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ADRIANA C. RUGGERI QUINELO DA SILVA

SMALL CLAUSES: INFINITIVO FLEXIONADO VS. BARE & TO-INFINITIVES. A COMPARISON IN CASE ASSIGNMENT

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Dissertation presented as a prerequisite to obtain the Master degree from the Post-graduation Program of Faculdade de Letras of Pontifícia Universidade Católica do Rio Grande do Sul.

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BANCA EXAMINADORA:

_____

Professor Dr. Ana T. Ibaños
Advisor (PUCRS)

_____

Professor Dr. Carlos Ricardo Rossa
(PUCRS)

_____

Professor Dr. Sérgio Menuzzi
(UFRGS)

I dedicate this work to all those who have somehow been part of this extraordinarily rich academic journey I have taken, who have nourished my spirit in search of new discoveries: my professors in the Specialization course at PUCRS; my professors in the Master's course at PUCRS, Dr. Ana Ibaños in special; my friends; CNPq; and my beloved family.

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The future belongs to people who see possibilities before they become obvious
Ted Levitt

Un savant dans son laboratoire n'est pas seulement un technician; c'est aussi un enfant place en face de phénomènes naturels qui l1impressionnet comme un conte de fees
Marie Curie

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ABSTRACT

Although Case Theory is one of the most central topics of theoretical discussion within GB (Government & Binding Theory) as Raposo and Uriagereka (1990) have affirmed, this project comprehends a yet unheard of proposal, such as: a comparative study of Case Assignment for the subjects of Infinitival small Clauses in English and Brazilian Portuguese. More specifically, it is a thorough look into the syntactic structure relations of Infinitival Small Clauses concerning the Inflected Infinitive in Brazilian Portuguese (BP) and the Bare & To-Infinitives in English, so as to demonstrate and explain the existing parametrization on Case Assignment. To achieve that, the (embedded) NP-subject behavior of Infinitival small Clauses of both languages has been analyzed and contrasted. Due to a rare combination of values in Universal Grammar, Brazilian Portuguese (BP) is somewhat problematic to accommodate Case marking. However, BP is fully accounted for by Government and Binding Theory, usually known as Principles and Parameters Theory, given the complementary contributions within Chomsky's (GB) Theory.

Key words: parametrization, Infinitival small Clauses, Case Assignment, Government & Binding Theory.

RESUMO

Apesar da Teoria do Caso ser um dos tópicos mais centrais da discussão teórica dentro da GB (Government and Binding – Regência e Ligação) como disseram Raposo e Uriagereka (1990), esse projeto compreende uma proposta ainda inédita, tal como: um estudo comparativo da Atribuição de Caso para os sujeitos das Mini-orações Infinitivas em Inglês e no Português Brasileiro. Mais especificamente, é uma investigação completa das relações das estruturas sintáticas a respeito do Infinitivo Flexionado no Português Brasileiro e do Bare & To-Infinitives do Inglês, a fim de demonstrar e explicar a parametrização na atribuição de Caso. Para tanto, o comportamento do NP-sujeito das Mini-orações de ambas as línguas foi analisado e contrastado. Devido a uma combinação rara de valores na Gramática Universal, o Português Brasileiro (PB) é deveras problemático para acomodar a marcação de Caso. No entanto; a GB (Teoria da Regência e Ligação), mais conhecida como Princípios e Parâmetros, da conta de explicar esse fenômeno totalmente, dado as contribuições complementares à teoria de Chomsky.

Palavras-chave: Parametrização, Mini-orações Infinitivas, Atribuição de Caso, Teoria da Regência e Ligação.

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1 INTRODUCTION

This work is a comparative study of the syntactic structure relations of Infinitival Small Clauses in Brazilian Portuguese (BP) and English (Eng.) concerning Case Assignment within *Government and Binding* (GB) Theory of Noam Chomsky.

The syntactic structures of Infinitival Small Clauses in BP are especially different from those in English, given that the Infinitive in BP can be inflected whereas in English it cannot. According to Viotti (2003), Brazilian Portuguese provides interesting and relevant data, at times even challenging, to the formulation and corroboration of the principles of grammar suggested by the comparison of English with other languages.

In so being, this work presents an in-depth investigation (description and explanation) of infinitival (embedded) NP-subject behavior according to GB's Case Theory in order to improve the analysis and understanding of such parametric differences and/or similarities between BP and English in relation to Case Assignment of Infinitival small clauses. This way, it provides (theoretical) evidence on how both natural languages vary as well as on how BP corroborates Chomsky's GB Theory.

Besides Chomsky's GB Theory, distinct but complementary proposals are offered in order to describe and explain the parametric phenomenon in question.

The chapters are organized as follows. In chapter 2, I present and explain main concepts on Generative Grammar, Universal Grammar and Government and Binding (or Principle and Parameters) Theory. Chapter 3 is exclusively devoted to Case Theory within Government and Binding. In chapter 4, I define Small Clauses, Infinitival Small Clauses, explain Edwin William's Small Clauses Theory and compare Case Assignment of both BP and Eng.'s Infinitival Small

Clauses. Chapter 5 presents my final considerations on the matter and the conclusion.

2 GENERATIVE GRAMMAR, UNIVERSAL GRAMMAR AND GOVERNMENT & BINDING THEORY

2.1 GENERATIVE GRAMMAR

The publication of Chomsky's *Syntactic Structures* in 1957 had an 'extraordinary and traumatic impact', according to the psychologist Howard Maclay (as in NEWMEYER, 1988/2003), and 'revolutionized the scientific study of language' as said by Britain's linguist John Lyons (NEWMEYER, 1988/2003); for 'the description and analysis of language was thrown into exciting turmoil', as Robins (NEWMEYER, 1988/2003), explained. That was Chomsky´s conceptual break with the American structuralists over the more fundamental issue of what a scientific theory is and how one might be constructed regarding linguistic phenomena. It meant a redefinition of the linguistic theory goal to that of providing rigorousness and formality to the characteristic of "a possible human language". In other words, distinguishing precisely the class of grammatical processes that are possible (can occur) from those which are not; or even specify the limits within which all languages function. Chomsky later called this characterization, *Universal Grammar* (NEWMEYER, 1988/2003).

For Chomsky, (in KASHER, 1991) the study of generative grammar developed within the "cognitive revolution" or "first cognitive revolution". It meant looking back at some earlier issues and reconstructing, at times in new ways, long forgotten understandings of matters such as representational-computational theories of mind, the Turing test for human intelligence, the question of innate conditions for the growth of knowledge and understanding, basic insights of Gestalt psychology, and others. It is concerned with states of mind/brain and how these states enter into behavior, particularly, the cognitive states (knowledge, understanding, belief, etc.). In this abstract context, the mind/brain refer to physical properties of the brain. The cognitive state or a

certain state of mind/brain is taken as the basic concept of "having" or "knowing" a language. Within the theory of mind, an integral part of natural sciences; particularly in the study of language, the central question is: *what constitutes knowledge of language?* Considering that language is 'a system that provides for infinite use of finite means' (according to Humboldt's insight), knowing a language is to have these finite means represented in the mind/brain: *"a language is a generative procedure that enables articulated structured expressions of thought to be freely produced and understood"*. Though in Humboldt's day there was no clear distinction between an abstract generative procedure assigning description to all expressions and to expression in linguistic performance, the conception of *generative grammar* that developed in the 1950's provide crucial and proper distinction to conceptions such as *diachronic/ synchronic* (as clarified in modern linguistics), *performance/ competence* (in the sense of possession of knowledge), and *knowledge of language* as an incorporation of a generative procedure in the mind/brain taken in the abstract sense.

The sense intended by Chomsky (1965) for "generate" is familiar to the one intended in logic, Post's theory of combinatorial systems, as well as the one translated from Humboldt's term (the abstract version) *erzeugen* in Linguistic Theory: *a process of generation*, as an *I -Language*; where "I" suggests both "internalized" (in the mind/brain) and "intensional" (a specific characterization of a certain function that enumerates, *generates* structural description). It expresses the creative aspect of language in a precise, explicit and automatic way. It explains the realized facts of language and foresees new ones.

The term "grammar" is systematically ambiguous, referring both to the generative procedure and to the linguist's theory of this cognitive system (I-Language); and so is the term "linguistic theory" (later "Universal Grammar" – UG), referring both to the initial state of the language faculty and to the linguist's theory of this innate component of the mind/brain. Still, given the concept of *generative* above (previous paragraph), the term *grammar* is restricted to the linguist's theory of I-Language , and *linguistic theory* or *UG* is

restricted to the initial state of the *language faculty* or (part of a fixed) biological endowment, a component of the mind/brain (CHOMSKY, in KASHER, 1991).

The Chomskyan view of language is centralized in the syntactic relations, where the grammar of a language is represented by a formal set of rules that "*generate*" (i.e., specify explicitly) the possible sentences and their associated structural properties. Thus the term "Generative Grammar" is applied to the theory as a whole, as Newmeyer (1988/2003) explains. According to Chomsky (1965), if the grammar of a language is perfectly explicit, or if it does not rely on the intelligence of the understanding reader, but instead provides explicit analysis of the reader's contribution, the grammar can carry the label *Generative Grammar*. By Generative Grammar Chomsky means simply a system of rules that assigns structural descriptions to sentences in an explicit and well –formed way. Therefore, the grammar of a language purports to be a description of the ideal speaker-hearer's intrinsic competence. In a fully adequate grammar, each of an infinite range of sentences is assigned a structural description indicating how this sentence is understood by the ideal speaker-hearer. Every speaker of a language has mastered and internalized a generative grammar that expresses his knowledge of his language (internal grammar of the language/finite system of principles); even not being aware of the rules of the grammar, or of the possibility of becoming aware of them, and neither of the fact that his intuitions on language knowledge are accurate. This way, Generative Grammar deals mostly with mental processes 'far beyond the level of actual or potential consciousness', in an attempt to specify what the speaker actually knows, not what he may report of this intrinsic knowledge. Such intrinsic finite system of knowledge enables speakers to construct and interpret an infinite number of sentences.

Haegeman (1994/2005) explains that, as a linguistic theory (the scientific study of language), Generative Grammar reaches both descriptive and explanatory adequacy since not only does it account for the native speaker's knowledge (competence) of language, i.e. explicit general principles of sentence formation, but it also accounts for the fact that the principles of internal

grammar can get to be known by the speakers, i.e. if it (the theory) can account for language acquisition. Cowper (1992/2000) affirms that, for Chomsky, the fundamental problem of linguistic theory, which has remained at the core of work in generative grammar, is that of "determining how it is possible for a child to acquire knowledge of a language" (CHOMSKY, 1973, p. 12). For Cowper, only by understanding it precisely enough can one's investigation be guided in a meaningful way.

Cook (1996) points that describing language as a property of human mind as well as explaining how it is acquired are Chomsky's theory goals; and to achieve that the theory establishes a considerably complex apparatus, providing a unified framework within which specific proposals can be tested. For this specific reason, Cook rates Chomsky's theory of language "stimulating and adventurous" with important consequences for all those working with language. Chomsky's view (in KASHER, 1991) is that a representational-computational theory of mind can handle a far greater deal of questions as well as overcome a vast array of problems once considered 'irresoluble' in structuralist terms.

It is important to bare in mind the fact that although the generative grammar approach differs in many respects from the early tradition of the various forms of structural linguistics, there are some crucial similar aspects as well, for example: assigning structural descriptions to linguistic expressions by some method. The several varieties of structural linguistics incorporate some method for that, which is called *strong generation*. In regard to this concept, generative grammar is not different from the several varieties of structural linguistics, but rather in regard to how this concept is formulated (CHOMSKY in KASHER, 1991).

The Generative model of grammar in the next session can illustrate the syntactic relations as well as describe and explain language phenomena, accounting for sound and meaning.

2.1.1 The Study of Syntax

The study of syntax in the generative framework focuses on the structural representation of sentences in human languages. It constitutes a model of 3 major components: a part of the study of grammar, which also includes the study of sound (phonology) and meaning (semantics). 'The syntactic component of a grammar consists of mechanisms and principles that govern the construction of sentential representations and that provide a set of syntactic structures that are subject to interpretation by the semantic and phonological components' as figure 1 shows (FREIDIN, 1992/1994, p. 5):

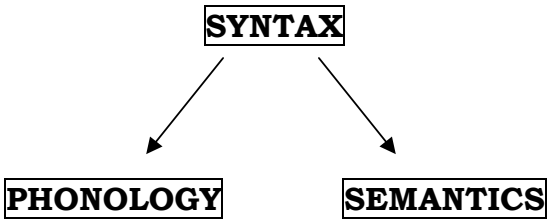


Figure 1- Generative Grammar model (FREIDIN, 1992/94)

Both the phonological and semantic components are considered *interpretive* in the sense that they assign phonetic and semantic representations to the syntactic representation serving as their input. Therefore, the syntactic component is considered *generative* in the sense that it provides syntactic representations which are processed by the other two components. The syntactic component *generates* or "enumerates" (in the mathematician's sense) a set of syntactic structures which are assigned sound and meaning by the phonological and semantic components respectively. "Generative" denotes nothing more than "explicit" (as previously mentioned),

being the term associated with a psychological interpretation of grammar in linguistics, which means more than just formal grammar for natural language.

Since it is known that in this framework a grammar is taken to be a model of speaker's knowledge of language (I-Language/competence), i.e. knowledge of sentences and their structures in his/her language, an analysis of an ambiguous sentence (with two or more different meanings) can be very illustrative from the structural representation (syntactic) perspective.

(1) *The woman cooked the chicken in the kitchen*.

This sentence can be interpreted in two different ways and yet none of the words are ambiguous: firstly a native speaker would be aware that the chicken the woman cooks is in the kitchen, while secondly he/she would understand that the cooking took place in the kitchen, whether the chicken was there or not.

In order to distinguish one interpretation from the other, the use of two distinct structural representations is necessary. Though they share the same basis, a string of words analyzed in terms of *lexical categories* (or more traditionally "parts of speech") such as (FREIDIN, 1992/94):

the woman cooked the chicken in the kitchen

Det N V Det N P Det N - lexical cats. ("parts of speech"),

they can be attributed two different meanings and, therefore, be ambiguous. According to Fromkin, Rodman & Hyams (2003/2007), this (and other similar cases) are instances of *structural ambiguity* as opposed to *lexical* or *word-meaning ambiguity*. Beyond this combination or grouping, there can be various lexical categories grouped into phrases of various sorts, which will be shown ahead. Within a phrase, certain words are grouped together respecting a *hierarchical structure*. We can get, again, two interpretations from this grouping *pretty woman escapes*: one for *pretty (woman escapes)* and the other for *(pretty woman) escapes*.

Syntactic knowledge also enables us to determine *grammatical relations* in a sentence; for example *subject* (**S**) and *direct object* (**O**) and how these relations are to be understood:

(2) [**S** Mona Lisa] painted [**O** Da Vinci].

(3) [**S** Da Vinci] painted [**O** Mona Lisa].

(4) [**S** Mona Lisa] was painted by [**O** Da Vinci].

Despite the structural differences, sentences (2) and (4) have the same grammatical relationships. But sentence (4) is understood as to having the same meaning as sentence (3); and yet, they have different structures.

Sentences are structurally composed of discrete units combined by a system of rules. Such system explains 'how speakers can store infinite knowledge in a finite space – our brains'. Part of what is meant by *structure* is word order. Largely does the meaning of a sentence rely upon the order in which the words occur in a sentence. However, sometimes, it just so happens that a change of word order has no effect on meaning (FROMKIN, RODMAN & HYAMS, 2003/07). Thus,

(5) *He does what the woman orders*

does not mean the same as

(6) *He orders what a woman does.*

And,

(7) *She cut the banana up*

is equal in meaning to

(8) *She cut up the banana.*

Speaker's knowledge of these facts is reflected in the *rules of syntax* which the grammars of all languages include. If a sequence of words does not comply with the syntactic rules of the grammar, meaningful words or expressions have no meaning.

> In English and in every language, every sentence is a sequence of words, but not every sequence of words is a sentence.
> (FROMKIM, RODMAN & HYAMS, 2003/07)

When a sequence of words conforms to the rules of syntax they are *grammatical* or *well-formed*; but when they do not, they are *ill-formed* or *ungrammatical*. Though, grammaticality does not depend on the sentences expressing the truth or discussing real objects. Untrue sentences referring to cats laying eggs can be grammatical and discussing Star Track's creatures can also be grammatical. Our unconscious knowledge of syntactic rules of grammar allows us to judge a sentence grammatical or not.

Thus, syntactic rules reveal the grammatical relations among the words of a sentence and tell us when meaning differences are a result of structural differences as well as when they are not. They also permit speakers to produce and understand a limitless number of sentences never produced or heard before; reflecting this way, the creative aspect of language use.

Hence, a major goal of linguistics is to show clearly and explicitly how the syntactic rules account for the knowledge of:

- the grammaticality of sentences;
- word order;
- hierarchical organization of sentences;
- grammatical relations (such as subject and object);
- whether different structures have different meanings or the same; and,
- the creative aspect of language.

Besides, a theory of grammar must provide a complete characterization of what speakers implicitly know about their language (FROMKIN, RODMAN & HYAMS, 2003/07, p. 123).

It is necessary at this point to take a look at how sentences are formed in the grammar and the syntactic categories contained in them.

2.1.1.1 Sentence Structure and Syntactic Category

The natural groupings of a sentence are called *constituents*. In a sentence such as (1) for example, the groupings and subgroupings reflect the hierarchical structure of the *tree diagram* (figure 2). The tree conveys the same information as the nested brackets, but more clearly; and the fact that the sentence is divided naturally into two branches: the subject (*the woman*) and the predicative (*cooked the chicken in the kitchen*). A further division would account for [(the) woman], [cooked] besides [(in) (the) (kitchen)] as can be seen in figure 2:

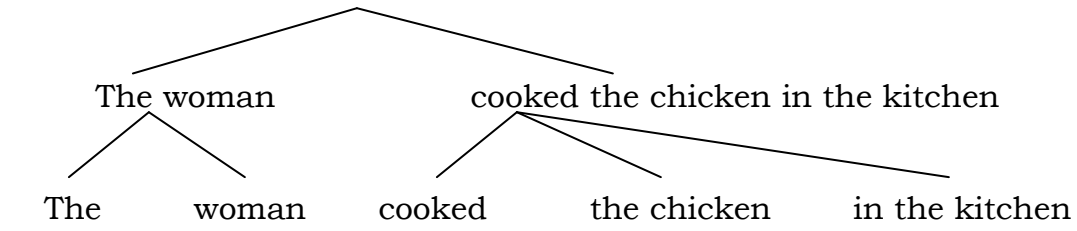


Figure 2 – Tree diagram (Constituent structure)
(FROMKIN, RODMAN & HYAMS, 2003/07)

Compared to a real tree, this one would be upside down, being the whole sentence its "root" and the "leaves", the individual words. Any division made differently would be unnatural. Constituents can also be "relocated": *It was in the kitchen that the chicken was cooked by the woman*. A constituent is so called if it remains intact through all the arrangements (*the woman*, *the chicken* and *in the kitchen*). The constituents can be substituted by pronouns, like *woman* can be taken for *she* and *the chicken* for *it*, the same as the phrase *in the kitchen* can be substituted for the word *there*. There are also words such as *do* that can substitute an entire expression like *cooked the chicken in the kitchen*. The speaker knowledge of the *constituent structure* may then be

represented more clearly in the tree structure/diagram below (developed from figure 2):

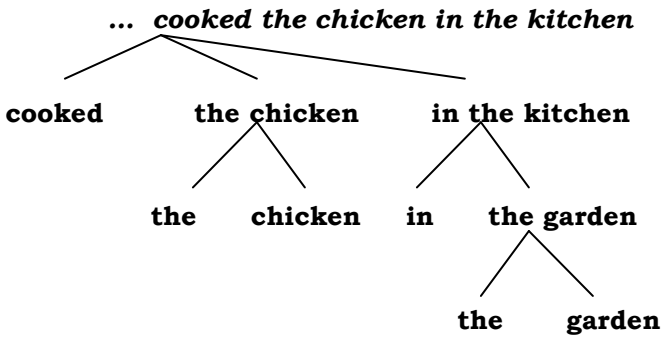


Figure 3 (developed from figure 2)

As was demonstrated, according to Fromkin, Rodman & Hyams (2003/07), every sentence in a language is associated with one or more constituent structures. Ambiguity derives from a plural constituent structure possibility, in which each tree possibility will account for a specific meaning as in the examples previously given:

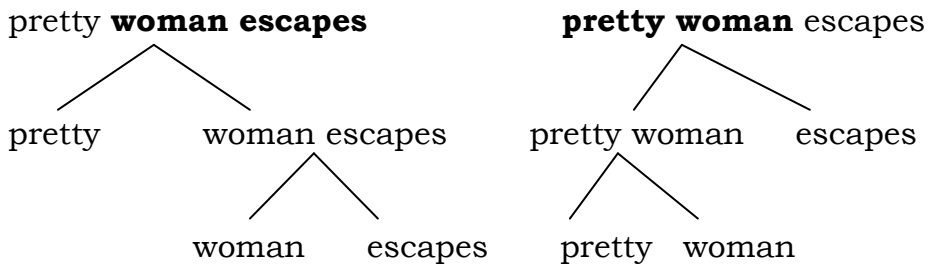


Figure 4

Each grouping in the tree diagram of *The woman cooked the chicken in the kitchen* is a member of a large family of similar expressions. Exemplifying, *the woman* belongs to the same family as *the clerk*, *your mother*, *that blue sweater*, *she* and infinite others. They can be substituted for one another and

not affect the grammaticality of the sentence; but causing a change in meaning, of course.

(9) ***The clerk*** *cooked the chicken in the kitchen.*

(10) ***Your mother*** *cooked the chicken …*

(11) ***She*** *cooked …*

Each family of expressions that can be substituted for one another without affecting the grammaticality of the sentence is called a *Syntactic Category.* This family exemplified above belongs to the syntactic category *Noun Phrase* (NP); one of many syntactic categories in English as well as in any other existing language. Part of the syntactic component of a grammar is the specification of the syntactic categories in the language, once the constituents are part of the speaker knowledge. It means that speakers of English know which items in a sentence are noun phrases, even if they had never heard them beforehand. NPs may function as the subject or the object in a sentence. They may consist of a single-worded noun, a proper noun or a pronoun, and even contain a clause or a sentence since they pattern like an NP by being able to fill in a subject or object slot.

Other syntactic categories are: *Verb Phrase* (VP), which always contain a *Verb* (V) (like *cooked the chicken in the kitchen*) and may also contain other phrases like NPs (*cooked the chicken)*, a *Prepositional Phrase* (PP), which is a *Preposition* (P) followed by a noun phrase (*cooked in the kitchen*), or even contain both an NP and a PP in a VP; *Adjective Phrase* (AP) containing an *Adjective* (A); *Determiner* (Det); *Adverb* (Adv); *Auxiliary Verb* (Aux) and *Sentence* (S); though it is not a complete list yet. As previously mentioned, these categories conform to the *lexical categories* or "*parts of speech*". Knowledge of these syntactic classes is revealed when equivalent phrases are substituted like it was done with sentences (9), (10) and (11) (FROMKIN, RODMAN & HYAMS, 2003/07).

These categories are comprised in *Phrase structure rules* and each contains syntactic information to fill *Phrase structure trees*.

2.1.1.2 Phrase Structure Trees and Phrase Structure Rules

Still following F., R., & Hyams (2003/07, p. 128) explanations, a *Phrase Structure Tree* is a tree diagram with syntactic category information, sometimes also called a *constituent structure tree*, which shows that 'a sentence is both a linear string of words and a hierarchical structure with phrases nested in phrases'. Hence, it is a graphic representation of the speaker's knowledge of the sentence structure in his language.

A phrase structure tree that explicitly reveals these aspects of speakers' syntactic knowledge represent not only every sentence in English but in any and/or every other human language. The following tree provides the labels for the constituents of sentence (1), showing the syntactic categories that the sentence is composed of. The syntactic category of each word is immediately above it. A speaker has a list of the syntactic category of each word stored in his *mental dictionary* and this information is used by the syntax of the language as follows:

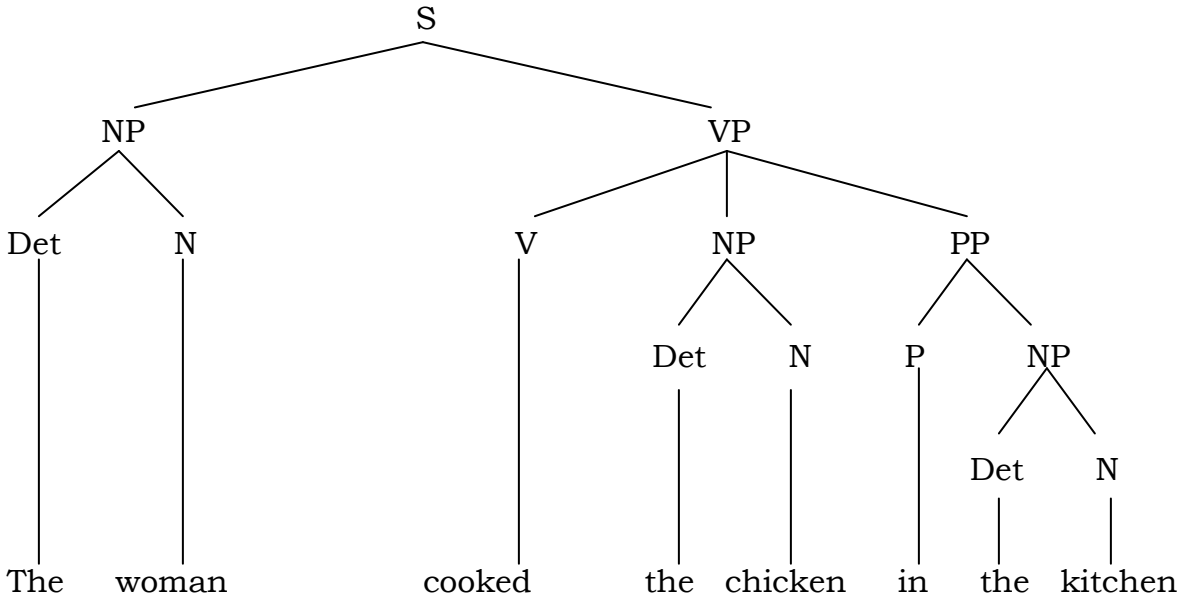


Figure 5

Syntactic categories are better defined in terms of syntactic rules of grammar, such as the one that defines a noun as “the head of an NP”, and the one defining a preposition as “the head of a PP” and so on. The larger syntactic categories like the verb phrase (VP) consist of all the syntactic categories and words below that point or *node* in the tree. In the tree above, the VP node consists of the syntactic category nodes V, NP and PP as well as the words *cooked, the, chicken, in, the, kitchen*. The natural groupings of words in a sentence, which reflect the intuition of the native speaker, for example *the chicken,* can be traced up the tree to the node NP identified as a Noun Phrase.

