

Copular inversion and non-subject agreement

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Abstract

In this thesis I propose an explanation for the facts of copular inversion in Spanish, Catalan, and other Romance languages, as well as in German. Copular inversion is a phenomenon found in some languages, in which, at least superficially, the copula may be found agreeing with the postverbal DP instead of the preverbal DP. At first sight it appears that the agreeing postverbal DP is the subject of the sentence, but in this work I provide evidence that this is not the case: the agreeing postverbal DP is, in fact, the complement of the copula. This yields a singular case of non-subject agreement in Spanish, Romance and the rest of copular inversion languages that is not found in the rest of the grammar of these very same languages (e.g. they do not ever show object-agreement in transitive sentences). This requires an explanation that is integrated with the rest of the grammars of the languages. I claim that coreference is the driving force behind the presence of copular inversion: in copular inversion languages, all verbs actually seek agreement with it and all those grammatical functions that are coreferential with the subject. In intransitive and transitive sentences, the only possible candidate is the subject, but in copular sentences the complement is usually coreferential with the subject. The choice of the agreeing function among the possible candidates is decided with respect to a Person-Number Hierarchy: the copula will always agree with the function that has the most marked person and number agreement features with respect to it. This requires challenging the standard view of LFG by which the lexical entries of verbs determine the person and number features of the subject: the solution requires accepting that the person and number features of the verb must be represented in a function-independent “bundle” that is unified with the right grammatical function according to syntactic well-formedness constraints in an OT setting. Additionally to explain the facts of copular inversion languages, the proposed OT-LFG hypothesis predicts why other languages do not have copular inversion. Moreover, the proposed hypothesis can easily be extended to other phenomena of non-subject agreement, e.g. Catalan cleft sentences, Icelandic non-subject agreement in “quirky case” constructions, English locative inversion and agreement phenomena in the Dargwa family of languages.

Resumen

En la presente tesis doctoral expongo una explicación para la inversión copulativa –presente en la mayoría de las lenguas romances como también en alemán–. Este fenómeno consiste, superficialmente, en que la cópula concuerda con el sintagma nominal posverbal en vez del preverbal. A primera vista, esto puede parecer simplemente que el sujeto se encuentra en posición posverbal, pero la evidencia que se presenta en este trabajo demuestra que ese sintagma posverbal no es el sujeto, sino el complemento del verbo. Por tanto, esta es una construcción singular en la que un verbo concuerda con un no-sujeto, con la misma morfología empleada para la concordancia con el sujeto, cosa absolutamente inusitada para la gramática de las lenguas analizadas –que carecen de cualquier tipo de concordancia verbo-objeto, por ejemplo–. Así pues, defiendo que la inversión copulativa es consecuencia del hecho de que la concordancia en estas lenguas es, en realidad, entre el verbo y alguna función gramatical que sea correferente con el sujeto, incluido el propio sujeto. Naturalmente, solo las oraciones copulativas poseen dos funciones correferentes con el sujeto –el sujeto y el complemento–, debido al significado de la cópula; en otros tipos de oraciones, la única función disponible es el sujeto, por lo cual el verbo solo puede concordar con este. La función con la cual se concuerda será aquella correferente con el sujeto cuyos rasgos de persona y número sean los más marcados según una Jerarquía de Persona y Número. Para ello, es absolutamente necesario abandonar la premisa de la Gramática Léxico-Funcional por la cual la concordancia del verbo se establece en su entrada léxica como una determinación de los rasgos de las funciones gramaticales concordantes. Aquí defiendo que los verbos simplemente determinan sus rasgos de concordancia, independientes de toda función gramatical, y que estos son unificados con los rasgos de una u otra función o funciones según restricciones formales de la gramática que, en este trabajo, se estipulan en un marco teórico inspirado en la Teoría de la Optimalidad. Esto me permite explicar por qué existen lenguas como el inglés que carecen de dicha construcción e, incluso, explicar fácilmente otros fenómenos de concordancia verbal con no-sujetos en otras lenguas, como, por ejemplo, en islandés en construcciones de sujeto en caso oblicuo, en la inversión locativa presente en inglés y en general en las lenguas dargwa.

Preface

As a preface to this work, I wish to state that this research could not have been possible without the support of the *Highest Argument Agreement* project, funded by the Ministry of Economy and Competitiveness of the Government of Spain (official code: FFI2014-56735-P), and the Formal Linguistics Research Group of the Pompeu Fabra University (*Grup de Lingüística Formal*, GLiF-UPF), officially recognized by the Agency for Management of University and Research Grants of the Autonomous Government of Catalonia (official code: 2014SGR698). The results presented here are to be considered part of the joint efforts of both the aforementioned project and the research group.

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Chapter 1

Introduction

Mi infancia son recuerdos de un
patio de Sevilla

Retrato

ANTONIO MACHADO

This study of copular inversion and the syntax of copular sentences is a direct consequence of my Master's degree thesis on the syntax of quotation (Vigo, 2012). In that work, in which I propose an LFG-based analysis for direct quotation, some of the examples discussed are copular sentences along the lines of “*perro*” is a noun in Spanish. The goal back then to fulfill was to explain how come it is possible to insert an arbitrary, even an ungrammatical or foreign expression into another grammatical expression, so the actual analysis of copular sentences was deliberately avoided due to the self-evident problems that such an analysis implies. At that moment I lacked the time and theoretical tools to undergo such an endeavor.

Now the time has come to tackle the problem of copular sentences, but especially of agreement in copular sentences. Agreement was critical to detect the presence of quotation, but no theory of subject-verb agreement was devised in that research, so the regular standard LFG hypothesis was assumed as valid. However, during the final stages of that research, Prof. Alsina brought to my attention his own paper (Alsina, 2007) in which data is shown that Spanish and Catalan copular sentences behave in an interesting way that English copular sentences do not. Let us compare a simple paradigm like the one that follows:

- (1) *English*
 - a. The team is/*are those children
 - b. Those children are/*is the team
- (2) *Spanish*

- a. El equipo son/*es esos niños
*the.m.sg team.m.sg be.pres.3.pl/*sg that.m.pl child.m.pl*
 ‘The team is those children’
- b. Esos niños son/*es el equipo
*that.m.pl child.m.pl be.pres.3.pl/*sg the.m.sg team.m.sg*
 ‘Those children are the team’

In English we find that the copula always agrees with the preverbal constituent, regardless which one it is. As can be observed in (1), in (1a) the copula agrees in the 3rd person singular because of *the team*, whereas in (1b) it agrees in the 3rd person plural because of *those children*. In Spanish, on the other hand, the copula always agrees with *esos niños* in the 3rd person plural, regardless of its position in the sentence, as can be observed in (2).

The first intuition that may be followed as a means to explain (2) is that *esos niños* is the subject of the sentence regardless of its position. Spanish is known for being a language with relatively free word order, so this is a reasonable working hypothesis at first sight. The problem is that the data that is presented in Chapter 3 shows that the in (2a) *esos niños* is not the subject, but the complement of the copula. This implies that we are facing a case of non-subject agreement in Romance languages, so the traditional name for this phenomenon –*copular inversion*– is kept, but reinterpreted in such a way that the notion of “inversion” relies in the verb agreeing with the constituent that is of the grammatical function that is the opposite of the one that is expected at first sight.

The problem is not new. The first analysis for this kind of data was presented for Italian by Moro (1997) within a late Government and Binding, early Minimalist Program (GB/MP) framework. Two analyses for Catalan were published later, by Alsina (2004, 2007) within an Optimality Theoretic version of the Lexical Functional Grammar framework (OT-LFG) and Rosselló (2008) within a version of the MP framework. The strategy of both Moro (1997) and Alsina (2004, 2007) consists in postulating a null subject that, according to some principles, takes the person-number features of the correct DP so that the copula agrees with it by virtue of regular subject-verb agreement. Rosselló (2008) takes a different route, based on the semantic distinction between specificational and predicational sentences.

This work makes use of an OT-LFG framework. The Lexical-Functional Grammar framework, originally proposed by Bresnan and Kaplan (1982) and later developed in works by Bresnan (2001), Dalrymple (2001) and Falk (2001), among many others, is detailed in Chapter 2, but for the time being, it might be helpful to state that it is a formal linguistics framework born within the generative tradition, i.e. the school of thought that assumes that the human faculty of language is uniform across the human race such that there is a Universal Grammar that underlies all languages. Optimality Theory is a metatheoretical framework originally de-

signed by Prince and Smolensky (2004) for explaining cross- and intra-linguistic phonological variation, but is adequate for explaining syntactic variation as well. It assumes that all grammatical principles are violable and languages rank them from the most to the least prominent, such that a given structure is grammatical, in contrast to other ungrammatical candidates, not because it complies with all grammatical principles, but because it is the one that violates the least prominent principle the least amount of times. This combination of LFG and OT, that is in no case original (Bresnan, 2000; Kuhn, 2003), proves itself to be the best tool to solve a problem like this one, where an apparent contradiction must be resolved, namely to explain why an instance of non-subject agreement is found in copular inversion structures in languages where subject-verb agreement seems to be the norm.

Coming from a philological and functionalist background myself, I am aware of the limitations of formal linguistics. Language is, over all, a social product of the human faculty of language (Saussure, 2005) and is “an instrument whereby men communicate their conceptions” (Locke, 1991). It is self-evident that formal linguistics is absolutely unable to treat phenomena where the explanation requires referring to the social and communicative aspects of language, because logical-mathematical formalization implies a reduction of the object of study to a series of entities that are defined by their compositional properties, not by their usage with respect to some social conceptualization. Fortunately, by its own definition, syntactic structure is pure form and combination, so formal linguistics is possibly the best approach to deal with it, in contrast with other approaches that are better for explaining the reason behind the frequency or the choice of some syntactic construction over another one in certain communicative context. This makes the choice of a highly formal framework like OT-LFG a very suited one for the goal of this research, which is none but to explain the grammatical principles that explain the agreement patterns of copulas in copular inversion languages. I do not endorse a formalist view of language as a whole, but acknowledge the practical advantages of a formal framework for the formal aspects of language.

After presenting the theoretical framework, Chapter 3 is devoted to the analysis of copular inversion itself. The main hypothesis is revolutionary: copular inversion languages like Catalan and Spanish are not subject-verb agreement languages, but languages in which the verb must agree with some grammatical function that is coreferential with the subject, which could be the subject itself of course. Copular sentences may have two such grammatical functions, due to the very meaning of the copula: the subject and its complement. Which of both is the actual grammatical function the copula must agree with is resolved by a set of constraints that evaluate which one is more marked according to a hierarchy of person and number features. Non-copular sentences, both transitive or intransitive, also abide to this set of principles, but always yield subject-verb agreement

because the only function that is coreferential with the subject in that type of sentences is the subject. This shows that the set of principles that is used to explain copular inversion also correctly predicts how agreement works in the rest of the language, thus yielding an integrated theory of verbal agreement instead of just an *ad hoc* description for the specific phenomenon under discussion.

There are cases in which copular inversion does not arise, but only subject-verb agreement is found. These are cases in which the copula fails to establish a coreference between the subject and the predicate. Such cases show obligatory subject-verb agreement precisely because the subject is the only grammatical function that is coreferential with itself. This renders these cases to have the exact same explanation as why transitive sentences only allow subject-verb agreement in this kind of languages.

Of course, an analysis of verbal agreement that proves itself to be applicable to other related phenomena in other typologically different languages. The analysis of copular inversion as a particular instance of non-subject agreement allows reusing the same theoretical principles to well-known phenomena like non-subject agreement in Icelandic “quirky case” constructions and English locative inversion constructions, as well as in cases of *there*-insertion. An analysis of the agreement patterns of Catalan and German cleft sentences shows that these are also instances of non-subject agreement that are explicable by means of the same principles that are common to all these different phenomena. The fact that the very same theoretical proposal, with very minor additions for each phenomenon, can be used to explain a relatively broad group of cross-linguistic data is a good sign that this analysis is a step forward in theoretical linguistics as a whole.

Chapter 2

The theoretical framework

2.1 Introduction

This work on copular inversion makes use of the Lexical Functional Grammar (LFG) theoretical framework, initially proposed by Bresnan and Kaplan (1982) and later developed by Bresnan (2001), Dalrymple (2001), Falk (2001), among many others. I also assume principles from Optimality Theory (OT), proposed by Prince and Smolensky (2004) and later combined with LFG by Bresnan (2000), Kuhn (2003), among others.

Given the fact that this work uses non-standard versions of the frameworks cited above, it is of crucial importance to formalize the theoretical framework being used here, at least in a short, summarized way, in order to define the relevant concepts, theoretical principles and formal devices that are going to be used in later parts of this work for the analysis of the phenomenon of copular inversion.

2.2 What is Lexical Functional Grammar?

Lexical Functional Grammar is a grammatical theoretical framework within the generative tradition that aims for formal explanations of linguistic data. Its development started in the early 80s, as shown by the seminal works by Bresnan (1978), Bresnan and Kaplan (1982), and Kaplan and Bresnan (1982), among others, as an alternative to the then newborn Principles & Parameters (P&P) framework proposed by Chomsky (1981) (under the name “Government and Binding”, GB). The development of LFG was then motivated by the observation that certain phenomena did not have a satisfactory, psychologically realistic treatment in P&P, most notably the syntax of non-configurational languages (e.g. Warlpiri, Latin) or the relation between argument structure and passive. Since then, however, it has evolved into a reliable framework that can be used to give account of grammatical

phenomena of several and different kinds.

LFG is a generative framework because it does accept the so-called generative hypothesis (Chomsky, 1958): LFG assumes that grammar is a computation that takes a finite number of lexical elements and is able to produce an infinite number of grammatical sentences and it assumes that there are general principles that rule over this computational component that all languages must satisfy as particular instances of it. This is not just a mere statement of adscription to a certain philosophy of language, but an epistemological statement that has effects on the goals of linguistic and grammatical research must have when using this framework. If the human faculty of language is assumed to be universal across mankind, with common principles that are to be stated to the universal component itself, then the task of a generative linguist is to aim his research in a way that avoids stating explanations that are language-specific in favor of explanations that are as general as the available data allow as possible. This has been explicitly stated by and for the Chomskyan tradition of generative linguistics, and is perfectly valid for LFG as well.

Where LFG differs from P&P frameworks is in what the so-called Universal Grammar (UG) is considered to be; in other words, what is the “shape” of UG. For P&P UG entails positing a universal constituent structure that is shared by all languages in some way. The exact details about which structure at what stage of the computation must be universal have changed throughout the history of P&P and Chomskyan generative grammar: in the (Extended) Standard Theory (1958-1981) it was the so-called deep structure which was required to be universally equal across languages; in the P&P approach (1981 onwards), the specific structure that is considered to be universal is the so-called Logical Form (LF), which represents the semantic structure of a certain grammatical sentence before it is interpreted by the Conceptual-Intentional interface in the speaker’s mind. The LF is the last stage of the homogeneous derivation that also produces the surface structure, so it shares with it the formal properties of a syntactic tree. LFG, on the other hand, assumes that the universal aspect of language is how different structures, devoted to represent different types of linguistic information, relate to each other. There is no claim that any particular shape of any of these posited structures is to be considered universal, but that their existence and the correspondence principles that map one to each other are.

In LFG, the description of each specific kind of grammatical information requires a specific grammatical structure, every one of which is formalized in its own specific way: configurational information on constituent dependency relations belong to the so-called c-structure (formalized as a syntactic tree); functional information belongs to the f-structure (formalized as an Attribute-Value Matrix); information about the grammaticalized pragmatic structure of sentences belongs to the i-structure (usually formalized as an Attribute-Value Matrix as well); lexical

information is represented in the lexicon, usually by associating a series of functional annotations to a certain lexical entry or, as I do in this work, by means of an Attribute-Value Matrix; and some authors accept that agreement information belongs to a specific structure called *m*-structure, etc. Authors may differ in the specific formalizations they propose and even the number of structures proposed to account for the data provided, but the principle that every grammatical structure must describe only one type of grammatical information is shared across research following the LFG framework.

Another of the key differences between LFG and other theoretical frameworks is that it is truly lexicalist, as the name of the framework points out. While P&P accepts that lexical entries might be modified by syntactic principles, LFG assumes that the elements that are drawn from the lexicon of a language cannot be modified under any circumstance. This constrains grammatical principles to refer only to grammatical information, i.e. information about how lexical entries are grouped together when forming a bigger structure.

Given the differences that are found across authors, the formalization of the specific version of LFG that I use in this work follows. The current reference implementations in the LFG literature are those by Bresnan (2001) and Dalrymple (2001) (and Falk, 2001 to a lesser extent). The first reference is written in a very particular style that is half way between a theoretical formalization to be used by researchers and a textbook to be used in an advanced linguistics course, so it concentrates in developing the more general aspects of the framework, leaving aside part of its formal aspects. The book by Dalrymple (2001) on the other hand is more detailed in the explanation of the formal definitions and principles behind LFG. Both complement each other and function as the main reference works from which the common aspects of LFG are usually cited in research papers. In the survey of the version of LFG that is assumed here, I am implicitly assuming that, where I do not propose a divergent principle or formal structure, the standard principles developed in those works apply.

2.3 A basic survey on the architecture of LFG

From all the structures that are accepted by researchers working on LFG, the two basic grammatical structures that are crucial for syntax are constituent structure (*c*-structure) and functional structure (*f*-structure). These two are the only ones that I will refer to throughout this work. The former deals with configuration, i.e. hierarchical relations between constituents; the latter deals with the ways syntactic entities (i.e. constituents and lexical entries) constrain each other (e.g. agreement, anaphora, focalization and topicalization, etc.). There is no derivation from one of these structures to the other, but a mapping between both that is functional

in the mathematical sense of not having any side-effects (Abelson et al., 1996): the mapping assumes both structures to be immutable, and it just checks whether an instance of a c-structure is mapped to an instance of an f-structure. In the “standard” versions of LFG this mapping is done by rules that are associated to phrase structure rules for c-structures and constraints provided by lexical entries, but here I assume that the mapping between structures consists of general abstract principles (Alsina, 2007, 2008; Alsina et al., 2005).

2.3.1 The c-structure

The c-structure is the level of representation that models dependency relations among syntactic constituents. It is represented as a syntactic tree following a version of X-Bar Theory for languages where constituency is organized in terms of lexical projections (endocentric languages), but also allowing for other “flat” structures for non-configurational languages (lexocentric languages) (Bresnan, 2001; Dalrymple, 2001). The c-structure is thus the place for explaining the particular configuration of a sentence and the general configurational structure of a given language as a whole.

There are a couple of metatheoretical principles that define the geometry of c-structures and must be made explicit, as these distinguish LFG from other theoretical frameworks within the generative tradition.

In the first place, the inventory of basic grammatical categories that are accepted in this research are namely Noun, Adjective, Preposition, Verb, Adverb, Determiner, Inflection and Complementizer (N, A, P, V, Adv, D, I, C). All these grammatical categories are required to dominate a lexical element, such that no empty categories are allowed in any case at the c-structure level. Languages may, depending on combinatorial properties, require other additional categories such as Clitic, Classifier, etc.

All nodes are optional, unlike tree representations in GB/MP.¹ This has the theoretical consequence that no general “universally underlying” c-structure may be posited as the representation of the “structure of language” as pursued by GB/MP. Therefore in LFG, while a non-*pro*-drop language like English will always require the presence of a Spec-IP position in most sentences, sentences without an overt subject in a *pro*-drop language or in English itself (e.g. imperative sentences, non-finite clauses, etc.) would be represented without a Spec-IP (or analogous)

¹In GB/MP the degree of the obligatoriness of nodes depends on the particular version of the framework. Cartographic approaches like those inspired in Cinque; Rizzi’s (1999; 1997) make all nodes obligatory, while more MP/Phase-theoretic-leaning studies make specifiers and complement positions of functional categories obligatory in order to fulfill the required AGREE relations in the derivation (Chomsky, 1995, 2001, 2004, 2008).

position; take as an illustration of this the c-structure in Figure 2.1 of the Spanish sentence (3).

