_{believe}$ [$_{TP}$ to be [$_{DP}$ t_{there} a man in the room]]]*.

We have presented some evidence which shows that the operation Agree is not always presupposed for Move to take place. Cosequently, we have argued that the operation Move and the operation Agree are in fact separate operations, which is opposed to Chomsky's (1998, 1999) assumption that the operation Agree is a subcomponent of the operation Move. Furthermore, we have argued that the probes for Move and for Agree are independently needed, proposing that the former is sensitive to categorial information, while the latter is sensitive to □-features. With these proposals, we provided a solution to the problems of Chomsky's Defective Intervention Effect. At the end of chapter IV, we have dealt with some problems of Chomsky's so-called Maximization Principle and Activization Hypothesis, leaving them open for further research.

Although we have proposed some solutions to the question about the satisfaction of the EPP, various and more fundamental questions still remain unresolved. Such questions may be: (1) why is the EPP satisfied only by Move, while Agree takes place *in situ*?; (2) what interpretable features correspond to the –Int EPP-feature?.

References

Abney, Steven. 1987. *The Noun Phrase in its Sentential Aspect*. Unpublished doctoral dissertation, MIT, Cambridge, Mass. (available from MIT Working Papers in Linguistics).

Belletti, Adriana. 1988. The Case of unaccusatives. *Linguistic Inquiry* 19: 1-34.

Boškovi , eljko. 1997. *The Syntax of Nonfinite Complementation: An Economy Approach*. Cambridge, Mass.: MIT Press.

Burzio, Luigi. 1986. *Italian Syntax*. Dordrecht: Reidel.

Chomsky, Noam. 1973. Conditions on transformations. In Stephen R. Anderson and Paul Kiparsky, eds., *A festschrift for Morris Halle*. New York: Holt, Rinehart and Winston.

Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.

Chomsky, Noam. 1986a. *Barriers*. Cambridge, Mass.: MIT Press.

Chomsky, Noam. 1986b. *Knowledge of Language: Its Nature, Origin, and Use*. New York: Praeger.

Chomsky, Noam. 1991c. Some notes on economy of derivation and representation. In R. Freidin, ed., *Principles and parameters in comparative grammar*. Cambridge, Mass.: MIT Press.

Chomsky, Noam. 1993. A minimalist program for linguistic theory. In Hale and Keyser 1993b.

Chomsky, Noam. 1994a. Bare phrase structure. *MIT Occasional Papers in Linguistics* 5.

MITWPL, Department of Linguistics and Philosophy, MIT. Also published in G. Webelhuth, ed., *Government and Binding Theory and the Minimalist Program*. Oxford: Blackwell, 1995.

Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, Mass.: MIT Press.

Chomsky, Noam. 1998. Minimalist Inquiries: the Framework. *MIT Working Papers In Linguistics*.

Chomsky, Noam. 1999. Derivation by phase. Ms., MIT.

Collins, Chris. 1997. *Local Economy*. Cambridge, Mass.: MIT Press.

Dikken, Marcel den. 1995. Binding, expletives, and levels. *Linguistic Inquiry* 26: 347-54.

Epstein, Samuel David, Erich M. Groat, Ruriko Kawashima, and Hisatsugu Kitahara. 1998. *A Derivational Approach to Syntactic Relations.* Oxford: Oxford University Press.

Fukui, Naoki. 1986. *A Theory of Category Projection and its Applications*. Doctoral dissertation, MIT, Cambridge, Mass.

Grimshaw, Jane. 1990. *Argument Structure*. Cambridge, Mass.: MIT Press.

Groat, Erich. 1997. *A Derivational Program for Syntactic Theory*. Doctoral dissertation, Harvard University, Cambridge, Mass.

Haegeman, Liliane. 1995. *Introduction to Government and Binding Theory*. Oxford: Blackwell.

Hale, Kenneth and Samuel Jay Keyser, eds. 1993b. *The View form Building 20*. Cambridge, Mass.: MIT Press.