Still, the phrase structure tree also implies which word combinations are not syntactic categories; for instance *cooked* and *the* in the diagram do not have a node above uniting them. Moreover, the phrase structure tree shows that some syntactic categories consist of other syntactic categories as the NP *the woman* in the tree above consists of the Determiner (Det) *the* and the Noun (N) *woman*. Individually, neither is an NP.

Every higher node *dominates* all the categories beneath it, and it *immediately dominates* the categories one level below it. Categories immediately dominated by the same node establish a relation called *sisterhood*. Thus, they are *sisters*. The sisterhood relation is defined as follows (FREIDIN, 1992/94):

A category α is a *sister* of category β iff the category that immediately dominates α immediately dominates β.

In the tree above, S dominates all the categories in the tree (NP, VP, Det, NP, V, NP, PP, Det, N, P, NP, Det, N), but it immediately dominates NP and VP, which are in sisterhood/are sisters. Other sisters in this tree are all the Dets and Ns immediately dominated by the NPs; the same as P and NP, immediately dominated by PP; and V, NP and PP, immediately dominated by VP. Freidin (1992/94) defined the relation “immediate constituent” as follows:

A category B is an *immediate constituent* of a category C iff

a. B is a constituent of C, and

b. B is not a constituent of any constituent of C.

Dominance relations between two categories in a structural description determine the hierarchical structure of a sentence (FREIDIN, 1992/94).

The relationships among elements in a sentence are also depicted in the phrase structure tree. Since an entire phrase, be it a VP, refers to whatever the *head* of that phrase, a V, refers to, the other categories within the VP, be it a PP or an NP, will also refer to what the head V refers to. These other constituents contained in the VP that 'complete its meaning', involved in the verb's subcategorization, are called *complements*. "The *head-complement* relation is universal' for 'all languages have phrases that are headed and that contain complements', though these complements can vary from language to language concerning their order in the sentence. In English, for instance, the head comes first (is a *head-first* or an *SVO –subject-verb-object-* language), preceding the complement. Whether a verb takes no, one or more complements depends on its properties, called *selection*, included in its *interalia*, its lexical entry, which every word has. And whether the phrase conforms to the selectional requirements of the head as well as the phase structure requirement of the language depend its well-formedness (FROMKIN, RODMAN & HYAMS, 2003/07).

Regarding heads, for the sake of uniformity, all categories are headed, including the Sentence (S). As defined by Fromkin, Rodman & Hyams (2003/07), a sentence is about a 'state of affairs' or 'situation that occurs at some point in time', so the category *Aux* is the one to naturally head S. Auxiliaries are function words, such as *be*, *have* and *modals*, that specify a time frame for the sentence; and to better express this idea, the symbols *INFL* (=*Inflection*) and *IP* (*Inflection Phrase*) are used instead. Besides specifying time reference of a sentence *Infl* specifies agreement features of the subject, granting the syntactic rules another function as that of using Aux/Infl to "match" the verb to the subject. If a verb has incompatible features with the subject Aux/Infl cannot make a match, and the sentence is ungrammatical; whereas if subject and verb have matching features the sentence is grammatical.

See tree below:

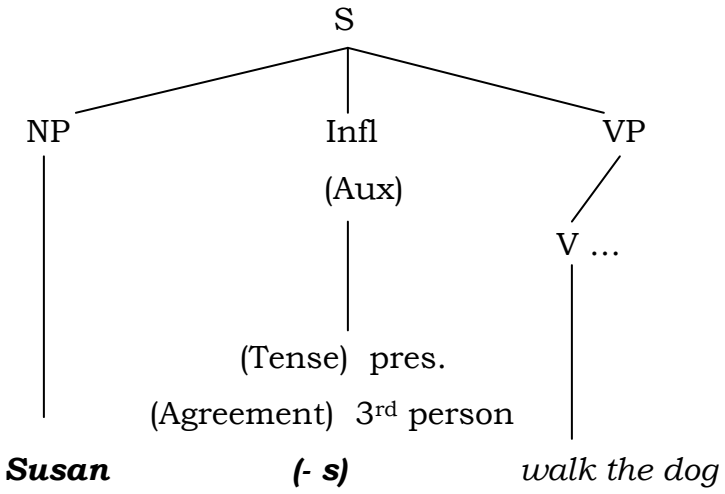


Figure 6

The repetition of categories within categories is common in all languages allowing speakers to use the same syntactic categories many times, with different functions in the same sentence; proving in so doing that sentences can be lengthened in various ways. This infinity aspect of language is also captured by phrase structure trees. One can, for example, repeat the number of NPs under PPs under NPs limitlessly; and yet not violate any rule of syntax and constitute a grammatical NP: *the horse with the saddle of some leather form Italy on his back …* One, or even children can produce and understand very long sentences or make them even longer. The capacity of our brains, though, is finite, only able to store a finite number of categories and rules for their combination. And yet, these finite means place an infinite set of sentences at our disposal. Such rules give speakers access to infinitely many sentences; therefore, making sentences within sentences possible. For example: *This woman cooking the chicken/ that was in the kitchen/ that was painted by her husband/ who died in the accident/ that killed thousands of others/ who worked on the same oil extraction platform …* and so on.

This linguistic property, the ability to put NPs in PPs in NPs ad infinitum, is possessed by all speakers of English as part of their linguistic *competence*, their mental grammars, clarifying the difference between *competence* and *performance* (E-language, or use of linguistic competence, according to Chomsky, 1965). Though, in principle there is no limit on sentence length, there is no such a sentence of infinite length. And speakers do not hear or utter an infinite number of sentences in a lifetime; so this property of grammar accounts for what Chomsky (1965) called *the creative aspect of language use* since it permits the production and the understanding of sentences never uttered before (FROMKIN, RODMAN & HYAMS, 2003/07).

The formal device for representing the knowledge of the structure of sentences speakers have is a phrase structure tree. Of all logically possible trees, only the word combinations that constitute grammatical phrases and sentences occur, for all speakers of a language knows whether any phrase or sentence is a possible structure or not in his language. Not only can a speaker not possibly have an infinite list of sentences in his head but also he cannot have a list of phrase structure trees in his head. Rather, he must have a finite set of rules that "generate", or provide a tree for any sentence in his language. These are called *Phrase Structure Rules*. They precisely and concisely specify the structures of a language expressing its regularities, such as the head-complement order and other relationships. They can be regarded as tests the trees must pass to be grammatical, or can be viewed as a way to construct phrase structure trees that conform to the syntactic structure of the language, applying both to speakers and listeners. However, they can never suggest that a speaker produces sentences that way.

Certain conventions are followed in generating (or specifying) trees as well as in how the rules are applied. The phrase structure rules listed below define some of the phrase structure trees of English:

S → NP Aux VP

NP → Det N (PP)

VP → V (NP) (PP)

PP → P NP

AP → Adj (PP)

After applying most of the rules (above) to the tree, it would look like this, corresponding to a very large number of sentences that correspond to this structure, such as the examples below:

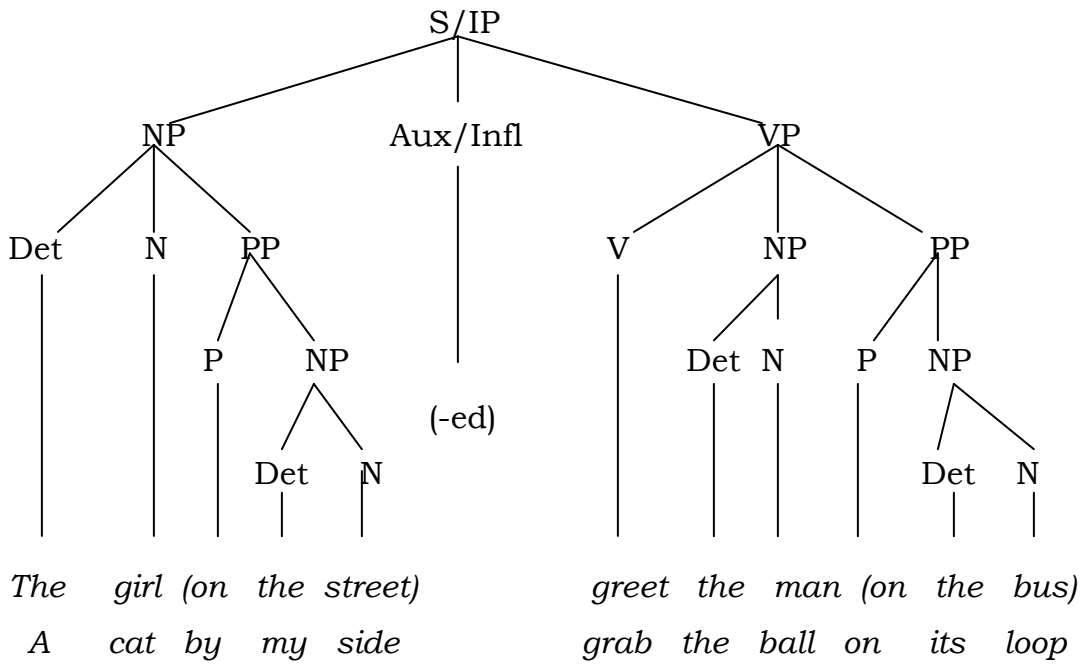


Figure 7

Note that the parentheses indicate an option which the rules also predict. Since both *greet* and *grab* are transitive verbs they need the complement NP. Hence, the NPs after these verbs are not an option but the PPs are.

Categories such as NP, VP, AP, IP (=S) are *Phrasal Categories* and the categories N, V, Adj. and Adv. are *Lexical Categories*. The categories housing function words, or the *Functional Categories* are Det and Aux/Infl. As can be seen in the phrase structure tree above, it comprises lexical and functional categories at the bottom, since the rules must apply until no phrasal categories remain.

More phrase structure rules are necessary, of course, to account for the many structures the English sentences can have, or all the sentence patterns language can have, for example:

(12) *Pretty woman escapes silently.*

(13) *The pig and the spider were friends.*

(14) *Chomsky believes that a speaker has knowledge of the syntactic structures of his language.*

Sentence (12) will include a new phrasal category (AP) and two new lexical categories (Adj and Adv) that will later appear in the tree. This tree will also show that the determiner Det is optional in the NP and that there will be modifications to both the NP and VP rules, such as:

NP → (Det) (AP) N (PP)

VP → V (NP) (PP) (ADV)

AP → Adj. (PP)

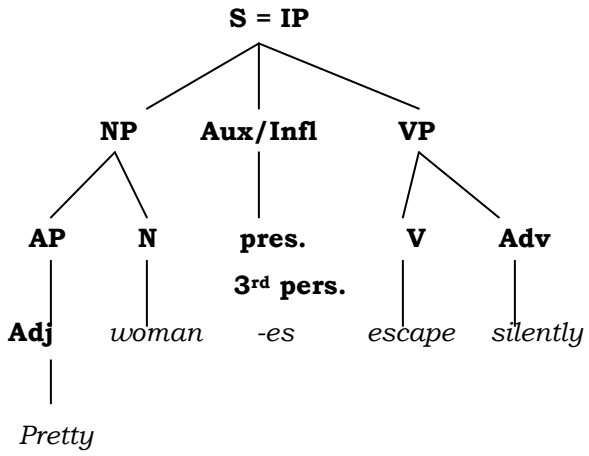


Figure 8

By having added the optional Adverb to the VP rule more sentence types are allowed, like:

(15) *The child sleeps soundly.*

(16) *The river runs through the creek wildly.*

Sentence (13) brings two constituents of the same category (two NPs) in subject position as a result of a *Coordinate Structure* joint by the conjunction *and*. This NP has the following phrase structure rule and tree as follows:

NP → NP conj NP

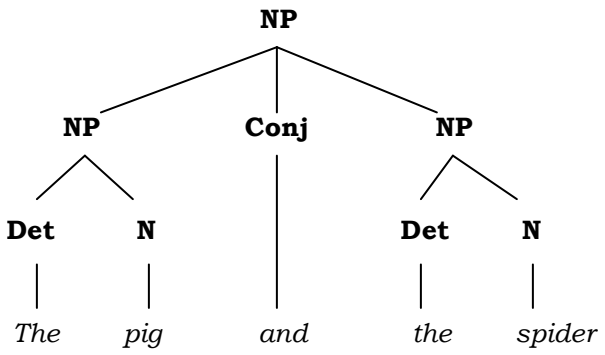


Figure 9

Sentence (14) includes another sentence *embedded* in itself. Since verbs (and other heads) take complements, these complements can be of different categories (NP, PP or AP), even a sentence (S = IP), bearing the same local relationship to the verb as that of a direct object. Therefore, the embedded sentence is inside the VP (with the verb). To be complete, this structure requires another piece: the word *that*, belonging to the same class of words such as *if, whether*, *for*, called C*omplementizers* (Comp). A complementizer is a word that turns a sentence into a complement. Just as any sentence alike, the embedded sentence must contain an S, and it must contain a position for the complementizer. Together they (Comp and S) form a constituent immediately dominated by the *Complementizer Phrase* (CP), the node just above them. As the tree structure below shows clearly, Comp is the head of CP, housing the functional category like Det and Aux. CP parallels with the NP verb complement in simpler sentences, where CP now takes the place of NP. This is what the rules and tree would be like:

VP → V CP

CP → Comp S

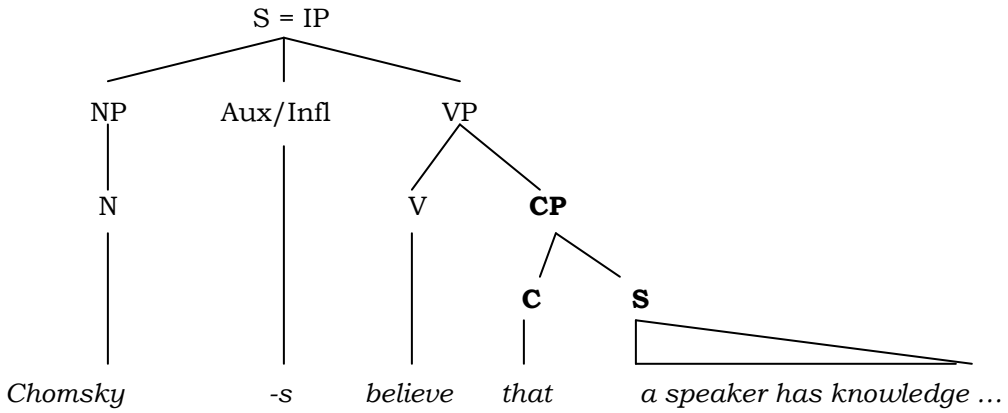


Figure 10

Combining this VP rule with the previous one we have all the possibilities for the VP: VP → (NP) (PP) (CP)

On top of this sentence tree you can continue to add embedded sentences and grow an even bigger tree, something on the lines of:

(17) ***I know that*** *Chomsky believes that a speaker has knowledge …*

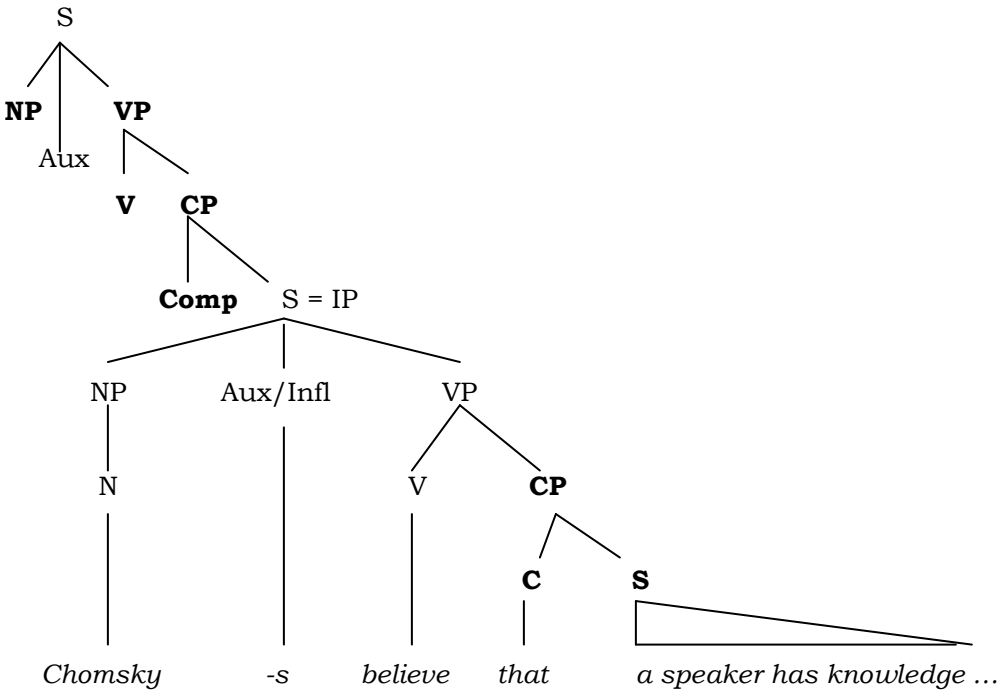


Figure 11

There are other forms of embedded sentences, which will not be accounted for in this mini-grammar, but from the rules discussed so far one already can specify an infinite number of possible sentences. One particular kind of embedded sentence that is important to account for in this work, though not in its full detail at this moment, is the *Infinitive*. An Infinitive sentence is tenseless. For example:

(18) *The woman is hoping for the chicken to cook in time*.

(19) *My grandma waited for me to arrive from school*.

(20) *Pedro believes himself to be groomed*.

The embedded infinitive sentences in (18), (19), (20) are: *for the chicken to cook in time*, *for me to arrive* and *himself to be groomed*. A few verbs, such as the ones in these sentences, can take infinitive complements depending on their selectional properties.

In a tenseless sentence, given that the tense features of a sentence (S=IP) belong to Infl (I = head of IP) category, the "infinitive" *to* is specified as Infl (Aux) providing further evidence of the central role Aux/Infl plays in the structure of a sentence, as well as its "headlike" properties (FROMKIN, RODMAN & HYAMS, 2003/07).

If a grammar must account for *all of* the speaker's knowledge of syntax, it is necessary to look beyond phrase structure rules, which do not account for the fact that certain sentence types relate systematically to other sentence types. For example, to capture the relationship of a declarative sentence type with a question sentence type would require another formal device called *Transformational Rules*. The phrase structure rules generate the declarative sentence structure type and the transformational rule device "moves" the auxiliary to the front of the subject. The dash represents the position from which a constituent has been moved:

The woman is cooking → Is the woman ___ cooking?

S → NP Aux VP - declarative sentence generated by phrase structure rules.

"Move α" or "Move Aux" transformational rule is applied as follows: *Take the first auxiliary verb following the subject and move it to the left of the subject.*

S → Aux NP VP - derived structure (interrogative counterpart of a declarative, which a speaker of English will immediately be able to provide).

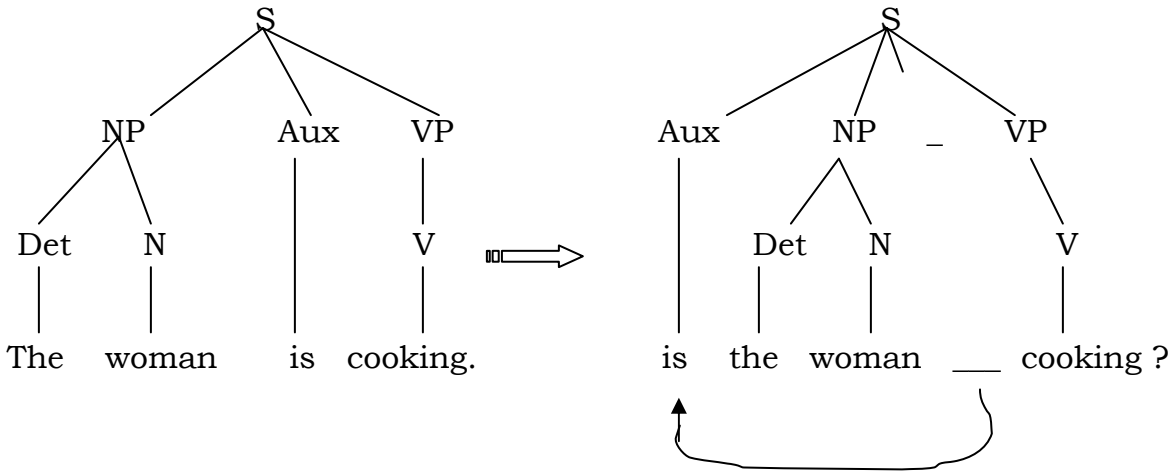


Figure 12

In order to produce the correct result, it is crucial that transformations such as the one above ("Move Aux") must refer to phrase structure, not the linear order of elements.

Phrase structure rules specify the basic structures of sentences known as *deep structures*. The transformations applied to those basic sentence structures derive variants called *surface structures* (FROMKIN, RODMAN & HYAMES, 2003/07).

Chomsky (1966/69, p. 16) proposes and explains that 'syntactic description must (i) determine a semantic interpretation and (ii) determine a phonetic representation'; defining deep structure as 'the aspect of syntactic

description (SD) that determines its semantic interpretation' and surface structure as 'the aspect of syntactic description that determines it phonetic form'. As previously shown in figure (1), according to Chomsky, 'the grammar as a whole will associate phonetic representations and semantic representations; being this association mediated by the syntactic component that generates deep structure and surface structures as elements of syntactic description (SD)'.

> A grammar, then, must consist of three components: a syntactic component, which generates syntactic descriptions, each of which consist of a surface structure and a deep structure; a semantic component, which assigns a semantic interpretation to a deep structure; a phonological component, which assigns a phonetic interpretation to a surface structure.
>
> (CHOMSKY, 1966/99, p. 16)

As affirmed by FROMKIN, RODMAN & HYAMS (2003/07), if no transformation is applied, then deep and surface structures are equal (resemble each other in form). If transformations do apply, then surface structure is the resulting effect of all transformations applied. According to Chomsky (1966/69) though, surface representation in no way expresses the grammatical relations, crucial for semantic interpretation that deep representation does. In case of an ambiguous sentence, it will be assigned only one surface structure, but the deep structures will differ in order to bare the different meanings.

> The inability of surface structure to indicate semantically significant grammatical relations (i.e., to serve as deep structure) is one fundamental fact that motivated the development of transformational generative grammar in both classical and modern varieties.
>
> (CHOMSKY, 1966/69, p. 17)

A transformational rule is a formal way of representing the relationship between types of sentences *transformationally related* such as: (a) *declarative-*

question; (b) *active-passive*; (c) *there* sentences; (d) *PP preposing* and others. Speakers know intuitively that these sentences are related and that such transformations can alter phrase structure trees by moving, adding or deleting items.

a) *The horse is jumping the fence.→ Is the horse jumping the fence?*
b) *The slave served the Baron.→ The Baron was served by the slave.*
c) *A fiddler is in the chimney.→ There is a fiddler in the chimney.*
d) *She felt the blood running down her cheeks by touching her face.→ By touching her face, she felt the blood running down her cheeks.*

Transformations are *structure dependent*, and it is proved by evidence of the fact that there is no other meaning possibility (no other interpretation possible) for sentence (d) than that of the suggested by its counterpart. Transformations act on structures, so sentence (d) is not ambiguous. To demonstrate structural dependency, take the rule that allows the omission of *that* in (e) when followed by a sentence complement, but not in (f), when in a subject position; and agreement rules in sentences (g), (h):

e) She told me that you used it.→ She told me you used it
*f) That you used it, she told me.→ *You used it, she told me.*
g) The poor baby cries. ; (h) *The poor babies cry.*

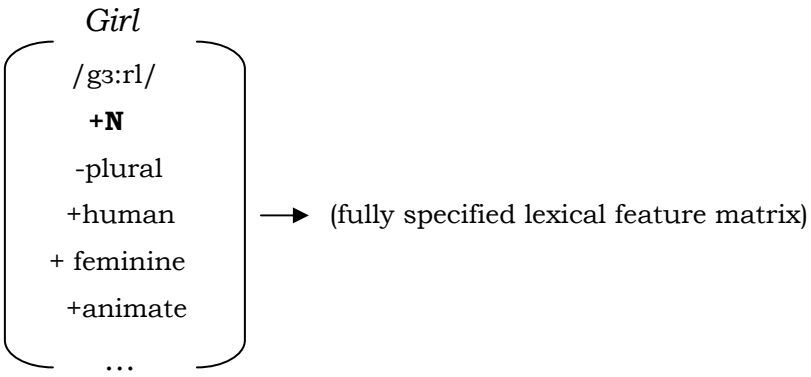
Even when the subject and verb are distant (there are various words between the head noun and the verb), no matter how distant, they *must* agree. English speakers know that agreement depends on sentence structure, not on the linear order of words. Agreement relations, as previously viewed in trees above, are mediated by *Aux*, containing tense and agreement features.