- (3) Vio el daño
 see.past.3.sg the.m.sg damage.m.sg
 ‘He/she/it saw the damage’

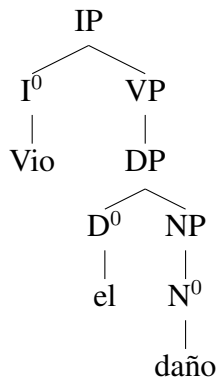


Figure 2.1: c-structure of (3)

Following the metatheoretical principle of Economy of Expression (Bresnan, 2001; Dalrymple, 2001), another point to take into account is that all nodes are represented only when necessary, namely when they provide linguistically relevant information. Therefore, for two given c-structures that are equivalent and map into the same f-structure, the one with fewer nodes will be preferred over all the other ones (Bresnan, 2001, pp. 114-115). This mostly affects X' nodes, like I' in Figure 2.1, which is not present because there is no specifier available that should be distinguished from the complement. This does not entail that there is no I' constituent in the structure, but that there is no need to represent an additional branch that does not provide any further relevant information. On the other hand, XP levels are usually obligatory as they provide information about an element being a constituent of type X, which provides information on lexical subcategorization; cf. the “headless” VP node in Figure 2.1, which is required because all IP dominate a VP.² X^0 may only be necessary under an XP if there is a lexical entry that is of that category and acts as the head of the constituent; headless constituents are accepted in LFG.

In summary, for example, the c-structure of a sample English sentence like (4) looks like the one in Figure 2.2.

- (4) My sister has baked the cake on the table

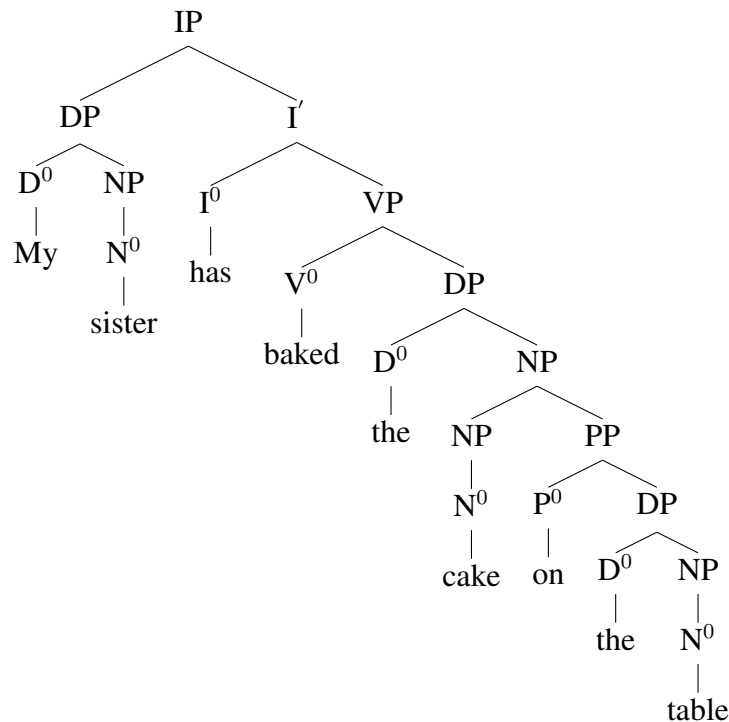


Figure 2.2: c-structure of (4)

The c-structure in Figure 2.2 shows a number of differences compared to a GB/MP-like tree. For instance, no empty categories are found in the c-structure (e.g. no traces are found, as there is no movement, and I^0 and D^0 do not dominate empty, functional categories, etc.), and some X-Bar projections are not represented in the tree (e.g. no V' is used, as in this case it would just add a further unnecessary node before the V^0 and DP split).

While no LFG version accepts the existence of functional terminal nodes akin to the X^0 empty categories used in P&P-inspired frameworks to check features and explain functional relations between constituents in the sentences (e.g. I^0 , D^0 , etc.), some do acknowledge the existence of traces as the only possible empty category in c-structures (Bresnan, 2001; Falk, 2001). These traces are used to explain long-distance dependencies phenomena (e.g. focalization and topicalization, among others), but not as part of a chain produced by a movement operation, but as a kind of “placeholder” that allows unifying in the f-structure the canonical position of a certain constituent with the “dislocated” position in which it actually appears. However, the version of LFG that I am adopting here does not make

²The c-structure of Spanish sentences requires I^0 to be filled by the inflected verb. I follow Alsina (2007) for this.

use of traces, as these imply accepting that in c-structure there are non-lexical elements whose function is to relate a certain position with another one so that a single constituent is mapped to two or more grammatical functions. The lack of need for traces has been proven to be the optimal minimal hypothesis; works by Alsina (2008), Alsina et al. (2005), and Dalrymple (2001) have shown that the phenomena traditionally analyzed by means of traces can be analyzed without them, thus improving the division of labor stipulated between c-structure and f-structure.

The c-structure does not play a fundamental role in the discussion that is held in this work, as agreement is an interaction between different constituents due to the grammatical functions these are mapped to. Such phenomena, in the framework that is being described here, are formalized via the f-structure, so my interest lies rather in describing and explaining that component of the framework.

2.3.2 The f-structure

The functional structure (f-structure) of a sentence is the grammatical structure in which the relations that are found among constituents according to their grammatical function are formalized. It is an abstraction different in nature than the c-structure, as it makes use of different theoretical primitives as well as it abstracts linear order away by formalizing the sentence as Attribute-Value Matrices (AVMs). This is in line with LFG's main premise that different kinds of linguistic information may require different kinds of formal structures to be properly explained.

General properties of the f-structure

An AVM is a mathematical construct based on the notion of a matrix. Whereas in a matrix columns and rows do not have any significance, in an AVM each row is formed by a pair of columns, where the first column is a set of symbols that declare a variable whose value is the corresponding element in the second column.³ This is formally represented as in Figure 2.3 (next page).

The interesting point of using a structure like this is that it avoids the problem of where to place functional categories in the configuration of the sentence: a framework like GB/MP requires establishing the exact position of these phonetically empty categories in between the positions taken by lexical categories. On the other hand, in LFG f-structures this theory-internal problem does not arise, as the order of the attributes inside an f-structure is irrelevant and does not interact in

³An AVM is formally equivalent to an “associative list”, “hash” or “dictionary” data structure, i.e. an unordered list of key-value pairs in which keys must be unique, such that the function $assoc(k)$ returns a single value associated to the key k in an associative list $assoc$.

$$\begin{bmatrix} \text{ATTR}_1 & \text{value}_1 \\ \text{ATTR}_2 & \text{value}_2 \\ \vdots & \vdots \\ \text{ATTR}_n & \text{value}_n \end{bmatrix}$$

Figure 2.3: Formal structure of an f-structure

any way with the order of lexical categories, which is dealt with by the c-structure. Only the correspondence of the attribute and a value is actually relevant, such that two f-structures f, g are said to be equal when all their attribute-value pairs are equal in both of them.

Typical attributes are grammatical functions (GFs) like e.g. SUBJ (subject), OBJ (object), OBL (oblique), etc. Another recurrent attribute class is PRED (predicate), which provides information about the arguments that are required by the main predicate of the f-structure, and other properties that may be required to describe and explain functional relations within a sentence. All these attributes are theoretically primitive in essence, so a hypothesis that proposes the least necessary number of attributes will be deemed superior to any that proposes more of them. On the other hand, values may be either atomic symbols (e.g. SG, PL, 3 (3rd person), PRES (present), etc.) or a well-formed f-structure of its own.

An important notion to take into account is argumental or governable functions (Bresnan, 2001; Dalrymple, 2001; Kaplan and Bresnan, 1982). An argumental function is defined as a grammatical function that is always mapped to an argument of the predicate. LFG states that the SUBJ, OBJ, the oblique (OBL) and the secondary object (OBJ_θ) functions are argumental, but for the purpose of this work, only SUBJ and OBJ will be considered, as the other functions are not relevant for this study. All other functions are, by default, non-argumental; for the purpose of this work, these are FOCUS, TOPIC and ADJ(UNCT).

As defined early on by Kaplan and Bresnan (1982), every f-structure must conform *at least* to these three basic logical principles in order to be well-formed, apart from conforming to any linguistic principle that may be proposed to explain syntactic data. These are COMPLETENESS, COHERENCE and CONSISTENCY, which I define as follow:

- (5) COMPLETENESS:
For an f-structure f with a PRED attribute, f is complete iff all the arguments listed by the PRED of f are mapped to an argumental function, all of which have a value assigned.
- (6) COHERENCE:

For an f-structure f with a PRED attribute, f is coherent iff all the argument functions it contains are mapped to an argument listed by the PRED of f .

(7) CONSISTENCY:

For any f-structure f , an attribute a of f may have one and only one value.

The reader that is used to the standard definitions of these three principles will surely notice that I deliberately avoid expressing COMPLETENESS and COHERENCE in terms of a PRED attribute that is a list of argument functions (also known as “governable functions” in Kaplan and Bresnan, 1982 and Dalrymple, 2001). Such definitions make sense in a theoretical framework in which PRED is envisioned as a list of the grammatical functions that a certain predicate governs. However, in the version of LFG that I am defining here, I consider such representation to miss certain generalizations about the mapping of thematic roles in a-structure to grammatical functions, following Alsina (1996). Therefore, in this work, PRED does not consist in a list of grammatical functions, but just a representation of the valence of a certain predicate.

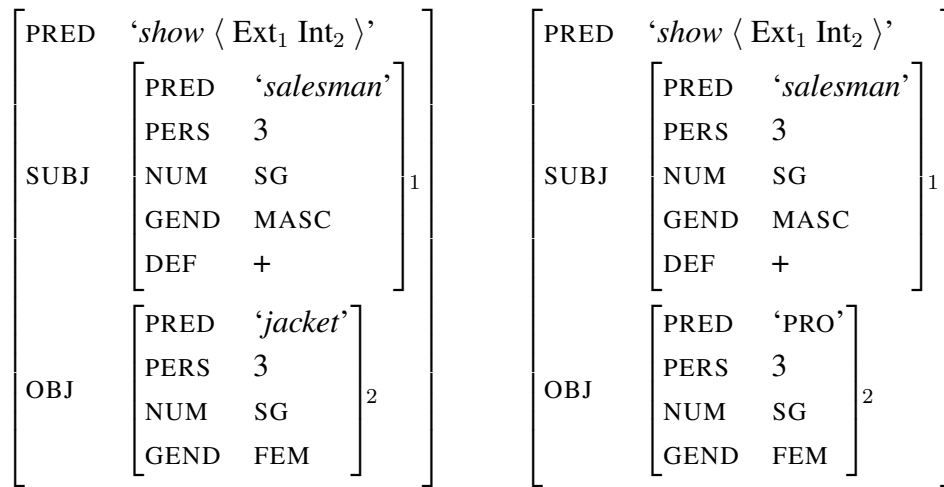
The COMPLETENESS principle explains why a transitive sentence must always have its object expressed in its f-structure. Take for example the following cases of object elision in English:

- (8) a. The salesman showed the jacket
- b. The salesman showed it
- (9) * The salesman showed

The abridged f-structures of the grammatical sentences (8a) and (8b) are, respectively, the ones shown in Figures 2.4a and 2.4b (both in the next page). The subindices 1 and 2 express the mapping of the Ext(ernal) argument to the SUBJ function and of the Int(ernal) argument to the OBJ function, respectively. As all arguments are mapped to an argument function, these f-structures are complete.

In fact, COMPLETENESS explains the contrast between (8b) and (9). The latter has the f-structure shown in Figure 2.5 (see next page), which is ill-formed because the internal argument remains unmapped to any grammatical function; English, as well as other languages, does not allow object *pro*-dropping, thus failing to comply with the aforementioned principle.

The absence of an overt subject in null subject languages, on the other hand, does not violate COMPLETENESS. In such languages, the null subject is present only at the f-structure and thus, it is available to be mapped to the external argument of the verb in the f-structure. The exact mechanism by which this is implemented in this thesis will be explained later, as it is closely related to the explanation of the copular inversion phenomena discussed here (cf. §§3.3.2, 3.4).



(a) f-structure of (8a)

(b) f-structure of (8b)

Figure 2.4: f-structures of (8)

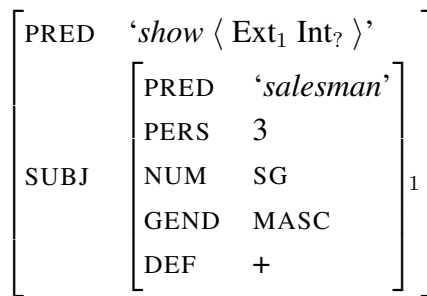


Figure 2.5: Ill-formed f-structure of (9)

The COHERENCE constraint, on the other hand, is useful to explain the converse case, namely when an argument function is present in the sentence that the verb is not able to map to an argument. This is illustrated by cases like the ones below:

- (10) a. A man arrived
 b. * A man arrived a box

The f-structures corresponding to both sentences above are the ones shown in Figures 2.6a and 2.6b. The latter is ill-formed because an argument function such as OBJ is required to be mapped to an argument of the predicate, but *arrive* only maps its internal argument to a subject. Therefore, OBJ remains unmapped and the f-structure is incoherent.

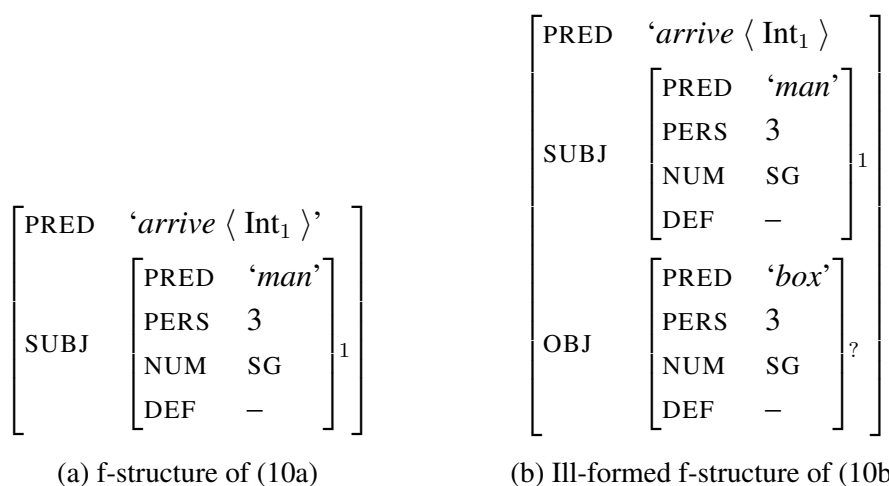


Figure 2.6: f-structures of (10)

Much more important is the condition on f-structures being consistent. CONSISTENCY requires every attribute to have just one and only value, such that, for instance, no f-structure might have two values for number. This is a consequence from the very same definition of an Attribute-Value Matrix. Traditionally, in LFG, CONSISTENCY explains, for example, subject-verb agreement: verbs are required to unify their subject features with the features of the subject DP, this being the usual canonical example for illustrating this principle. However, I prefer to illustrate it with another phenomenon, as discussion of the mechanisms of subject-verb agreement is the heart of the discussion of copular inversion and, in fact, this work shows that significant portions of the standard theory of subject-verb agreement usually defended within the LFG framework must be reconsidered.

A good phenomenon to illustrate CONSISTENCY is gender and number agreement within a DP in a language like Spanish:

- (11) La pregunta
 the.f.sg question.f.sg
 ‘The question’
- (12) a. * La preguntas
 the.f.sg question.f.pl
- b. * El pregunta
 the.m.sg question.f.sg

In the only grammatical case above, i.e. (11), all features are consistently unified, as shown in Figure 2.7.

In Spanish D^0 and N^0 in a DP share their features with each other; in consequence, it takes only one non-matching feature to render the whole sentence

$$\left[\begin{array}{ll} \text{PRED} & \text{'question'} \\ \text{PERS} & 3 \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{FEM} \\ \text{DEF} & + \end{array} \right]$$

Figure 2.7: f-structure of (11)

ungrammatical, not just the DP. This may be provisionally stated in an informal fashion as follows:

- (13) DP-INTERNAL AGREEMENT (informal, provisional version):
D⁰ and N⁰ share their features.

The lexical entries for the determiners *la* and *el* and for both forms, singular and plural, of the noun *pregunta* are shown below:

- (14) a. D⁰ *el* : $\left[\begin{array}{ll} \text{NUM} & \text{SG} \\ \text{GEND} & \text{MASC} \\ \text{DEF} & + \end{array} \right]$

- b. D⁰ *la* : $\left[\begin{array}{ll} \text{NUM} & \text{SG} \\ \text{GEND} & \text{FEM} \\ \text{DEF} & + \end{array} \right]$

- (15) a. N⁰ *pregunta* : $\left[\begin{array}{ll} \text{PRED} & \text{'question'} \\ \text{PERS} & 3 \\ \text{GEND} & \text{FEM} \\ \text{NUM} & \text{SG} \end{array} \right]$

- b. N⁰ *preguntas* : $\left[\begin{array}{ll} \text{PRED} & \text{'question'} \\ \text{PERS} & 3 \\ \text{GEND} & \text{FEM} \\ \text{NUM} & \text{PL} \end{array} \right]$

The c-structure of the DP in (11) is shown in Figure 2.8.

The DP-internal agreement principle that I informally stated above (i.e. “in a DP, D⁰ and N⁰ share their features”) must be stated in terms of a mapping principle that relates the c-structure of the DP with its grammatical f-structure. That

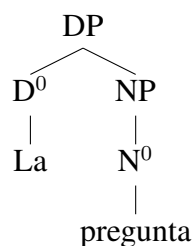


Figure 2.8: c-structure of (11)

requires the operation of unification, which will be discussed later. The important point to make at this specific stage is show that the ill-formed f-structure of the (12a), provided in Figure 2.9, shows the violation of CONSISTENCY due to NUM having two different values, which *must* be unified by virtue of the DP-INTERNAL AGREEMENT principle. The remaining cases in (12) share the same problem in their ill-formed f-structure, so representing them seems redundant for my purposes here.

PRED	‘ <i>question</i> ’
PERS	3
NUM	SG/PL
GEND	FEM
DEF	+

Figure 2.9: Ill-formed f-structure of (12a)

Within LFG, stating that an f-structure is consistent is roughly the equivalent to stating within P&P that in a derivation all feature checks have succeeded, but without resorting to positions and position changes (movement) in order to actually check whether the features within a certain syntactic structure are compatible. As will be shown below, the way features are unified is obviously related to the syntactic structure of the sentence, but may not follow the particular c-structure of the sentence at all, as is the case in non-configurational languages.

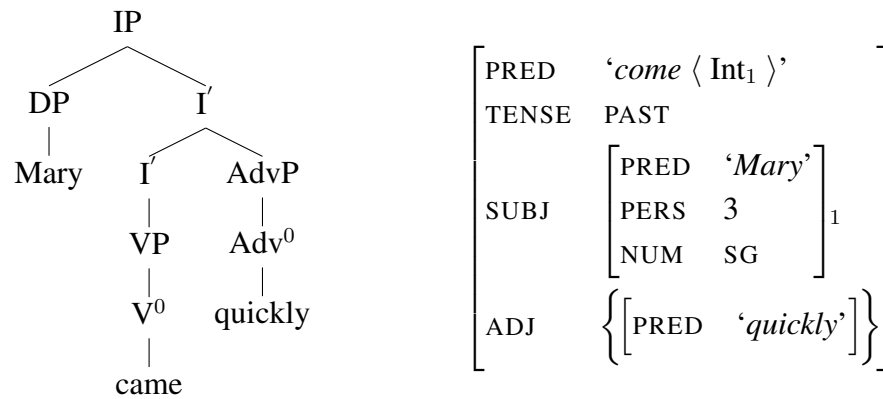
In this work, an f-structure is considered to be irreparably ill-formed if it violates any of these three general formal constraints on f-structures. However, in this version of LFG violating other principles may not necessarily yield an ungrammatical structure, as an Optimality Theoretic framework is accepted as well. The OT component, which operates over c-/f-structure pairs so that it chooses the one that is the optimal (which might violate one or more principles) over other possible, formally well-formed candidates.

Sources of functional information, unification and structure sharing

A brief comment is now needed to understand where the information that an f-structure is made of comes from. There are mainly two different sources of functional information, namely lexical entries and c-/f-structure mapping principles.