Hoekstra, Teun and René Mulder. 1990. Unergatives as copular verbs: locational and existential predication. *The Linguistic Review* 7, 1-79.

Jaeggli, Oswaldo. 1980. *On Some Phonologically-null Elements in Syntax*. Doctoral dissertation, MIT, Cambridge, Mass.

Jaeggli, Oswaldo. 1986. Passive. *Linguistic Inquiry 17*: 587-622.

Kitahara, Hisatsugu. 1997. *Elementary Operations and Optimal Derivations*. Cambridge, Mass.: MIT Press.

Koopman, Hilda and Dominique Sportiche. 1991. The position of subjects. *Lingua* 85: 211-258.

Kuroda, Shige-Yuki. 1988. Whether we agree or not. In W. Poser, ed., *Papers from the second international workshop on Japanese syntax*, 103-143. Stanford, Calif.: CSLI Publications. Distributed by Chicago University Press.

Lasnik, Howard. 1995. Case and expletives revisited: On greed and other human failings. *Linguistic Inquiry* 26: 615-33.

Lasnik, Howard, and Mamoru Saito. 1984. On the nature of proper government. *Linguistic Inquiry* 15: 235-89.

Lee, Dong-Youn. 1999. *On Deriving the Properties of PRO in the Minimalist Program*. MA Thesis, Sogang University.

Lee, Hong-Bae. 1999a. On defining Move. *Korean Journal of Linguistics* 24-4: 619-637.

Lee, Hong-Bae. 1999b. Agree to Move? *Language Research* 35-4: 523-541, Language Research Institute, Seoul National University.

Marantz, Alec. 1984. *On the Nature of Grammatical Relations*. Cambridge, Mass.: MIT Press.

Martin, Roger. 1999. Case, the extended projection principle, and minimalism. In S.D. Epstein and N. Hornstein eds., *Working Minimalism*. Cambridge, Mass.: MIT Press.

May, Robert. 1977. *The Grammar of Quantification*. Doctoral dissertation, MIT, Cambridge, Mass.

May, Robert. 1985. *Logical Form: Its structure and derivation*. Cambridge, Mass.: MIT Press.

McCloskey, James. 1991. *There, it*, and agreement. *Linguistic Inquiry* 22: 563-7.

Muysken, Pieter. 1982. Paramaterizing the notion of “Head.” *Journal of Linguistic Research* 2: 57-75.

Park, Soon-Hyuk. 1999. The EPP-feature and uninterpretability. *Studies in Generative Grammar* 9-2: 199-228.

Perlmutter, David. 1978. Impersonal passives and the unaccusative hypothesis. In *Proceedings of the Fourth Annual Meeting of the Berkeley Linguistics Society*. Berkeley Linguistics Society, University of California, Berkeley.

Pesetsky, David. 1982. *Paths and Categories*. Doctoral dissertation, MIT, Cambridge, Mass.

Pesetsky, David. 1987. Wh-in-situ: movement and unselective binding. In Eric J. Reuland and Alice G. G. ter Meulen eds., *The Representation of (In)definiteness*. Cambridge, Mass.: MIT Press.

Rizzi, Luigi. 1990. *Relativized Minimality*. Cambridge, Mass.: MIT Press.

Stroik, T. 1991. Expletives Revisited. *Linguistic Analysis* 21: 1-2, 23-33.

Ura, Hiroyuki. 1994. Varieties of raising and the feature-based phrase structure theory. *MIT occasional papers in linguistics* 7. Department of Linguistics and Philosophy, MIT.

Uriagereka, Juan. 1998. *Rhyme and reason: an introduction to minimalist syntax*. Cambridge, Mass.: MIT Press.

Waller, Brad. 1997. Towards a Proper Characterization of English *There*. Presented in

Workshop in Syntax/Semantics, MIT.

Yang, Dong-Whee. 1999. The activization hypothesis. In S.-O. Lee and C.-J. Kwon eds., *A Festschrift for Hong-Bae Lee*, 423-440. Seoul: Hanshin Publishing Co.