In the assignment of structural descriptions to sentences with the participation of phrase structure rules, another kind of rules need to be introduced for the completion of the description of the formalism created so far for rules generating constituent structures for sentences. This other kind of rules associates lexical categories with actual lexical items (or words) relating

constituent structures to sentences –that is, string of words in a language, at the level of lexical categories. In other words, they establish the relationship between lexical categories and lexical items, as Friedin (1992/94) says, called *Lexical Insertion Rules*.

2.1.1.3 Lexical Insertion

Friedin (1992/94) explains that a lexical item is not a constituent of a lexical category, but simply an '*instantiation*' of it; and in some sense like a miniature of grammar consisting of three separate parts: structure, meaning and sound. So, in the lexical entry of the word *girl*, for example, these are the kinds of information that one would find, represented at least partially in terms of sets of binary features (-/+) that relate to their phonological, syntactic and semantic forms:



In terms of sound, the phonetic transcription (/gɜ:rl/) represents the lexical item *girl*. [+N] represents the syntactic information or the *categorical feature* the word *girl* belongs to, the class of nouns. The semantic interpretation of a lexical item is taken from a group of features: [-plural] as opposed to *girls* [+plural], [+human] as opposed to *flower* [-human], [+feminine] as opposed to *boy* [-feminine], [+animate] as opposed to *rice* [-animate] and so on…

The relationship between lexical items and lexical categories that is established concerns the equivalence there is for the notation of the categorical feature and the lexical category, hence being [+N] ≡ N. Under this notion of equivalence, the lexical insertion may be considered as a *substitution* of a fully specified lexical feature matrix (as the one for the lexical item *Girl* above) for a partially specified matrix, comprising the categorical feature only. Thus, the operation of substitution, or derivation of a sentence containing the word *girl* would be:

{ …, +N, …} ⟹ {…, *girl*, …} (FRIEDIN, 1992/94)

As the illustration above shows, the lexical insertion maps a phrase marker containing al element [+N] onto another phrase marker containing the lexical item *girl* (the fully specified feature matrix) in its place; or a *substitution* of one for the other takes place. In this case, this substitution operation is called *transformation*. In a more general form, where α and β are feature matrices, we have:

Substitute α for β,

constrained by a *nondistinctness* condition that avoids the lexical entry for a verb [+V] substitute for matrix containing [+N]:

α must be *nondistinct* from β. The *nondistinctness* relation is defined as: α is *nondistinct* of β if α contains all the features of β.

The features of β will be a subset of the features of α and this way, where a head N is designated only [+N], the fully specified lexical feature matrix (α) could be substituted for the categorial feature (β) once the lexical matrix is *nondistinct* of the categorial feature. In other words, the categorical feature is a subset of the lexical matrix. When it comes to verbs, though, lexical insertion is sensitive to syntactic context; and hence, the grammar must distinguish among

three distinctive subcategories of verbs, deriving a set of *contextual features* for verbs, called *subcategorization features* (examples from Friedin, 1992/94):

(i) verbs that may not occur with an NP object,
(s*leep*, for example): [+___#]

(ii) verbs that must occur with an NP object,
(*mention*, for example): [+____NP#]

(iii) verbs that must occur with both an NP object and a PP,
(*put*, for example): [+ ____NP PP#]

So, for verbs, lexical entries will contain contextual features (or subcategorization features) besides the categorical feature [+V] (or non-contextual feature), like Freidin (1992/94) demonstrated:

Sleep	*mention*	*put*
+V +___#	+V +___NP#	+V +___NP PP#

The constituents involved in the verbs' subcategorizations are their complements. Sometimes there can be a verb like *believe* that can have two different contexts:

(21) *I believe* [**NP** *you*].

(22) *I believe* [**S** *you are good*].

Thus, *believe* take an NP and an S as complements, *mention* takes an NP and *put* takes both an NP and a PP. A verb and its complements are constituents of the same phrasal category (V + complements = VP – verb phrase). And the complements are all (internal) *arguments* of the verb. Verbs have internal and external arguments. As represented in logic, in the case of *believe* we have: (BELIEVE (*x*, *y*)), where *y* is the only internal argument (complement/object) and *x*, the external argument, called subject. As viewed in logic (*n*-place predication), this verb would have two predicates, one internal and the other external, being called a 2-place predicate, while the verb *put*,

following the same concept, would be called a 3-place predicate (PUT (*x*, *y*, *z*)) and *sleep* a 1-place predicate (only *x*- the subject).

The subcategorization of a verb (or any specific lexical item) constitutes its lexical property. When the subcategorization feature and actual syntactic context of the lexical item match, we say that this lexical property is *satisfied*. Therefore, the grammar consisting of phrase structure rules, a lexical insertion transformation and this lexical property satisfied will consider any sentence ungrammatical if it (the sentence in question) contains a lexical item whose subcategorization does not match its actual context in a phrase marker.

Principle of Lexical Satisfaction (FREIDIN, 1992/94): Lexical properties must be satisfied.

"Grammatical" or "ungrammatical" are technical terms, each respectively concerning sentences that do or do not conform to formal rules and general principles of grammar. The set of categories and primitive operations from which grammatical rules are constructed, conditions on the form of grammatical rules, and conditions on rule application and output constitute what is universal across the species, providing the basis for the acquisition of the grammar, known as *Universal Grammar* (FREIDIN, 1992/94).

2.2 UNIVERSAL GRAMMAR (UG)

According to the Chomskyan generativists, Universal Grammar is innate to the human species, once known that speakers' intuitions cannot rely on formal teaching or overt evidence. UG is a genetic endowment, the basis for acquiring language. It underlies *all* human languages and *all* human beings are equipped with it, otherwise they would not be able to learn languages (HAEGEMAN, 2005). In Chomsky's (1981b, p. 7) words, "Universal Grammar may be thought of as some system of principles common to the species and available to each individual prior to experience".

For Cook (1996/2005), ever since the beginning of the Chomskyan tradition in the 1950's up to his current writings, the theory couches UG in terms of specific proposals possessed by all language speakers as part of their knowledge of language.

Therefore, since the principle of *structure-dependency* is applied to all types of structures in English and is used in '*all* languages', and speakers know it within their knowledge of language; it is a universal principle of language: whenever elements of a sentence are moved, be it to form passives, or questions or else, such movements take account of the structural relationships of the sentence, as exemplified above: "all known formal operations in the grammar of English, or any other language are structure-dependent" (CHOMSKY, 1971, p. 30); such an important insight in the nature of human language. The central concept is Universal Grammar: "the system of principles, conditions and rules that are elements or properties of all human languages … the essence of human language" (CHOMSKY, 1976, p. 29).

The important aspects of language knowledge are not only true for one language specifically, or one mind specifically, but the ones that reflect the internal properties of all minds, or that account for human language in general. In Chomsky's words:

> Real progress in linguistics consists in the discovery that certain features of given languages can be reduced to universal properties of language, and explained in terms of these deeper aspects of linguistic form.
>
> (CHOMSKY, 1965, p. 35)

As Cook (1996/2005) said, UG is a scientific theory based on specific evidence about language, and as such, is always progressing to better explain the knowledge of language, our common heritage.

Yet, knowledge of language does not consist only on unvarying principles, or no human languages would be different. Hence, although some principles are universal (do not vary from one language to the other/ apply to all

languages), some can offer parameters within the universal principles. The UG theory captures and determines variations available among languages (HAEGEMAN, 2005), like the *head parameter,* for example. Choices are limited to two or so possibilities, known as a *parameter* (COOK, 1996/2005).

According to Chomsky (1981a, p. 6), "ideally, we hope to find that complexes of properties differentiating otherwise similar languages are reducible to a single parameter, fixed in one or another way."

2.2.1 The head Parameter

As declared by Cook (1996/2005), the head parameter specifies the order of certain elements in a language, under a distinctive claim that the *head* of the phrase is its essential element. Where the head occurs in relation to other elements of the phrase (the complements), though, is an important way in which languages vary. In a given language, a single generalization (once for all phrases) specifying the relative position of heads and complements is enough. As Chomsky (1970) suggested: "heads are *last* in the phrase" or "heads are *first* in the phrase". If heads are first in a language, like English for example, it means that Verbs come on the left on Verb Phrases.

Unlike the universal necessity of structure-dependency, the head parameter postulates that all languages have heads, either to the right or to the left. And, according to the limited choice available, a language 'sets' or 'fixes' its parameters. Thus, all phrases of a given language should obey the same head setting (Cook, 1996/2005).

As much emphasis given to syntactic principles, the theory also gives to the words of the language, that is, the lexical items of the mental lexicon.

2.2.2 The lexicon

The theory, as a matter of fact, integrates syntactic description of a sentence with the properties of lexical items. This integration is done via a principle which requires the syntax to accommodate the characteristics of each lexical item, called the *Projection Principle*. Speakers know what the words in their language mean or sound like as well as how they should be used in a sentence. It is known for a fact that there are restrictions on which words can occur in which constructions and such are linguistically described through the lexical entry each item possesses in the lexicon.

A Verb entry has to show this verb's *inter alia*, which specifies whether or not the verb in question is followed by an NP, i.e. whether it is transitive or intransitive (its subcategorization frame). The lexical entry takes care of the information concerning a verb's need for an NP, PP, both or none, dismissing a rule (or a syntactic statement) for that. The lexical specifications of the word ensure that the syntax has a particular form summed up in the Projection Principle, as the properties of lexical entry are said to 'project' onto the syntax of the sentence. Instead of syntactic rules, the information is handled as projections from lexical entries. This way, the syntax is simplified. The knowledge of how a word behaves is inseparable from the knowledge of how it is accommodated in syntax. All languages work in this fashion, integrating syntactic rules with their lexical entries, so the Projection Principle is a universal of human language. Also, once there is no logical need for a language to be this way nor obvious means by which a child could acquire it, the Projection Principle is considered, too, a built-in feature of the mind.

Summing up, knowledge of language depends on syntax and on the *crucial* role vocabulary plays, and it consists of a few powerful principles and parameters as well as of data on the idiosyncratic properties of numerous words (COOK, 19996/2005).

It is known, though, that within the UG universals built-in everyone's minds, there are languages that do not comprise them.

2.2.3 Universals within UG

Universals within UG are *theory-driven*, so there is no need to demonstrate that a universal occurs in many languages, but rather, that it occurs in one single language. Like structure-dependency, if the principle relates to the Language faculty itself and not to the experience of learning a particular language, it can be called a universal based on evidence of one language only, as long as the evidence is relevant. This allows a universal that does not occur in one language *still be* a universal. The presence of a universal in some human language is proof enough, so it does not have to be present in all languages. Hence, all languages are not the same. These differences and variations are made possible through parameters, provided that the UG principles are not broken, though (COOK, 1996/2005).

Haegeman (1994/2005) exemplifies one of these variations exposing the contrast between similar languages: English and Japanese. She explains that they are similar in the sense that both possess the same elements in a sentence: subject, verb and object; but they are ordered differently. UG makes the notions of 'subject', 'verb' and 'object' available in all human languages as universal concepts. They have to be ordered linearly. English, though, is an SVO language while Japanese is an SOV language. This way, the SVO hypothesis for English, also applied to other languages, is not an absolute linguistic universal, but a parameter along which English and Japanese differ. English 'sets' its parameter where the object follows the verb; and Japanese 'sets' its parameter where the verb follows the object. Concerning word-order there are other variations among languages for which UG will always provide a binary choice of parameters.

> I have not hesitated to propose a general principle of linguistic structure on the basis of observations of a single language.
>
> (CHOMSKY, 1980b, p. 48)

Fromkin, Rodman & Hyams (2003) say that the word order difference between English and Japanese illustrate the interaction between general and language-specific properties. UG specifies the structure of a phrase (all languages have phrase structure rules), which has to have a head and may take one or more complements. However, the relative order of these constituents (within the phrase) is decided by each language. English is head initial and Japanese is head final.

Another example is movement ("move alpha") rules, which all languages seem to have. Despite variations in movement, Wh-movement respects some constraints which depend on structure, not on the length of a sentence. These constraints are not specific to English; hence, they operate in other languages with wh-movement, as well. So again, like the principle of structure dependency and the ones governing the organization of phrases, the restrictions/constraints on Wh-movement are part of Universal Grammar. These aspects of grammar do not need to be learned. They are part of what the child brings along when acquiring a language. What they must learn, though, are the (his/her) language specific aspects of grammar, such as the variation parameters, to determine what is correct for that specific language. While English, Italian and Czech children learn that Wh-movement rules are used to form questions, moving the Wh-phrase; Japanese children learn that there is no movement at all. Also, English-speaking children acquire a rule that verbs do not move, but auxiliaries do; and while Dutch-speaking children acquire a rule that moves the verb (FROMKIN, RODMAN & HYAMS, 2003).

Contrary to *theory-driven*, there are *data-driven* types of universals, based on observations in many languages, called *implicational universals*. More

simply, it is the way languages turn out to be. There is no particular principle or parameter involved, so there is no way it should be the case within UG. There may be a UG explanation for it, but not its incorporation as a UG principle, though (COOK, 1996/2005).

Under a psychological interpretation of grammar, UG provides an important part of the explanation of *how it is possible* to acquire a grammar, the human cognitive capacity for language acquisition, called *The Language faculty* (FREIDIN, 1992/94).

2.2.4 The Mind/Brain Module for Language: The Language Faculty

The Language Faculty is based on evidence that there are facts unique to language and that there is a module of the brain containing particular properties belonging to no other faculty but that of language. This module, the language faculty, accounts for structure-dependency in syntax and language acquisition, for example. Two very strong evidence of the uniqueness of language principles pointing to an autonomous area of the mind devoted to language knowledge, apart from other mental faculties or other forms of representation in the mind, according to Chomsky (1971). Based on that, the mind is viewed as separate parts or modules, each responsible for some aspect of mental life; and UG is a theory concerning only the language module, distinct from and not inter-relating with other modules of the brain.

Vary distinct, too, it is from theories that see language development through general cognitive growth (PIAGET, 1980) and the nineteenth century tradition of dividing the mind into autonomous areas with definite sites, called 'faculty' psychology (FODOR, 1983). But, instead, very much as Chomsky (1976, p. 36) affirmed: "the theory of language is simply that part of human psychology that is concerned with one particular 'mental organ', human language" and "The study of language falls naturally within human biology"

(CHOMSKY, 1976, p. 123), even if, according to Cook (1996/2005), its precise location and form are not known yet.

This character of UG strongly suggests that knowledge of language is not acquired from the linguistic environment alone, being it too impoverished to provide this knowledge at its full extent, and yet, a child would be able to produce novel utterances (never heard or read before) in a 'creative' way. All this creativity, however, accounts for the aspect of language use that is based on a more formal grammar, which has rules and principles to conform to (FREIDIN, 1992/94).

2.2.5 Rules versus Principles and the Theory Shift

The concept of *rules*, once dominant concerning linguistic knowledge, has been minimized for *knowledge of language* consists of underlying principles (general) from which individual (language-specific) rules can be derived. An individual applies his knowledge of principles to the (his) language via the setting of parameters and the knowledge of how the lexical items of such language accommodate that language's syntax. Thus, it is not a rule system regarding linguistic theory status for rules are redundant and idiosyncratic phenomena that account for specific aspects of one language alone, not general facts about language. Rules can be reduced to general principles that account for properties of all rules of all languages. One single principle established by UG applies to all rules in English, like the head parameter, for example; instead of large numbers of rules repeating themselves (rewrite rules). Rules are to be explained as the interaction of principles and lexical properties; as artifacts of this interaction to be reinterpreted as general principles affecting all rules. This has been considered the main shift of the theory, from rules to principles, consolidating a major development in the Chomskyan thinking with

consequences also for the interpretation of the term *generative grammar*, according to Cook (1996/2005):

> When we speak of the linguist's grammar as a 'generative grammar' we mean only that it is sufficiently explicit to determine how sentences of the language are in fact characterized by the grammar
>
> (CHOMSKY, 1980a, p. 220)

As Cook (1996/2005) explains, generative grammar rules (the rewrite rules) were precise and testable besides not demanding the reader's knowledge of the language. Their justification lied upon the formalization of the grammar into a rigorous set of definitions as the rule below defined a sentence (S) as consisting of an NP and a VP, such as:

$S \rightarrow NP \quad VP$

Principles; however, do not offer the same formal treatment as rules, but the theory insists that the grammar be stated *explicitly* and that the rigorousness comes from the principles and concrete evidence about language, confirming the generative theory's scientific status. A principle of language is but a proposal for a vague abstraction. Instead, it is a specific hypothesis about the facts of human language, from which one can attribute grammaticality or ungrammaticality to a sentence, as one does based on structure-dependency, for example.

According to Haegeman (1994/2005), this coherent system of principles or *Universal Grammar*; which determines the formation of the sentences of a language (specific components, how they interact, their linear order, etc.) will partly offer principles of universal nature and partly offer principles parametrized (with language specific properties). Therefore, universal grammar is viewed as having a grammar structured as that of a particular language; and for that reason it fits the *Principles and Parameters* (P&P) approach.

> The basic assumption of P&P model is that languages have no rules at all in anything like the traditional sense, and no grammatical constructions (relative clauses, passives, etc.) except as taxonomic artifacts.
>
> (CHOMSKY, 1995b, p. 388)

As Cowper (1992/2000) points out, the research on parameters is yet in its very beginning and that in syntax, there are very few of them. In fact, she recalls what Chomsky proposed in 1989, that 'all syntactic parameters are to be found in the lexicon', not in the grammar itself. That, as explained by Cook (1996/2005), is the result of the omission of those many rules, simplifying syntax itself at the cost of greatly increasing lexical information. Acquisition of the syntactic component of a language, then, would comprise the learning of the words of that language, their meanings, their syntactic and morphological properties, as well as their phonological representations.

To sum up, this shift represented another step in the development of the theory, from refined rule types to concepts of Principles and Parameters; which, in turn, developed into *Government and Binding Theory* (or the GB Model). The label Principles and Parameters theory has come to be regarded as closer to its essence, though, as Chomsky himself declared.

2.3 GOVERNMENT & BINDING THEORY (GB) - CONCEPTS

The theory of Government and Binding, since developed out of the Chomskyan tradition started back in the 1950's, is a theory of linguistic competence also known as *Transformational Grammar* (TG), *Generative Grammar* or *Generative-transformational Grammar*, that fits into Principles and Parameters approach to Universal Grammar (COWPER, 1992/2000).

One book after the other, each depicting the different periods of the Chomskyan thinking and concepts of the theory starting from the original

model, *Syntactic Structures* (1957), which established the notion of the grammar itself, shows how the generative tradition evolved and grew in importance. Later, in 1965, Chomsky presented the *Standard Model*, first known as *Aspect*, and distinctive from the first in that it separated deep from surface structure, leading to the next called *Extended Standard Model*, in the 1970s. By refining the types of rules that were employed, this last model developed into the *Government and binding Model*, named after *Lectures on Government and Binding* (LGB - CHOMSKY, 1981a), yet being later modified in *Knowledge of Language* (KOL - Chomsky, 1986a) and in *Barriers* (CHOMSKY, 1986b). Because of its widespread usage, the label for this model is of mere convenience (COOK, 1988).

All these classic Chomskyan models, as Cook (1988) explains, express the insight that language is a relationship between *sounds* and *meanings*. Physical forms of speech (sounds), meaningless in themselves linked to the abstract mental representations (meanings), independent of physical forms. Dealing with the description of such complex links is difficult so a grammar, to describe a sentence, needs a bridge between the two (from sound to meaning). This relation mediated (or bridged) via various syntactic devices comprising a syntactic level of representation, as figure 13 (COOK, 1988) demonstrates. Similar to the one/relation showed in figure 1, the grammar then, must show how a sentence is pronounced involving the sequence of sounds, the stress patterns, the intonation, etc.; what it actually means involving the individual words, the syntactic structures, etc.; as well as how the various crucial syntactic devices relate them:

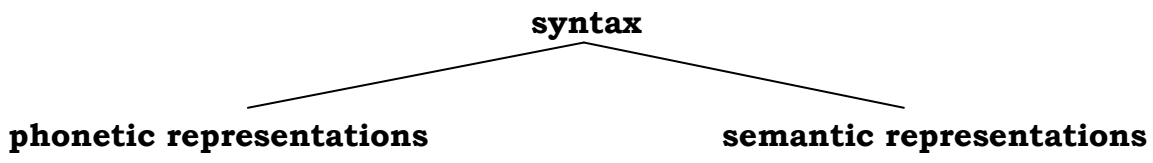


Figure 13 – Cook, 1988.

The GB model presents this relationship slightly different where sound sequences are realized in what it (the model) calls '*phonetic form*' (PF) and representations of syntactic meaning are realized in '*logical form*' (LF), both mediated through syntax as can be seen in figure 14 below (COOK, 1988 -1st edition):

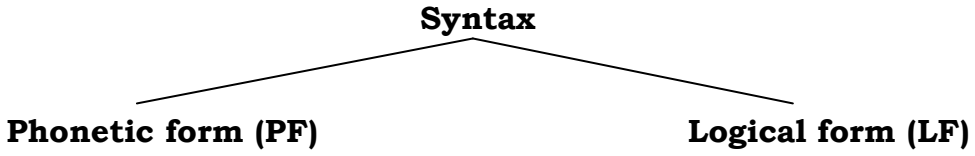


Figure 14 – Cook, 1988.

Since both phonetic and logical forms have their own natures within the model, distinct components are needed. They constitute the contact between the grammar and other areas or what Chomsky (1986) called the "interface between language and other cognitive systems", at one side sounds realized physically and at the other, further mental systems.

> PF and LF constitute the "interface" between language and other cognitive systems, yielding direct representations of sound on the one hand and meanings on the other as language and other systems interact (CHOMSKY 1986a, p. 68)

In most GB research, there is concentrated focus on the central syntactic component; given that syntax is a bridge, that is where the theory must take place. The same occurs for language acquisition: the interface of phonology and meaning is the central problem; that is, how a child acquires the syntactic interface. The main theme is syntax, which makes clearer the fact that LF only represents '*syntactic*' meaning, "the part that represents meaning determined by grammatical structure", according to Chomsky's (1979b) meaning to "logical form". It represents the *structurally determined aspects of meaning*, which are

the input to a semantic representation, and thus, different from a full semantic representation in itself.

The concept of movement in GB elaborates the syntactic level further, given that before movement there is the original form of the sentence (called deep structure) and after movement we have the derived form of the sentence (called surface structure). For example:

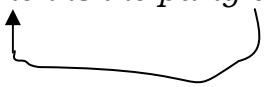
The party is when? – ***deep structure***
(level at which all elements in the sentence
are in their original location)

(Movement)

When is the party? – ***surface structure***
(level at which the elements
have been moved)

By the movement of *What* and *is* one can connect deep structure to surface structure; hence, GB requires two levels of syntactic representation, now specialized in their scopes, 'deep' and 'surface' respectively, as *d-* and *s-structures*. The 'bridging' level between sounds and meaning, connected to phonetic form on one hand and logical form on the other is s-structure, essentially; related by movement to the underlying d-structure. D-structure, then, expresses the key structural relationships in the sentence, which still need to be *traceable* in order to guarantee semantic and phonological interpretations. These (structural relationships) are rescued via 'traces' (*t*) indicated in s-structure marking the original place in the sentence from which elements have been moved. The simplified fuller s-structure of the previous sentence is:

(25) *When is the party* ***t*** *?*



Yet another example (26):

D-structure	*Pam will dance what*
S-structure	*What**2** will**1** Pam t**1** dance t**2***
Surface structure	*What will Pam dance ?*

It (s-structure) includes *"t"* to mark the position from where *when* has been moved, enriching s-structure with movement traces that show the original locations of the elements moved from d-structure, and fulfilling GB requirement of a syntactic representation that can determine both the phonetic form of the sentence in the PF component and the logical form in the LF component. It is known as the *T-model* as figure 15 shows:

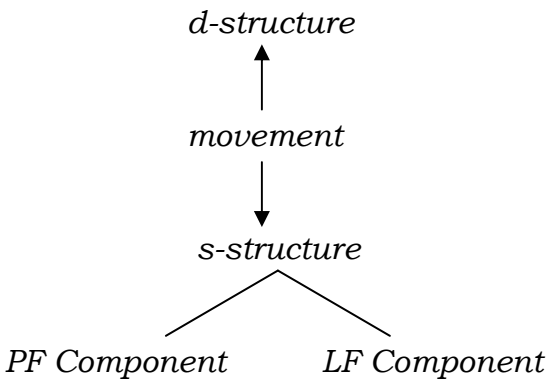
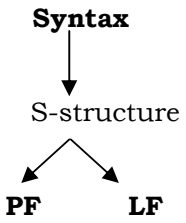


Figure 15 – The T-Model (COOK, 1988, p. 31)

(...) s-structure *"is the only point of interaction between the **three fundamental levels**"* Chomsky (1991c, p. 45)



GB model (CHOMSKY 1981/82, p. 17)

Figure 15.1 -Complementation

This model (contributed by Cook, 1988) in figure 15 shows that the GB grammar is a continuous interaction between components, since d-structure is related to s-structure by movement and s-structure is interpreted by both PF and LF in each respective way (COOK, 1988).