Let us analyze the first source of functional information and for that purpose let us take a sentence like (16) and its c-structure and f-structure, shown in Figures 2.10a and 2.10b, respectively.⁴

(16) Mary came quickly



(a) c-structure of (16)

(b) f-structure of (16)

Figure 2.10: Grammatical structures of (16)

The attributes concerning the DP *Mary* or the past tense of the verb come from the lexical entries of *Mary* and *came*, shown in (17) and (18), respectively.⁵

(17) DP *Mary* : $\left[\begin{array}{l} \text{PRED} \quad \text{'Mary'} \\ \text{PERS} \quad 3 \\ \text{NUM} \quad \text{SG} \end{array} \right]$

(18) V⁰ *came* : $\left[\begin{array}{l} \text{PRED} \quad \text{'come' } \langle \text{Int} \rangle \\ \text{TENSE} \quad \text{PAST} \end{array} \right]$

Now the question that must be addressed is why the f-structure in Figure 2.10b is effectively the f-structure of (16). Even though the c-structure is already an

⁴The value of ADJ(UNCT) in Figure 2.10b is a set of f-structures, as a sentence might, in principle, have more than one adjunct. This is formalized by enclosing the value of ADJ within braces.

⁵The grammatical category of proper names is DP so that **the Mary* is barred.

abstraction over the raw data that is any linguistic expression on its own (“the sentence itself”), this question can be rephrased as how is the c-structure in Figure 2.10a mapped to the aforementioned f-structure.

A first principle that is needed to explain the mapping of these two structures in English is one that establishes that the Spec-IP position is mapped to the SUBJ grammatical function:

$$(19) \text{ SUBJPOS:}$$

$$\begin{array}{c} \text{IP} \Rightarrow [\text{SUBJ } \phi(\text{XP})] \\ \swarrow \quad \searrow \\ \text{XP} \quad \text{I}' \end{array}$$

As already explained earlier, the function $\phi(x)$ is a function that takes a c-structure node x and returns the f-structure that corresponds to that c-structure node. Given that the Spec-IP in this case is a DP consisting only of the proper name *Mary*, the result of that operation applied to (16) is that the subject of the sentence is equivalent to the lexical entry shown in (17), as can be seen in the f-structure of the whole sentence (Figure 2.10b).

However, the complete f-structure has the predicate of the verb of the sentence as its own predicate. Interestingly, no additional principle identifying the f-structure of the VP and the one of the IP is required in order to construct the f-structure in such way that the main predicate of the sentence is the verbal predicate: COMPLETENESS and COHERENCE are enough to force this, as the only possible way for an f-structure to comply with these two well-formedness conditions is to follow the generalized geometry shown in Figure 2.11.

$$\left[\begin{array}{l} \text{PRED} \quad \text{'pred}(\phi(\mathbf{V}^0)) \langle \text{Arg}_1 \text{ Arg}_2 \dots \text{Arg}_n \rangle \text{' } \\ \text{GF}_1 \quad \phi(\text{XP})_1 \\ \text{GF}_2 \quad \phi(\text{YP})_2 \\ \vdots \quad \quad \quad \vdots \\ \text{GF}_n \quad \phi(\text{ZP})_n \end{array} \right]$$

Figure 2.11: Generalized geometry of a sentential f-structure

In Figure 2.11, $\text{pred}(\phi(\mathbf{V}^0))$ represents the PRED of the f-structure that corresponds to the \mathbf{V}^0 position in the c-structure. The subindices show, as usual, the mapping between the predicate arguments with the corresponding grammatical functions that are found in any arbitrary sentence.

Frequently, different sources of functional information may specify the same values for the very same attribute. This has been illustrated above in the examples

in (11) and (12a) in the case of gender-number agreement within a Spanish DP, where all three –the determiner, the noun and the adjective– specify the gender and number features of the f-structure of the whole DP; in other words, they unify their f-structures in such a way that their features are summed up into a superset f-structure. Unification of two f-structures is thus defined as follows:

(20) UNIFICATION:

For f-structures f, g, h : f, g are said to unify into h iff $(f \cup g) \subseteq h$.

The definition above contemplates both, the case of h being “produced” by the unification of f and g (i.e. $f \cup g = h$) as well as the case of f and g unifying its features into a bigger f-structure that draws its features from other sources of functional information too. Of course, CONSISTENCY bars unifying f-structures if it results in an attribute having more than one possible value.

Unification of two f-structures, of course, implies that the result must be consistent. It seems evident that the concepts of unification and CONSISTENCY are related from an informal point of view, but whereas the former establishes a relation of three f-structures with each other and is not really a constraint on the well-formedness of f-structures, CONSISTENCY is indeed a constraint on the well-formedness of f-structures that bars an attribute having more than one value regardless whether because these inconsistent values come from two f-structures that have been unified or because of any other reason.

Turning back to the explanation of DP-internal agreement, unification into a consistent f-structure can be used then for explaining a phenomenon like Spanish gender and number agreement within a DP by stating a principle of obligatory agreement in terms like these:

(21) DP-INTERNAL AGREEMENT (formal version):

$$\text{DP} \iff \phi(\text{DP}) = \phi(\text{D}^0) \cup \phi(\text{NP})$$

$\begin{array}{c} \diagup \quad \diagdown \\ \text{D}^0 \quad \text{NP} \end{array}$

This formal version assumes that there is another NP-internal agreement principle that deals with unifying the noun only with adjectives but not with adverbs that may be modifying those adjectives, for example. That agreement principle yields a well-formed f-structure that is $\phi(\text{NP})$.

Another important notion involving f-structures is structure sharing. If unification arises when a single attribute has its value specified from various sources of functional information, structure sharing arises when a single source of functional information provides a single value that is shared by more than one different attributes. The best example of this is, for certain, focalization or any long-distance

dependency; the f-structure of a sentence like (22) is shown in Figure 2.12.⁶

(22) What does Mary know?

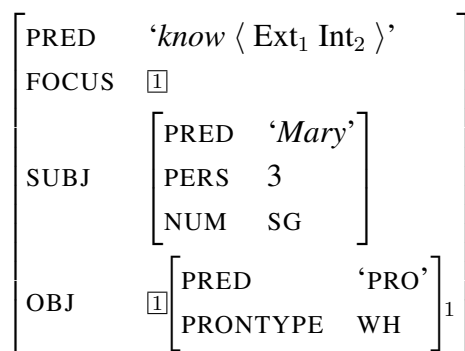


Figure 2.12: f-structure of (22)

It is important to notice that structure sharing implies that one unique instance of the same f-structure, the shared value, is the value of two different attributes. In the example above, the object and the focus are the same f-structure because the value is provided by the same source of functional information, namely the interrogative in the example used above.

Finally, as has been already shown in Figure 2.12, the notation used in this work for showing structure sharing between two functions in an f-structure is an HPSG-style numerical tag (Pollard and Sag, 1994), unlike the “curved line” that is traditionally used in the LFG literature. The tag notation works, such that in the Figure 2.13, ATTR_1 and ATTR_n share their structure.

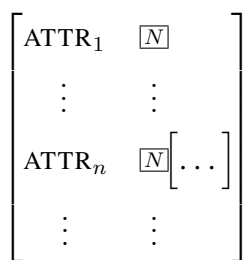


Figure 2.13: Example of tag notation for structure sharing

For convenience, when structure sharing arises in an f-structure, I only represent the shared value once, conventionally at the place that is closest to the

⁶In Figure 2.12 I am ignoring the Q attribute defended by Kaplan and Bresnan (1982) and Dalrymple (2001).

predicate that requires it. Any other instance in which the shared f-structure is the value of an attribute only the tag is shown in its place.

2.4 An Optimality Theoretic view on syntax

2.4.1 A brief survey into the basics of OT

The theory of grammar usually assumes that grammar is a set of rules that expressions must comply with. This set of rules is traditionally construed, even in the most modern approaches, in such a way that the violation of just one single principle of the proposed grammar entails an ungrammatical structure.

I believe this view on syntax has its origin in prescriptive grammar, but later continued by the positivist and later structuralist (and functionalist) views on language in general. According to these intimately related two schools of thought, languages are primarily a social product, so philosophers and philologists took the stance of thinking about the rules of language as analogous to rules of society. This can be easily seen in the writings of Humboldt (1949) and Saussure (2005), among others. In the same way that laws and social norms are meant not to be violated so that the society does not fall apart, the rules of grammar are there not to be violated so that communication among speakers does not fail.

Even the generativist view on language, which is by nature centered on grammar as the product of individual, genetically-based abilities of language rather than as a product of society, has traditionally worked under the assumption that grammar is a set of rules that must be obeyed. In its early days, generative-transformational grammar explicitly looked for the rules that generate specific grammatical expressions, so that those expressions that do not follow those rules are deemed ungrammatical (Chomsky, 1958, 1965). Now it tries to express general principles that license grammatical expressions, from a more universal and abstract point of view, but the idea is still imperative in nature. For this school of thought the imperative implied in the rules of grammar is even stronger than that implied by structuralism and functionalism: generativism considers the rules of grammar (in a broader sense that also includes phonetics and semantics) to be part of the general architecture of language as embodied in our minds. The belief is that grammar must be complied with not because of social reasons, but ultimately because they are expressions of our psychology or biology.

Optimality Theory (OT), originally developed as a metatheory for phonetics and phonology (Prince and Smolensky, 2004), radically breaks with this idea. That the rules of grammar may be violated in some way is in no case an original finding of these authors: Coseriu (1973, 1981, 1994) explicitly defines grammar as the knowledge shared by the speakers of some historical instance of the faculty

of language. As he famously acknowledges in his *Textlinguistik* (Coseriu, 1994), among other works, the rules of grammar may be superseded in order to comply with the requirement to get a message understood in a certain way that makes it more effective, namely when in a certain message Jakobson's (1981) "poetic function" is predominant.

Coseriu's (1994) view on the violability of grammar is not the view defended by OT. While the former claims that the rules of grammar may be violated for extragrammatical reasons, OT claims that the rules of grammar may be violated for intragrammatical reasons; in other words, OT claims that grammar is composed by violable principles, but in such a way that it makes falsifiable predictions about the grammaticality of a linguistic expression or its lack thereof.

In a nutshell, OT proposes that general linguistic well-formedness constraints are ordered in a prominence ranking. Crosslinguistic variation is then accounted for by different language-specific orders of these general constraints. As has already been mentioned, every well-formedness constraint is always assumed to be violable. From a set of all possible expressions –"candidates"– that may compete to convey the same meaning using the same formal elements, an OT grammar picks out the candidate that violates the least prominent constraint the least amount of times. Formally, this may be expressed as follows:

(23) HARMONY:

A candidate A_1 is more harmonic than A_2 if it contains fewer violations for the highest-ranking constraint in which the marking of A_1 and A_2 differs. (Kuhn, 2003, p. 7)

(24) GRAMMATICALITY:

From within the set S of candidates, every candidate C is grammatical if there is no P such that P is more harmonic than C .

The concept of "marking" mentioned in the definition of HARMONY requires some further explanation. In the context of OT, the marking of a certain candidate for a certain constraint can have two possible values: either the candidate complies with the aforementioned constraint and, therefore, it is left unmarked (i.e. there is no violation) or it does violate the constraint, in which case the candidate is marked as such. Moreover, violations are cumulative, so that the same candidate may be marked more than once for a certain constraint if it violates it more than once. Therefore, that two candidates "differ in their marking" with respect to one of the constraints means that one complies with it and the other does not (once or more times) or viceversa.

Even though it is not the usual case, OT allows for an optimization to result in predicting more than a single grammatical candidate for the very same competition. (24) only requires for a grammatical candidate to be predicted to be

grammatical not to have any other candidate that is *more* harmonic than itself, but it may be the case that there are more than one candidates that are equally harmonic and both are more harmonic than all the remaining candidates. In such scenarios, a case of free variation is predicted.

Optimizations are traditionally represented by means of tableaux in which the violations are marked by a star (*), one star for each time a candidate violates a certain constraint. Candidates are listed in the first column of the tableau, constraints are listed in the first row ordered from the most to the least prominent, as shown in the Tableau 2.1. The grammatical candidate is marked with a $\text{!}\text{!}\text{!}$ symbol in front. Conventionally, to ease the readability of OT tableaux, the specific instance of violation that results in discarding a certain candidate is marked with an exclamation mark (!).

	CONSTRAINT A	CONSTRAINT B	CONSTRAINT C
$\text{!}\text{!}\text{!}$ <i>Candidate 1</i>		*	*
<i>Candidate 2</i>	*!		
<i>Candidate 3</i>		**!	

Tableau 2.1: An example OT tableau

In the generic case shown in Tableau 2.1, the winning “optimal” candidate is Candidate 1, conveniently marked with a leading $\text{!}\text{!}\text{!}$ symbol as convened. This is the optimal candidate because it is the most harmonic of all candidates: Candidate 1 is obviously more harmonic than Candidate 2 because Candidate 1 does not violate the highest-ranking Constraint A while Candidate 2 does violate it; Candidate 3 also complies with Constraint A, but loses against Candidate 1 because it violates Constraint B twice whereas Candidate 1 violates it just once. The violation of Constraint C by Candidate 1 (not violated by Candidates 2 and 3) becomes irrelevant as all other candidates have already been discarded at this point.

The OT metatheoretical framework was first applied in generative phonology, but soon had its first application on syntax in a study by Grimshaw (1997) dealing with the different conditions in which English *do*-support arises as well as the conditions of matrix interrogative sentences. The first application of an OT metatheoretical framework within the LFG tradition is probably Bresnan’s (2000), and Kuhn’s (2003) work is the first giving a systematic account of an OT-LFG-based grammatical framework. In this work I am using OT exclusively as way to allow having a much more powerful version of LFG for explaining a phenomenon in which an apparent grammatical paradox is easily resolved by accepting that grammatical principles can be violated in predictable conditions.

A critical point of the OT metatheory is how candidates are selected for com-

peting against each other. In other words the so-called *input* must be defined so that it is the input of the *Gen* function that returns all the necessary candidates (Kuhn, 2003; Prince and Smolensky, 2004). In the case of an OT-LFG theory as the one that I am using in this research, the candidates are pairs of c-structures and f-structures such that constraints may apply either to the c-structure or to the f-structure of each sentence or to the mapping between both structures. However, it is self-evident that the “generated” candidates must share some traits in order for the competition to be an actual competition between comparable structures. This is why an appropriate definition of the input is necessary.

The input is defined to be an underspecified structure that provides the predicate and its arguments, so that all candidates must obligatorily express the same predication and only differ in the syntactic structure. Kuhn (2003) represents this by means of a representation that is akin to a lambda expression, whereas Alsina (2007) represents the input as an underspecified f-structure. In the case of this research, I conform to the following definition:

(25) OT INPUT:

The input of any optimization is an f-structure f that only provides a PRED value, the f-structures of those nodes in the corresponding c-structure c that also provide a PRED value and assigns an argument of the main predicate to those f-structures that fulfill a thematic role.

The consequence of the definition of what the input is is that all candidates must share the same propositional meaning, as the lexical PRED values must remain constant and the predicate must be saturated by the same elements across all candidates. Therefore, the input must provide the semantic material that must be common to all candidates in the competition, namely the semantic material that originates from the combination of lexical entries. However, this does not imply that all PRED values in the output (the winning candidate) should be found in the input. The generation of candidates may, under strictly defined conditions, add new semantic material, e.g. new elements that are devoid of any lexical meaning. For instance, null pronouns may be “unfaithfully added” into the f-structure of candidates while not being present in the f-structure of the input (as there is no c-structure element that introduces that null pronoun). Such an “unfaithful” addition will be grammatical or not depending on the prominence of the faithfulness principles in the grammar of each language.

This definition deals with adjuncts in a natural way, as well. *Gen* should not be allowed to “generate” candidates that differ from each other due to adjuncts; leaving this possibility open lets *Gen* “generate” an infinite number of candidates, as the amount of adjuncts is, at least theoretically, not limited in any way. As adjuncts do have a PRED value, the definition above requires them to be present in the input of an optimization.

A word must be said about the nature of the “generation” of candidates. Even though this does not affect the discussion that I am about to present on copular inversion, I am following Kuhn’s (2003) idea that *Gen* is a relation between candidates and the input instead of the traditional derivational view where the actual OT nomenclature comes from. Therefore, the *Gen* relation is defined as follows:

- (26) GEN:
 $Gen(I, S) = \top$ iff for the input I and each candidate C in the set of candidates S it holds that C does not modify the lexically specified value of any attribute of I and does not remove any attribute available at I .

Informally, GEN states that for mapping a set of candidates to a certain input, it must hold that all candidates only add more information. Modifying the value of attributes as specified by lexical entries is prohibited in order to comply with the LFG strong lexicalist hypothesis. Removing information from the input is also barred so that the input is kept as the common denominator of all candidates. “Unfaithful” addition, on the other hand, is allowed, as well as modifying attributes whose value is not lexically specified, but are due to some c-/f-structure mapping principle (e.g. structure sharing principles).

As formalized, the proposed metatheoretical OT component allows us establish hypotheses in a more flexible, yet constrained way. The assumption that the ranking of constraints is language-specific allows for accounting for crosslinguistic differences and similarities assuming that all languages share the same set of constraints, but differ in how these are ranked. Within a specific language, the assumption that all constraints may be violated allows for accounting for differences and similarities across syntactically related structures that form minimal pairs or minimal sets of syntactic variation.

Now a simple example follows showing how a sample of English data, unrelated to copular inversion, can be explained by means of an OT-LFG framework so that the concepts developed in the last few pages can be understood in a better way.

2.4.2 A simple example of a toy hypothesis in OT-LFG

Let us go back to the (22) example to illustrate how OT-LFG works, adapting the analysis by Grimshaw (1997) and the one by Kuhn (2003). The aim of this section is not to present a full-fledged analysis of the data, but only to exemplify how the theoretical framework that has been formalized in this chapter can be made use of.

- (27) What does Mary know?

As the reader will recall from the earlier discussion, (27) is interesting because there is an object, *what*, that is not in a position that maps to the OBJ grammatical function. This was explained earlier by stating that the FOCUS grammatical function requires to share its structure with another grammatical function. According to that reasoning, (27) would be a case in which the f-structure corresponding to *what* is the value of two GF attributes, namely FOCUS and OBJ. This was represented earlier by means of an f-structure that is repeated in Figure 2.14 for convenience.

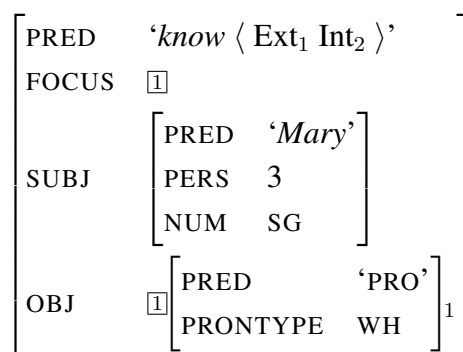


Figure 2.14: f-structure of (27)

The problem with the argumentation above is that it does not set the conditions in which this kind of situation may or may not occur; i.e. it has no predictive power. The goal here is to state why in cases like (27) we find that interrogative objects in English must be outside their object position (but in the focus position). An OT-LFG framework is a great choice for explaining such an apparent paradox, as it allows us to express this phenomenon, compared to the English canonical SVO order, as the result of the interaction of two conflicting “tendencies” within English itself: On the one hand, OBJs take their value from the DP in the VP-complement position and, on the other hand, foci of *any* grammatical function are located at Spec-CP (thus triggering *do*-support). In summary, the paradigm that must be correctly predicted by our theory is this:

- (28) a. What does Mary know?
 b. * Mary knows what?
 c. * What knows Mary?
 d. * Does Mary know what?