The complementation model presented by Chomsky (1981/82) in figure 15.1 helps simplify the UG various subcomponents of the rule system of grammar (1) seen so far:

1-) *Subcomponents of UG rule system of grammar*

i) lexicon

ii) syntax

a- categorial component

b- transformational component

iii) PF –component

iv) LF –component

As Chomsky (1981/82) explains, the abstract morpho-phonological structure of each lexical item and its syntactic features are specified in the lexicon, including its categorial and contextual features. The base rules, consisting of systems (i) and (iia), generate d-structures by the insertion of lexical items (i) into the categorial component structures (ii), respecting the items' feature structures. The move–alpha rule, constituting the transformational component (iib), maps these d-structures into the s-structure containing traces co-indexed with their antecedents; being this rule also able to

appear in PF and LF components. Therefore, syntax generates s-structures assigned PF and LF representations via each respective (iii and iv) components.

Within this continuous interaction of the components there are *sub-theories* comprising different principles and parameters as well, briefly demonstrated here for the purpose of a general outline of the theory (COOK, 1988) and comprehension of the main focus of this dissertation; i.e., Case theory, spelt out in greater depth throughout the next chapter. To better understand the actual grammar one can think analogously to the modularity introduced in the language faculty, that together with other modules form all the faculties of the mind. Slightly different, though, the theory consists of a number of separate parts (modules/subsystems), called theories, used to describe a single sentence or phrase invoking several different aspects of the grammar simultaneously. A simultaneous application of all principles and parameters settings which grants the theory both a strong point, and a major difficulty to be understood. So, in the theory as a whole, each module (theory/subsystem) affects any aspect of the sentence or phrase that comes within its brief, and the parts (modules/subsystems) join together forming a complex *web* (figure 16 ahead) only supporting itself once all the links are made (COOK, 1996/2005).

In Chomsky's (1981/82, p. 5) book, the subsystems of principles (2) are as listed:

2-) <u>*Subsystem of principles (and parameters)*</u>

i) bounding theory

ii) government theory

iii) θ-theory

iv) binding theory

v) Case theory

vi) control theory

These subsystems, whose properties are to be developed ahead with further detail, are closely related in various ways as explained by Chomsky

(1981/82): bounding theory restricts locality on certain processes and related items; the relation between the head of a construction and categories dependent on it are the central notion of government theory; θ-theory treats the assignment of theta (θ) roles or thematic roles to argument NPs, such as *agent*, *theme*, *experiencer*, etc.; binding theory explains the relations of anaphors, pronouns names and variables to possible antecedents; Case theory is concerned with abstract Case and its morphological realization; and control theory determines the reference potential for the abstract pronominal element *PRO*.

Moreover, within the framework of government theory, binding and Case theory can be developed, and Case and θ-theory are closely interconnected. Furthermore, the subsystems of (1) and (2) interact: bounding theory poses constrains on the move-alpha rule (for antecedent-trace relations, for example). And as it is known, systems (1) and (2) are based on principles with parametric possibilities, so in their interaction, many properties of particular languages can be accounted for (CHOMSKY, 1981/82).

No matter how minor the changes are in the characterization of principles and concepts, the greater and more complex will be the dimension of the consequences for a particular language in observation, according to Chomsky (1986a).

The web mentioned previously makes clear the idea that the objective of GB theory is never to deal with isolated phenomenon, but rather with the continuous interaction of principles and sub-theories as can be seen in figure 16 (COOK, 1988):

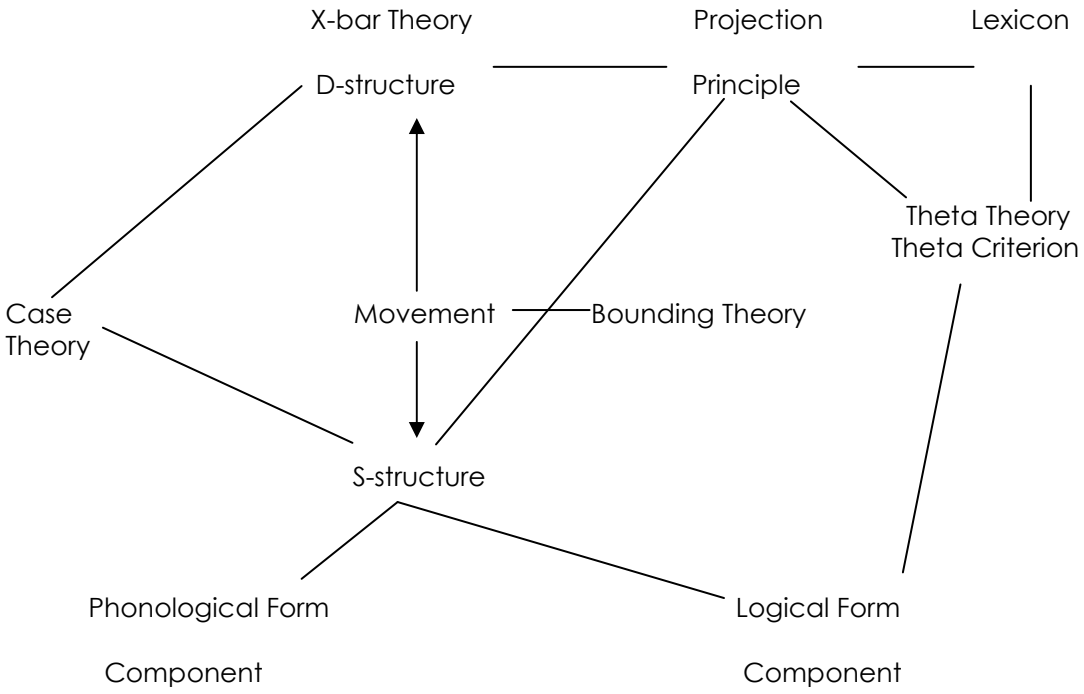


Figure 16 – The Complex Web (COOK, 1988)

As Cook (1988, 1996/2005) says, D-structure demands accounting for the phrase structure, dealt with via the sub-theory of syntax called *X-bar*; named after different number of bars on lexical categories; a way of capturing the familiar phrase structure insight in terms of principle and parameters in trees. Hence, it is a theory related to the lexical categories such as Nouns, Verbs, Prepositions, and Adjectives; which describes the structure of phrases like NPs, VPs, PPs, and APs. One of its principles is the *Head Parameter*, already introduced, namely that the location of heads within phrases is specified in the grammar of each language by the setting of the value for the head parameter (*head first* or *head last*). In Haegeman (2005), the x-bar schema is as figure 17 presents, abstracting away from the category of the head:

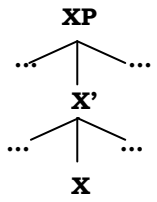


Figure 17 – X-bar schema (HAEGEMAN, 2005)

In the schema of figure 17, **X** stands for N, V, A or P -heads. The grammar needs only one schema to regulate the structure of phrases, since they all have in common the fact that they are headed by one head; thus, traditionally called *endocentric*. The head of the projection is a *zero* projection (Xº). Heads are terminal nodes, so they dominate words. X' theory captures two levels of projections: complements (YPs) combine with X to form X'-projections (17.1c), and adjuncts combine with X' to form X'-projections (17.1b). The specifier (Spec) combines with the topmost X' to form the maximal projection XP (17.1a). It can be followed from figure 17.1 below and the summarized general format for phrase structure in 17.1a, 17.1b and 17.1c below:

(17.1) Summary of Phrase Structure format:

(17.1a) **XP** → **Spec; X'**

(17.1b) **X'** → **X'; YP**

(17.1c) **X'** → **X'; YP**

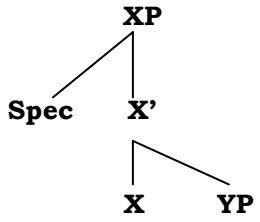


Figure 17.1 – Specific phrase structure tree representation of a language, say English – X' layered projection schema (HAEGEMAN, 2005)

Though the schema in figure (17.1) is universal, the linear order of constituents can vary in a sentence, as has already been said, since the head parameter for heads is not universally fixed. So, an interaction of the general schema in 17.1 and the principle which fixes the relative order of heads, complements, adjuncts and specifiers (yet to be specified) is needed to derive the specific phrase structure of a particular language (HAEGEMAN, 2005).

Again Cook (1988, 1996/2005) asserts that x-bar theory also integrates the lexicon with the syntax, since it is concerned with both the lexical category characteristics and the syntactic structure of the sentence reflecting the properties of the lexical items which compose it. As already known, the characteristics of lexical entries are projected onto syntax and this is established by the *Projection Principle*, which then, connects d-structure to s-structure as well as LF component to the lexicon by specifying the possible context in which a lexical item can occur: "*An x-bar structure is composed of projections of heads selected from the lexicon*" (CHOMSKY 1993, p. 6).

Syntax offers, too, a treatment for the functional relations among the parts of the sentence via *Theta Theory*– "*who is doing what to whom*"- called in GB *θ-roles* (theta or thematic roles), which form a crucial part of the syntactic meaning of the sentence directly relevant to LF, and indirectly relevant to the semantic component; therefore, establishing a semantic relation with syntax. A sentence like (27), for example:

(27) *Lisa whispered the man a warning*

has three different theta roles taken from the fact that each verb assigns theta roles to its argument (1 external – subject, and in this case, 2 internal ones – indirect and direct objects respectively). Each verb is associated to a group of arguments, and a thematic (or argument) structure is represented to each verb. Once the lexicon has thematic marking, each NP in s-structure is attributed a different thematic role so that each lexical item X (N, V, A, P) assigns a theta role to every NP or S complement in its structure. Considering how the lexical items behave, in terms of arguments they project (verbs, nouns, adjectives and

prepositions can have argument structures), in order to assign theta-roles is a way to integrate X-bar syntax with the Projection Principle (COOK, 1988, 1996/2005).

According to Haegeman (2005), independently of the main predicate's argument structure, it is a general property of the sentences that they have subjects, obligatorily. This property is guaranteed by the *Extended Projection Principle*. The predicate's lexical entry signalizes explicitly which argument must be out of the VP, referred to as the *external argument* (or *subject*, or yet *external theta role*), and indicated by an underlining.

Still according to Haegeman (2005), it is intuitively wrong to infer that the verb's subcategorization grid (which determines it transitive [VP-internal NP]/possessing *internal argument* – or intransitive/ not possessing internal argument) be a primitive property of grammar; that is, it does not come from anything in specific. She explains it is not mere luck, but determined by the kind of verb, better, the kind of meaning expressed by the verb: be it an action or a state. Its argumental structure determines which elements of the sentence are obligatory. The verb's lexical representation is, thus, improved once its (the verb's) argumental structure (derived from its meaning) and the realization of arguments are specified. Such notion substitutes the (verb's) labels: transitive, intransitive and ditransitive or the verb's subcategorization grid. The thematic structure associated to the lexical items must be saturated/satisfied in syntax as demanded by the *Theta Criterion*. The Theta Criterion (COOK, 1988) is a basic principle of the theta theory: *an argument can only perform one, and one only, theta role; and each theta role can only be assigned to one, and one only, argument*. The argument, as previously observed, an element in a subcategorization position (AP, NP, VP, PP) or an adjacent subject.

For Haegeman (2005), in this approach to syntax grammatical functions are not primitive concepts of the theory, but rather derivative concepts, defined in configurational terms. For instance, the grammatical function subject is defined in terms of phrase structure relations: the specifier (Spec) for the sentence (S) phrasal category (IP); hence [Spec, IP] – the more elementary

concepts of the theory. Since it is proposed that INFL (inflection)- a category of zero level in X'-schema, is the head of S, S is headed by INFL (I) and is a projection of I (IP – inflectional phrase). Like any other phrasal category, S (or IP) is *endocentric*. The category INFL dominates material such as verbal inflection, infinitival *to*, aspectual auxiliaries and modals. It contains the features for Tense and Agreement associated with V. Auxiliaries and infinitival *to* are followed by a verb (V). Since V heads VP, it is proper to say that I takes a VP as its complement to constitute the I' projection. As in (17.1a) the specifier of the phrase combines with the topmost X' to form XP, in the case of sentences, the subject of the sentence occupies the specifier position, combining with the I' projection to form IP. By means of the tree diagram representation figure (18) and a set of phrase structure rules (18.1a, 18.1b), it can be illustrated for sentence (27) *Lisa whispered the man a warning*:

(18.1) Phrase structure rules:

(18.1a) IP → Spec; I'

(18.1b) I' → I; VP

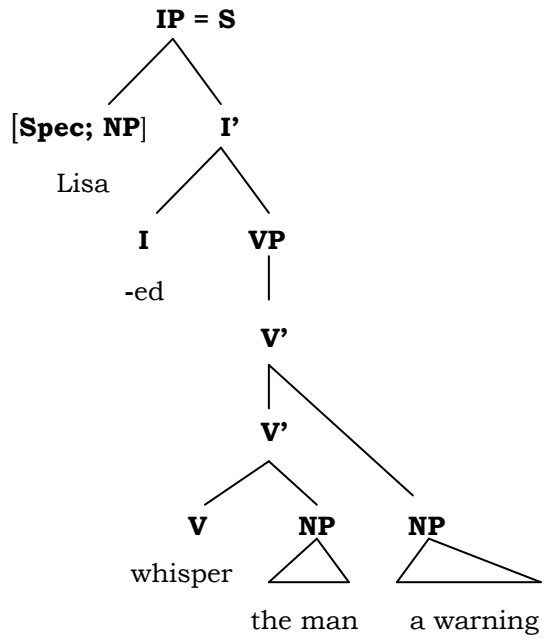


Figure 18 - Tree diagram (HAEGEMAN, 2005)

Going back to theta theory, it also distinguishes argumental positions, known as *A-positions* from non-argumental positions or *A'-positions* (read "A-bar" positions). A-positions are potential theta positions, to which a theta role can be assigned; such as [Spec; IP] or the NP dominated by V' [NP, V']. Nonetheless, A-positions do not necessarily receive a theta role. But they still count as A-positions anyway if, for instance, the subject is occupied by an expletive element; traditionally corresponding to positions associated to grammatical functions. Any other position that is not an A-position is an A'-position, such as [Spec, CP] positions (subject derived from COMP) and adjunct positions (complements that do not belong to the theta grid of the verb) (HAEGEMAN, 2005).

Chomsky (1982, p. 35), called expressions such as *the girl, Johanna, she* as "arguments", which are assigned θ-roles; meaning that they are assigned the status of terms in a thematic relation. He also made these so called arguments distinct from idiom chunks, like "*burn the midnight oil*", "*rest on your oars*", and "*make too much fuss out of something*"; as well as distinct from non-argument *it* (as in *it is clear something is on*), or the existential *there* (as in *there is known to be a disease in his blood*); terms which assume no θ-role. Thus, NP arguments are to be NPs with some sort of "referential function", including names, variables, anaphors, pronouns; but *not* idiom chunks or elements inserted to occupy an obligatory position of syntactic structure. The position in LF that is assigned θ-role and satisfying the subcategorization features of the lexical head of a construction is called a θ-position. In the terminology of X' theory, each complement position is a θ-position. Moreover, a position not associated with a subcategorization feature of a lexical head, a subject position, whether NP or S, may (though it need not be) assigned a θ-role.

And, according to the "θ-criterion", an argument is assigned a θ-role by virtue of the θ-position that it or its trace occupies. Some θ-positions are filled with arguments; all complements of heads are θ-positions (apart from idioms); subjects are θ-positions where a θ-role is assigned and determined for it (CHOMSKY, 1982).

> Internal arguments are sisters to the head X; i.e. complements, which are theta-marked *directly* by the head V under the sisterhood condition. – (check figure 8.1 – consider XP = VP)
>
> External arguments are sisters to the X´, i.e. subjects, which are theta-marked *indirectly* by V' under the sisterhood condition – (check figure 8.1 – consider XP = VP)

(COOK, 1996)

Cook (1996, p.172) exemplifies a few of the most agreed on θ-roles (because in the literature there are others):

- ***Agent****: A person or thing performing an action:*
  *– **Annabelle** painted the house.*
- ***Patient****: a person or thing affected by an action:*
  *– Annabelle painted **the house**.*
- ***Goal****: the recipient of the object of an action:*
  *- Annabelle gave **Frank** a kiss.*
- ***Theme****: the thing which is moved by the action.*
  *- Annabelle gave **a kiss** to Frank.*
  *- Annabelle gave Frank **a kiss**.*

Theta theory must account for the explanation of:

1. which elements assign theta role;
2. which elements receive theta-role;
3. which basic principles characterize this theta-role assignment;
4. where theta-role assignment occurs.

Travis (1984, in COOK, 1996) has suggested that theta-marking parameter determines the word order of arguments in relation to their predicates; and that the X' parameter acts as default setting for determining the places of non-arguments.

And according to Cowper (1992), any description that does not account for the thematic relations is missing a significant part of how sentences are elaborated.

As explained by Cook (1988, 1996/2005), the sub-theory involving movement ("Move –alfa") from d-structure to s-structure and/or vice-versa as well as its restraints on *what* or *where* it can be moved *from/to* and *how far* is called *Bounding Theory*. It involves not only the principle of structure-dependency but also another principle from the sub-theory proposed by Chomsky (1973) called *Subjacency*. The basic idea to be captured by Bounding Theory is that "*no movement can move an element too far*", as she puts it. The theory works by preventing movement over long distances by defining certain nodes in a tree as 'hurdles' to be leapt over by a leaping element, one (leap) at a time and not over two or more hurdles one leap at a time. Hence, nodes considered hurdles are *bounding nodes*; and thus, the *Principle of Subjacency* is: *no movement can move an element over more than one bounding node at a time*.

So, movements are local and a description of how far is *too* far will depend upon the stipulation of which nodes count as bounding nodes. This, though, will not be dealt with here.

Freidin (1992/94) points that this theory involves an important concept of *domain* for the application of the wh-movement. Wh-movement may be applied "*cyclically*" licensed by a rule that can be applied successively to its own output, and this way, enlarge the domain for the movement to occur. This rule is called *Cyclic Rule*, and it is a condition on movement or on the connection between a trace and its antecedent: "*a trace and its antecedent cannot be separated by more than one bounding node*". The smallest domain in which it is applied is called its *cyclic domain* (named due to Edwin William, 1974). Within the notion of domain there is what is called an *island* or *Wh-island* out of which a movement would occur across two boundaries, hence violating the Subjacency principle. Given the Subjacency condition, the movement must be *bounded* or applied in successive cycles, and restrained by the *Strict Cycle*

Condition: "*no rule may apply solely within a cyclic sub-domain of the current cycle*", which ensures that, once a cycle has been passed in a derivation, the 'alpha' movement does not go back to previous stages of the cycle.

To make it clear, consider examples (28) and (29), and the explanations from Cook (1996):

(28) *Where***i** *did* [**AGRP** *Vivian think* [**CP** ***t*i** *that Mr. Gable do* ***t*i**]]]

Here the sentence is grammatical because the wh-element is moved into the matrix C-specifier position in two short hops (one at a time, in successive cycles): one from its original position to the lower C-specifier and one from the lower C-specifier to the higher one. Each of these movements cross one only bounding node (both AGRPs) at a time.

(29)*****_who_**i** *did* [**AGRP** *Vivian think* [**CP** *where***k** [**AGRP** *t***i** *was t***k**]]]

Here, nonetheless, the wh-element *who* has to move directly into the matrix C-specifier because the lower C-specifier position is filled by *what*. This movement crosses two bounding nodes; violating Subjacency principle and thus; the sentence is ungrammatical.

Another theory in the web is *Government Theory,* whose principles affect every part, entering into all aspects of language widespread. It refers to a particular syntactic relationship of high abstraction between a '*governor*' and its governed element, such as the relation of a Preposition, say '*for',* and a Noun Phrase, say *you*; for example: the Prepositional Phrase (PP) *for you*. The same way the Preposition *for* governs the NP *you*, a verb governs its NP object in the sentence. Governors comprise the list of those who can be heads of phrases, like the lexical categories ('concrete', actual words in the sentences and dictionaries) of Nouns (N), Verbs (V), Prepositions (P) and Adjectives (A). Besides the lexical categories, the theory also includes a non-lexical category or rather a functional category, known as INFL (not allocated to a single word but spread across different locations – tense and *number/agreement* – in the sentences),

head of IP, as a governing constituent. That is made possible via the *Principle of Empty Category*, which has to account for the complex phenomenon of human language: *The Null Subject Parameter,* or '*pro-drop*'. The empty category of a null subject would be 'licensed' by the [+AGR] feature from Infl; and therefore, properly governed (COOK, 1988).

In Chomsky (1982) we have that, in a general way, the lexical head governs its complements in the phrase of which it is a head, and that Infl governs its subject, when it contains (+AGR), if regarding Infl as the head of S. The 'core notion' of government has clear thematic content, but the operative notion involves structural configurations that make the 'core notion' general. Such general government notion must meet several kinds of conditions:

(i) conditions on choice of governor;

(ii) conditions on governed elements;

(iii) structural conditions on relation of government.

One approach to meet these conditions (i, ii and iii) on government is the notion of "minimal c-command". For Cook (1996), the most basic structural relationship on which government lies is *c-command* (or constituent command):

- *C-command* (CHOMSKY 1986, p. 8, in COOK, 1996):
  α c-commands β if and only if α does not dominate β
  and every δ that dominates α dominates β

The role of δ this definition, according to Cook (1996), is to represent the domain within c-command operates. For her, there are a number of ways c-command can be defined depending on the different tasks. It can be defined in terms of '*the first branching node*' as proposed by Reinhart (1976 - in Cook 1996). When c-command is defined in terms of maximal projections (XPs) such as (IP, NP, VP, PP, AP) considered as *barriers* for "minimal c-command", it may be termed as *m-command*, as 're-christened' by Chomsky (1986a).

So, Government is a version of c-command with two types of restrictions: the first is on the elements (previously presented) that are allowed to govern, and the second is on that it has both a bottom and a top maximal projections

blocking the relation to its complements. To start off, the formal definition for Government can be stated as proposed by Cook (1996):

- *Government*:
  α governs β if and only if:

  1. α = X° (X zero) and X is a governor;
  2. α and β mutually c-command each other.

To say that the governor and the governee c-command each other is to say that they are at the same structural level or below, but not higher than the other in a tree. These notions will be explained in-depth in the next chapter.

This next theory comprised in the net is the one to be the focus of the next chapter, called *Case Theory*. Such module deals with the assignment of particular *Cases* to the phrases (NPs) in the sentences, according to their positions in D- and S-structures, accounting for the verb's *interalia* in English, for example, in an eventual difference between the surface forms of *she*, *her, hers*; and so on (COOK, 1988). It is related to the relationship between elements in as sentence as being shown by their morphology and word order, the traditional syntactic view, which in English is confined to the pronoun system (*we*, *us*, *our* and so on, presenting a greater range) and the Genitive *–s* in NPs (*Myrna's glasses*). In Principles and Parameters Theory (or GB), Case goes beyond morphological endings of nouns. It also deals with *Abstract Case*, which is Case forms *not* visible in the surface structure, 'assigned in a uniform way', according to Chomsky (in COOK, 1996).

> In some languages, Case is morphologically realized, in others not, but we assume that it is assigned in a uniform way whether morphologically realized or not.
>
> (CHOMSKY, 1986a, p. 74)

Hence, even when Case is not (morphologically) realized, so not visible in s-structure, Abstract Case is being assigned to NPs, fact which is very important in syntax for in so doing it provides a principled explanation for various aspects of movement.

In English, it is the structural position in which an NP is located that determines its Case: subjects (external arguments) have Nominative Case and Objects (internal arguments) have Accusative Case. Case Theory assumes that Cases are similar to Theta roles in some aspects: Theta roles are assigned by certain theta role assigners (predicates) to certain elements (arguments), under certain structural (sisterhood) conditions; and Case, too, is assigned by certain elements to other certain elements under particular structural restrictions.

Case theory distinguishes between *Structural* and *Inherent* Cases; where the former is assigned by virtue of the position it occupies in S-structure, and the later is associated with particular arguments of predicates. To assign Case to an argument makes it (the argument) precisely *visible* to receive a theta role; and since accordingly to the *Case Filter*, this theory's major principle: *every phonetically realized NP must be assigned (Abstract) Case*, this notion of *visibility* brings about another important principle, that of *Principle of Full Interpretation*. Such principle states that *all elements must be properly interpreted* so that if one NP does not receive Case, it will be invisible for theta theory, therefore, it will not receive theta role, violating thus, the Full Interpretation Principle (COOK, 1988/1996).

Haegeman (2005) points out another structural requirement to be fulfilled in this theory worth mentioning here, the *Adjacency Principle*. It requires that *all Case assigners and assignees must be adjacent*, not permitting any element in between them.

In both Theta and Case theories the notion of Government is fundamental.

There is still another module of the grammar to be analyzed, the one which regulates the interpretation of a noun phrase known as *Binding Theory*. It explains how the reference of various types of noun phrases can be bound to other noun phrases, as exemplified by Cook (1988), binding NP *James* to NP *himself* (30):

(30) *James watched himself in the mirror*.

As the example just above demonstrated, this theory aims at identifying the antecedent of an anaphoric (the reflexive pronouns are anaphors) and of a pronominal when that antecedent exists. According to Chomsky (1986a, p.166), the theory accounts for three basic principles:

A – an anaphor is bound in a local domain;

B – a pronominal is free in a local domain;

C – an r-expression is free.

The term *bound* in principle A, as says Cook (1996), refers to the conjunction of c-command and co-indexing; thus *binding* can be defined as:

- A binds B if and only if:
  a) A c-comands B and
  b) A and B are co-indexed
    - A c-comands B if and only if:
      a) A does not dominate B;
      b) B does not dominate A and,
      c) the first branching node that dominates A also dominates B.

The term *free* in principle B means simply *not bound* and refers to pronominals such as *us* or *them*. Moreover, *local domain* referred in principles A and B, up to this point of the theory, is equal to the smallest clause containing the relevant pronoun. It is also called the *governing category* since the local domain for a pronoun is the smallest clause containing the pronoun and its governor; hence the importance of the governor in the definition of local

domain. A *governing category* is, then, the maximal projection containing both the governor and the governee (the pronoun) (COOK, 1996).

It has been shown so far (HAEGEMAN, 2005) that government is the structural property involved in the syntactic processes of theta role and Case assignment, so important in so many parts of the grammar including Binding theory; though there further complications to be arisen here that do not concern government directly.

Still, in Principle C, the term r-expression is referred to 'referential' Noun Phrases and elements such as names (COOK, 1996).

Haegeman (2005) affirms that Binding Theory offers an explicit formulation of the grammatical restrictions imposed to the NPs, and essentially examines the relations between NPs in A-positions (argumental positions), called *A-Binding Theory*.

- A A-binds B if and only if:
  a) A is in an A-position;
  b) A c-comands B and;
  c) A and B are co-indexed.

In respect to binding possibilities, the small clauses behave like non-finite sentences. For both types of sentences, be it finite or non-finite, the subject can be bound to an outsider referent as long as it does not violate any grammatical principle.

Finally, the sub-theory left to be looked at is the one dealing with subjects of infinitive (non-finite) sentences. Such module of the grammar regulates the occurrence and interpretation of *PRO*: non-realized NPs or empty categories (*pronominal anaphor*); called *Control Theory*.

The characteristic composition of PRO is discussed as being [+anaphor, +pronominal], from which the *PRO Theorem* is derived: *Pro cannot have government;* that is, PRO cannot have a governing category since it must be

bound and free in its governing category, a contradiction concerning the binding principles A and B. Therefore, PRO is licensed when not governed.

Regarding PRO´s interpretation, it can be *controlled* by an NP- argument or have an *arbitrary* interpretation. Subject-NPs or object-NPs can be controllers. In some sentence patterns, control is *obligatory* and in others it is *optional.* In the case of *obligatory control*, the controller must c-command the element controlled. As for its occurrence, PRO can occur in three different syntactic environments: complement sentences, adjunct sentences and subject sentences (Haegeman, 2005).

2.4 SUMMARY

The objectives of the Government and Binding Theory (GB), according to V. Cook (1996), are those of *describing* language as a property of the human mind and *explain* its source (how it is acquired), taking into account that the nature of language knowledge is inseparable of the problem of how such knowledge is acquired. To reach these two objectives, an apparatus of considerable complexity is established, in combination with Universal Grammar (UG), inevitably being translated into a complex theory involving abstract and difficult sub-theories, which, at the same time, offer a new simply. Knowledge of language is summarized into variations or parameters in a small number of properties or principles. Acquiring language implies knowing how these principles apply to a given language in particular and what value is attributed to each parameter. One reason, therefore, for the recent popularity of the term *Principles and Parameters Theory* (PP).

This chapter presented a broader scope of the Government and Binding theory, offering the grounds for the focus discussion of Case assignment in Infinitival small clauses to be dealt with ahead.

3 CASE THEORY

This chapter focuses on Case Theory (within GB) applied to English and Brazilian Portuguese, more specifically on the structural relationships concerning the assignment of Case to raised and/or nonraised subject-NPs of both languages. Throughout the chapter, the reader will be guided by the descriptions, explanations and analysis of the specific relationships concerning Government conditions and principles in order to be able to establish basis for a more in-depth comparison of Case assignment that will concern only Infinitival small clauses of these two languages in particular.

3.1 CASE THEORY

Chomsky (1980) distinguishes two types of Case assignment. Structural Case and Inherent Case. Inherent Case will not be dealt with here for it is not the focus of this analysis. The focus is Structural Case assignment, the one which depends only upon the structural relationships; especially the structural relationship of Government, condition sufficient for Case assignment. The Structural Cases are Nominative and Accusative.

Pronouns receive different Case depending on the position they occupy in the sentences. External arguments (subject positions/theta-marked indirectly) receive Nominative Case, for example: *he/ele*; and internal arguments (object positions/theta-marked directly) receive Accusative Case, for example: *him/ele*. As can be observed for the 3rd person singular (and in others) in Portuguese there is *Syncretism* or Case Syncretism (HAEGEMAN, 1991); that is, the same morphological realization for two different Case forms. In English it is observed, for example, in the 2nd person and 3rd person singular (*you/it* – nominative or

accusative). Lexical elements of the same morphological form receive different Cases depending on the position they occupy in the sentence, like:

- *He* saw *him*. - English
  (pronouns)
  Ele viu *ele*. – Portuguese - Case Syncretism

- *A mulher* beijou *a filha*. -Portuguese
(Nominative Case - External Argum.) (Accusative Case - Internal Argum.)
(*Ela*) (*ela*)
A filha beijou *a mulher*. – Portuguese – Case Syncretism
(same lexical items in different positions, so, different Cases)

- *It* chews *it*. – English – Case Syncretism
(the dog) (the bone)

Case marking for Noun Phrases of both languages (English and Portuguese) is rarely morphologically realized (even considering the traces of a Case system manifested in the pronoun system). For that reason, the Noun Phrases (NPs) of Portuguese and English have a very developed Abstract (not morphologically realized) Case system. Chomsky (1980a) says that Case marking is an essentially syntactic phenomenon, the languages having morphological realization or not. What is not realized is the morphology of Abstract Case assigned to phonetically realized NPs. Based on that, the syntactic Abstract Case (Nominative/Accusative) is morphologically realized for both Portuguese and English in the pronominal system (only).

Abstract Case is an important concept in GB (Government & Binding Theory) because it part of UG (Universal Grammar). Another important factor to ad to its importance is the *Case Filter*; requirement that *all overt (realized) NPs must receive (Abstract) Case*[1]. The Case Filter explicitly affirms that: *the grammar excludes any phonetically realized NP without Case marking* – which will, then, be violating Case Filter and be enough to account for a *non-grammatical* sentence.

Nominative Case (*a*) is reserved to NPs in subject position of finite sentences, and Accusative Case (*b*) reserved to NPs in object position of

[1] The italicized which is not a quotation throughout this work has my authorship.

transitive verbs (*b1*), subject of infinitive subordinate sentences (*b2*), or even object of prepositions (*b3*). See examples for both languages:

a) We won!
Nós vencemos!
A Joana bebeu muito.
Marcos recebeu um premio.
Susan shot herself by accident.

b1) Ela beijou os ("os" clitic = eles). / Ela os beijou.
She kissed them.
A cadela mãe abandonou os filhotes.
A cadela mãe os abandonou/... abandonou-os[2]*.*
The mother bitch abandoned the puppies. /... abandoned them.

b2) [For her to be safe] is mandatory.
It is nice [for us to have some fun].
**[Ela beijar os garotos] causaria emoção.*
**Seria perigoso [ela beija-los]. (the accusative pronoun "los" realized in S-structure is a clitic in Portuguese, in a position of adjunction to the verb – kiss -infinitive.)*
**[Ela cair da varanda] é uma probabilidade remota.*
**Eu penso [a Maria cair da varanda ser uma realidade] ou*
**(Eu penso [isso ser uma realidade]).*

b3) Passe o caderno para mim, por favor?
Pass the notebook to me, please? / Pass me the notebook, please?
Um carro veio em direção a mim.
A car moved towards me.

[2] Possible production in Portuguese, though not as current as the previous one: … o*s abandonou*.

Fale de <u>você</u> com <u>ela</u>. - ('oblique' Case in Portuguese – not different from Accusative in English).
Talk to <u>her</u> about <u>you.</u>

***** In Portuguese, the Case assigned in *b2* is not Accusative (as it is in English) for the pronouns or lexical items in subject position of infinitive subordinate sentences. There is, in fact, incompatibility of an infinitive inflection with a phonetic subject in Portuguese. This phenomenon will be later explained. In fact, the sentences (the examples given in Portuguese) are very good and grammatical, but, comparatively to the ones in English, their constituent structures are different, so cannot be taken as equal, though equivalent in meaning. Case Syncretism in Portuguese does not help identify the structural difference immediately either.

Regarding Structural Case, the conditions for Case assignment are those of Government, in other words, a particular linguistic element in an NP context receives Case from the linguistic element that governs it. The governing elements, called *Case assigners* are the following categories:

- ***Infl****/[+Agr.] (NP in subject position of a finite sentence or in an inflection context) – assigns Nominative Case - … [$_{IP}$ NP [$_{I'}$ [$_{I}$ [+Agr.]…]…]…]*
- ***V*** *– assigns Accusative Case to an NP in object position of a transitive verb - … [$_{VP}$ V NP …] …*
- ***P*** *– assigns Oblique/Accusative Case to a prepositional NP (NP in a preposition context - …[$_{PP}$ P NP] …*

An important aspect to observe is that these contexts are exclusively local: each Case assigner assigns one only Case to its *closest* NP. This "*locality"* or *"proximity"* notion can be captured, according to Chomsky (1980a; 1981) through the notion of Government. So that there is no ambiguity in the government relations, it is necessary to clarify that: *each governed element (NP) posses on only governor.* This way, a verb cannot assign Accusative Case to an

NP out of VP, like the subject-NPs, because such NP-subject is not governed by the verb. The possibility of assigning Case is also a verb's type function, i.e. the governor. Only transitive verbs and prepositions are Accusative Case assigners (in English). Intransitive verbs, such as *wonder* or *overeat*, nouns and adjectives do not assign Accusative Case to an NP-complement. Case assigners {V and P} have an in-common propriety that is the syntactic feature [-N]; while the heads A and N do not posses this propriety for being of a different intrinsic nature, [+N].

Conceptualizing Government, according to Raposo (1992), the most adequate for Case assignment is that of *Head- Government*, where the class of governing categories is restricted to heads X° conforming to X' Theory (reminding that categories A and N do not assign Case). Therefore, functional categories C and Infl [-Agr.], though being heads, are eliminated for they are "*inert*" and cannot govern, as Rizzi (1990) affirmed. Hence, Head-Government is defined as:

A H-governs B if and only if:

i) A={N,V, A, P, Infl/[+Agr.]}.

ii) A m-commands B.

iii) There is no category τ, τ a barrier*, so that τ excludes A and τ dominates B.

***** A category τ is a barrier if and only if τ is a maximal projection.

M-command is a structural relationship that has to exist between the *governing* category and the *governed* category, being it more appropriate for Government Theory than the c-command relation. The same way as that of with c-command, this notion privileges a relation from top to bottom through an obstacle-category (first branching node in the case of c-command or maximal projection in the case of m-command), out of which there can be no relation established. That is, m-command establishes a superior limit out of which this relation cannot go

past; and, this limit (or ascendant barrier) is the first maximal projection. To conclude, Government is the *local* relation established between a head Xº and the categories contained inside the maximal projection XP, defined by this head. Thus, m-command is defined as:

> A node A m-commands a node B if and only if:
>
> i) *A does not dominate B and B does not dominate A*;
>
> *ii) The first maximal projection that dominates A equally dominates B.*

It can be asserted that the maximal projections (now descending) form a "protection" for the ambiguity problems in the governing relations since certain categories are taken as barriers (maximal projections from top to bottom), occurring in between the governing and the governed categories. None of the NPs governed by the categories that assign Case (governing ones) listed previously is dominated by a maximal projection, which would *exclude* the respective governing categories. As Raposo (1992) explained and showed (trees 1a, 1b):

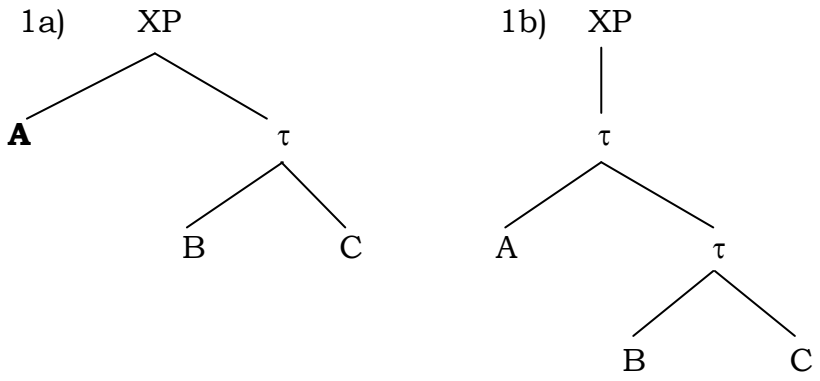


Figure 19 – Raposo,1992.

A (as a governor) is excluded by τ if and only if none of the segments of τ dominates A as can be observed in tree a), where τ excludes A (and vice-versa) since it does not dominate A. In tree b) τ does not exclude A, that is, it *includes*

(dominates) this category, hence there is no barrier (a maximal projection) occurring in between A and B. So A m-commands B.

Another way of confirming it would be, for example, to verify among two potential governors (P and V), which one really governs the NP (*Joana*) in a sentence such as: *Ele falou de Joana / He spoke of Joana* (tree 2).

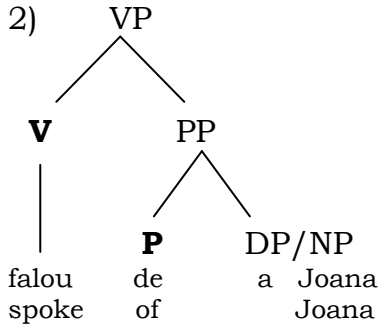


Figure 20 – Raposo, 1992.

There is a barrier (max. proj. PP) between V and NP, excluding V from governing NP (V cannot m-command NP), granting P as the only governor since it is more *local* or *closer* to NP. As P intervenes, it assigns Oblique/Accusative Case to NP. The idea that the closer potential governor *wins* the dispute is expressed in terms of the Governing *Minimality Condition* (HAEGEMAN, 2005). Government is defined in terms of m-command, but the intervener (P in this case) is computed in terms of c-command:

A node A c-commands B if and only if:

i) *A does not dominate B and B does not dominate A*;

ii) The first branching node that dominates A equally dominates B.

Minimality Condition:

A governs B if and only if:

i) *A is a governing category*;

ii) *A m-commands B*;

iii) There is no node Z so that Z:

a) *is a potential governor of B*;

b) c-commands B;

c) *does not c-commands A*.

The Minimality condition clause iii) excludes V as a governor by the verification in the tree diagram of the presence of a node (P) which satisfies all the requirements a), b) and c) – being c) in ascending direction, towards a barrier PP that does not dominate V.

The Minimality condition clause ii), at first sight, does not exclude V because the first (ascending) maximal projection of V is VP, which also dominates (descending) PP, and NP. There lies V's potential as a governor at first, considering m-command. However, not having confirmed the Minimality conditions a), b) and c), V is excluded. The inverse, ascending now (NP m-command V) does not occur (τ=PP). Thus, c-command is at work.

Now analyzing Case assignment to subjects based on the so far given explanation (Head-government Accusative Case assignment by V or P), one distinction must be made between subjects of finite sentences and subjects of infinitive (non-finite) sentences. The difference is in the sentence head feature, Infl (I).

The head feature of a finite sentence (I) is [+Tense, **+**Agr.]; and the head feature of an infinitive (non-finite) sentence (I) is [-T, **-**Agr.]. This difference suggests that Nominative Case assignment is associated to finite Infl (I), being the Infl feature [+Agr.] a Nominative Case assigner. In finite sentences, verbs are inflected in accordance with (the head of) the subject, configurating the feature of the finite element [+Tense]. Infinitive sentences are not inflected, and have the element *to* as an infinitive marker classified as [-Tense]. As Cook (1996) suggests, for not having the element Agr; and therefore featuring [-Agr.], infinitive sentences must be analyzed as *Tense Phrases* (TP), whereas finite sentences be analyzed as *Agr. Phrases* (Agr. P). This way, Case assigned to NP-subjects is made accordingly to the position they occupy in S-structure, known

as '*Structural*' *Case* (Nominative/Accusative). This distinction can be better observed in the following trees 3) and 4) (COOK, 1996):

3) **Finite Sentences: NP- subject – Nominative Case**

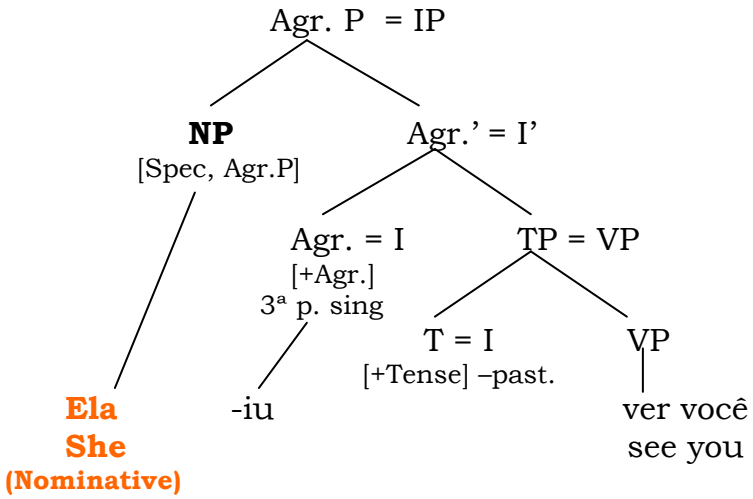


Figure 21 – Cook, 1996.

The NP-subject of the finite sentences is in Spec position of Agr. P and is assigned Nominative Case (for both languages in question); while in the infinitive sentences, NP-subject occupies Spec position of TP and is assigned Accusative Case in English, but in Portuguese, only a null subject is possible (for the same Spec position).

4) **Infinitive Sentences: NP-subject – Accusative Case**

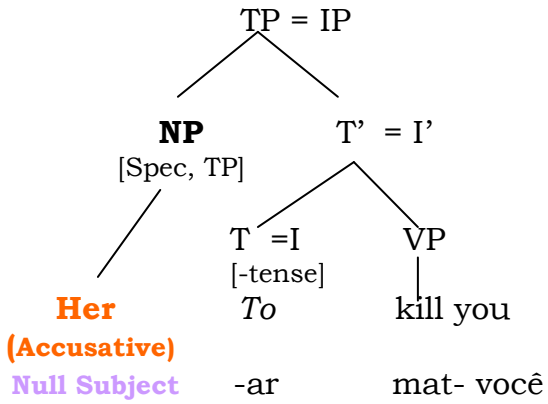


Figure 22 – Cook, 1996.

Given that the Nominative Case only comes along an [+Agr.] feature, it is Agr., then, responsible for Nominative Case assignment. Haegeman (2005) affirms that I (Infl/[+Agr.]) assigns (Nominative) Case to [Spec, IP] under government (as previously defined in terms of m-command) since I (Agr.) m-commands NP [Spec, IP/Agr. P], but also that Nominative Case assignment can be licensed via *Spec-head Agreement relations*.

Being the nucleus of IP (I) [-Tense, -Agr.] in infinitive sentences, it cannot assign Abstract Case at all, be it Nominative or Accusative. But the infinitive NP-subject (*her*) is phonetically realized, hence it cannot "escape" Case Filter. It must receive Case, but from another governor that is also not the verb of the matrix sentence, since between the two (*her* and the matrix verb) there is a barrier/maximal projection (TP=IP or CP or even both). According to Cook (1996), once Accusative Case can only exist if assigned by an element (P or V) that demands an NP-object, the English sentences are alternatively "rescued" in two ways:

- The first alternative is the insertion of a *Prepositional Complementizer* (***for*** in English) which occupies the nucleus position of CP (C) –see example a) below and tree-5 further below- without which this NP has no governor to receive Accusative Case from; thus violating Case Filter and granting the sentence as not grammatical as examples b) and c) show.

  a) A lot of courage was necessary [CP ***for*** [*him to get on with it*]].

  *b) *I prefer* [*him to go now*].

  *c) *Prefiro* [*ele - accusative- ir agora*]

  *d) *Ela prefere* [*mim ficar*].

- The second one is the omission of the NP-subject -see f) and g)- in case there is no Complementizer, like the preposition *for*. For being a preposition, *for* assigns Accusative Case and this is its exclusive role. As mentioned before, there is, for Portuguese, an

incompatibility of the infinitive inflection with a phonetic subject and now it is made possible to understand -check c). The subject omission, though, is an option for both languages –see f), g) and h) and other examples:

e) *[IP H*er to be a star*] *is a problem for the whole family.*

f) *[IP *Ela (acc.) ser uma estrela*] *é um problema para toda a família.*

g) *[IP *Me to be a star*] *is a problem for the whole family.*

h) *[IP *Mim ser uma estrela*] *é um problema para toda a família.*

i) [IP___*Ser uma estrela*] *é um problema para toda a família.*

j) Prefiro [IP___*ir agora*].

k) A lot of courage was necessary [___*to get on with it*].

Case Filter has nothing to say about the subjects of i), j) and k) infinitives, since these do not have a realized NP-subject.

It is known that Case assignment occurs under government conditions, and that maximal projections are barriers for government; so the Complementizer *for* could not govern the NP in [spec, IP] position. Nevertheless, differently from finite Infl (I), infinitive/non-finite Infl (I) is considered a functional head featuring [-Tense, -Agr.], a "weak" characterization (as a governor, not morphologically), thus not taken (not listed) as one of the governors. That *weakness* generates the fact that its (non-finite Infl (I)) maximal projection IP does not block government from another element, external to it. In other words, IP is not a barrier for CP nucleus (C= *for*) govern inside its complement (IP) as can be observed in tree 5) below (HAEGEMAN, 2005, p.168):

- *For them to approve the law would be complicated.*

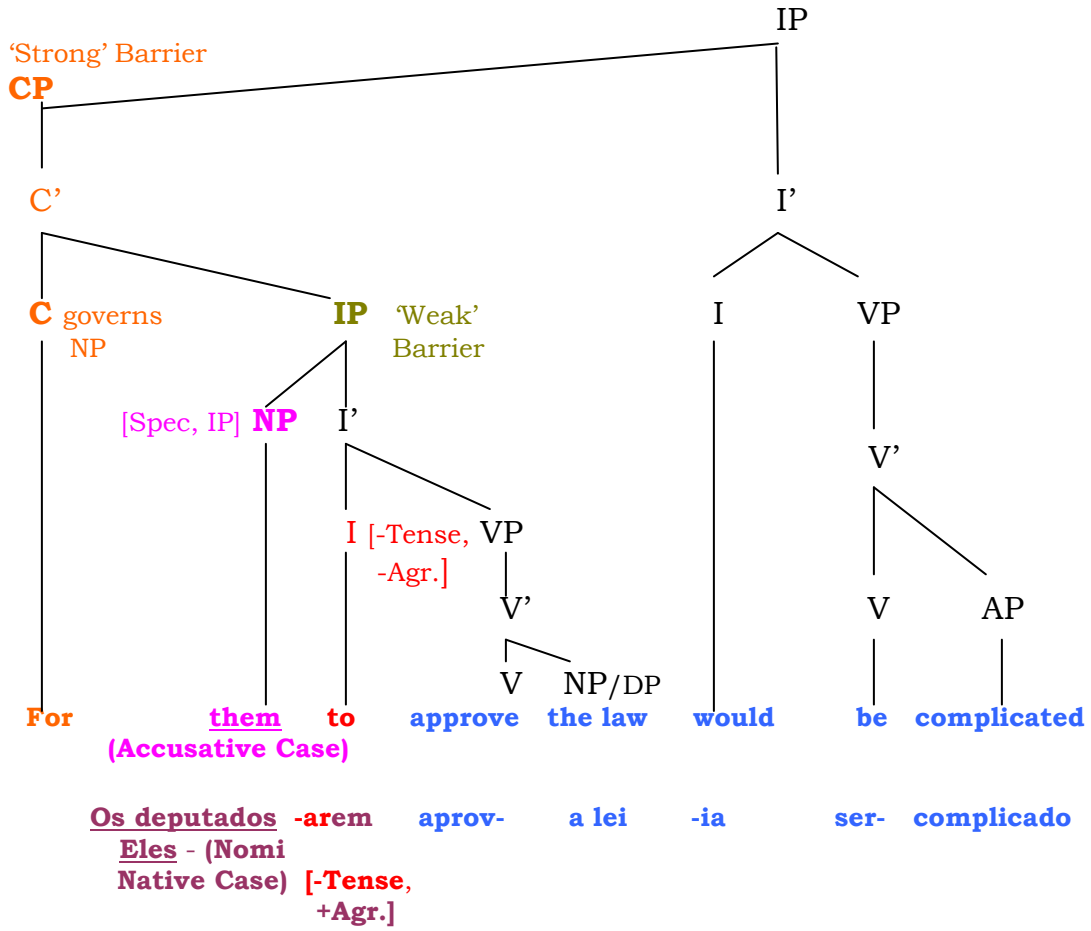


Figure 23 - Tree 5 – HAEGEMAN, 2005

Moreover, it is necessary to observe that the finite inflection of the matrix sentence (-*ia*/*would*; 3ª person sing. – past) cannot govern inside the more inferior sentence (CP) and assign Nominative Case to the NP-subject [Spec, IP] of the infinitive/non-finite sentence, given that CP constitutes a barrier for government. Another detail that does not license Nominative Case to this NP-subject (*them* –infinitive sentence) is the fact that Nominative licensing is granted via spec-head agreement between NP-subject and a finite Infl, which

does not occur. On the contrary, this NP-subject is a specifier of a subordinate non-finite/infinitive [-Tense, -Agr.] Infl.