The paradigm in (28) is the set of candidates we want the OT *Gen* function to generate. The input in this case is an abstract f-structure that only consists of the predicate *know*, *Mary* and the pronominal predicate provided by *what*, as

shown in Figure 2.15. The assignment of GFs is left to mapping principles that the c-/f-structure pairs must be tested against. On the other hand, the mapping of the values of the yet to be defined GFs and the predicate's argument structure (and thematic roles, but these are not shown in f-structures) is already set by the input.

$$\left[\begin{array}{l} \text{PRED} \quad 'know \langle \text{Ext}_1 \text{Int}_2 \rangle' \\ \text{TENSE} \quad \text{PRES} \\ \text{GF}_x \quad \left[\begin{array}{l} \text{PRED} \quad 'Mary' \\ \text{PERS} \quad 3 \\ \text{NUM} \quad \text{SG} \end{array} \right]_1 \\ \text{GF}_y \quad \left[\begin{array}{l} \text{PRED} \quad 'PRO' \\ \text{PRONTYPE} \quad \text{WH} \end{array} \right]_2 \end{array} \right]$$

Figure 2.15: Input f-structure of *know(Mary, what)*

Let us establish the following set of constraints, ranked as in (32):

(29) OBJPOS:

$$\begin{array}{c} V' \\ \swarrow \quad \searrow \\ V^0 \quad XP \end{array} \iff [\text{OBJ} \quad \phi(\text{XP})]$$

(30) FOCUSPOS:

$$\begin{array}{c} CP \\ \swarrow \quad \searrow \\ XP \quad C' \end{array} \iff [\text{FOCUS} \quad \phi(\text{XP})]$$

(31) INTFOCUS:

If an f-structure f has its PRONTYPE value defined as WH, f is the FOCUS of the sentence.

(32) FOCUSPOS \gg INTFOCUS \gg OBJPOS

The c-structures and the f-structures pairs of the candidates are “generated” by the *Gen* function, but in this case those are relatively trivial, so these are not reproduced here. In Tableaux 2.2 only the example number is used to refer to a candidate.

Sentence (28a) wins over the rest of candidates because it only violates OBJPOS, which is the lowest ranking constraint. Cases (28b) and (28d) do comply with this constraint, but they violate more prominent INTFOCUS. Case (28c) violates INTFOCUS as *what* occupies Spec-IP, not Spec-CP (LFG does not allow stating an empty C^0 node of which *what* is the specifier, so *what* must be in Spec-IP)

	FOCUSPOS	INTFOCUS	OBJPOS
☞ (28a)			*
(28b)		*!	
(28c)		*!	*
(28d)	*!	*	

Tableau 2.2: Optimization for (28)

and of course OBJPOS. Therefore, even though (28a) is not a “perfect” sentence, as it does violate one grammatical principle, it must be considered the optimal candidate among its competitors and, therefore, predicted to be grammatical.

Of course this toy theory is not as complete as Grimshaw’s (1997) OT view on the position of English interrogatives and *do*-support. It incorrectly predicts expressive sentences like *Mary said* WHAT? (with a raising intonation over the interrogative left *in situ*) to be ungrammatical, for instance. Obligatory subject inversion is also left unexplained by it. However, it should serve as an illustration of the type of analysis that will be used later for copular inversion.

2.5 Summary

In this chapter the theoretical framework that is used in the exploration of copular inversion has been defined. What has been presented in the previous pages is a version of LFG that makes use of abstract general principles instead of functional annotations to constrain the mapping of c-structures and f-structures, thus allowing for better cross-linguistic generalizations that do not depend on the particularities of the c-structure of the language analyzed. As a way to allow for even better cross-linguistic generalizations, an OT view of syntax is assumed, such that grammatical structures are not those that comply with all linguistic principles, but violate the lower-ranking ones with respect to other candidates.

The appropriateness of the OT-LFG framework presented in this chapter will make itself evident when discussing the data on copular inversion as well as the attempts to explain them within other theoretical frameworks without the desired success. The apparent paradoxes that arise related to the facts of copular inversion lend themselves to be easy to resolve by means of the framework proposed here. Moreover, in chapter 4 the OT-LFG framework will show itself as very convenient for accounting for cross-linguistic phenomena that can be related to copular inversion.

Chapter 3

The syntax of copular inversion

3.1 Determining the function of the agreeing DP

As discussed earlier in the introduction to this work, copular inversion is a phenomenon that can be found in languages like Spanish in sentences where the copular predicate is a DP (i.e. sentences with the pattern DP-*be*-DP). This phenomenon consists in the copula agreeing with the postverbal DP where agreement with the preverbal DP would be expected, as in the following examples adapted from Alsina (2007):¹

(33) La solución son los impuestos
the.f.sg solution.f.sg be.pres.3.pl the.m.pl tax.m.pl
'The solution is taxes'

(34) *La solución es los impuestos
the.m.sg solution.f.sg be.pres.3.sg the.m.pl tax.m.pl

This phenomenon is not unique to the 3rd person, but is also present with other person features. Consider the following paradigms involving the 1st and 2nd person features:

(35) a. El problema soy yo
the.m.sg problem.m.sg be.pres.1.sg I
'The problem is me'

b. *El problema es yo
the.m.sg problem.m.sg be.pres.3.sg I

(36) a. El problema eres tú
the.m.sg problem.m.sg be.pres.2.sg you.sg

¹This chapter is primarily based on Alsina and Vigo (2014), where this theory is presented for the first time.

- ‘The problem is you.sg’
 b. * El problema es tú
the.m.sg problem.sg be.pres.3.sg you.sg

It should be noted that inverting the order of the DPs in (33) does not alter the number feature of the copula; the copula will still be required to agree in the plural with *los impuestos* ‘the taxes’, unlike in English, where the copula always takes the features of the preverbal DP:

- (37) The solution is/*are taxes
 (38) Taxes are/*is the solution

One way to explain these facts could be as simple as to assume that the postverbal DP is the subject of the sentence. Indeed, authors like Fernández Leborans (1999), Hernanz and Brucart (1987), and Ramos (2002) have analyzed copular inversion like this in the past, usually stating that the postverbal DP is indeed the subject such that the predicate is “raised” over the verb probably to receive focus. That type of hypothesis resembles a somewhat recurrent analysis of English specificational copular sentences, where the predicate is also considered to be “raised” above the verb, thus leaving the subject unmoved under VP (Heggie, 1988; Mikkelsen, 2005).

However, Alsina (2007) shows this cannot be the case with data from Catalan. Catalan, as well as Spanish, is a Romance null subject language, and therefore, it allows for free elision of the subject.² If the postverbal DP was the subject, then it should be elidable, but it is not ((39) is taken from Alsina, 2007; (40) is mine):

- (39) La solució són *(els impostos)
*the.f.sg solution.f.sg be.pres.3.pl *(the.m.pl tax.m.pl)*
 ‘The solution is taxes’
 (40) La solució és *(aquesta llei)
*the.f.sg solution.f.sg be.pres.3.sg *(this.f.sg law.f.pl)*
 ‘The solution is this law’

In fact, it is the preverbal DP which is freely elidable in a sentence like the one above (Alsina, 2007), with the copula agreeing with the postverbal DP:

- (41) La solució són els impostos
the.f.sg solution.f.sg be.pres.3.pl the.m.pl tax.m.pl
 ‘The solution is taxes’

²Subject ellipsis is like using a pronoun: how the pronoun or the elliptical subject is interpreted is a pragmatic matter. Syntactically, though, elision is always freely available in null subject languages.

- (42) Són els impostos
be.pres.3.pl the.m.pl tax.m.pl
 ‘It is taxes’
- (43) És la solució
be.pres.3.sg the.f.sg solution.f.sg
 ‘It is the solution’

These facts of Catalan are also valid for Spanish, thus providing further evidence that the postverbal DP in (33) is not the subject:

- (44) La solució son *(los impuestos)
*the.f.sg solution.f.sg be.pres.3.pl *(the.m.pl tax.m.pl)*
 ‘The solution is taxes’
- (45) La solució es *(esta ley)
*the.f.sg solution.f.sg be.pres.3.sg *(this.f.sg law.f.pl)*
 ‘The solution is this law’

However, Alsina (2007) shows how Catalan provides evidence against considering the agreeing postverbal DP as the subject from the behavior of its partitive clitic *en* (with allomorphs *n’* and *-ne*), which cannot be used to cliticize a partitive constituent out of an element that is only a subject,³ as he shows with the following examples:⁴

- (46) a. Els estudiants llegeixen molts llibres
the.m.pl student.m.pl read.pres.3.pl many.m.pl book.m.pl
 ‘The students read many books’
- b. Els estudiants *(en) llegeixen molts
*the.m.pl student.m.pl *(CL.part) read.pres.3.pl many.m.pl*
 ‘The students read many (books, magazines, ...)’
- (47) a. Molts estudiants aprovaran
many.m.pl student.m.pl pass.fut.3.pl
 ‘Many students will pass’

³This must be stated this way because unaccusative verbs like *arribar* ‘to arrive’ allow partitive cliticization of its VP-internal yet subject-like argument: *Arribaren molts estudiants* ‘Many students arrived’, *N’arribaren molts* ‘Many (of them) arrived’. According to Alsina (1995) such arguments are simultaneously the subject and the object of the sentence, thus the restriction over *en* is that it cannot be used for elements whose only GF is SUBJ.

⁴The sentence *Molts en llegeixen els llibres* ‘Many read the books (of someone, about something, ...)’ is also possible, because *en* can also be used to substitute the complement of a complement DP. In any case, the clitic is never interpreted as part of the subject.

- b. Molts (*n')aprovaran
*many.m.pl (*CL.part=)pass.fut.3.pl*
 'Many will pass'

The Catalan examples below show that, in copular inversion structures, *en* can be used to replace a partitive in the postverbal DP, thus providing further evidence that the postverbal DP is not the subject of the sentence:

- (48) El problema són molts estudiants
the.m.sg problem.m.sg be.pres.3.pl many.m.pl student.m.spl
 'The problem is many students'
- (49) El problema *(en) són molts
*the.m.sg problem.m.sg *(CL.part) be.pres.3.pl many.m.pl*
 'The problem is many of them'

All I have done up to this point is to prove that the postverbal DP is not the subject, even though it agrees with the verb. However, claiming that something is not the subject leaves a lot of alternative grammatical functions for this postverbal constituent to take. I will now proceed to show that the agreeing postverbal DP in copular sentence is the complement of the copula in this construction.

In the first place, clause structure in null subject Romance languages requires the complement to immediately follow the verb in the absence of any special intonation, whereas the apparent subject may freely occupy either the preverbal or a postverbal position provided that it allows the complement to be placed in the right position. This is shown in the following examples, where the object *la tormenta* 'the storm' is only allowed immediately after the verb *seguirán* 'will follow' (examples adapted from Alsina and Vigo, 2014):

- (50) a. Las lluvias seguirán la tormenta
the.f.pl shower.f.pl follow.fut.3.pl the.f.sg storm.f.sg
 'The showers will follow the storm'
- b. Seguirán la tormenta las lluvias
follow.fut.3.pl the.f.sg storm.f.sg the.f.pl storm.f.pl
 'The showers will follow the storm'
- (51) a. *La tormenta seguirán las lluvias
the.f.sg storm.f.sg follow.fut.3.pl the.f.pl shower.f.pl
- b. *Las lluvias la tormenta seguirán
the.f.pl shower.f.pl the.f.sg storm.f.sg follow.fut.3.pl
- c. *La tormenta las lluvias seguirán
the.f.sg storm.f.sg the.f.pl shower.f.pl follow.fut.3.pl

If the complement of the verb is required to be placed immediately after the verb, it follows then that the postverbal DP in copular sentences with a preverbal DP is the complement, whereas the preverbal DP is the subject. However, there is a difference that cannot be ignored; in copular sentences interchanging the positions of the subject and the complement is allowed, as shown below, unlike in transitive sentences (e.g. (51a)):

- (52) El problema soy yo
the.m.sg problem.m.sg be.pres.1.sg I
 ‘The problem is me’
- (53) Yo soy el problema
I be.pres.1.sg the.m.sg problem.m.sg
 ‘I am the problem’

This is not an obstacle against my argument. Even though both DPs may interchange their positions, in both cases above the postverbal DPs are the complements of their respective sentences; these DPs cannot be preposed to the verb, as shown below, precisely because these are complements:

- (54) *El problema yo soy
the.m.sg problem.m.sg I be.pres.1.sg
- (55) *Yo el problema soy
I the.m.sg problem.m.sg be.pres.1.sg

Further evidence for the postverbal DP being the complement of the copula comes from the behavior of Spanish clitics. These clitics are only found in complement positions to replace an otherwise absent obligatory internal argument. For instance, masculine *lo*, feminine *la* and their respective plural forms are accusative clitics that may replace a missing 3rd person OBJ in a sentence:

- (56) a. Veo el camino
see.pres.1.sg the.m.sg road
 ‘I see the road’
- b. *(Lo) veo
 *(CL.3.m.sg.acc) *see.1.sg*
 ‘I see it’
- (57) a. Compraré esa patata
buy.fut.1.sg that.f.sg potato.f.sg
 ‘I will buy that potato’

- b. *(La) compraré
 *(CL.3.f.sg.acc) *buy*
 ‘I will buy it’

The clitics *lo* and *la* shown above, and their plural forms, must have the same person, gender and number features as the complement they replace. Failure in matching the person, gender and number features of the reference will lead to a pragmatically inadequate sentence or to a plain misunderstanding of which the intended reference actually was, even though the sentence will be perfectly grammatical.

There is however, a third clitic, homophonous to *lo*, which lacks person, gender and number features and that replaces clausal complements, which do not either have any of those features or, at least, there is no reason to assign them any. This gender-number-less (“neuter singular”) *lo* is shown in (59) replacing the embedded sentence that is the object of a transitive sentence in (58):

- (58) Los expertos afirman que la ternera navarra
the.m.pl expert.m.pl claim.pres.3.pl that the.f.sg veal.f.sg Navarrese.f.sg
 es la mejor de España
be.pres.3.sg the.f.sg best.sg of Spain
 ‘The experts claim that Navarrese veal is the best one in Spain’
- (59) Los expertos *(lo) afirman
*the.m.pl expert.m.pl *(CL.3.sg.acc) claim.pres.3.pl*
 ‘The experts claim it/that’

This *lo* can be shown not to be the masculine clitic by testing any of the forms of masculine *lo* or feminine *la* with a verb like *afirmar* ‘to claim’ that only accepts clausal complements renders all resulting structures ungrammatical. The fact that *afirmar* does not allow either the masculine clitic *lo* or the feminine clitic is proven by topicalization structures like those shown below, as in Spanish topics must be resumed by a clitic that agrees with the topicalized constituent in person, gender and number.

- (60) *El pensamiento, los expertos lo
the.m.sg thought.m.sg the.m.pl expert.m.pl CL.3.m.sg.acc
 afirman
claim.pres.3.pl
- (61) *Esa verdad, los expertos la afirman
that.f.sg truth.f.sg the.m.pl expert.m.pl CL.3.f.sg.acc claim.pres.3.pl

- (62) * Los pensamientos, los expertos los
the.m.pl thought.m.pl the.m.pl expert.m.pl CL.3.m.pl.acc
 afirman
claim.pres.3.pl
- (63) * Esas verdades, los expertos las afirman
that.f.pl truth.f.pl the.m.pl expert.m.pl CL.3.f.pl.acc claim.pres.3.pl

Therefore, the clitic *lo* in (59), which replaces a clausal complement, is not the masculine singular form, but a different one.

Let us not lose the goal here. So far, I have shown that there are three different complement clitics that are used to replace OBJ in Spanish: a masculine, a feminine and an unmarked clitic. My goal here is to show that the postverbal DP of the copula is a complement, so let us test these clitics in copular sentences so that the complementhood of the postverbal DP is proven to be true and to establish which clitics are allowed and which are not in this type of sentences. The result is shown below:⁵

- (64) a. El problema son los impuestos
the.m.sg problem.m.sg be.pres.3.pl the.m.pl tax.m.pl
 ‘The problem is taxes’
- b. * El problema los son
the.m.sg problem.m.sg CL.3.m.pl.acc be.pres.3.pl
- c. El problema lo es
the.m.sg problem.m.sg CL.3.sg.acc be.pres.3.pl
 ‘The problem is it’
- (65) a. La cena son esas verduras
the.f.sg dinner.f.sg be.pres.3.pl that.f.pl vegetable.f.pl
 ‘The dinner is those vegetables’
- b. * La cena las son
the.f.sg dinner.f.sg CL.3.f.pl.acc be.pres.3.pl
- c. La cena lo es
the.f.sg dinner.f.sg CL.3.sg.acc be.pres.3.sg
 ‘The dinner is it’

In the paradigms above it is shown that the copula bars having *los* and *las* as their possible complements, even if the original constituent was masculine plural

⁵Sentences like (64c) and (65c) are odd without a discourse context that licenses the subject to be topicalized (see §3.3.3 for more information on why a preverbal subject is probably better analyzed as a topic), but are grammatical. Take for example a context like this for (65c): *La comida no son esas verduras, pero la cena lo es* ‘The lunch is not those vegetables, but dinner is’.

or feminine plural, respectively. The only possible clitic is *lo*,⁶ but is it the masculine singular or the unmarked one? The most sound hypothesis is the latter, which proves to be the correct one as the copula accepts clausal complements, which are also replaceable by a clitic:

- (66) El problema es que se vayan mañana
the.m.sg problem.m.sg be.pres.3.sg that leave.subj.pres.3.pl tomorrow
 ‘The problem is that they may leave tomorrow’
- (67) El problema lo es
the.m.sg problem.m.sg CL.3.sg.acc be.pres.3.sg

The feature-less clitic *lo* even replaces APs:

- (68) Rosa es muy trabajadora
Rosa be.pres.3.sg very hard.working.f.sg
 ‘Rosa is very hard working’
- (69) Rosa lo es
Rosa CL.3.sg.acc be.pres.3.sg
 ‘Rosa is it’

Before discussion the conclusions these data lead to, it must be noted that it is true that Spanish allows constructions like the one in (71), where it might seem at first glance that *lo* might be used to take over the function of *el problema* in (70), which I claimed not to be the complement.

- (70) El problema son los impuestos
the.m.sg problem.m.sg be.pres.3.pl the.m.pl tax.m.pl
 ‘The problem is taxes’
- (71) Lo son los impuestos
CL.3.sg.acc be.pres.3.pl the.m.pl tax.m.pl
 ‘It is taxes’

Upon closer inspection, it turns out the structure of (71) is absolutely different, since the postverbal DP, in this case, is the subject of the sentence indeed, as it is elidable:

- (72) Lo son (los impuestos)
CL.3.sg.acc be.pres.3.pl (the.m.pl tax.m.pl)
 ‘They are’

⁶The verb turns into the singular form because there is no plural form in the sentence. A plural form in (64c) or (65c) is absolutely impossible, because it would have no grammatical function it could unify with in the sentence.

Cross-linguistic evidence from Catalan is important here. The Catalan feature-less accusative clitic *ho* is not homophonous with masculine *el* (with *lo*, *l'*, *-l* as its allomorphs). We find *ho* to be the obligatory clitic in copular sentences for replacing a whole DP, AP or CP complement (unless the partitive *en* is licensed), and we also find that *ho* is the only clitic that is allowed for being the complement of a verb that requires clausal complements:

- (73) a. El sopar són verdures
the.f.sg dinner.f.sg be.pres.3.pl vegetable.f.pl
 ‘The dinner is it’
 b. El sopar ho és
the.f.sg dinner.f.sg CL.3.sg.acc be.pres.3.sg
 ‘The dinner is it’
- (74) a. La Rosa és molt treballadora
the.f.sg Rosa be.pres.3.sg very hard.working.f.sg
 ‘Rosa is very hard working’
 b. La Rosa ho és
the.f.sg Rosa CL.3.sg.acc be.pres.3.sg
 ‘Rosa is it’
- (75) a. Els experts afirmen que la vedella
the.m.pl expert.m.pl claim.pres.3.pl that the.f.sg veal.f.sg
navarresa és la millor d’Espanya
Navarrese.f.sg be.pres.3.sg the.f.sg best.sg of=Spain
 ‘The experts claim that Navarrese veal is the best one in Spain’
 b. Els experts ho afirmen
*the.m.pl expert.m.pl *(CL.3.sg.acc) claim.pres.3.pl*
 ‘The experts claim it/that’

All these data point towards two important conclusions that are basic for our research. First, it shows more evidence that in copular sentences the postverbal DP is the complement, even if it happens to agree with the verb, in which case it constitutes a case of copular inversion. But, more importantly, it also shows that the complement of the copula must be represented in a way that makes it akin to a clausal complement even if in the c-structure its category is D. Whereas *verba dicendi* like *claim* or other similar ones restrict their complements to be CPs probably by means of some lexical subcategorization specification, the copula may take DPs, APs and CPs as its complements, but in all cases these are replaced by *ho*. This means that, at least for the case of the copula, all three possible categories share some property that makes them both ineligible to be replaced by

the feature-full clitics even in the case of nominal complements as well as akin to a clausal complement.

The best assumption here is to assume that the copula takes predications as its complements. This is easy to visualize for APs (an open predication saturated by the subject of the copular sentence, as in Attia, 2008 and Dalrymple et al., 2004) and embedded sentences (a closed predication), but perhaps a bit striking for DPs. The grammatical behavior, though, leads to assuming that even DPs, at least as complements of copular sentences, behave like adjectives and become a predicate the subject of the sentence is predicated of.

The evidence presented so far allows us to assign the OBJ grammatical function to the postverbal DP in copular inversion structures, i.e. those in which this postverbal element cannot be considered to be the subject. However, I want the reader to keep in mind that the definition of the OBJ function I will be referring to is not the standard one used by Bresnan (2001) or Dalrymple (2001), namely the function assigned to the internal (usually thematic) argument of transitive verbs. On the contrary, the OBJ function I am referring to is rather a generic “complement” function as defined by Alsina et al. (2005) that, in the case of Spanish, is able to encompass non-oblique non-subject arguments, regardless of c-structure properties (i.e. whether the object is a DP or a CP, which is the distinction behind OBJ/OBL and COMP in standard LFG) and also regardless of lexical argument structure (a-structure) properties like the fact whether the verb can be passivized. To state that the copular predicate is an OBJ is in no case a novelty: this has already been proposed by Van der Beek (2003) in her analysis of Dutch *het*-clefts.

Choosing this generic OBJ function has a great theoretical advantage over other labels that have been proposed in the past for the grammatical function of the complement of the copula. Both the PREDLINK grammatical function (Attia, 2008; Butt et al., 1999; Dalrymple et al., 2004; Sulger, 2009) and Alsina’s (2007) “COMP(LEMENT)” (which must not be confused with the standard COMP grammatical function) not only add one further grammatical function to the inventory, but they fail to explain why a clitic like *lo*, typically used for direct objects, can be used in copular sentences to cliticize the predicate of the copula. It must be noted, though, that the OBJ of the copula is not in accusative case, thus disallowing the insertion of the preposition *a* ‘to’, which acts as a mandatory accusative mark for specific human objects in Spanish (regardless of it being a proper name or a common noun):

- (76) Marta ve *(a) la panadera
 Marta see.pres.3.sg *(to) the.f.sg baker.f.sg
 ‘Marta sees the bakerwoman’
- (77) Marta es (*a) la panadera
 Marta be.pres.3.sg *(to) the.f.sg baker.f.sg

‘Marta is the bakerwoman’

I consider this to be rooted in lexical properties of the verbs involved: transitive verbs are specified to assign accusative case to their OBJ argument, while the copula does not, at least in Spanish or Catalan. I will not enter into the details on the conditions when accusative case is licensed by a verb, which are probably generalizable as in Burzio (1986) or Grimshaw (1990), namely that accusative case may only arise if the verb has an external argument. As the copula does not have an external argument, this might be the reason why a specific human OBJ in copular sentences cannot be introduced by the preposition or case marker *a*. This also explains why the copula cannot be passivized.

Taking into account the data presented so far, the f-structure of a sentence like (33) would look like the one below shown in Figure 3.1. Notice though that the grammatical function of the *preverbal* DP has not been discussed yet, so I am provisionally labelling it as SUBJ, as the Extended Projection Principle (Chomsky, 1981, 1995) or the Subject Condition (SUBJCOND) require every sentence to have a subject (Baker, 1983; Bresnan, 2001).

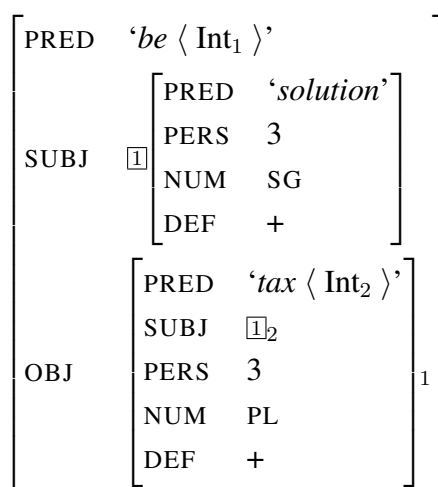


Figure 3.1: f-structure of (33)

Following Alsina (2007, pp. 32–33), I am considering the copula to have only one internal argument (although he represents it under the label “arg”), as the subject is an argument of the predicate, as is shown by the fact that the apparent subject, in the case of adjectival copular sentences, is an argument of the adjective. This is shown in Figure 3.1 by stating that the SUBJ of the sentence shares its structure with the SUBJ of the OBJ of the sentence, exactly like a raising structure. The main advantage of this approach is that it explains why the clitic *lo* can

appear both as the complement of copular sentences as well as the substitute for a complement embedded clause: both have in common that they are formed by predicates that assign at least a SUBJ position.

In summary, the conclusion that has to be drawn from the data presented in this section is that the postverbal DP, despite the fact that it maintains an agreement relation with the verb, is not the subject of copular inversion structures. The question this idea leads to, of course, is how this may be possible and why (and how) the postverbal, complement DP agree with the verb, contrary to what linguists have traditionally assumed.

3.2 A first provisional explanation

As Alsina (2004, 2007) and Rosselló (2008) notice, it appears that the features of the copula are chosen with respect to a person-number feature hierarchy, always taking the highest-ranking feature available in the sentence. The hierarchy, according to Alsina (2007), is as follows:

- (78) PERSON-NUMBER HIERARCHY (PNH)
 1st person / 2nd person > 3rd person plural > 3rd person singular

The main intuition behind this hierarchy is that the copula, for some reason, seeks to agree with the DP which is more marked according to this hierarchy, thus “showing” why the copula does not agree in 3rd person singular either in (33), (35) nor (36) and why inverting the order of the arguments does not affect the features chosen by the copula. Let us state this more formally:

- (79) COPULAR AGREEMENT (COPAGR)
 The copula agrees with the argument that ranks higher on PNH.

There are, nevertheless, a couple of issues that must be sorted out in a theory of copular agreement, which PNH is able to diagnose but not explain. The first one is how 1st and 2nd person interact with each other when they are found in the same sentence:

- (80) a. Yo soy tú
I be.pres.1.sg you.sg
 ‘I am you.sg’
 b. Tú eres yo
you.sg be.pres.2.sg I
 ‘You.sg are me’
 (81) a. *Tú soy yo
you.sg be.pres.1.sg I

- b. * Yo eres tú
 I be.pres.2.sg you.sg

According to COPAGR, it is clear why the sentences in (80) are grammatical, namely because the 1st and 2nd person features are equally ranked on the hierarchy. However, the hierarchy does not explain why inverting the order, as in (81), renders the structures ungrammatical. This asymmetry, namely that inverting the order of the elements in a copular sentence does not affect the person-number features of the copula except when both DPs are equally ranked (i.e. one is in the 1st person and the other one is in the 2nd person) must be explained by any good theory of copular agreement.

A principle like COPAGR cannot be considered anything but a useful descriptive device that shows the way to a good explanation of the facts. It does predict some results, but it does not present any cause why the behavior of this kind of sentences is different from what is otherwise expected and why it is different from the behavior of this very same type of sentences in other languages like English, for instance. Predicting results is not enough to actually understand the nature of any phenomenon, but we must also thrive for understanding the causes behind the phenomena we are facing: we need principles that interact with the rest of the theory of agreement in a clear way such that *ad hoc* principles like COPAGR, which makes copular inversion an isolated, special phenomenon, are avoided.

Let us try now to refine this first hypothesis to make it a good base for our analysis. The challenge is to create a general principle of grammar that explains copular inversion by means of the PNH, while constraining its effects in such a way that it does not make incorrect predictions. Consider, for instance, these examples:

- (82) Juan plantó esos pinos
Juan plant.past.3.sg that.m.pl pine.m.pl
 ‘Juan planted those pines’
- (83) * Juan plantaron esos pinos
Juan plant.past.3.pl that.m.pl pine.m.pl

Our already discarded COPAGR principle does not predict anything about these cases, exactly because it only referred to copular sentences. On the other hand, a principle that applied the PNH regardless of the type of sentence (e.g. “Verbs always agree with the argument that ranks higher in the PNH”) would yield the incorrect prediction that (83) should be grammatical because *esos pinos* (3rd person plural) ranks higher than *Juan* (3rd person singular), so the verb should agree with its complement rather than with its subject. Conversely, (82) would be incorrectly predicted to be ungrammatical for the same reason. This means that

we need to find a principle or, rather a set of principles (i.e. a theory) about agreement that results in the PNH being relevant only in the case of copular inversion, due to an isolable property of the copula.

So, how is the copula different to a transitive verb like *plantar* ‘to plant’? Following Alsina (2007), I propose that the relevant difference is that of the coreference relation established by the copula between its subject and its predicate, which is not found in any other type of verb. This makes the copula stand apart from all the rest of verbs and, as will be shown, it is the property that must be taken advantage of to construct a principled explanation of copular inversion.

The question what the copula does is one that must be answered if we want to tackle the problem of its syntax, especially when it comes to copular inversion structures. It is quite evident that the predication relation in a case like (84) is completely different from the predication found in (85):

- (84) The cause of the riot is unknown
 (85) The cause of the riot is the last presidential address.

In (84) the copula works as a descriptive operator, in the sense that it declares an attribute (*unknown*) of a certain object, namely the cause of the riot. On the other hand, in (85), there are two different expressions (*the cause of the riot* and *the last presidential address*) with two different meanings but that share the same extralinguistic reference, i.e. a state of affairs in which there is a riot, presumably because of something the president said in his last address. The reference of the first DP, *the cause of the riot*, is stated to be the same as the reference of the second DP, *the last presidential address*, or, conversely, one unique reference is stated to be referred to by two different forms.

Two DPs that share their reference as in (85) are said to be coreferential, under the following definition of coreference:

- (86) COREFERENCE:
 Two expressions *S* and *P* are said to be coreferential if the references of *S* and *P* share the same coordinates in space-time.

The reference of an expression *x* is an instance in space-time of a class denoted by the meaning of *x*, i.e. an object in the real world. If two expressions are stated to be coreferential by means of a copular sentence, it is entailed that the references of the coreferential expressions share the same space-time coordinates. In a case like *Today's dinner is vegetables* the reference of the subject and the complement is the same (notice that the set of all vegetables includes those that will be taken for dinner the day the expression has been uttered). The speaker then claims that the reference of these two expressions must be completely identified: the actual

vegetables that are taken for dinner and the dinner itself are the same object in the world, but referred to by means of two different “names”.

The concept of coreference is of critical importance as it is the key difference between copular sentences with a DP complement and every other sentence where a verb has two DPs as its arguments. In a transitive sentence, there is no necessary identification or no coreference of the subject and the object, except for those cases in which the object is a reflexive pronoun, a case which I will turn to later. Taking this into account, we may restrict the scope of the COPAGR constraint by stating that it only applies to sentences where SUBJ and OBJ are coreferential, which ultimately restricts it to copular sentences with a DP complement:

- (87) COREFERENCE-DRIVEN AGREEMENT (COREFAGR): If SUBJ and OBJ are coreferential (as defined above), then the verb agrees with the one that is higher on the PNH.

Principle (87) solves the problem of PNH predicting incorrect results for (82) and (83), repeated below for convenience as (88) and (89), respectively:

- (88) Juan plantó esos pinos
Juan plant.past.3.sg that.m.pl pine.m.pl
 ‘Juan planted those pines’

- (89) * Juan plantaron esos pinos
Juan plant.past.3.pl that.m.pl pine.m.pl

In the cases above, *Juan* and *esos pinos* ‘those pines’ do not refer to the same real-world object so COREFAGR is not applicable to them. Therefore, it appears we must resort to “classic” subject-verb agreement when no coreferentiality is present. This correctly predicts that (88) is grammatical but (89) is not.

However, there is a major problem with approaching this phenomenon in this way. In first place, the set of principles proposed so far is stated in terms that yield copular sentences to be a special, particular kind of sentence, completely isolated from the rest of the agreement system of the languages analyzed so far. On the other hand, the set of principles lacks validity across languages, as it fails to explain why English has no copular inversion, but Spanish and Catalan do. The reason of this is that the set of principles proposed above is not backed up by any precise theoretical framework that constrains how principles must be stated and how they interact with each other. Nevertheless, the ideas described here are in no case useless; they will serve as a starting point to arrive to a proper explanation of the facts, within the framework discussed in Chapter 2.

3.3 The preverbal DP and the case against *pro*

If the postverbal DP in copular inversion structures is the OBJ of the sentence, then, it seems natural to state that the preverbal one is the SUBJ. However, this poses some problems: even if we accept a constraint like COREFAGR, based on the notion of coreference, we need some way to prevent this principle from clashing with the general claim that verbs agree with their subjects, which is claimed to be universal, among others by Jespersen (1951) or by Chomsky (1981, 1995, 2000), in the form of the different versions of the EPP.

Reconciling COREFAGR with subject-verb agreement is needed mainly because our current working hypothesis does not claim that the former ranks higher than the latter in any way nor do we have any other theoretical device that resolves the conflict between those two principles. Additionally, I am still not in the position to discard subject-verb agreement, in any of its possible versions, which is a very intuitive principle that has worked quite well for explaining one of the most basic linguistic facts.

One way to make sense of the data presented so far that is found in the literature has been to consider that in copular inversion, a null subject is present. This null subject, as I will discuss below, is used as a sort of proxy that, by different theoretical devices according to the different authors, copies or assumes the features of the agreeing postverbal DP. The resulting effect is that the verb, by agreeing with this null subject, ends up agreeing with the postverbal DP.

These approaches are certainly reminiscent of Perlmutter's (1983) analysis of subject agreement with Italian unaccusative verbs by means of a "dummy" element. Very briefly explained, unaccusative verbs have the special property of agreeing with a DP that looks more like an object than like a subject. The dummy, silent element acts like a grammatical subject but takes its features from the object by virtue of a "brother-in-law" agreement rule.

However, there is evidence that depending on a null subject to analyze copular inversion structures is a wrong approach, as I will show after discussing Moro's (1997) and Alsina's (2007) approaches in detail.

3.3.1 Moro's (1997) analysis

One of the earliest works on the topic of copular inversion was Moro's (1997), within an early minimalist framework. In his work, he tries to reconcile the facts of copular inversion and the requirement of the GB/MP framework that only the subject, i.e. the DP in Spec-IP, can check the agreement features of the verb.

For Moro (1997), Italian copular sentences are to be analyzed in such a way that Spec-Head agreement of the verb or actually the functional empty category I^0 is kept with the Spec-IP. To do this, he claims that the preverbal DP is not in

Spec-IP in any case in Italian because that position sometimes does not trigger agreement with the verb, namely in copular inversion cases.

If the preverbal DP does not always trigger agreement, the question is what does trigger it. The comparison with English leads him to propose that the presence of copular inversion is a consequence of the *pro*-drop parameter, such that he proposed that the Spec-IP is filled by *pro* in all Italian SVO sentences (Moro, 1997, pp. 67-70). Consequently, the preverbal DP is claimed to be a topic left-adjoined to IP.

However, in order to account for the possibility that the copula might agree with its complements, Moro (1997) proposes that the copula acts as a raising verb that has a small clause (SC) as its complement from which *pro* is raised to the Spec-IP position. If *pro* is the subject of the SC, the resulting structure will be a non-inverted copular sentence, whereas if *pro* is the predicate of the SC, copular inversion arises. Within the SC, *pro*, which is stated to lack any ϕ -features, copies those of the DP as a last resort strategy possible because of the predicative relation they hold.⁷

In summary, the derivation of sentences (90) and (91) is to be represented, respectively, as in Figures 3.2 and 3.3 (pages 48 and 49, respectively).

- (90) La causa della rivolta sono le foto
the.f.sg cause.f.sg of=the.f.sg riot.f.sg be.pres.3.pl the.f.pl photo
 del muro
of=the.m.sg wall.m.sg
 ‘The cause of the riot is the pictures of/?on the wall’

- (91) Le foto del muro sono la causa
the.f.pl photo of=the.m.sg wall.m.sg be.pres.3.pl the.f.sg cause.f.sg
 della rivolta
of=the.f.sg riot.f.sg
 ‘The pictures of/?on the wall are the cause of the riot’

The analysis of copular inversion shown above has two problems. One of them is that it depends on *pro*, which will be shown to be an incorrect approach as there is evidence that non-*pro*-drop languages like German and Dutch also show copular inversion (see §3.3.3). However, there is also another problem, which is theory-internal, namely that it does not account for the Spanish cases cited before, in which agreement is only possible with the preverbal DP:

⁷Moro (1997) excludes the possibility that small clauses may be the projections of an Agr head because of well-known cases where no agreement is found within a SC, as in Italian *Gianni ritiene* [_{SC} [_{DP} *questi libri*] [_{DP} *la causa della rivolta*]] ‘Gianni considers these books the cause of the riot’, where *questi libri* is masculine plural and *la causa della rivolta* feminine singular.

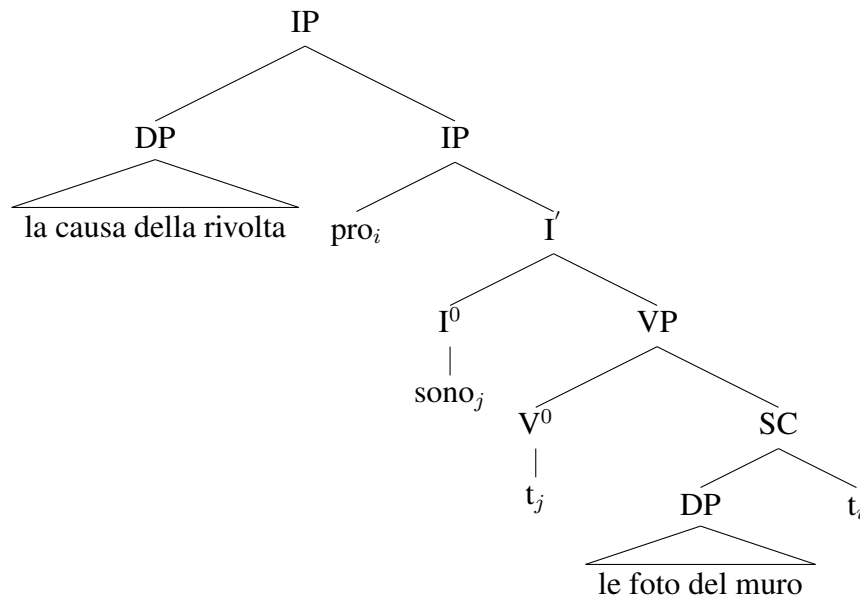


Figure 3.2: Derivation of (90) according to Moro (1997)

- (92) a. Yo soy tú
I be.pres.1.sg you.sg
 'I am you.sg'
- b. Tú eres yo
you.sg be.pres.2.sg I
 'You.sg are me'
- (93) a. * Tú soy yo
you.sg be.pres.1.sg I
- b. * Yo eres tú
I be.pres.2.sg you.sg

Following Moro (1997), the inverted structures in (93) should be possible. Regardless of what pronoun is considered to be the subject of the SC in these cases, Moro (1997) always allows for *pro* to be either the subject or the predicate of the SC, such that it is raised from the former position in non-inverted cases or from the latter position in those where inverse agreement is found.