In Portuguese, it is very important to highlight the possibility of having an *Inflected Infinitive* subordinate sentence, though, called *Inflected Infinitive* (*Infinitivo Flexionado*). In this case, the realized NP-subject in Spec position of an Inflected infinitive/non-finite IP receives Nominative Case from Infl category featuring agreement [+Agr.], the part of Infl nucleus (I) that allows spec-head agreement, but that does not feature tense [-Tense, +Agr.]. For example:

- [**IP** *Os deputados aprovar**em** a lei*] *seria complicado.*
- *Ela esperou* [**IP** *as crianças descer**em** a escada*].
- [**IP** *Os deputados ter**em** assinado a aprovação*] *foi constrangedor.*
- *Eu lamento* [**IP** *as crianças ter**em** rolado escada abaixo*].

For subordinate sentences with Inflected Infinitive in Portuguese (which implies phonetically realized subject), the licensing spec-head agreement occurs *inside* IP, where the nucleus I/[+Agr.] agrees with the specifier of IP, assigning Nominative Case to NP-subject [Spec., IP] –check tree 5) above. It can be established that, for the subordinate infinitive sentences of Portuguese (RAPOSO, 1992), the presence of [+Agr.] in the inflection is enough to license a phonetic subject. If [+Agr] is absent, only a null subject (*PRO* -empty category) is possible, as in the contrast:

- ***Eu lamento** [as crianças rolar escada a baixo*]. – Violates Case Filter - There is no Case assigner.
- *Eu lamento* [*as crianças rolar**em** escada abaixo*]. - Agreement due to present [+Agr.].
- *Eu lamento* [*PRO rolar escada abaixo*]. – Null subject (subject is an empty category – not phonetic).

Still analyzing the subjects of infinitive sentences (in English) and going back to considering the fact that the Complementizer *for* may not be there, like the sentences below:

- *Hanna believes* [*her sisters to be dead*].
- *Hanna wants* [*them to be dead*].
- *Hanna proved* [*Sarah to be a fool*].
- *Hanna believes* [*her to be a fool*].

we need to explain how *them/her sisters* e *her/Sarah* satisfy the Case Filter. These (just above) being considered grammatical sentences, such pronouns and lexical items (in the sentences just above - *them/her sisters* and *her/Sarah*) receive Accusative Case, since we cannot attribute this Case marking to Infl (I)/[-Agr.], as is known. Then, the only alternative lies on the verb. As is also known, the (subordinate) complement IP, being an infinitive sentence, does not stand as a barrier for government, so the verb from the matrix sentence can govern inside (maximal projection) IP complement. This way, the verb (of the kind: ***believe, want, prove, consider,*** and ***know***) assign Accusative Case to the NP-subject of the subordinate infinitive through what is called *Exceptional Case-Marking (ECM)*. Verbs that admit an ECM construction arte called *ECM verbs*. In Portuguese, the ECM verbs are the causatives: ***deixar***, ***mandar***, ***fazer*,** besides the perception ones ***ver*** and ***ouvir*** (RAPOSO, 1992). The option IP for complement of these ECM verbs is manifested when the complement is infinitive. The Case assigned to the NP-subject of the infinitive in Portuguese is Accusative, too. For example:

- *A mãe* ***deixou*** [**IP** *os filhos fazer bagunça*].
- *A mãe deixou* [**IP** *os bagunçar a vontade*].
- *Eu* ***faço*** [**IP** *meu cachorro sentar*].
- *A professora* ***mandou*** [**IP** *ele terminar a tarefa*].

These verbs posses the *exceptional lexical propriety* of subcategorizing an IP directly and *not* a CP, as is canonically expected (for Portuguese and English) in a finite sentence, where the subordinate NP-subject's Case is Nominative, like the examples below show:

- *Melissa believes* [**CP** *that* [**IP** ***I*** *am a total freak*]].
- *Melissa acredita* [**CP** *que* [**IP** ***eu*** *sou uma maníaca total*]].
- *Melissa does not know* [**CP** *whether* [**IP** ***she*** *should stay or go*]].
- *Melissa não sabe* [**CP** *se* [**IP** ***ela*** *deve ficar ou partir*]].

According to Chomsky (1981), the ECM structures are generated in D-structure with a CP that is deleted during the derivation process.

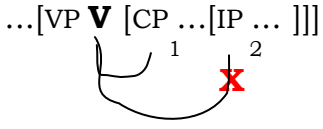
In the case of the example that follows ahead, Case Filter has nothing to say, given that the subordinate infinitive NP-subject is null (PRO):

- *She doesn't know* [**CP** *whether* [**IP** *PRO to go or to stay*]].

Nevertheless, in this next example there is Case Filter violation. The subordinate NP-subject receives Case from neither the verb *know*, since CP is a barrier; nor the infinitive marker *to*, given that it has a [-Agr.] feature.

- ***** *I don't know* [**CP** *whether* [**IP** *Melissa to do it or not*]] → non-grammatical sentence.

Kayne (1984) shows that the verbal government relation must be defined so that it is able to "cross" a (one) phrasal boarder (according to his theoretical framework, phrasal boarders are categories such as S (IP) and S' (CP)), but *not two* phrasal boarders; as can be observed in the scheme he provided:



The above diagram, as suggested by Kayne (1984), shows that government by an exterior element (the verb in this case), can *cross* one phrasal node, but not two. Despite that, the *exceptionality* of these ECM constructions, as Raposo (1992) later explained, is not due to Case assignment (done under government) per se, but due to their (these ECM constructions') argumental structure, more specifically, to the phrasal/sentential categorial realization as IP instead of CP; and so being able to eliminate *any* barrier for Case assignment.

Belletti and Rizzi (1981) had proposed that *the nucleus of a B category governed by an A category is also governed by A*. Based on that, we can consider that a verb governing an NP and a PP, governs equally the nucleus of both these categories.

Compare *l* and *m*:

l) A professora mandou [**IP** *o (ele) / Marcos / o aluno terminar a tarefa*].

m) It is not appropriate [**CP** *for* [**IP** *you/ anybody/ Mary to smoke here*]].

Chomsky (1986a) reformulates Government Theory and incorporates the essential idea (relative to Government Theory presented so far) that a maximal projection is not an *automatic* barrier to government, but that its status of barrier depends on its position in the syntactic configuration; in other words, a maximal projection *is not a barrier* if it is a complement (semantically selected – θ function – by one) of the lexical categories, as following Rizzi and Belletti (1981)'s proposal[3].

In *l*, IP is a maximal projection between the verb (*mandou*) and the subordinate NP-subject. Still, IP is a *selected* (subcategorized) *complement* by the lexical category V, thus it is not a barrier for the government of the matrix verb into the subordinate NP-subject; not to mention the fact of this IP being

[3] Following Belletti and Rizzi (1981), government is defined as: α *governs β in a configuration like [*δ … *β* …α …*β* …*], where: i)* α = *X°; **ii)** where φ is a maximal projection, if φ dominates β, then either φ dominates* α*, or φ is the maximal projection of β* – crucial for Raposo (1987) to account for the inflected infinitive, known as the **head-to-head government**; *iii)* α *c-commands β* (Raposo 1987).

infinitive ('weak', according to the previously established government notion). The verb, then, assigns Accusative Case to the subordinate NP-subject.

In *m*, the analysis is similar to *l*, but supported by the hypothesis of the Complementizer *for* be of prepositional nature (P), granting it the *lexicality* that V has. This way, IP is a complement of *for*, not constituting a barrier for government of the external category (P) into the subordinate NP-subject. So, P (*for*) assigns it (subordinate NP-subject) Accusative Case.

Now, it becomes necessary to review the system of definitions of Government Theory, in particular the auxiliary notion of *L-marking* (existing relation between a lexical category –V or P- and the complements to which such lexical category assign a θ-function), and that of barrier.

L-marking:

A L-marks B if and only if *A is a lexical category that assigns a θ-function to B.*

And,

Barrier:

A category τ is a barrier if and only if τ *is a maximal projection not L-marked.*

That is, τ is a barrier if and only if τ is a lexical category that does not assign a θ-function.

This reformulation proposed by Chomsky grants the Minimality Condition a much more important role, in the sense that it establishes the non-obligation for maximal projection of a "closer governor" (c-command relation) of being a barrier, in case such maximal projection be L-marked (assigns θ-function). On this fact lies the possibility of excluding the illegitimate government relations. The global result of the reformulation in question is synthesized in the abstract structure below (RAPOSO, 1992, p. 381):

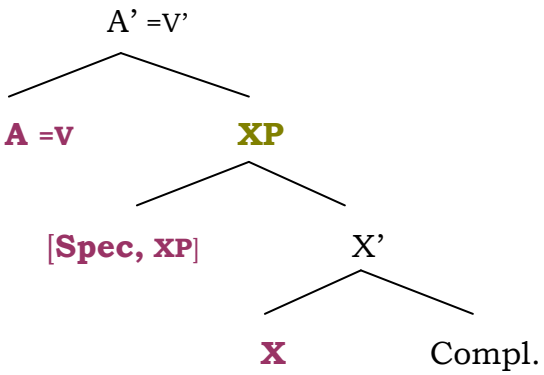


Figure 24 – Raposo, 1992, p.381.

A governs (m-commands) XP. No maximal projection excluding A dominates XP. According to Chomsky's reformulation proposal mentioned above, even being a maximal projection excluding A (and dominating X as well as [Spec, XP]), XP is L-marked by A (receives θ-function from A). Therefore, XP is not considered a barrier, making it possible for A to govern inside XP ([Spec, XP] and X). A; however, does not govern the Complement of X because X is the "closer governor" (according to Minimality Condition).

In his book *Barriers* (1986, p. 12), Chomsky says that *a category is a barrier only in some relative sense*, and that *the definition of "barrier" will be relational*; that is: *a category α will be a barrier for β for certain choices of β, but not for others*, and that *a category may be a barrier by inheritance or intrinsically* (the later by virtue of its own status as a *blocking category- BC*). CP would *inherit* barrierhood from IP, so that CP will be a barrier for something (an element) within IP, but not for something in a pre-IP position. Hence, a category β (maximal projection) θ-marked by α will be a barrier only by inheritance. IP, regarded as a "defective" category, can only become a barrier by inheritance and not for being a BC intrinsically.

As a consequence of this reformulation proposed by Chomsky, the subjects of small clauses also receive Case from matrix verbs, given the identical, and if not identical at least similar, behavior and structural properties they (SC) have to ECM constructions.

Consider the small clauses in brackets [ ] of the categories AP, NP and PP for further analysis ahead:

- *Os homens* ***consideram*** [**AP** *as mulheres loiras* [**AP** *muito burras*]].
- *Men* ***consider*** [**AP** *blond women* [**AP** *very stupid*]].
- *Eu* ***considero*** [**NP** *as loiras* [**NP** *mulheres de múltiplas qualidades*]].
- *I consider* [**NP** *the blond* [**NP** *women of multiple qualities*]].
- *O médico* ***considera*** [**PP** *minha saúde* [**PP** *com sérios agravantes*]].
- *The doctor* ***considers*** [**PP** *my health* [**PP** *with serious aggravations*]].

The small clauses themselves, do not contain a Case assigner for their subjects in order to satisfy Case Filter (Haegeman 1991), except for the fact that they are considered "super-projections" of the category of their predicates, as explained by Raposo (1992). The subject of small clauses is in a relation of adjunction to the AP/NP/PP projections (A'= *muito burras/very stupid*)/(N'= *mulheres de múltiplas qualidades/women of multiple qualities*)/(P'= *com sérios agravantes/with serious aggravations*), given that the nucleus, of AP (adjectival phrase) for example, is the adjective (burras/stupid). Therefore, NP-subject is not dominated by AP (A'), but combines with it. Following break iii) of Head-government definition, it is known that *a barrier* like AP (A')/NP (N')/PP (P) *will only constitute a real barrier for government if it dominates a potentially governed category*, such as NP-subject. Since these categories, AP/NP/PP, do not satisfy this barrier condition, the verb may govern inside the small clause. The subject of the small clause is, hence, in adjunct position, only, since it is dominated by none of the three categories AP/NP/PP. Moreover, relative to the modifications proposed by Chomsky previously mentioned, these categories are

complements L-marked by the verb; thus, not qualifying as a barrier. For all facts exposed, the matrix verb governs into the NP-subject of the small clause, assigning it legitimate Accusative Case (Raposo, 1992). Check simplified representation of the small clause type AP in tree (6) and an even more simplified representation for the PP type in tree (7) (Haegeman, 1991):

Tree 6):

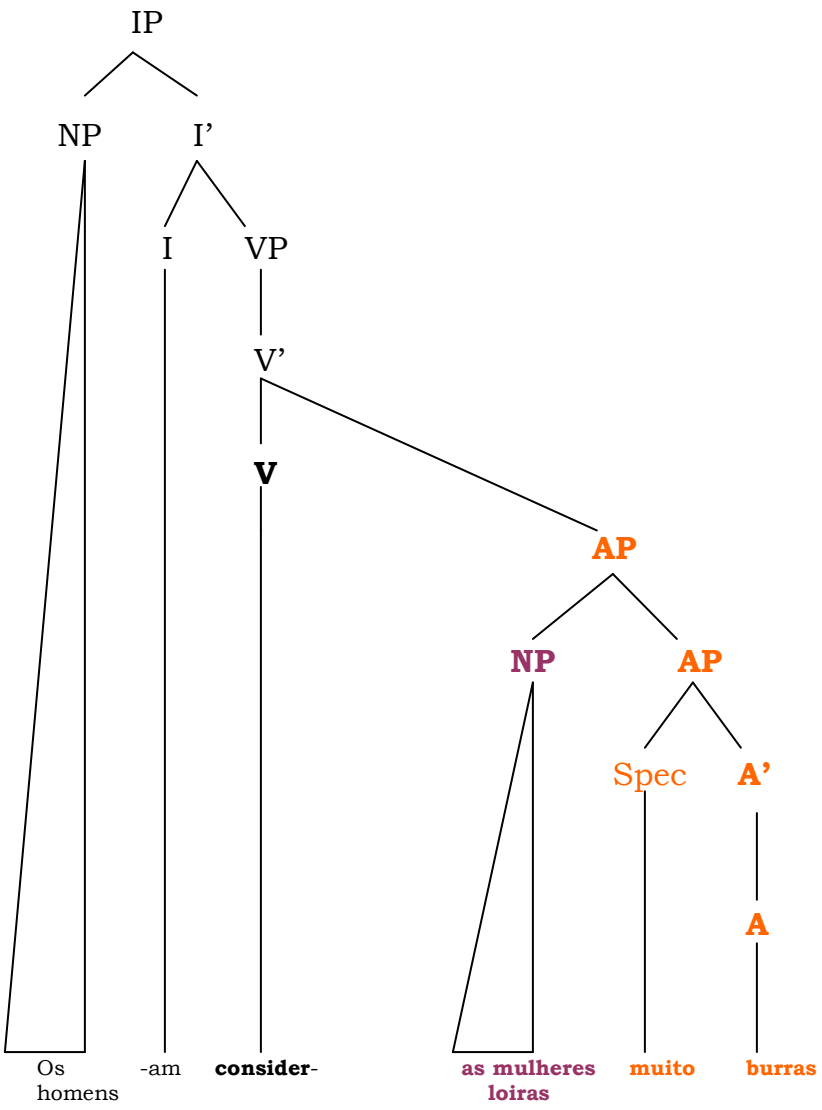


Figure 25 – tree 6, Haegeman, 1991.

Tree 7):

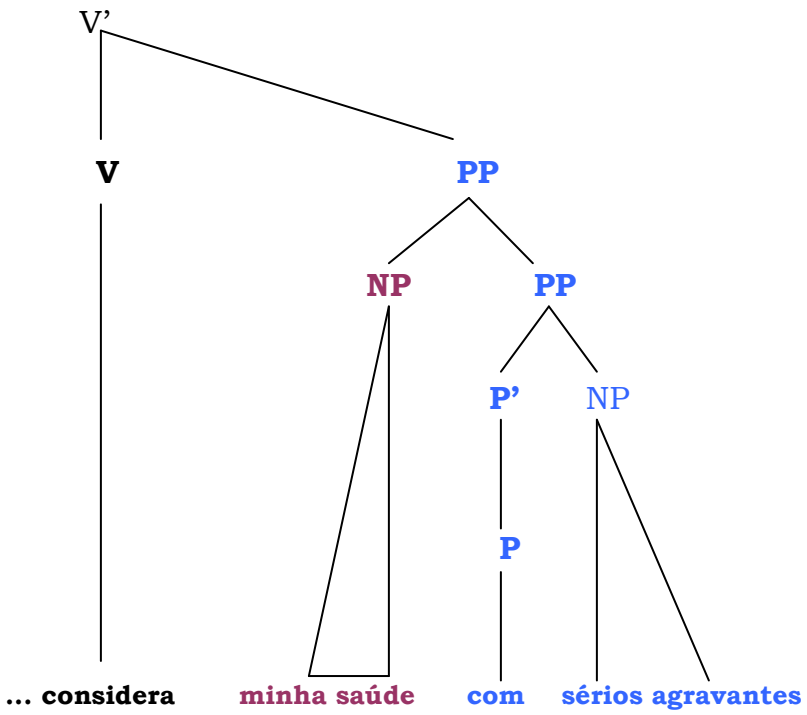


Figure 26 – tree 7, Haegeman,1991.

A last important detail to highlight is the fact that Case assignment cannot be "*cut*", or say, have an element in between the verb and the NP (receiving Case). That means the governor and the governee have to be *adjacent*. This condition completes the requirement for Structural Case assignment, originally proposed by *Stowel* (1981- in Haegeman 1991).

Adjacency Requirement: Case assigners cannot be separated from the NPs they assign Case to by any intervening material, which would violate Case Filter and cause the sentence to be non-grammatical. For example:

n) Melissa ***sincerely*** *believes* [**IP** *Susan to be a total freak*].
(Adverb) *(verb)* *(NP)* *(Infl/[-Agr.])*

*o) *Melissa believes* ***sincerely*** [**IP** *Susan to be a total freak*].
(***Adverb*** – *separates V and NP*) = *non-grammatical!!!*

This condition or requirement explains the reason why, in English, there can be no element occurring between the verb and the NP-direct object. As a reminder, for Portuguese, though, a structure such as *'n'* is not admitted; instead, example *'p' below* is.

p) Melissa ***sinceramente*** *acredita* [**CP** *que* [**IP** *eu* ***sou*** *uma maníaca total*]].
(Adv.) *(Verb)* *(NP)* *(Infl/ [+Agr.])*

q) Melissa acredita ***sinceramente*** [**CP** *que* [**IP** *eu* ***sou*** *uma maníaca total*]].
(Verb) ***(Adv.)*** *(NP –* ***Nominative****)*

In fact, The Adjacency Requirement has nothing to say about the finite CP sentences from examples *'p'* and *'q'* since Case Filter applies to NPs, and the NP-subjects of both sentences get Nominative Case from finite Infl. So, even for English, take example sentence *'r'*, it would be grammatically correct:

r) Melissa believes ***sincerely*** [**CP** *that* [**IP** *her boyfriend* ***is*** *a total freak*]].
(V) *(Adv.)* *(NP -* ***Nominative*** *-(I)/* ***+****Agr. feature)*

In Portuguese, as in other Romance Languages in general, however, there is a "cut" in Adjacency, even though it is a linguistic universal. Adverbs seem to be able to move more flexibly than other lexical items. As Pollock (1989) affirms about the Romance Languages, the verb is moved in S-structure to a position of adjunction to Infl, leaving a trace *t* in its original function. This trace assigns Case to the NP under government and satisfies the condition of Adjacency, as in example *'s'* represented in tree (8):

s) Maria ama ***verdadeiramente*** *Joaquim.*

t) Maria ama Joaquim ***verdadeiramente****.*

Rule of **'*Raising V*' :**

Tree 8):

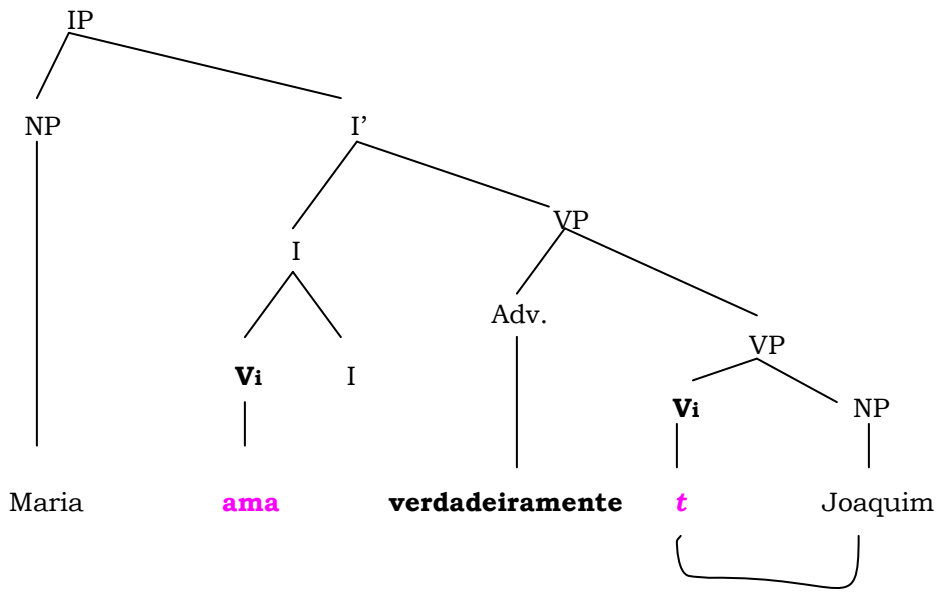


Figure 27 – tree 8, Pollock, 1989.

It can be concluded that, depending on the richness of the morphological Case System of a language, this language can have its value for the Adjacency Condition parametrized; that is, the value for the Adjacency Condition can be fixed in [+] or [-]. For the languages baring a weak morphological Case System, the Adjacency Condition is valued as [+] (strict Adjacency), even if its effects can be "mascarated" by the "**raising V**" (subida de V) rule represented above in tree (8) for the example *'s'*. And, in languages where the morphological Case System is rich (manifested/realized), the order of the constituents in and/or outside VP is relatively free, given that they can be rescued phonetically. In these languages, the value fixed for the Adjacency Condition is [-](Raposo, 1992).

3.2 SUMMARY

In this chapter, crucial Government aspects were dealt with so as to provide Conditions for Structural Case assignment in English and Portuguese. Fundamental definitions for such Government Conditional System were presented (notions of Government, C-command, M-command, Barrier and L-marking among others), as well as requirements (such as the Case Filter and Adjacency, to name a couple) aiming at its understanding and analysis throughout the many examples given, also briefly touching Small Clauses. Having assimilated that, one is invited to move on to the objective of this work; that is, compare English and Brazilian Portuguese concerning Case assignment for the Infinitival Small Clauses in Chapter 4.

4 INFINITIVAL SMALL CLAUSES (ISC) IN ENGLISH AND PORTUGUESE: *A COMPARISON ON CASE ASSIGNMENT*

This chapter focuses on a comparative assignment of Case to the infinitival small clauses in English and Brazilian Portuguese, more specifically on the raised and/or nonraised subject-NPs behavior of infinitival small clauses of both languages concerning Case assignment. In order to best achieve a good analysis of this proposal, Infinitival Small Clauses will be explained and dealt with relative to Case assignment for the two languages in particular throughout the chapter. Firstly, though, a quick view of small clauses definitions and theory will be presented.

> The type of Case a given small clause is assigned is shown to follow from (a) the structural relation between the small clause and the Case assigner; and (b) the structural nature of the small clause.
>
> (RAPOSO AND URIAGEREKA, 1990, p. 505)

4.1 SMALL CLAUSES: DEFINITIONS

A first definition (4.1-a), according to David Crystal's (2003) *Dictionary of Linguistics and Phonetics*, "small clauses in GB are clauses containing neither a finite verb (verb with inflection [+ Agr., +Tense]) nor an infinitival *to*. Lacking both C (Complementizer) and I (Infl), its structure can be defined as [NP, XP], where XP can be and AP, NP, etc". For example:

a-1) Peter considers [*Johanna superficial*]. – [NP, AP]
Peter considera [*Joana superficial*].

a-2) Johanna considered [*Peter a nerd*]. – [NP, NP]
Joana considera [*Peter um nerd*].

a-3) Peter heard [*Johanna say it*]. – [NP, VP]

Peter ouviu [*(a) Joana dizer isso*].

a-4) She wants [*him off her back*]. – [NP, PP]

Ela quer [*ele pra longe dela*].

Another definition (4.1-b), according to Peter Culicover (1997, p. 47), "a small clause is a phrase that has a clausal or a propositional interpretation, but lacks the full inflectional morphology of a sentence"; such as the phrases in brackets [ ] and their respective propositional interpretations below:

b-1) Peter considers [*Johanna (acc.) superficial*]. = Peter considers that Joana (nom.) is superficial.

b-1) Peter considera [*Joana (acc.) superficial*]. = Peter considera que Joana (nom.) é superficial.

b-2) Peter imagined [*her shopping for clothes*]. = Peter imagined that she was shopping for clothes.

b-2) Peter imaginou ela (acc.) comprando roupas./... imaginou-a/... a imaginou = Peter imaginou que ela (nom.) estava comprando roupas.

Mioto (et al.2005) defined small clauses (or as he named them *mini-orações* in Portuguese – 4.1-c) as a predication established between a constituent that is a subject and another that is a predicate, without the nucleus of this predicate being a verb or a verbal inflection. Thus, the subject of the small clause in brackets is the constituent to which various predications are applied, independently of the fact that it (the subject) may end up being taken as the direct object of the verbs:

c-1) A Joana acha [**SC** *o Peter feio*]. */Joana considers* [**SC** *Peter ugly*].

c-2) A Joana acha [**SC** *o Peter capaz de dirigir*]. */Joana considers* [**SC** *Peter capable of driving*].

c-3) A Joana acha [**SC** *o Peter um monstro*]. */Joana considers* [**SC** *Peter a monster*].

c-4) A Joana quer [**SC** *o João de barba*]. */ Joana wants* [**SC** *Peter with a moustache*].

In the cases just above exemplified by Mioto (et al. 2005), all the SCs are verb complements.

Infinitival small clauses are infinitival subordinate *subject* clauses such as: [*For Nina to marry*] *will take ages.* They may or may not have raised NP-subjects. Compare:

[*For* ***Nina*** *to marry*] *will take ages.* – raised subject within infinitival small clause; and
[*(In order) to marry*], *Nina will have to save some money.* – Nonraised subject within subordinate clause.

They can also be Infinitival subordinate *complement* clauses such as the examples:

It is [*for Ana to live abroad*].
It is important [(*for* Ana) to *live abroad*].
She wants [*to live abroad*].
You make [*me cry*]. – bare infinitive

Infinitive subordinate clauses may seem not to satisfy the definition of small clauses given above (4.1-a) once it may contain the infinitival *to*, but it is still considered a small clause for it behaves like nominal projections of a [-V,+N] element, namely the infinitival morpheme (Raposo, 1986). In other words, (Bare or To-) Infinitival small clauses are non-finite and behave like a noun in a sentence. Therefore, they fit the definition given above in terms of their structure.

4.2 SMALL CLAUSE (SC), THE THEORY

Edwin Williams (1983, p. 288-9) claims that the basic features of the analysis of the small clauses (SC) constructions will be determined largely by the idea that is adopted as "subject".

> *The ruling motto of the SC theory is: "All subjects are structural subjects.*
> (Williams, 1983, p. 289)

Being so, in the SC theory, the subject of the small clause is structural; hence *Margot* is the subject of *lunatic* in the next small clause examples 1 and 2 in brackets:

1. *We consider* [*Margot lunatic*]**x**. /*Nós consideramos* [*a Margot lunática*]**x**.
2. *Margot**i** seems* [**t***i* *lunatic*]**x**. /Margot***i*** *parece* [**t***i* *lunática*]**x**.

He appoints that the nature of the category **x** is that of a projection of the predicate itself (contained in **x –** adjective, in this case A and its projection = A*) in combination with the selection of the predicate (verb) that would determine the possibilities for complements such as **x**[4]. In addition, this projection A* cannot be a maximal projection so as to constitute a barrier for government from outside SC, given that SC gets its Case from the matrix verb; according to the definition of government in Chomsky (1981/86). Therefore, some SCs are projections of their own predicates; and others are not. The ones headed by their predicates (inside VP) are foreseen not to have PRO subjects; that is, they have to have an NP filling the *subject* position to receive θ-role from the predicate (inside **x**) and to be governed by the matrix verb (from outside), which PRO cannot. Observe the examples 3 and 4 ahead:

[4] Author's notation for such complements.

3. **Margot wants* [PRO *hurt*].

4. *Margot wants* [*Sarah hurt*].

If SCs were to have PRO subjects inside VPs, they (SCs) would not be theta-marked, thus not be an s-selected verb complement, hence not L-marked; figuring a thematic independence from the matrix verb which cannot occur in order to maintain SCs' subjects proper government conditions. Take sentence 3 as an example: that is the source if its ungrammaticality. This type of (complement) small clauses are called *headed*; ones which can never have PRO subjects when inside VPs (or when V complements).

The type of small clauses that can have PRO as subjects are the ones considered a proposition = S, which are outside VPs, in ungoverned environments. For example, observe sentence 5:

5. Margot had the soup [PRO hot]**x**.

The soup was hot is the proposition intended = S and PRO is controlled by the verb complement *soup*. The predicate inside **x,** *hot*, assigns theta role to the projection of the complement (*soup* = PRO) not figuring an environment to be governed by the verb anymore. *Soup hot* is not a small clause complement of *have*. One does not *have* = *eat* propositions. **x** being = S, then S is a class of small clauses not headed by predicates.

Concerning the notion "subject", SC theory retains the [NP, XP] idea of structural subject (NP dominated by S), consequently needing no trivial theory of the subject-predicate relation; hence holding whatever relation between NP and XP in [NP, XP]α, where α is a clause. The subject and its predicate, being a semantic unit, reflect the *unithood* necessary to satisfy the Projection Principle in Chomsky (1981). In small clause theory, *clause* is the more primitive notion of the subject-predicate relation, in which it defines subject (E. Williams, 1983).

The properties of the NP-subjects to be licensed in small clauses and the nature of the small clauses themselves are aspects to take part in accounting for Case marking of NP-subjects in infinitival small clauses.

4.3 CASE MARKING THE SUBJECT OF INFINITIVAL SMALL CLAUSES IN ENGLISH AND IN BRAZILIAN PORTUGUESE

The small clauses themselves do not contain a Case-marker. Following Haegeman (1994/2005), small clauses are projections of a functional head Agr., which, like non-finite I, small clause Agr. fails to assign Case. Observe the contrast of finite a) and non-finite (small clause -SC) b):

a) [**CP** *That* [**IP** *Peter is a nerd*]] *Johanna knows*. /*Joana knows that Peter is a nerd.* – finite I within SC = [+Tense, +Agr.], assigns Nominative Case via Spec-Head agreement.
[*Que* [*Peter é um nerd*]] Joana sabe. /*Joana sabe* [*que* [*Peter é um nerd*]].

b) [**SC** *Peter a nerd] Johanna knows. – non-finite I within SC = [-Tense, -Agr.],
too weak to assign Case to the subject-NP (*Peter*).
[***Peter um nerd] Joana sabe.

As has been explained, in GB, the distinction between finite and non-finite clauses is drawn in terms of feature composition of the head of the clause, as we know it for INFL (I). The feature composition of an Infinitival small clause is also that of a non-finite clause, check c):

c) [*To be here*] *took precious time and money*. – non-finite SC = [-Tense, -Agr.]/[*Estar aqui*] *levou tempo e dinheiro preciosos*.

As also said by Koopman and Sportiche (1991) while examining subject properties in non-finite clauses, Infinitival INFL is not a Case assigner, meaning that no overt (or covert subject requiring Case) can surface there; unless Case is available from an outside governor, such as ECM cases. ECM cases in turn, will behave like tensed (finite) clauses. If NP-subject is overt (realized), it needs Case. PRO, on the other hand, is ungoverned (Koopman and Sportiche, 1991). Besides, if there is no overt NP as the small clause subject, the Case filter will have nothing to say about it. One case of an SC with PRO, though, presented by Haegeman (1995), is the one with unaccusative (matrix) verbs, such as *arrive*: *Poirrot**i** arrived* [PRO***i*** *angry*].

Hence, as for the non-raised subject of infinitival small clauses, Case assignment is dismissed. We shall concentrate on raised (realized/ overt) NP-subjects, which receive Case.

Considering I) the weakness of Infl in infinitival small clauses, added to II) the revision as given by Raposo and Uriagereka (1990) of the characterizations of *government* in terms of barriers, *barriers* in terms of blocking category and *blocking category (BC)* in terms of L-marking:

4.3-1) α governs β iff (being "*iff*" equal to "*if and only if*") α m-commands β and there is no γ, γ a barrier for β, such that γ excludes α.

4.3- 2) γ is a BC for β iff γ is not L-marked and γ dominates β.

4.3- 3) γ is a barrier for β iff:

a) γ immediately dominates δ, δ a BC for β or;

b) γ is a BC for β, γ ≠ IP

4.3- 4)α L-marks β if α θ-marks β;

besides III) Raposo' s (1986/92) argument that infinitival clauses behave like nominal projections with respect to Case Filter, whose analysis can be perfectly extended to English; the subordinate infinitival small clause subject Case is assigned mainly in two ways (in Eng.): i) by the (insertion of) Complementizer *for* (Accusative Case assigner preposition-P), and ii) likewise verbs in ECM,

government from outside (Accusative Case assigner), since IP is not a barrier for outside government. In Brazilian Portuguese (BP), though, we find an inflected infinitive, with a positive value for feature [+Agr.], so iii) the ISC-subject receives Nominative Case internally, or otherwise is not licensed. Check examples d, e and f below:

d =i) [***For*** *Ana* **(acc)** *to relax*] *is complicated.*

… *her* …

[***Para*** *Ana* **(acc)**[5] relaxar][6] *é complicado.*

… *ela* …

[*For me to relax*] *was much easier.*

[*Para mim relaxar*][7] *foi muito mais fácil.*

The same way for instead of *subject* infinitival small clauses, *complement* infinitival small clauses:

It is complicated [***for*** *Ana to relax*].

É complicado [***para*** *a Ana relaxar*].

It was much easier [*for me to relax/for me to have relaxed/for me to have been relaxed*].

Foi muito mais fácil [*para mim*[8] *relaxar/ para mim*[9] *ter relaxado/ para mim*[10] *ter sido relaxado*].

Observe tree1) for the examples in i) (Mioto, 2005):

[5] Just a reminder that acc. is equivalent to oblique, as has been previously mentioned.
[6] Not current but possible use in PB.
[7] The accusative in this construction is not considered a high standard of PB, but it is possible and more current than one would like it.
[8] Equal to note 6.
[9] Equal to note 6.
[10] Equal to note 6.

Tree 1)

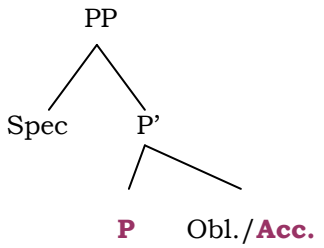


Figure 28 – Tree 1), Mioto, 2005.

Mioto (et.al 2005), calls the attention to the discomforting fact that it is not exactly the pronoun *mim* in PB that receives the Oblique Case by the preposition, but the ISC as a whole (the infinitive sentence), which is in fact the complement. The canonical configuration nucleus-complement thus, is not present. Nonetheless, external argument *mim*, 'daughter' of the complement, receives Case. The infinitive sentence, in principle, does not demand Case assignment. This is why it is also known as an ECM, attributed only by the preposition *para* in BP.

e =ii) *I* ***want*** [*you* **(acc)** *to be my date*].

Eu quero* [*você* **(acc) *ser minha namorada*].

They ***believe*** [*Marco* **(acc)** *to be the smartest of them all*].

*…**believe** him to be …*

Eles acreditam Marco/ele* **(acc) ser *o mais esperto de todos eles./ Eles acreditam Marco/ele* **(nom)** *ser o mais esperto …*

*******Marcos acredita os meninos /eles* **(acc)** *serem os mais espertos de todos./Marcos acredita eles* **(nom)***serem os mais espertos …*

Remembering here that the impossibility for this construction in PB is due to the fact that the verb would have to cross two barriers, first CP and then IP[11], which is not possible in Kayne's terms[12], and mainly the fact that these

[11] The explanation in chapter 3 demonstrates how this barrier is undone because of Chomsky's reformulation on Government theory based on Rizzi and Belletti's (1981) proposal. Mainly consider the second justification for this impossibility in PB.

[12] In Kayne's terms means that government from a matrix predicate can cross one S-type boundary but not two such boundaries. This insight is respected in this analysis with respect to government of C by V since C is the head of CP: …V [CP SPEC [C' C IP]]. C canonically governs IP and Infl once Infl is the head of IP – Head-to-head movement. Therefore, matrix predicate (directly) takes an IP complement: … V [IP NP [I' Infl VP]] (Raposo, 1987).

verbs subcategorize for a finite CP clause, which then would contain a Case assigner inside IP as in:

Eu quero [**CP** *que* [**IP** ***você seja*** *minha namorada*]].

Eles acreditam [*que* [***Marco é / seja*** *o mais esperto de todos eles*]].

Observe tree 2) for the examples in ii) (MIOTO, 2005):

Tree 2)

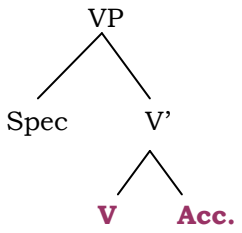


Figure 29 – Tree 2), Mioto, 2005.

f =iii) [*Ela* **(nom)**[13] ***ser*** *bonita*][14] *não pode ser verdade*. - Agreement is Present = [+Agr] in Infl for 3rd person singular.

'She to-be-Agr beautiful cannot be true'.

*[*She to be beautiful*] *cannot be true.*

[*Ela* **(nom)** ***ter*** *nascido perfeita*] *teria sido desejável*. - Agreement is Present = [+Agr] in Infl for 3rd person singular.

[*Ela* **(nom)** ***estar*** *dizendo a verdade*] *pode contribuir*. – Agreement is Present = [+Agr] in Infl for 3rd person singular.

[*Eles* **(nom)** *ser****em*** *bonzinhos*] *é uma farsa*. – Agreement for 3rd person plural.

[*Eles* **(nom)** *ter****em*** *sido bonzinhos*] *foi uma farsa*. – Agreement for 3rd person plural.

[*Nós* ser**mos** *capazes de ouvir*] *será útil*. – Agreement for 1st person plural.

---

[13] Because of the pronominal Syncretism the specification "acc" for accusative and "nom" for nominative is given. When there is no Syncretism, the specification is not given, once it is possible to distinguish the correct Case assigned without leaving any doubt.

[14] As said Raposo (1981), the subject clause in extraposition such as this is somewhat marginal in Portuguese, but such marginality has nothing to do with the infinitive inflection.

Raposo's (1981) strategy to account for these constructions (subject clauses in extraposed position) takes the Agr element in the inflected infinitive as a zero level element of category N, combined with the "projective" properties of X' theory, that: when IP is an inflected infinitival clause it is a maximal projection of N, nondistinct from NP, being IP an immediate 'daughter' of the matrix S, with no CP dominating IP.

Será útil [*nós ser**mos** capazes de ouvir*].

[**CP** [**IP** [**N***max* = **IP** *Nós* [**I'** [**I Agr**]**1** *ser capazes de ouvir*]] [**I' Infl 2** *será útil*]]]

'It will be useful we to-be –Agr capable of hearing.'

**It will be useful* [*we to be able of hearing*].

Observe tree 3) for the examples in iii) (Mioto, 2005):

Tree3)

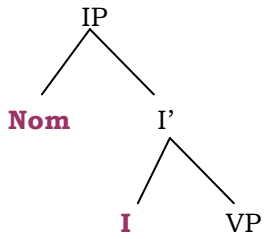


Figure 30 – Tree 3), Mioto, 2005.

Summarizing so far, out of the three ways exposed just above for Infinitival small clauses subject Case assignment, two are possible in English: one via the insertion of the Accusative Case assigning preposition *for,* and the other via ECM verbs, also assigning Accusative Case. From that we conclude that there is no Nominative Case assignment for NP-subjects of English infinitival small clauses, whether they are subject ISC or complement ISC. In Brazilian Portuguese (BP), the more marginal, but possible in some cases, Accusative Case assignment via preposition *para* is one way, parallel to English

preposition *for*; but mostly (more currently and highly standardized) it is the other way, via Spec-head agreement which assigns Nominative Case.

According to Nunes (1993c), the infinitival preposition *to* has recently been claimed as the head of one of the projections (AGR = AgrP or T = TP) resulting from the split of Infl (cf. Chomsky, 1989 and Pollock 1989). As it is known, the agreement morpheme in English is not realized, not inflected for Infinitive clauses, showing no distinction from the set of person features , often taken as a *vacuous* agreement; thus matching all the different person features. For Nunes it is more plausible that it heads the projection AgrP, though no morphological agreement is realized, than TP for semantic reasons[15], patterning with *phonologically null*. Considering Pollock (1989)'s split infinitive projections, and the fact that in PB infinitival constructions with raised subjects have agreement (or are not morphologically null), AgrP distinguishes inflected/personal infinitives in BP from morphologically null/impersonal infinitives in Eng. The IP splitting as said Mioto (2005), can be very clarifying for languages with personal infinitives once the infinitive can and cannot have Agr.; being (such splitting) otherwise, not necessary. It clears the fact that there is an agreement morpheme (number and person) plus the aspect-time morpheme (-*r*) in BP. In accordance with X' Theory (MIOTO, 2005, p. 59), Infl splitting would configurate as in tree 4):

Tree 4): IP splitting

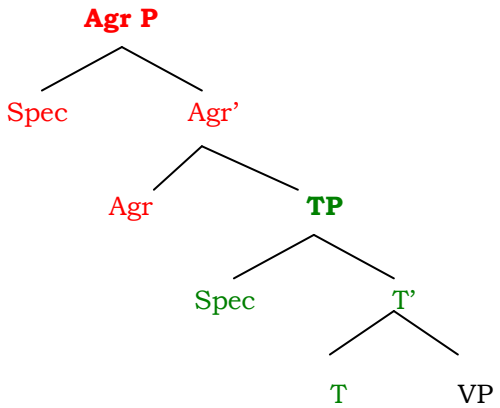


Figure 31 – Tree 4), Mioto, 2005.

[15] Lack of significant semantic contrast between aspectual to-infinitive vs. bare infinitive undermines an analysis of *to* as head of TP (Nunes 1993c).

For an even better visualization of the above explained, check tree 5 of example g) extracted from Mioto (2005, p. 80) below[16]:

g) O joão viu [**IP** *os musicos executarem a Nona Sinfonia*].

'The João saw the musicians (they) –to-perform –Agr (3rd p. pl) the 9th Synphony'

Tree 5): SS representation[17] of sentence *g)*

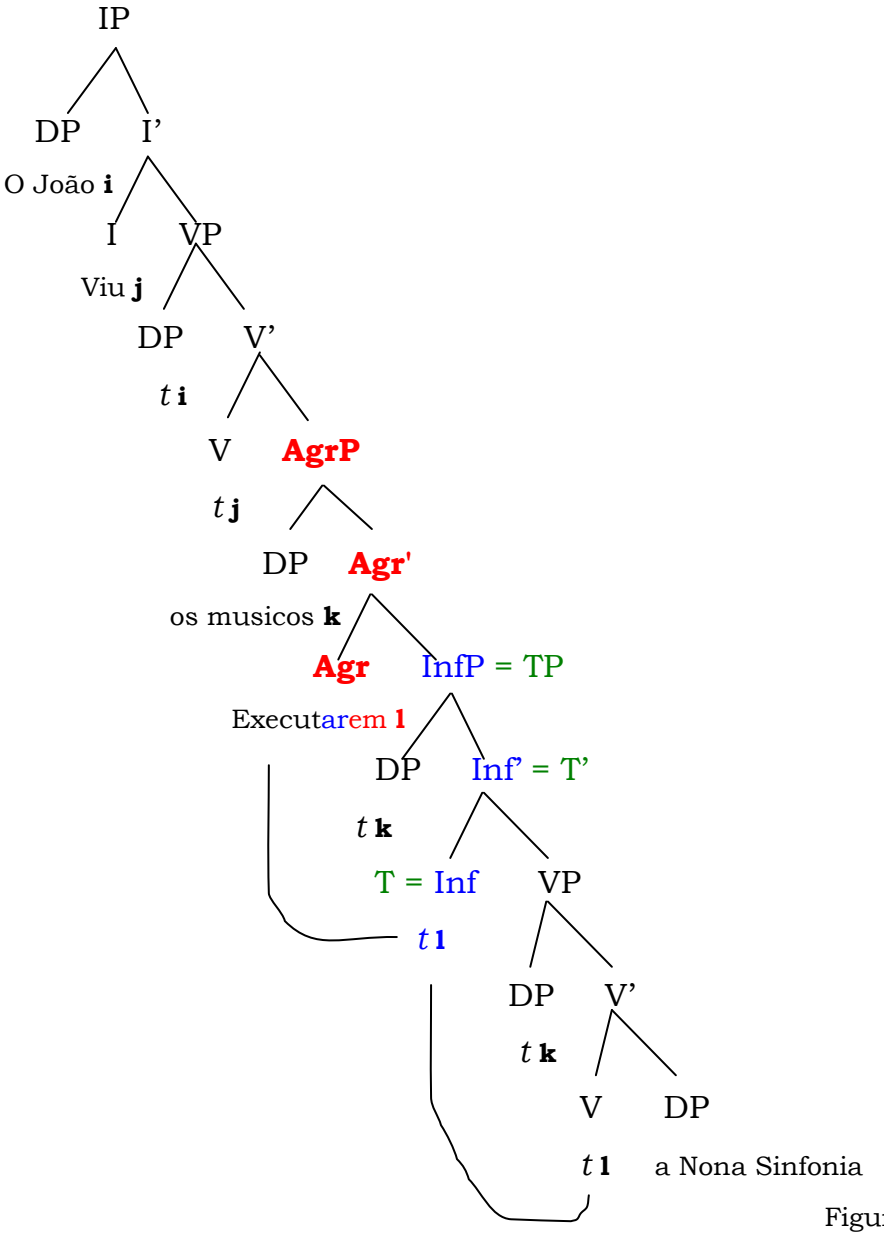


Figure 32 – Tree 5), Mioto, 2005.

[16] In Eduardo Raposo (1992), accepting Pollock's proposal of splitting Infl and commenting that in this context, the movement of V to Agr and T occurs by adjunction and not by substitution.

[17] TP is not included in this tree for it is not pertinent due to the reason explained in the above paragraph.

It should also be noted that DP (as can be seen in tree 5 – Figure 32) configurates X' Theory functional category dominating NP, parallel to how IP (functional category) dominates VP. Its nucleus is D, which builds reference to NP, granting it (NP) the status of argument (Mioto, 2005).

As Silveira, Simões, Abreu, Collishonn and Lima (1994) explain, the first incorporated modification by Chomsky & Lasnik (1991) to Chomsky's (1986) theoretical framework is with respect to NPs. According to them, Chomsky & Lasnik (1991) bring about the fact that propositions have functional categories as maximal projections, such as IP and CP, being I and C functional categories. An NP being a lexical category is in asymmetry with those of propositions (IP and CP). Nevertheless, since determiners are functional elements in NPs, it would be only natural that this functional character of maximal projections be extended to NPs. Taking determiners as functional heads (D), NPs are analyzed as complements of maximal projection DPs. Having this functional feature extended, the internal structure of NPs now is similar to those of propositions. The immediate and crucial consequence of this change is that it reinforces the idea of an IP = [+Agr, -Tense] being treated as an NP, a pronominal manifestation of N, for baring nominal marks only.

Concluding, there is a significant parametric difference between English and Brazilian Portuguese concerning Case assignment of subjects within Infinitival small clauses. This parametric difference in UG, mainly due to the inflected Infinitive (II) constructions possible in BP, should be therefore further accounted for here as to determine: a) what parameters of UG make this construction (II hence, ISC) possible, b) its (II's/ ISC`s) major properties, and c) which principles (of UG) differ from English comparatively.

Addressing questions b) and c), Raposo (1987) explains that there should be no expectations as to UG providing special features or principles dealing exclusively with the inflected Infinitive and that the grammatical generalizations that account for its distributional properties follow from independent principles of UG, since reasonable assumptions can be drawn from clausal structures and the nature of the Infl node. Government-Binding Theory basic framework as

outlined in Chomsky (1981a; 1982) accounts for the properties of the Inflected Infinitive; and Case Theory completely accounts for the distributional properties of Inflected Infinitival Clauses (IIC), given assumptions drawn from the nature of Agr in this type of inflection.

To finally address question a), about the UG parameters that make inflected infinitive possible cross-linguistically, placing inflected infinitives in a general picture of inflections, Raposo (1987) claims there are two distinct parameters: a morphological and a syntactic one. The morphological parameter is *The Infl Parameter* and the syntactic one is *The Null-Subject Parameter*; each to be explained in the next sessions.