The reason why Moro's (1997) hypothesis fails to explain the data above comes from the subtle problem that the representation of the derivation of copular sentences critically depends from the null pronoun being able to be raised from two positions in the SC to give account for both the inverted and non-inverted structures. But the conditions on which of the derivations is correct are undefined beyond the superficial attesting of which DP agrees with the copula. The problem

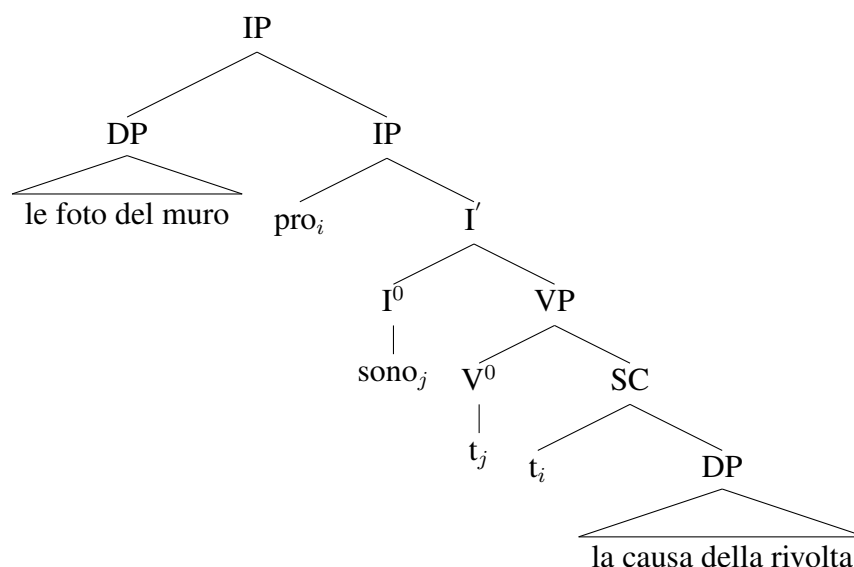


Figure 3.3: Derivation of (91) according to Moro (1997)

is that is exactly what the hypothesis actually tries to explain, namely why is *pro* able to take both the SC-internal subject position and the SC-internal predicate position and under which conditions each? These are the questions that the hypothesis should answer in order to be able to correctly predict the data in (92)-(93). Without further constraining that barred inverse agreement in such cases, namely some principle that actually explained when some derivations are available and when not, Moro's (1997) hypothesis is only applicable to the small subset of data that, per chance, allows both DP occupy either of the positions around the copula.

3.3.2 Alsina's (2007) analysis

The approach by Alsina (2007) also seeks to explain copular inversion, in Catalan in this case, by resorting to a solution in which the verb agrees with a null subject that takes the features of the complement. His theory is based on a version of Lexical Functional Grammar very similar to the one proposed for the present work and thus, it works in a radically different way than Moro's (1997) in order to achieve the "copying" or "transmission" of features from the postverbal DP to the null subject so that the verb agrees with it.

In order to understand the proposal by Alsina (2007), one must first discuss an important assumption made by the author regarding the "canonical" structure of sentences in null subject Romance languages (in practical terms, all Romance languages except French). Following Bonet (1990), Solà (1992) and Vallduví (1992, 2002), among others, Alsina (2007) assumes that the SVO order is not the canon-

ical word order in Catalan (and by extension, null subject Romance languages). Therefore, according to this claim, a regular transitive sentence in Catalan like the one in (94) has the c-structure and the f-structure shown in Figures 3.4a and 3.4b, respectively.

- (94) La noia menjava pomes
the.f.sg girl.f.sg eat.impf.3.sg apple.f.pl
 ‘The girl was eating apples’

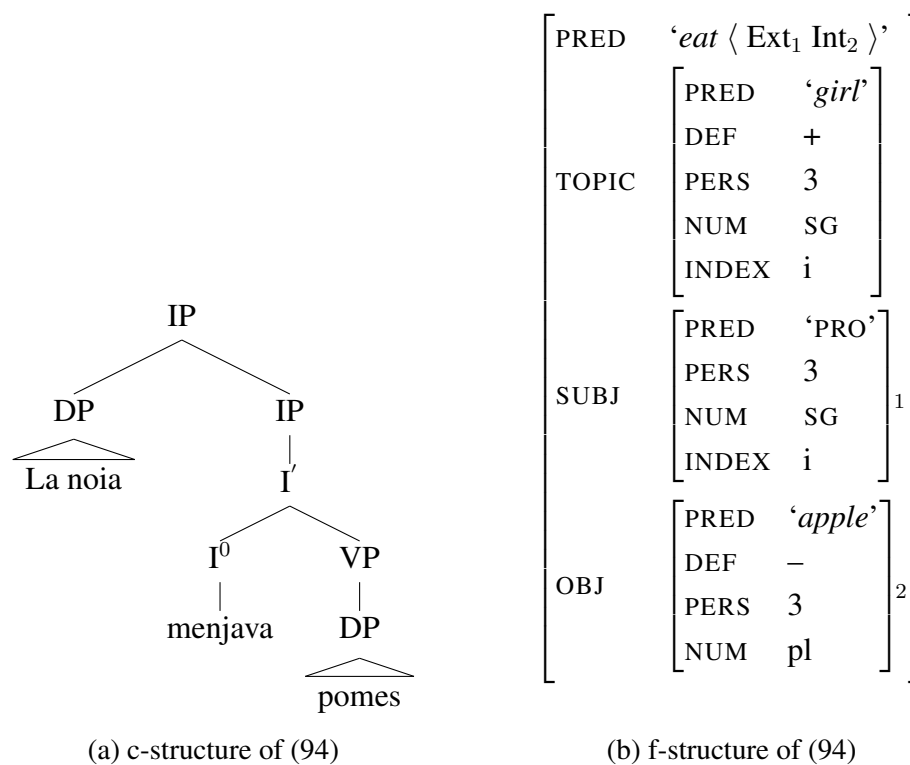


Figure 3.4: Grammatical structures of (94), following Alsina (2007)

The rationale behind these representations is the idea that *pro*-drop languages differ from those that are not in the grammatical function that is assigned to Spec-IP. In the case of null subject languages, this position is reserved for foci, so in a sentence without special intonation like (94), the preverbal element is not the focus, but it cannot be the subject either precisely because the Spec-IP position is not reserved for that grammatical function. In fact, Alsina (2007) claims that in Catalan there is no position that is exclusive to the SUBJ function.

As in Moro’s (1997) approach, a null pronoun takes the role of the subject. However, LFG allows this null pronoun to appear in the f-structure without the

need to have it in the c-structure, unlike MP or GB. Of course, inserting an element into the f-structure that is not present in the c-structure requires a principled explanation. While Moro (1997) considers the insertion of *pro* as the most economical way to fill the empty Spec-IP position in order to comply with the EPP (so that the derivation converges), Alsina (2007) considers it a necessary violation of a general constraint named F-FAITH(FULNESS), defined by him as follows:

(95) F-FAITH:

At f-structure, atomic features must be lexically specified and GFs must be licensed by a mapping constraint.

This constraint exists in order to avoid having grammatical functions in the f-structure that are not licensed by any constraint in the sentence and to also avoid having features in the f-structure that are not due to some specific lexical item. This requires the linguist to actually give an explanation for the geometry of the proposed f-structure, like lexical functional annotations do in “standard” LFG (Bresnan, 2001; Dalrymple, 2001; Falk, 2001), but leaving the door open to more general and abstract rules that operate within the mapping between levels of representation.

Of course, inserting a null subject directly into the f-structure violates the requirement of using a mapping constraint as stated by F-FAITH. However, this violation is actually needed; otherwise, the sentence would lack a SUBJ, thus violating both the so-called Subject Condition (SUBJCOND), namely the requirement that predicators (a verb in this case) should always have a subject, and the argument-to-functional structure mapping principle that requires an Ext(ernal) argument to map onto a SUBJ grammatical function. So, in order, to solve this contradiction, Alsina (2007) proposes an OT-LFG account, where:

(96) SUBJCOND \gg F-FAITH

As I have already noted above, Alsina (2007) claims that, when copular inversion is found, it is because the null subject has taken the features of the complement, but the mechanism by which this is explained is radically different to Moro’s (1997). In the first place, Alsina (2007) claims that all preverbal DPs in apparent SVO orders are topics that are anaphorically linked to a null subject in the f-structure, and copular sentences are not an exception to this, regardless whether they show copular inversion or not. This way Alsina (2007) avoids treating copular inversion or SVO copular sentences in general as a special case which a specific set of rules is applied for, but it aims to explain the phenomenon by means of rules that are claimed to be general. Consequently, a sentence in Catalan like (97) has the f-structure shown in Figure 3.5.⁸

⁸In the f-structure in Figure 3.5, COMP does not refer to the closed complement position tra-

- (97) La solució són els impostos
the.f.sg solution.f.sg be.pres.3.pl the.f.pl tax.f.pl
 ‘The solution is taxes’

	[PRED	‘be < arg ₁ >’		
				[
TOPIC		PRED	‘solution’		
		PERS	3		
		NUM	SG		
		INDEX	i		
]	
SUBJ		PRED	‘PRO’		
		PERS	3		
		NUM	PL		
		INDEX	i		
]	
COMP		PRED	‘tax’		
		PERS	3		
		NUM	PL		
		INDEX	i		
]
]

Figure 3.5: f-structure of (97), according to Alsina (2007)

Under the analysis by Alsina (2007), the verb agrees with the null pronoun in SUBJ. This leads to Alsina’s (2007) claim that inversion is “apparent”, because the verb, under his analysis, really agrees with the null subject. This is where another apparent similarity with Moro’s (1997) analysis falls down: the null subject is claimed to take the features of the coreferential GF that ranks higher in the PNH. This provides a way to explain why in a non-inverted sentence like (98) below the verb must agree in the plural (with the preverbal DP in this case) and not in the singular:

- (98) Els impostos són/*és la solució
*the.f.pl tax.f.pl be.pres.3.pl/*sg the.f.sg solution.f.sg*
 ‘Taxes are the solution’

This result is completely unsurprising because the plural element is the preverbal DP, such that it looks as if *els impostos* agreed with the verb because of it being

ditionally proposed for sentential objects, but to a GF representing the predicate argument of the copula. It is equivalent to PREDLINK grammatical function proposed by Butt et al. (1999).

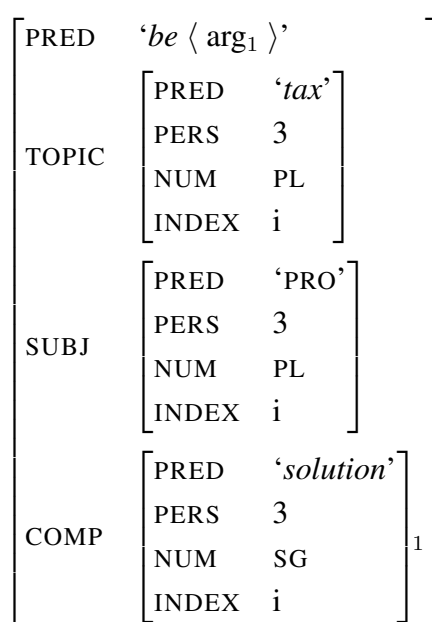


Figure 3.6: f-structure of (98), according to Alsina (2007)

the “subject”. In the theory proposed by Alsina (2007), however, the explanation of why (98) has plural agreement is actually the same used for explaining the copular inversion case (97): the preverbal DP has features that are higher in the PNH than those of the complement and both DPs are coreferential with each other, so the null subject (also coreferential with both DPs due to it being an anaphora of TOPIC) takes the plural number feature and the verb agrees with it.

The way how this null subject takes the correct features is by means of a series of constraints that state that coreferential GFs must agree in person-number features. However, in copular sentences there is a conflict to resolve when the GFs involved do not share the same features. On the one hand, pronouns are required to agree with their antecedent and, on the other, subjects of copular sentences (in this case, a null pronoun) must agree with the predicate due to coreference. This results in the possibility of having two forms in competition for agreement with the verb, so the choice by Alsina (2007) is that the constraints proposed are ranked in an OT fashion. These are the constraints and how they are ranked, also with respect to SUBJCOND and F-FAITH:⁹

(99) AGR-1/2

⁹Alsina’s (2007) original names for AGR-1/2, AGR-3PL and AGR-3SG are AGRCOI-1/2, AGRCOI-3PL and AGRCOI-ELSE, respectively. The change of name of the constraints here is due to formatting issues.

Assign a * for every GF that fails to have the same agreement features as a coindexed GF which is 1st or 2nd person.

- (100) AGR-3PL
Assign a * for every GF that fails to have the same agreement features as a coindexed GF which is 3rd person plural.
- (101) AGR-3SG
Assign a * for every GF that fails to have the same agreement features as a coindexed GF which is 3rd person singular.
- (102) SUBJCOND \gg F-FAITH \gg AGR-1/2 \gg AGR-3PL \gg AGR-3SG

The ranking in (102) explains why (103) is the grammatical structure over (104), as shown in the competition between both sentences in Tableau 3.1:

- (103) La solució són els impostos
the.f.sg solution.f.sg be.pres.3.pl the.f.pl tax.f.pl
'The solution is taxes'
- (104) *La solució és els impostos
the.f.sg solution.f.sg be.pres.3.sg the.f.pl tax.f.pl

	SUBJCOND	F-FAITH	AGR-1/2	AGR-3PL	AGR-3SG
☞ (103)		***		*	**
(104)		***		**!	*

Tableau 3.1: (103) vs. (104) according to Alsina (2007)

Candidate (103) wins over its competitor (104) because the latter violates AGR-3PL twice, as both *la solució* and the null subject, which are 3rd person singular, fail to agree with *els impostos*, which is 3rd person plural). The grammatical candidate, on the other hand, only violates it once, as it is just the preverbal topic which disagrees in person-number features with the postverbal complement, whereas the null subject, in the 3rd person plural, does agree with the latter.

SUBJCOND is fulfilled because of the null pronoun taking the SUBJ function in both f-structures. F-FAITH is violated three times by both candidates, according to Alsina (2007), because there is no mapping principle that licenses the null subject in the f-structure, the null subject PRED is not specified by any lexical item and, finally, because the complement is not licensed by any mapping principle either.

Alsina (2007) himself notices that his hypothesis is unable to predict what happens when both the subject and the complement are in the 1st and 2nd person, which rank equally in the PNH. The facts regarding these combinations were

shown in examples (80)-(81), but left unexplained by the constraints COPAGR and COREFAGR proposed earlier; these are unable to explain why the asymmetry arises by which the verb always agrees with the preverbal DP, when both DPs rank equally in the PNH. I am reproducing the data below again for convenience:

- (105) a. Yo soy tú
I be.pres.1.sg you.sg
 ‘I am you.sg’
 b. * Yo eres tú
I be.pres.2.sg you.sg
- (106) a. Tú eres yo
you.sg be.pres.2.sg I
 ‘You.sg are me’
 b. * Tú soy yo
you.sg be.pres.1.sg I

The hypothesis by Alsina (2007) does not explain this set of data at all. In fact, it incorrectly predicts that all of them are grammatical, as the theoretical mechanism only works when the DPs rank differently, not when both rank equally, as one gets exactly no violation for AGR-1/2 in all cases and also none for AGR-3PL and AGR-3SG, as there is no element in the 3rd person, in any number, which could give rise to a mismatch. Alsina (2007) proposes an explanation that is external to the theoretical proposal for copular inversion, namely that (105a) and (106a) are not truth-conditionally equivalent because they mean ‘I play the role of you’ and ‘You play the role of me’. This would imply that there is no coreference between both DPs, so the null subject would only be able to take the features of TOPIC, thus yielding the apparent agreement relation between the verb and the preverbal DP. The lack of coreference is certainly a factor that is to be considered, and I will consider it in §3.4.3, but the solution I propose in §3.4.2 allows for a simpler explanation for the particular cases shown above.

As I will show immediately, there is an additional problem with a theory like this. I have already pointed out that Alsina (2007) bases his claims on a particular vision of the structure of sentences in Catalan and, in general, null subject Romance languages, namely that an SVO order is actually a Topic-Verb-Object order with a null subject that satisfies the Subject Condition. However, this is claimed only for structures in which there is a preverbal DP, but such a theory implies that there must be unmarked word orders where both DPs are postverbal; in fact, this is a very well-known fact of null subject Romance languages like Spanish, Italian or Catalan. Here is an example of a transitive sentence like this in Spanish:

- (107) Leía María una carta
read.impf.3.sg María a.f.sg letter.f.sg
 ‘María was reading a letter’

This structure is possible in copular sentences as well, as shown by the example below:

- (108) Es él el médico
be.pres.3.sg he the.m.sg physician.m.sg
 ‘He’s the physician’

The theory by Alsina (2007) predicts that in structures like (108) copular inversion should not arise, as there is no null subject that acts as a flexible “proxy” that is capable of taking the features of one DP or those of the other one. In cases like this, the verb is predicted to take the features of the SUBJ, but apart from the problem of which DP is considered to be the subject in sentences like these, the observation is that also in cases like the ones shown below in Spanish (and equivalent for Catalan) the verb is found to agree with the DP that ranks higher in the PNH. Therefore, the underlying hypothesis that copular inversion is a consequence of the null subject parameter and, in particular, of the presence of a null subject in a sentence falls apart.

- (109) Son/*Es ellas el grupo de la tarde
*be.pres.3.pl/*sg they.f the.m.sg group.m.sg of the.f.sg evening.f.sg*
 ‘They are the evenings group’
- (110) Soy/*Es yo el médico
*be.pres.1.sg/*3.sg I the.m.sg physician.m.sg*
 ‘I am the physician’

I will show that some postverbal subject copular sentences show the same agreement patterns as those that are said to have a null subject in their f-structure. This rules out copular inversion as a side-effect of a null subject being part of the sentence. Furthermore, I will also show that a non-null subject language like German also shows copular inversion, thus also ruling the parametrical hypothesis out.

3.3.3 Cases of copular inversion without *pro*

There are instances of copular inversion in languages like Spanish, Catalan and Italian which are impossible to explain by means of a null subject. As I have already mentioned above, postverbal subject constructions do not require a null subject, as there is no preverbal DP that may be considered a topic (Alsina, 2007;

Vallduví, 1992, 2002). Consequently, a Spanish sentence like (111b), which is the most neutral answer to a question like (111a), should be considered to have an f-structure like the one shown in Figure 3.7.

- (111) a. ¿Qué ha pasado?
what happen.perf.3.sg
 ‘What (has) happened?’
 b. Ha venido Marta
come.perf.3.sg Marta
 ‘Marta has come’

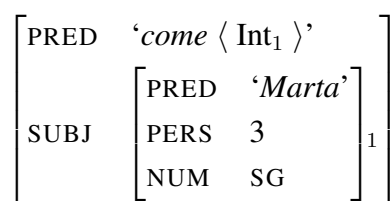


Figure 3.7: f-structure of (111b)

Close inspection of what happens in copular sentences shows us that PNH-controlled agreement also arises in cases where there is no null subject in the f-structure. Let us consider, for instance, the following examples in Spanish:

- (112) a. Son los impuestos un problema
be.pres.3.pl the.m.pl tax.m.pl a.m.sg problem.m.sg
 ‘Taxes are a problem / A problem is taxes’
 b. *Es los impuestos un problema
be.pres.3.sg the.m.pl tax.m.pl a.m.sg problem.m.sg
 (113) a. Son un problema los impuestos
be.pres.3.pl a.m.sg problem.m.sg the.m.pl tax.m.pl
 ‘Taxes are a problem / A problem is taxes’
 b. *Es un problema los impuestos
be.pres.3.sg a.m.sg problem.m.sg the.m.pl tax.m.pl

First and second person always takes precedence over the third person, exactly as in the data that have been discussed earlier:

- (114) Soy/*Es yo el médico
*be.pres.1.sg/*3.sg I the.m.sg physician.m.sg*
 ‘I am the physician’

- (115) Soy/*Es el médico yo
*be.pres.1.sg/*3.sg the.m.sg physician.m.sg I*
 ‘I am the physician’

This set of data is of great interest, especially after having shown that agreement with the verb cannot be trusted as a way to determine which the subject of a sentence is. As subjecthood and agreement have been shown to be independent, determining the grammatical functions of the DPs in sentences without a null subject becomes a harder task, but also actually irrelevant to explain their agreement pattern, as will be shown.