4.3.1 The Infl Parameter

Given the standard extension of Infl in 4.3.1- *h)*:

4.3.1 –*h*) Infl → [[+/- Tense], (Agr)],

being: *finite Infl* specified for [+Tense] and *infinitival Infl* specified for [-Tense] regardless of its Agr specification. In English and in most Romance languages, it is the case that a finite Infl is specified for [+Agr] (as well as vice-versa), the dominant type in UG. As has been described and explained, this is not the case of Portuguese, as Raposo (1987) exposed. Structurally, BP (identical to European Portuguese –EP) has Agr features overtly specifying for inflected infinitive, offering the free optional realization of [[+/- Tense], (Agr), contrary to most languages, presumably, where if Agr is positively specified [+Agr], there is no free choice, but the obligation of being [+Tense] as well; like English. With respect to these potential cross-linguistic realization choices of [+/- Tense] in an Infl with Agr, assigning value "+" to the free realization choice and "-" to the obligatory choice, there is the Infl parameter. BP is positively marked, comprising a highly marked choice in UG, once it has not been attested in

many languages. And English is negatively marked, as are most languages (RAPOSO, 1987).

4.3.2 The-Null Subject Parameter

As in Chomsky (1981a, pg. 52), Zubizarreta (1980) and others, Agr features have been equated to nominal properties, thus carrying typical nominal properties such as number, person and gender; what Chomsky (1981a) called the Φ –features, that can be specified for Case in the null-subject languages (CHOMSKY, 1982 and RIZZI, 1982). For Chomsky (1982) the question whether Agr in Infl can or cannot be specified for Case depends on the content of the null-subject parameter. Null-subject languages contain a set of specifications for number, person, and optionally Case in verbal Agr. Non-null-subject languages Agr is not specified for Case. Raposo (1987) takes an Infl consisting of [+Agr, -Tense] to be an overt pronominal realization of the category N at the zero-bar level. The consequence is that "inflected infinitives" will occur taking Nominative lexical subjects in Null-subject languages, given *i)*:

> i) In the absence of [+Tense], Infl (i.e. Agr in Infl) is capable of assigning Nominative Case to a lexical subject only if it is itself specified for/assigned Case (RAPOSO, 1987).

A language valuing both the morphological and the syntactic parameters positively; that is, a null-subject language positively specified for the Infl parameter (like BP) has four types of S-structure, supposing NP is lexical throughout *j), k), l), m)*, according to whether Agr is or is not specified for Case and whether Infl is [+Tense] or [-Tense]:

j) NP [+Tense] **Agr** VP

-C = *not* specified for Case

k) NP [-Tense] **Agr** VP
-C

l) NP [+Tense] **Agr** VP
+C = specified for Case

m) NP [-Tense] **Agr** VP
+C

In *j)*, the presence of [+Tense] is enough to allow Nominative Case marking of NP by Infl (or Agr in Infl). Otherwise, Nominative Case would not be assigned to NPs in non-null-subject languages, like English. In *k)*, though, Infl cannot assign Nominative Case, given it marks no tense and it is not specified for Case. It is the case of the Infinitive for null-subject and non-null-subject languages. Unless there is a source of Case for NP from outside the infinitival clause, it is ruled out. The possibility for an outside governor is in an "exceptional Case marking" construction, bearing Objective or Oblique (Accusative) Case for the NP, not Nominative, though. In *l)*, Infl satisfies the conditions for assigning Nominative Case *redundantly*, occurring with both tense and Case specification. The NP receives Case under feature matching, following Chomsky (1982). In *m)*, we have what we are looking into, Inflected Infinitival clauses in BP, featuring no tense, but Agr is specified for Case, assigning Nominative Case to NP.

Concluding, Null-subject languages can assign Nominative Case to lexical NP-subjects within inflected Infinitival clauses (IICs), which non-null-subject languages cannot. Hence, if NP is a null-subject, *j)* and *k)* are ruled out for not being able to assign nominative Case within IICs, whereas *l)* and *m)* are ruled in, following Chomsky (1982).

As for what has been exposed in 4.3.1 and 4.3.2, the phenomenon of the Inflected Infinitive narrows down to these two parameters: Infl and Null-subject. More broadly speaking, only when a specific combination of choices in UG concerning these two parameters such as the ones below for English and

Brazilian Portuguese respectively, will a language allow Inflected Infinitives or not (Raposo, 1987):

[-Infl] Parameter + Non-null-subject Parameter;

Or

[+Infl] Parameter + Null-subject Parameter - extremely rare in UG.

Therefore, these two combinations or choices in such parameters make English and Portuguese different with respect to Infinitival small clauses.

So far so good, but where does Agr gets its case given the inflected infinitival clause feature configuration: [-Tense, +Agr]? Assuming that, according to Raposo (1987), positive Tense assigns Case to Agr, which in turn assigns it to NP (supposedly under feature matching as previously assumed), where would Agr receive Case from without a positive Tense as in *m)*? There must be a Case assigner positioned locally enough and accessible to Agr external to Infl. In other words, Infl node, containing only Agr in this case (as configurating in *m)*), must have an external governor to be Case marked. Since Case is assigned under government, Infl in *m)* must be governed by a Case assigner (V, P, or Infl). Both the internal properties and external distribution of inflected infinitival clauses follow from this idea besides other aspects independently motivated concerning clausal structure, if we take the concept of government[18] adopted so far. So, one way for Agr in Infl to receive Case and assign it to NP without being directly governed is via *Chain formation*. This hypothetical chain (Agr, NP) is assigned only one Case by an element β external to it, thus not violating Chomsky's (1981a, 334) requirement: *"…no chain can be assigned Case by more than one category β"*; even if NP and Agr in fact form a chain, given that both are specified for Case. As Reuland (1983) suggested, the Nominative Case assignment from Agr to NP is purely internal to the chain, thus can be taken as a *transmission* of Case instead of true assignment.

[18] Following Belletti and Rizzi (1981), government is defined as: α *governs β in a configuration like [*δ … *β* …α …*β* …*], where: i)* α = *X*º*; **ii)** where φ is a maximal projection, if φ dominates β, then either φ dominates* α*, or φ is the maximal projection of β* – crucial for Raposo (1987) to account for the inflected infinitive, known as the **head-to-head government**; *iii)* α *c-commands β* (Raposo 1987). Definition which is incorporated in Chomsky's government concept reformulation.

Observe through an example sentence already given in this chapter (from the list f =iii):

[**CP** [**IP** [**N***max* = **IP** *Nós* [**I'** [**I Agr**]**1** *ser capazes de ouvir*]] [**I' Infl 2** *será útil*]]]

In this sentence, the matrix Infl **2** governs and assigns Case to the subject-clause as a whole. Hence, the head of the subject-clause, Infl **1**, is also governed by Infl **2** (under Belletti and Rizzi's (1981) proposal –check chapter 3, and government concept as in footnote 15). Because of that, the Case assigned to the whole subject-clause can then, percolate down to its head, Infl **1 (Agr)**.

Following Reuland (1983), the *transmission* from Infl (Agr) to the NP within the internal chain would be of Nominative Case, therefore ignoring the specific Case assigned to Agr or the Chain (Agr, NP) from Infl **2** (which is not necessarily Nominative), once Agr only assigns/"transmits" Nominative Case to NPs.

Extraposing the whole subject-clause by Move-α, we derive the sentence below at s-structure:

pro***i*** [**I'** Infl **2** *será útil* [**N***max* = **IP** *nós* [**I'** [**I Agr**]**1** *ser capazes de ouvir*]] **i**]

Again, Infl **2** governs and assigns Case to the whole Infl **1** clause, therefore also assigning Case to its head I **(Agr)1** (through percolation as the above explanation). The null expletive (pro) in subject position also receives Nominative Case by Infl **2** (Raposo, 1987), for it is then "transmitted" via chain formation from the co-indexed extraposed clause, as Chomsky (1986a) explained.

Similarly, a Case-assigning preposition can introduce an infinitival complement as adjunct clauses such as: *Lena saiu de casa* [**PP** *sem* [**IP** *os cachorros ouvirem*]], on the assumption that adjunct clauses are PPs and that the category P subcategorizes for maximal projections of N. P, then, governs the infinitival complement (inflected SC as a whole) and therefore its head (Agr), which assigns Nominative Case to the adjunct SC-subject (Raposo, 1987).

Summarizing these three previous sessions of chapter 4, we have focused on the cross-linguistic parametric differences and how to account for them,

specifically treating Infl splitting and how Agr is assigned Case concerning Infinitival small clauses NP-subject Case assignment, mainly the Inflected Infinitival Small Clause in BP, given its rarity in UG; and hence, proving its relevance to this work as we see it corroborates the theory.

We shall now be looking into another reflect of Infl splitting such as how the infinitival morpheme *to*, head of TP (dominated by AgrP as shown in tree 4) gets its Case in English, as well as how some idiosyncratic verbs subcategorize their infinitival complements as to generate *bare* or *to*-infinitive complements as well as ISC =Nmax IPs or ISC =CPs. On both respects, we will also compare to BP.

4.3.3 Different types of Infinitival Complements

Still on splitting Infl (Pollock, 1989), Nunes (1992/1993c) exposes the traditional view that the preposition *to* is the head of one of the projections of infinitival IPs in English. That, according to him, has been due to the fact that the nominal properties of infinitives have not changed in the history of English, playing the same role it always did as a *dummy* Case marker to satisfy Case Filter as a last resort (cf. Stowell, 1981, 177-179 for further discussions on this idea). Assuming that, Nunes presents four logical possibilities for infinitival TP`s head (T=*to*) to satisfy Case Filter, namely: 1-Infinitival TP is subcategorized by a Case assigner; 2- the infinitival TP moves to a Case marked position; 3- the infinitival head (T=*to*) moves to a position where it can be Case marked; and 4- the infinitival TP is Case marked after the insertion of a dummy Case marker, as a "last resort operation". Possibilities 2 and 3 are not going to be dealt with here. Possibilities 1 and 4; however, are actualized in the event of specific constructions such as the ones containing *perception* and *causative* verbs with infinitival complements *n)* and *o)* respectively below. For example:

n) Candice *saw* [**VP=IP** Jeffrey Ø *die*].

Candice *viu* [Jeffrey morrer].

o) Paloma *made* [**VP=IP** Candice Ø *see* to his funeral].

Paloma *fez* [Candice providenciar seu funeral].

As according to Zagona (1982), verbs like *see* and *make* function as Case assigners for VP (for Zagona, VP = IP). The last resort rule of to-insertion is not triggered; thus, subcategorizing bare infinitives (bare infinitival TPs =Ø) as Nunes (1992/1993c) explains. The matrix verbs of *n)* and *o)* assign Case to both the (bare) infinitival head and the subject of the embedded clause.

The "last resort operation" would be required, though, for their (*n)* and *o)*) passive counterparts, given that both nominal and verbal Cases are absorbed under passivization and that the embedded verb needs to be licensed (Zagona, 1982):

n.i) Jeffrey was seen [***to*** *die (by Candice)].*

**Jeffrey foi visto morrer (por Candice).*

Jeffrey foi visto ***ao*** *morrer (por Candice).*

o.i) Candice was made [***to*** *see to his funeral (by Paloma)*].

**Candice foi forçada providenciar seu funeral (por Paloma).*

Candice foi forçada [***a*** *providenciar seu funeral (por Paloma)*].

The dummy *verbal* Case marker ***to*** is triggered in the above cases. This would differ from ECM verbs in the sense that ECM verbs have both active and passive forms comprising *to-infinitive* complements (Nunes, 1992/1993c):

p) I believe [**IP** *Tina* ***to be*** *responsible*].

*Eu acredito [a Tina ser responsável].

Eu acredito [**CP** que [**IP** a Tina é/seja responsável]].

p.i) Tina is believed [***to be*** *responsible*].

*A Tina é acreditada ser responsável.

Summarizing, there is a common view, as in Chomsky (1981), that perception and causative verbs trigger S'-deletion (embedded clause is a

nominal projection = Noun Phrase), hence their infinitival complements (both NP-subject and Ø morpheme) satisfy Case Filter by having their Case assigned by the matrix verb, which percolates down to the infinitival head, allowing both the embedded subject and the infinitival head (Ø, in these cases) to satisfy Case Filer (Nunes, 1992/1993c).

If the matrix verb is passivized, losing its ability to assign Case, both the embedded subject and the infinitival morpheme (Ø) have to resort to Case assignment alternatively. The embedded subject undergoes movement to subject of the matrix verb, receiving Nominative Case from matrix Infl; whereas the infinitival morpheme in turn, is Case marked by the last resort *to-insertion*, yielding then a contrast between the active (bare-infinitive) and passive (to-infinitive) forms. Compare sentences *n)* vs. *n.i)*, and *o)* vs. *o.i)*.

As Nunes (1992/1993c) added, although both types of constructions (perception/causative + infinitival complements, and ECM + infinitive complements) trigger S'-deletion, the relation between perception and causative verbs and their infinitival complements is more local than that of between ECM verbs and their infinitival complements.

It is possible to say, according to Nunes (1992/1993c), that English has a null nominal infinitive morpheme (Ø) and that infinitival *to* is a dummy Case marker used as a last resort for the infinitival morpheme (Ø) to be Case marked. *To-infinitives* came to replace bare-infinitives in all the contexts where the infinitival morpheme (Ø) is not governed *in situ* by a Case assigner.

In Brazilian Portuguese, as the translations below the examples in English above show, an analogous to-infinitive such as an infinitive headed by a preposition (some sort of a dummy Case assigner) also comes into action in order to license the infinitive complement of passive sentences for perception and causative verb constructions:

q) Candice viu [**VP=IP** *Jeffrey morrer*].

q.i) Jeffrey foi visto [**PP=IP** ***ao*** *morrer (por Candice)*].

r) Paloma fez [**VP=IP** *Candice providenciar seu funeral*].

r.i) Candice foi forçada [**PP=IP** ***a*** *providenciar seu funeral (por Paloma)*].

That is due to the different syntactic and semantic properties that exist among the types of infinitival clauses, and also to the fact that such verbs may subcategorize for more than one type of infinitive, depending on the language (N. Hornstein, A. Martins & J. Nunes, 2006).

It is important not to confuse these structures within perceptive verbs in BP above as any similar or identical semantically with the aspectual gerundive morpheme, as recalled N. Hornstein, A. Martins & J. Nunes (2006):

q) Candice viu [**VP=IP** *Jeffrey morrer*].→ ≠ *... morrendo ...*

q.i) Jeffrey foi visto [**PP=IP** ***ao*** *morrer (por Candice)*].→ ≠ *... morrendo ...*

Another factor to take into account here concerning different types of infinitival complements (ISC = N*max* IPs or ISC = CPs) is how they are subcategorized according to *factive*, *epistemic*, *declarative* and *volitional* verbs. Following Raposo (1987), the class of verbs under factive are the ones denoting an emotive predicate. Besides *lamentar*/'*to regret*', it includes *deplorar*/'*to deplore'*, *censurar*/'*to sensure*', *aprovar*/'*to aprove'*, etc. They subcategorize in BP for nominal maximal projections baring appropriate semantic properties, a nominal IP whose head is an inflected infinitive able to satisfy the subcategorization and selectional requirements of such predicates, given its maximal projection of Infl is =N. Thus, this class (of factive verbs) is arguing for the absence of a CP between IP and the matrix verb in this case. Like sentence *s)*, for example:

s) Eles lamentaram nós termos chegado tarde ao baile.

Eles lamentaram [**N*max* =IP** nós [**I'** [**I Agr**] ter chegado tarde ao baile]].

'They regretted *we to have-Agr* arrived late for the Ball'. -

(Corresponding to: They regretted *our arriving* late for the Ball. - in English)

The remaining verb types, namely the inflected infinitival clauses as complements to epistemic (pensar, achar/'to think', acreditar, crer/'to believe', adimitir/'to admit'), declarative (dizer/'to say', afirmar/'to claim'), and volitional (desejar/'to wish', querer/'to want') verbs, cannot subcategorize for (propositional/IP=Nmax) NPs since they do not select for the type of nominal complements factive predicates do, according to Raposo (1987); so he suggests that the infinitival complements of these verbs belong to the category CP. See examples *t)*, u) and *v)* below:

t) A Cassandra afirma [**CP** *que* [**IP** *nós comemos além do necessário*]].

'Cassandra affirms that we eat beyond the necessary.'

u) O Olavo pensa [**CP** *que* [**IP** *nós comemos além do necessário*]].

'Olavo thinks that we eat beyond the necessary'.

v) A Valentina deseja [**CP** *que* [**IP** *eles comam menos*]].

'Valentina wishes that they eat less'.

Keeping the above explained in mind, we have to adopt, according to Raposo (1987), the structure for their (inflected) infinitival complements within CP, as in D-structure representation of an infinitival counterpart for example *u)* above as:

O Olavo pensa [**CP**[**C'**[**C/T** *e*][**IP** nós [**I'**[**I** **Agr**][**VP** *ter* comido além do necessário]]]]]; equivalent to: **O Olavo pensa nós termos comido além do necessário,* where *e* in C is an empty terminal element dominated by TENSE operator ("C/T" just above in the bracket labels).

'Olavo thinks we to-have-Agr eaten beyond the necessary'.

As can be seen, the closest governor for the embedded Agr or the potential governor and Case assigner, the matrix verb, governs CP (and its head C) not IP (or its head, Infl/Agr). Hence, Agr is not governed and cannot receive Case, since the maximal projection (CP) dominating Infl (IP) does not dominate the matrix verb (V). Besides, V is not a maximal projection of Infl (to assign Case to its head I/Agr), regarding proper government conditions.

One possible '*escape hatch*' for Agr along the lines of Kayne (1984) is provided by moving Infl to the head position C, a strategic and adequate '*landing site*'. From that move we derive the S-structure representation of the infinitival counterpart for example *u)* as:

O Olavo pensa [**CP**[**C'**[**C/T** [**I Agr**]***i***][**IP** nós [**I'** t***i*** ***VP*** *ter* comido além do necessário]]]]; equivalent to:

w) O Olavo pensa termos nós comido além do necessário.

'Olavo thinks to-have-Agr we eaten beyond the necessary'.

Assuming that there is a TENSE operator in the head of CP, Infl (though nominal) has then moved to a TENSED position (T), still conforming to the selectional requirements of such predicates given that they are construed as needing propositional complements with TENSE, which are not *purely nominal*, therefore. Agr is in pre-subject, head of CP position, which allows Infl to be assigned Case from outside CP by the matrix predicate. Its trace is properly governed by the nominal Infl itself in the head position of CP, since they are co-indexed.

The behavior of epistemics and declaratives with respect to inflected infinitival complements is identical. Henceforth, whenever referring to epistemic predicates, declarative ones are included.

There is, nonetheless, a difference between epistemics and volitionals with respect to infinitival complements. Besides not taking nominal complements (IP=N*max*), volitionals do not take TENSEd CPs. Thus, if a nominal Infl raises to the head of CP, it becomes a purely nominal complement, violating these predicates' selectional requirements. The '*escape hatch*' for the epistemics does not work for the volitionals, as representation below demonstrates:

... V [**CP** [**C'**[**C** *e*] [**IP** NP [**I'**[**I Agr**] VP]]]]

X

As presented in the above bracket labeled demonstration, Infl cannot receive Case "*in situ*" for the reasons already exposed. In addition the demonstration in labeled brackets shows that C is unavailable as a landing site, which in turn does not allow Infl to be governed nor be Case marked from outside CP, by the matrix verb.

The account proposed for *u)* also holds for factive predicates, since they too, can subcategorize for CP complements besides optionally allowing the same word order in the inflected infinitival complements that are obligatory with epistemic verbs. Compare *s)*, *x)* and *y)* :

s) Eles lamentaram [**IP=N***max nós termos chegado tarde ao baile*].

... lamentam nós termos chegado tarde ... (purely nominal complements, propositional NPs);

x) Eles lamentam [**CP** *que* [**IP** *nós cheguemos tarde ao baile*]].

... lamentam que nós tenhamos chegado tarde ... (propositional CPs, sentential complements);

y) Eles lamentaram [**CP**[**C'**[**C/T** *-mos*]***i***][**IP** *nós* [**I'** t***i*** ***VP*** *ter- chegado tarde ao baile.*

... lamentam termos nós chegado tarde ... (TENSEd CPs, not purely nominal complements, propositional complements with TENSE).

'They regret/ regretted to-have-Agr we arrived late to the Ball'

The dual word order found in the inflected infinitival complements to factive predicates/verbs (examples '*s*' and '*y*') reflects the dual selectional possibilities of this type of predicate (CPs or IPs). Therefore, it is not necessary to assume that there is a TENSE operator in the head of CP *(y)* since factive predicates allow for pure nominal projections/complements, anyway (Raposo, 1987).

In English, verbs do not subcategorize for inflected infinitival complements, but equally, the kinds of predicates mentioned here will also subcategorize in E for more than one type of complement, varying from IPs to CPs. If the subcategorization is for a CP, it will be equal to BP as in examples *t)*, *u)*, *v)*; and if they subcategorize for a nominal IP (infinitive small clause), the

embedded subject will be Case marked by the matrix verb just as ECM verbs do.

Summing up this last session of chapter 3, I have presented different types of infinitival complements regarding both languages (E and BP) with respect to certain verb type idiosyncrasies in order to explain how their embedded subjects receive Case depending on the kind of Infinitival complement they subcategorize for.

Concerning the specific objectives of this work: *a) the investigation and comparison of the infinitival small clause NP-subject behavior in both English and Brazilian Portuguese languages with respect to Case assignment, b) the identification of similarities as well as differences in the behavior of NP-subject of infinitival small clauses, while comparing both languages, that corroborate the GB theory, c) within GB (Chomsky's theory), discuss and present different and contributing proposals for Case assignment to NP-subjects of infinitival small clauses of both languages*; these three chapters have described and explained, therefore accounted for the comparison of Case assignment to NP-subjects of infinitival small clauses between English and Brazilian Portuguese by having presented the similarities and differences on this matter for both languages as well as significant proposals within GB theory in order to offer a more in-depth analysis and understanding of how this challenging parametrization corroborates the theory.

Within this account, a few final considerations are more objectively appointed as this work's main conclusions in the following chapter.

5 CONCLUSIONS

The analysis carried out in this work has mainly narrowed this comparison between the behavior of NP-subjects of English and Brazilian Portuguese infinitival small clauses concerning Case assignment down to two parameters of UG: *The Infl Parameter* and the *Null-Subject Parameter.* The case here being that English and BP value these parameters differently:

[-Infl] Parameter + *Non-null-subject Parameter* – in English*;*

And

[+Infl] Parameter + *Null-subject Parameter* – in BP, a rare combination in UG.

Given this broader parametric difference between the languages in question, a few more specific and crucial appointments can be made:

- Portuguese allows inflected infinitival small clauses, so BP's infinitival small clauses can have embedded Nominative NP-subjects while English cannot, given it does not allow inflected infinitives. Hence, Eng. only has Accusative NP-subjects of infinitival small clauses, but BP can have both Nominative and Accusative. The data shows that for these subjects to be Nominative in BP two phenomena are crucial: the presence of agreement and the specification of head Iº [+Agr] for Case, which must be assigned by an external governor since Iº is valued [-tense]. The node IP (infinitival small clause = DP - nominal construction phonetically realized, thus subject to Case filter) receives Case and it (the Case assigned) percolates down to Iº [Agr). In cases where certain verbs subcategorize for a CP instead of an IP, the *head-to-head* movement occurs causing head Iº to move to head Cº (Kayne, 1984) permitting the external governor to Case mark CP and its Case percolates down to Iº occupying this position ("C/T") (Raposo 1987);

- Since BP is a null-subject language it can have a null expletive (not possible in Eng.), thus the null expletive (pro) in subject position also receives Nominative Case "transmitted" via chain formation from the co-indexed extraposed clause. This is the only non-raised NP-subject case behavior possible observed. The non-null-subject language (Eng.) will have an expletive receiving Nominative Case under spec-head agreement, independently from the extraposed subject-clause;
- The splitting of Infl projections, a contribution from Pollock (1989), clarifies a lot in terms of infinitival constructions with raised subjects for languages with personal infinitives where the infinitive can and cannot have Agr.; being such splitting otherwise, not necessary, as it is not for a fact in Eng.. Hence, it clears the fact that there is an agreement morpheme (number and person realized) plus the aspect-time morpheme (-*r*) in BP (Mioto 2005).
- Certain types of verbs in English such as perceptive and causative allow different infinitival complements: *bare* (Ø) in the active sentences and *to*- infinitives in their passive counterparts; being *to* a "last resort" *dummy* Case marker licensing the embedded verb only, because both nominal and verbal Cases are absorbed under passivization, and a matrix verb in the passive cannot Case mark its complement (Nunes, 1993c).

Further considering yet, in the discussion proposed by Chomsky and Lasnik (1991), the authors imply that Raposo's (1987) stipulation: '*an infinitival sentence has to be assigned Case*' is unnecessary, given that it is a maximal projection of a nominal head. The necessity of being licensed by Case, according to Nunes (1994; apud, Silveira, Simões, Abreu, Collishonn and Lima, 1994), is a characteristic of all infinitival constructions since they behave like nominals in relation to Case Filter.

I will also leave for future investigation the advancements on the explanation of Infl splitting concerning Case marking (AgrO and AgrS), as well

as the null-Case configuration reserved for PRO (a relation between spec and head); also proposed by same authors Chomsky & Lasnik (1991).

Finally concluding, and answering the previous hypothesis:

a) Case marking the infinitival small clauses in Portuguese is problematic to accommodate Chomsky's (1981) Case Theory;

b) Case, as a parametrization, presents remarkable idiosyncrasies between Brazilian Portuguese and English;

Case as a parametrization, presents remarkable idiosyncrasies between Brazilian Portuguese and English, but Case marking the infinitival small clauses in Portuguese is not problematic to accommodate Case theory (Chomsky 1981) since, given the extra contributions, it corroborates the theory, and therefore, is completely accounted for.

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