The difficulty in determining the grammatical function is caused by the fact that the distribution of the DPs seems to be absolutely free from a syntactic point of view even though pragmatic factors may favor one DP to be placed before the other one. This syntactic freedom can be observed when applying the partitive cliticization test in Catalan to this type of sentences:

- (116) No és en Joan el professor de la
 NEG *be.pres.3.sg* DET.m.sg *Joan the.m.sg teacher.m.sg of the.f.sg*
 nena: en sóc el professor jo
girl.f.sg CL.part be.pres.1.sg the.m.sg teacher.m.sg I
 ‘Joan isn’t the girl’s teacher: I am her teacher’
- (117) No és en Joan el professor de la
 NEG *be.pres.3.sg* DET.m.sg *Joan the.m.sg teacher.m.sg of the.f.sg*
 nena: en sóc jo el professor
girl.f.sg CL.part be.pres.1.sg I the.m.sg teacher.m.sg
 ‘Joan isn’t the girl’s teacher: I am her teacher’

The partitive clitic *en* in the second clause refers to the girl the speaker is the teacher of. According to the tests that were shown in previous sections of this work, *en* cliticization is only allowed in Catalan from within a complement, never a subject. This means that there is no *a priori* position for the complement in verb-initial copular sentences, such that the way to know which DP is the complement and which one the subject is by testing for their defining properties. While this is easy to do in Catalan, in a language like Spanish it is absolutely impossible to do as there is no partitive clitic and the elision test is inconclusive, because both DPs can be elided:

- (118) a. Soy (yo) el médico
be.pres.1.sg (I) the.m.sg physician.m.sg
 ‘I am the physician’

- b. Soy yo (el médico)
be.pres.1.sg I (the.m.sg physician.m.sg)
 ‘It is me (the physician)’
- (119) a. Soy (el médico) yo
be.pres.1.sg (the.m.sg physician.m.sg) I
 ‘It is me (the physician)’
- b. Soy el médico (yo)
be.pres.1.sg the.m.sg physician.m.sg (I)
 ‘I am the physician’

The structures in (118) and (119) are better represented as sentences with a null subject and a complement (the non-omitted DP), so no conclusion can be drawn from these structures that could help to understand what the distribution of grammatical functions in a sentence like *Soy yo el médico* is. The very same is found when applying *lo*-substitution:

- (120) Son un grupo los cómplices del
be.pres.3.pl a.m.sg group.m.sg the.m.pl complices.m.pl of=the.m.sg
 asesinato
murder.m.sg
 ‘The complices of the murder are a group’
- (121) Lo son/*es los cómplices del
 CL.3.sg.acc *be.pres.3.pl/*sg the.m.pl complices.m.pl of=the.m.sg*
 asesinato
murder.m.sg
 ‘It is the complices of the murder’
- (122) Lo es/*son un grupo
 CL.3.sg.acc *be.pres.3.sg/*pl the.m.pl a.m.sg group.m.sg*
 ‘It is a group’

In any case, the important point to take into account is that the copula always agrees with the most prominent constituent according to the PNH and that there is no null subject in these structures that “copies” the features of any of both DPs so that the copula can still be said to agree with its subject. Regardless of which is actually the subject in structures like the ones shown above, the possibility that the copula may agree with its complement without the intervention of any feature-copying device must be accepted. The claim I defend here is that copular inversion is unrelated to the null subject parameter, and this can be shown by exploring a non-*pro*-drop language such as German, where copular inversion also arises.

In German, the agreement paradigm of copular sentences follows exactly the same generalization as in Spanish. The observation is that when both DPs are in the third person, one in singular and the other in plural, the copula must agree in the plural, regardless of the order of DPs:

- (123) a. Die Ursache waren mehrere Fehler
the.f.sg cause.f.sg be.past.3.pl many mistake.pl
 ‘The cause was many mistakes’
 b. * Die Ursache war mehrere Fehler
the.f.sg cause.f.sg be.past.3.sg many mistake.pl
- (124) a. Mehrere Fehler waren die Ursache
many mistake.pl be.past.3.pl the.f.sg cause.f.sg
 ‘Many mistakes were the cause’
 b. * Mehrere Fehler war die Ursache
many mistake.pl be.past.3.sg the.f.sg cause.f.sg

Moreover, the same phenomenon is found in embedded sentences, where a verb-final fixed word order is required in German:

- (125) Ich glaube, dass die Ursache mehrere Fehler
I believe.pres.1.sg that the.f.sg cause.f.sg many mistake.pl
 waren/*war
*be.past.3.pl/*sg*
 ‘I believe that the cause is many mistakes’
- (126) Ich glaube, dass mehrere Fehler die Ursache
I believe.pres.1.sg that many mistake.pl the.f.sg cause.f.sg
 waren/*war
*be.past.3.pl/*sg*
 ‘I believe that the cause is many mistakes’

The basic clause structure of German I assume here is the one proposed by Berman (2003), which is a formalization of the classical structure that divides German clauses in a so-called “prefield” (*Vorfeld*), “midfield” (*Mittelfeld*) and “postfield” (*Nachfeld*). As can be noticed in the tree diagram below, representing the c-structure of (127) following this author, the preverbal DP is the specifier of CP, a position which in German is mapped to one of the so-called *discourse functions* (DF, Bresnan, 2001 and Dalrymple, 2001) at the level of the f-structure, namely FOCUS, TOPIC or SUBJ.

- (127) Das Mädchen sah einen Hund
the.n.sg girl.n.sg see.past.3.sg a.m.sg.acc dog.m.sg
 ‘The girl saw A DOG’

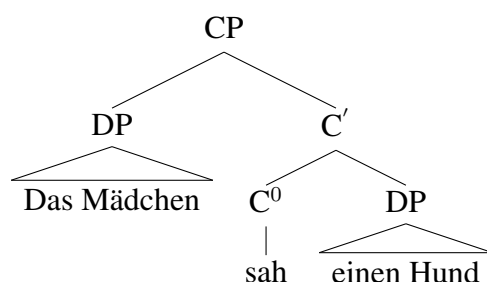


Figure 3.8: c-structure of (127), following Berman (2003)

This structure that I adopt yields the prediction that any GF may appear focalized in the preverbal position, including the subject. When a non-subject is focalized, the subject must be C'-internal, i.e. postverbal. This is shown in the example below, in which the object of (127) is focalized, resulting in (128). Its c-structure is the one shown in Figure 3.9:

- (128) EINEN HUND sah das Mädchen
a.m.sg.acc dog.m.sg see.past.3.sg the.n.sg girl.n.sg
 'The girl saw a dog'

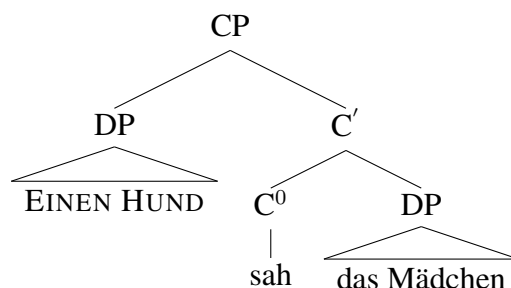


Figure 3.9: c-structure of (128), following Berman (2003)

These remarks are important to understand why I claim that German is a language with copular inversion. At a first sight, it could be argued that in a sentence like (123a) the copula agrees with the postverbal DP because it is a subject that is placed there because of an apparent topicalization of what might be a predicate. This, however, is an analysis that ignores the fact that the singular is barred in that construction, as shown by (123b). If this was just a matter of which GF is topicalized, nothing should prevent *das Problem* to be interpreted as a topicalized subject, thus incorrectly predicting the verb should be able to agree in singular as well as in plural. Conversely, such a hypothesis would predict that the singular is allowed in (124b), as it would be possible to consider *die Ursache* as a VP-internal

subject. However, the data shows the copula is only able to agree in plural in such configurations, regardless of the order of the DPs, exactly as it happens in Spanish, Catalan and Italian.

However, after it has been shown that in German we cannot define the subject of a copular sentence as the DP that agrees with the verb, a word must be said about the grammatical functions involved in these German constructions. While for Spanish this is a relatively easy task because it is a *pro*-drop language, in German we cannot resort to elision-based tests.

A way to show that in (123a) *die Ursache* can be the subject of a sentence is as simple as to show that it can fulfill the subject function in a “raising” construction like the one following below:

- (129) Es scheint, dass die Ursache mehrere Fehler
it seem.pres.3.sg that the.f.sg cause.f.sg many mistake.pl
 sind
be.pres.3.sg
 ‘It seems that the cause is many mistakes’
- (130) Die Ursache scheint mehrere Fehler zu sein
the.f.sg cause.f.sg seem.pres.3.sg many mistake.pl INF be
 ‘The cause seems to be many mistakes’
- (131) Mehrere Fehler scheinen die Ursache zu sein
many mistake.pl seem.pres.3.pl the.f.sg cause.f.sg INF be
 ‘Many mistakes seem to be the cause’

It is worth noting that the verb in (130) must be in singular and not in plural, contrary to what happens in other languages with copular inversion, where the raising verb is expected to agree with the DP that ranks higher in the Person-Number Hierarchy.

The important point to make here is that *die Ursache* can be the subject of the sentence, thus allowing for an analysis of (123a) as a case of copular inversion. Of course, (131) is also possible, meaning that *mehrere Fehler* may also be the subject of the sentence. The ungrammaticality of cases like (123b) can then be safely explained as a violation of the Person-Number Hierarchy, exactly as in Spanish and Italian. Moro’s (1997) and Alsina’s (2007) assumption that copular inversion is a consequence of the null subject parameter is therefore proven to be incorrect.

In German, as Dutch as well (Heycock, 2012), there is a slight difference with respect to the Spanish or Catalan paradigms of copular inversion, namely that accented pronouns cannot be placed after the unaccented *es* ‘it’ pronoun in a sentence. However, the rest of the paradigm remains the same:

- (132) a. Die Königin bin/*ist ich
*the.f.sg queen.f.sg be.pres.1.sg/*3.sg I*
 ‘The queen is me / I am the queen’
- b. Meine einzelne Hoffnung wart/*war ihr
*my.f.sg only.f.sg hope.f.sg be.past.2.pl/*3.sg you.pl*
 ‘My only hope were you.pl’
- (133) a. Ich bin es
I be.pres.1.sg it
 ‘I am it / It’s me’
- b. Sie sind es
they be.pres.3.pl it
 ‘They are it / It’s them’
- c. * Es bin ich
it be.pers.1.sg I
- d. * Es sind sie
it be.pers.1.sg I

The data above do not pose any problem: it seems quite clear that the restrictions regarding *es* are isolated to it not being able to take a discourse function (be it FOCUS or TOPIC) when a more specific, accented pronoun is being used in the same sentence (Müller, 2002). Restrictions of the same kind occur both in German as in Dutch in cleft sentences, where *es* must be inserted in the postcopular position when a pronoun is being clefted, thus yielding the exact opposite order found in the rest of cleft sentences. I will not go into details here about cleft sentences, which will be later analyzed as possible cases of copular inversion in Chapter 4.

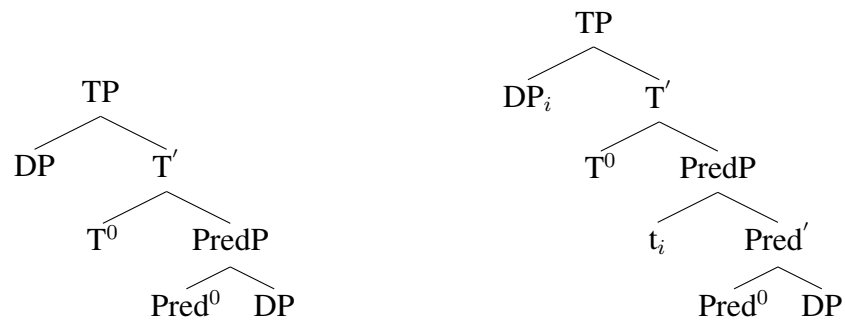
These data show that any approach that bases its analysis of copular inversion on the presence of a null subject is wrong because of two reasons: because of evidence that is internal to the null subject languages that I have been presenting throughout this work as examples of languages with copular inversion and because there is reasonable evidence that German (and Dutch) are languages with copular inversion but are not null subject languages. This means that any approach that is to be proposed must not rely on the *pro*-drop parameter. There is, to my knowledge, only one analysis that does not depend on that to analyze copular inversion, which I will proceed to discuss immediately below.

3.3.4 Rosselló’s (2008) analysis

The analysis proposed by Rosselló (2008), within an MP framework, takes a completely different route to explain copular inversion, by claiming that copular inver-

sion occurs in copular sentences that are specificational, but never in predicational ones, following Mikkelsen (2005).

The structure that is posited for specificational sentences by her and, thus, for sentences where copular inversion arises is the one that is shown in Figure 3.10a. In this structure, the preverbal DP is claimed to be generated *in situ* in Spec-TP, in contrast to the case of predicational sentences, where this preverbal DP has been raised from Spec-PredP, as shown in Figure 3.10b.



(a) Specificational copular sentence

(b) Predicational copular sentences

Figure 3.10: Syntactic structures of copular sentences according to Rosselló (2008)

This difference in structure is signalled, according to this author, in copular inversion cases because the copula does not agree with the preverbal DP. She takes this as evidence that the features of the preverbal DP remain unchecked, as it is generated *in situ* and therefore, it is unable to check the ϕ -features of T^0 . This implies the claims that it is impossible for the copula to agree with the preverbal DP in a specificational sentence and, conversely, that if the copula agrees with the preverbal DP is because the sentence is predicational. This is illustrated by Figures 3.11 and 3.12, which represent the respective structures of the Spanish sentences (134) and (135) below (both examples are mine):

(134) El equipo son estos niños
the.m.sg team.m.sg be.pres.3.sg this.m.pl child.m.pl
 ‘The team is these children’

(135) Estos niños son el equipo
this.m.pl child.m.pl be.pres.3.sg the.m.pl team.m.sg
 ‘These children are the team’

The problems with this approach are twofold. First of all, the specificational structure that is proposed is an *ad hoc* solution that is only applicable by postulate to this specific type of copular sentences. The feature specification algorithm that

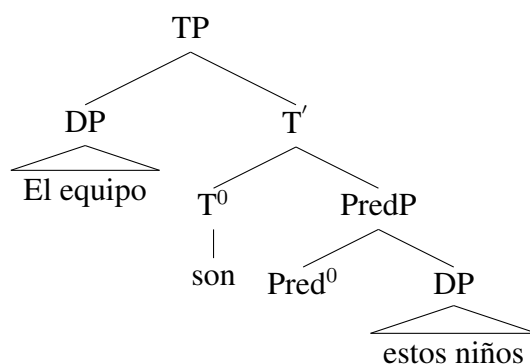


Figure 3.11: Syntactic structure of (134), following Rosselló (2008)

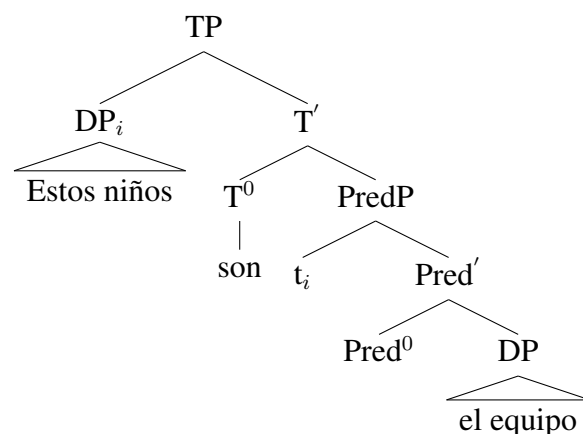


Figure 3.12: Syntactic structure of (135), following Rosselló (2008)

replaces feature checking in specificational sentences due to the *in situ* insertion of a DP in Spec-TP is also postulated to be restricted to this kind of sentences. This means that copular inversion structures are explained as a very particular case that fall outside the regular explanation of agreement within the chosen theoretical framework.

The second problem is that the explanation requires knowing the quantificational semantics of the sentence to be analyzed before being able which is its actual structure. While copular inversion structures signal their specificational nature by means of the copula agreeing with the complement and not with the subject of the sentence, sentences like the ones below, where the copula may at first sight agree with any of both DPs, cannot be ascribed any of both proposed derivations but *after* determining their respective semantic properties:

- (136) El ganador es este niño
 the.m.sg winner.m.sg be.pres.3.sg this.m.sg child.m.sg

‘The winner is this child’

- (137) Este niño es el ganador
this.m.sg child.m.sg be.pres.3.sg the.m.sg winner.m.sg
 ‘This child is the winner’

Determining that (136) is specificational and (137) predicational is easy: in (136) the preverbal DP contributes the variable or kind whose value is the postverbal DP, whereas in (137) the preverbal DP is assigned a property that is expressed by the postverbal DP. However, there are no formal cues that may motivate arguing that in (136) *el ganador* is not actually agreeing with the copula because it is not undergoing raising from PredP as *este niño* does in (137). The only reason why *el ganador* should be considered to be generated *in situ* in Spec-TP in (136) is because that is the structure attributed to specificational sentences due to the possibility that they may show inverse agreement.

However, things become less clear as soon as data like the ones that follow are taken into account. This approach is not able to give any explanation for the cases where there is no preverbal DP even though it does not depend on using *pro*. In a Spanish paradigm like the one below, there is no way to posit any type of contrast between DP-movement and the lack thereof:

- (138) Son/*Es esos niños el equipo
*be.pres.3.pl/*sg this.m.pl child.m.pl the.m.sg team.m.sg*
 ‘These children are the team’
- (139) Son/*Es el equipo esos niños
*be.pres.3.pl/*sg the.m.sg team.m.sg this.m.pl child.m.pl*
 ‘The team is these children’

Verb movement to a topicalized or focalized position could be posited, crossing over the DP that would “normally” be in Spec-TP. However, if the verb-initial order is to be regarded as the unmarked case, then that movement of the verb so that the DPs are left behind it while keeping a structural difference between specificational and predicational sentences is certainly less economical than assuming that in these structures everything is *in situ*.

Semantic properties do constrain which DPs may be the subject of a copular sentence and which ones may be the predicate. A Spanish sentence like (140) is odd because one single tax is strange to be considered a variable that it is attributed to have the value of several problems.

- (140) *El impuesto son los problemas
the.m.sg tax.m.sg be.pres.3.pl the.m.pl problem.m.pl
 Lit. ‘The tax is the problems’

On the other hand, (141) seems to be possible, but the determiners are surely transforming the sentence into a predicational or at least a non-specificational sentence, such that the subject is an actual instance of a tax and not a variable that is set to the value referred to by the complement:

- (141) ?? En realidad, solo el impuesto sobre la renta
actually, only the.m.sg tax.m.sg over the.f.sg income.f.sg
 son todos esos problemas de los que
be.pres.3.pl all.m.pl this.m.pl problem.m.pl de the.m.pl REL
 hablas
talk.pres.2.sg
 ‘Actually, only the income tax is all those problems you talk about’

The best solution is to decouple the explanation of which combinations are semantically possible from the constituent structure of copular sentences and from the actual mechanisms that are behind the agreement patterns found in copular sentences. The aim is to have an explanation for inverse agreement in copular sentences that is actually an explanation for verb agreement in general, such that the behavior in copular sentences is a simple application of those general principles. Rosselló’s (2008) does not satisfy this goal, even though it takes null subjects out of the explanation and opens the way for proposing a formal solution that allows for the verb not to agree with the DP in Spec-TP.

3.3.5 Summary

The evidence presented in this section shows that copular inversion is a phenomenon whose explanation cannot resort to the use of a null subject. Another type of analysis is required to explain the data presented in this chapter, namely the apparent contradiction that consists in having a non-subject agreeing with the verb overriding the subject of the sentence itself, in languages that do not know any other instance of non-subject agreement.

Such an analysis will be developed starting from the section coming next. Even though Rosselló’s (2008) approach is not satisfactory, because it treats copular sentences as a special case in which the subject of the sentence might not agree with the verb due to semantic properties. However, her approach is insightful as it abandons the assumption that the subject should always agree with the verb in a formal explanation of these facts. This eliminates the need of postulating a null subject that acts as a sort of “dummy element” *à la* Perlmutter (1983). This will be applied in the pages that follow.

3.4 A new explanation for copular inversion

3.4.1 Brief introduction

What follows is the description and formalization of a theory that explains copular inversion making use of the theoretical framework laid out in Chapter 2. In a nutshell, this theory works from the grounds outlined in §3.2: copular inversion is explained as a consequence of coreference, but, unlike the merely descriptive “theory” proposed as a first possible explanation, I will now proceed to show a set of theoretical principles that are indeed integrated into a theory of syntax and grammar and thus, integrated into a theory of language.

3.4.2 Copular inversion explained in terms of coreference

In previous sections, I claimed that the key to understanding copular inversion is that it only arises in copular sentence because both DPs are coreferential, according to the definition in (86), which I repeat below for convenience:

(142) COREFERENCE:

Two expressions S and P are said to be coreferential if the references of S and P share the same coordinates in space-time.

The hypothesis defended before was that in case the SUBJ and the OBJ are coreferential, then the verb agrees with the GF that is higher according to the PNH (COREFAGR, cf. (87)). This was obviously a very *ad hoc* approach that even specifies which GFs are eligible for establishing an agreement-by-coreference relation. What is required is to make our hypothesis even more abstract, such that the verb does not specify the features of a specific grammatical function, but those of a more flexible concept that could, eventually, be applied to the GFs mentioned just above. The concept I propose is the GF-label COSUBJECT, which is defined as follows (cf. Dalrymple, 2001 for the concept of labels):

(143) COSUBJ(ECT):

A GF f is a COSUBJ iff f is coreferential with SUBJ g .

The SUBJ of a sentence is always, per definition, a cosubject, as it is always coreferential with itself. All sentences, in conclusion, have at least one cosubject, namely their own subject. Transitive sentences, in general, have only one cosubject (i.e. the subject), although reflexive objects should be considered cosubjects if they refer to the subject’s referent. Finally, copular sentences are the standard case where more than one, plausably two, cosubjects are to be found.

In f-structures, cosubjecthood is expressed as equality in index with the subject. Indices, which intuitively serve as labels for extralinguistic references, are

formalized here in a way that corresponds to the implicit definition used by Alsina's (2007):

(144) Attribute INDEX:

For f-structures f, g , and atomic values i, j , such that $(f \text{ INDEX}) = i$ and $(g \text{ INDEX}) = j$, if $i = j$, then, f and g are coreferential. If $i \neq j$, then f and g are not coreferential.

These indices are in fact the same that are used to represent coreference due to anaphorical linking. Anaphoras are easily explained as cases of coreference between a pronoun and a nominal constituent; both share the same reference by definition. This is the rationale behind Alsina's (2007) usage (which I also adopt) of the INDEX attribute for representing both the identification of two nominal elements due to the copular construction as well as the binding/anaphora between the topicalized preverbal DP and the functional null subject. In this work the INDEX attribute is formally restricted to this definition.

After this definition of the INDEX attribute, we may now safely introduce the provisional f-structures of Spanish sentences like (145) and (146), shown in Figures 3.13 and 3.14, respectively (pages 70 and 71).¹⁰

(145) El problema son los impuestos
the.m.sg problem.m.sg be.pres.3.pl the.m.pl tax.m.pl
 'The problem is taxes'

(146) El niño come manzanas
the.m.sg boy.m.pl eat.pres.3.sg apple.m.pl
 'The boy eats apples'

It might be argued that coreference is only possible with abstract nouns like *problema* 'problem', *causa* 'cause' as one of the cosubjects. It is quite clear that an abstract noun is more easily identifiable with any reference, just because abstract concepts must gain a position in space-time by being instantiated on some non-abstract concept that has a position in space-time on its own. That makes them easily coreferential with everything possible. However, coreference is also possible between two less abstract entities¹¹ as in these cases in Spanish that follow, as

¹⁰In order to simplify the representations, I am now leaving aside the issue whether the preverbal DP should be assigned the TOPIC or SUBJ GF in the f-structures. The f-structures will represent the preverbal subject in Spanish as SUBJ.

¹¹The careful reader will notice that the nouns *cena* 'dinner' and *silla* 'chair' in (147) and (148) refer to some object by defining its composition, rather than directly to the object itself. Of course, this implies a certain degree of abstraction from the actual object, but it is less abstract than a concept like 'cause' or 'problem', which are not tangible by definition. This is the reason behind using the expression "less abstract" in this context.

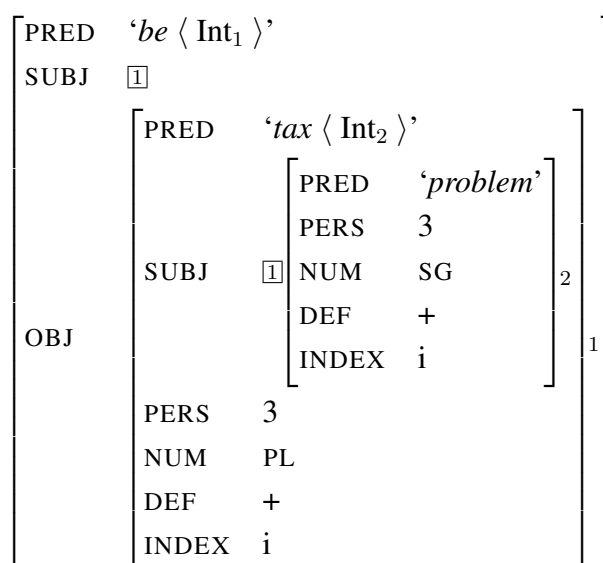


Figure 3.13: f-structure of (145)

shown by the paradigm below, where copular inversion is also obligatorily found (examples translated from Catalan into Spanish from Alsina and Vigo, 2014):

- (147) La cena de hoy son/*es verduras a la
*the.f.sg dinner.f.sg of today be.pres.3.pl/*sg vegetable.f.pl on the.f.pl*
 plancha
grill.f.pl
 ‘Today’s dinner is grilled vegetables’
- (148) Esta silla son/*es cuatro maderas mal clavadas
*this.f.sg chair.f.sg be.pres.3.pl/*sg four wood.f.pl badly nailed.f.pl*
 ‘This chair is a bunch of woodpieces poorly nailed together’

The difference in f-structure between copular and transitive sentences is captured by making use of indices to signal coreference or lack of coreference between GFs. However, the current state of the formalization is actually equivalent to the “first” tentative description proposed at §3.2, as it gives no further details on the plural form of the copula in (145): the theoretical tools we have available so far are just a more precise formalization of COREFAGR, which, as already noted in previous pages, is inadequate as a theoretical principle.

In fact, the standard formalization of verbal agreement in LFG shows itself as the primary obstacle to create a formal device that is able to explain the facts I am dealing with in this research. As a reminder, standard LFG frameworks have

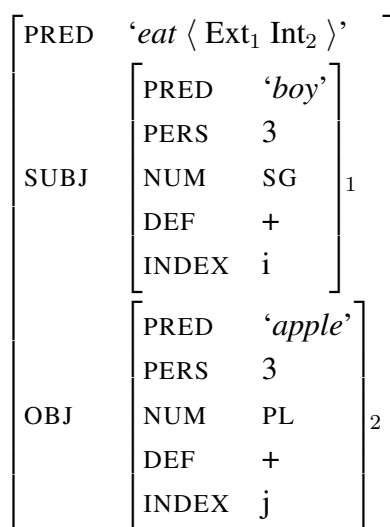


Figure 3.14: f-structure of (146)

verb forms lexically specify the features of the SUBJ (Bresnan, 2001; Dalrymple, 2001; Falk, 2001); for example, Spanish *traía*, i.e. the 3rd person plural form of the imperfect indicative of Spanish *traer* ‘to bring’, would have its lexical entry formalized in a fashion similar to the one in (149).

- (149) *traía* : (↑ PRED) = ‘bring’ ⟨SUBJ OBJ⟩
 (↑ SUBJ PERS) = 3
 (↑ SUBJ NUM) = PL
 (↑ TENSE) = IMPF

This approach must be rejected as it predicts subject-verb agreement as the only possible case, excluding the facts of copular inversion. Any kind of hypothesis that underspecifies the GF at a lexical level, e.g. replacing the references to “SUBJ” in (149) by “COSUBJ”, must also be excluded: such an approach would allow agreement with any cosubject available, thus freely allowing agreement with either the subject or the predicate in copular sentences. In order to account for the facts of copular inversion, a theory of agreement is needed such that the agreeing GF is not specified at the lexicon, but at the functional level, so that all the candidate DPs competing for agreement with the copula are known and can be compared with each other in order to predict which one the copula must agree with.

The solution I propose is to isolate the agreement features of the verb into a GF-agnostic bundle named AGR. Verbs only specify their agreement features in their lexical entry, but never specify which GF these agree with. This is slightly

reminiscent to the GB/MP approach to agreement, in the sense that Chomsky (1981, 1986, 1995) proposes that agreement features are part of a functional head (I^0 , Agr^0 or T^0 , depending on the particular historical stage of his framework) that is not lexically tied to any specific grammatical function. In other words, the features of both a certain AGR bundle in this approach or one the functional heads proposed within GB/MP may be 2nd person plural, but these are free to be unified or checked with any compatible element in the sentence; it is the task of other additional general constraints or principles to restrict which elements are eligible to do so. Therefore, analogously to the requirement in GB/MP that the features of I^0 or T^0 must be checked by some element before the derivation arrives to the Conceptual-Intentional component, I assume that the only general principle of agreement in my version of LFG is that AGR of the sentence must always unify with some GF in order for the f-structure to be grammatical. This principle is formalized as follows:

- (150) AGR-SHARE:
 For f an f-structure of category V:

$$\left[\begin{array}{cc} \text{AGR} & \boxed{1} \\ \text{GF} & \left[\begin{array}{cc} \text{AGR} & \boxed{1} \end{array} \right] \end{array} \right]^f$$

The AGR-SHARE principle requires AGR to unify with another AGR of some GF in the sentence. In order to understand how this works in practice, let us consider the following lexical entry for the verb form *sleeps*:

- (151) *sleeps* : $\left[\begin{array}{cc} \text{PRED} & \text{'sleep } \langle \text{Int} \rangle \text{' } \\ \text{TENSE} & \text{PRES} \\ \text{AGR} & \left[\begin{array}{cc} \text{PERS} & 3 \\ \text{NUM} & \text{SG} \end{array} \right] \end{array} \right]$

Now let us consider the following paradigm in order to show how the AGR-SHARE is used to explain the most basic fact of subject-verb agreement in English:

- (152) Mary sleeps
 (153) * The children sleeps

The f-structures of (152) and (153) are shown in Figures 3.15 and 3.16, respectively.

The f-structure in Figure 3.16 is ill-formed, thus ruling out (153) as it does not conform to AGR-SHARE: the f-structures that are the values of AGR and SUBJ are impossible to unify and, therefore, the f-structure becomes inconsistent. The

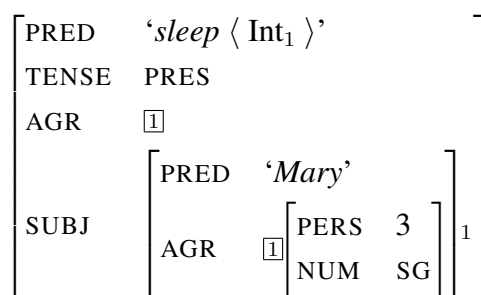


Figure 3.15: f-structure of (152)

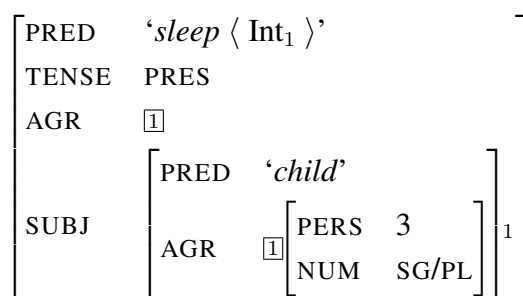


Figure 3.16: Ill-formed f-structure of (153)

f-structure corresponding to (152) in Figure 3.15 is, on the other hand, consistent, thus predicting the sentence to be grammatical.

Of course, the examples that I have chosen have been selected with care in order to fit the state of things in which this exposition is at this point. The English verb *sleep* only allows for a single possible agreeing DP, namely the one that is SUBJ. This makes the choice of the GF AGR must unify with, a trivial task.

However, in the case of transitive verbs, there are two DPs that could be eligible, but both in English or Spanish we want the OBJ f-structure to be ruled out as a possible candidate. Therefore, a principle like SUBJAGR, as follows, can be posited to avoid non-subject GFs from being unified with AGR:

$$(154) \text{ SUBJAGR: } \left[\begin{array}{l} \text{AGR} \quad \boxed{1} \\ \text{SUBJ} \quad \left[\text{AGR} \quad \boxed{1} \right] \end{array} \right]$$

Informally, SUBJAGR states that if there is a SUBJ in the sentence, its own AGR must unify with AGR and, conversely, that if a certain GF has its own AGR unified with the AGR of another GF, it is because that second GF is the SUBJ of the sentence.

This way, for a paradigm like the one below, (155) is correctly predicted as grammatical as its f-structure (Figure 3.17) does not violate SUBJAGR, while the f-structure in Figure 3.18, corresponding to (156), is ruled out as ill-formed as it violates SUBJAGR:¹²

(155) John watches the wheels

(156) * John watch the wheels

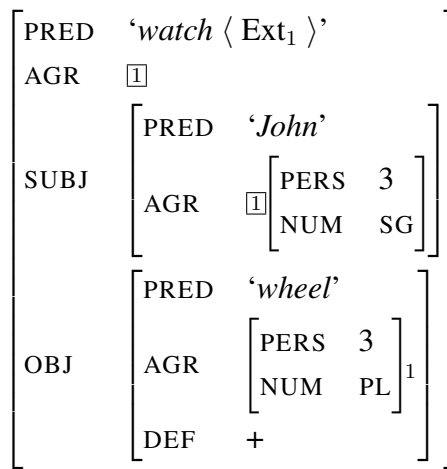


Figure 3.17: f-structure of (155)

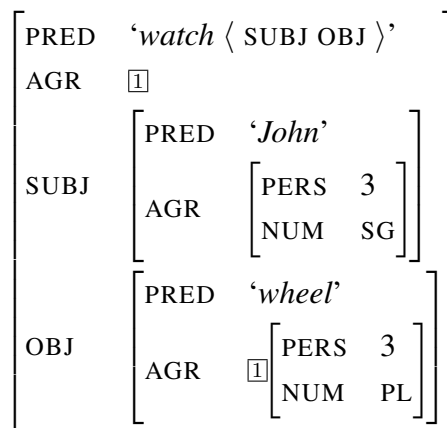


Figure 3.18: Ill-formed f-structure of (156)

¹²The TENSE attribute is ignored in f-structures for simplicity.

The obvious problem with SUBJAGR is that it rules out copular inversion structures, where the verb may agree with any of both cosubjects, namely the subject or the predicate. In languages where there is copular inversion, the agreement principle is rather the following one:

$$(157) \text{ COSUBJAGR: } \left[\begin{array}{cc} \text{AGR} & \boxed{\text{I}} \\ \text{COSUBJ} & \left[\begin{array}{cc} \text{AGR} & \boxed{\text{I}} \end{array} \right] \end{array} \right]$$

Notice that COSUBJAGR is enough to explain the paradigm of (155) and (156): (156) is ungrammatical according to COSUBJAGR because in that particular case the object is not a cosubject, so the verb may not agree with that GF. In such cases, both SUBJAGR and COSUBJAGR yield the same predictions because the only available cosubject is the subject itself. The conflict, however, arises in copular structures, where there is more than one cosubject.

At first sight, the desirable solution should attempt to posit a solution that involved merging SUBJAGR and COSUBJAGR into one single overarching grammatical principle. The issue relies in the fact that SUBJAGR is actually a subset of COSUBJAGR: when the copula agrees with the subject, it complies with both principles, as the subject is, per definition, a cosubject. However, when the copula agrees with the predicate, SUBJAGR is not satisfied, but COSUBJAGR is; the former predicts the structure to be ungrammatical, while the latter correctly predicts it to be possible. Therefore, even though there are cases in which both principles are redundantly satisfied, they cannot be reduced into one single principle. The coexistence of both is the theoretically most economical solution so far.

This is the main reason why I have chosen OT as a metatheory of principle interaction in this research. While the Person-Number Hierarchy may be modelled in many other ways, the only way to solve the apparent contradiction between SUBJAGR and COSUBJAGR is to, in the first place, acknowledge the existence of both, as they seem to be the simplest and most intuitive principles that can be proposed to describe and explain the agreement patterns that have been presented so far. This means that, in the second place, in order to solve the aforementioned conflict, a principled explanation must be given on why these principles can coexist the one overlapping with the other in the case of non-copular sentences, with COSUBJAGR taking precedence over SUBJAGR in languages with copular inversion and viceversa in languages without this phenomenon, such as English. OT provides a proven, well-known metatheory that provides not only a language-specific explanation of the facts of Spanish and other languages with copular inversion, but also an explanation of the variation that is found across languages over this type of constructions, i.e. languages with and without copular inversion.

Provisionally, the relative rankings of these two constraints in languages with copular inversion and those without are these, respectively:

(158) For CI languages: COSUBJAGR \gg SUBJAGR

(159) For non-CI languages: SUBJAGR \gg COSUBJAGR

Applying ranking (159) to English gives us the desired result, as it turns out from the result of the competition between (160a) and (160b) shown in Tableau 3.2.

- (160) a. The problem is taxes
 b. * The problem are taxes

	SUBJAGR	COSUBJAGR
☞ (160a)		
(160b)	*!	

Tableau 3.2: Optimization for (160)

In Tableau 3.2 both candidates comply with the lower-ranking constraint COSUBJAGR because in both cases AGR is unified with a GF that is a cosubject. The constraint that rejects (160b), though, is the higher-ranking SUBJAGR, as it is expected in a language like English where verbs are expected to always agree with their respective subjects.

However, the current set of constraints is not enough to explain the situation in languages with copular inversion. If examples (161a) and (161b) are made to compete, the result is that the latter is incorrectly predicted to be grammatical (cf. Tableau 3.3).

- (161) a. El problema son los impuestos
the.m.sg problem.m.sg be.pres.3.pl the.m.pl tax.m.pl
 ‘The problem is taxes’
 b. * El problema es los impuestos
the.m.sg problem.m.sg be.pres.3.sg the.m.pl tax.m.pl

	COSUBJAGR	SUBJAGR
(161a)		*!
☞ (161b)		

Tableau 3.3: Optimization for (161) (incorrect)

Let us analyze the conceptual problem behind the false prediction drawn from the competition shown in Tableau 3.3. This result is derived from the fact that both DPs are cosubjects in both sentences and, consequently, both sentences redundantly comply with COSUBJAGR. Consequently, this leaves SUBJAGR as the deciding factor and, therefore, the competition will always draw the incorrect prediction that the copula always agrees with the subject in copular inversion languages.

The core issue is that our OT system does not feature a way to correctly choose the cosubject that determines agreement. In the informal explanation (cf. §3.2) the Person-Number Hierarchy had this function; so a similar mechanism must be incorporated into the new set of constraints. My proposal is as follows:

(162) MARKEDAGR:

Where GF_{agr} is the GF which the AGR of the verb unifies with:

a. AGRPERS: $\left[GF_{agr} \left[AGR \left[PERS \ 1 \vee 2 \right] \right] \right]$

b. AGRNUM: $\left[GF_{agr} \left[AGR \left[\begin{array}{l} PERS \ 3 \\ NUM \ PL \end{array} \right] \right] \right]$

c. AGRPERS \gg AGRNUM

(163) For CI languages:

COSUBJAGR \gg MARKEDAGR \gg SUBJAGR

(164) For non-CI languages:

SUBJAGR \gg MARKEDAGR

SUBJAGR \gg COSUBJAGR

MARKEDAGR is a “bundle” of constraints consisting of the actual constraints AGRPERS and AGRNUM. The reason for using this bundle is to unify under a single name two constraints that are codependent one with each other. First, the Person-Number Hierarchy ranks 1st and 2nd person DPs as the most marked option and so does AGRPERS, which states that the PERS feature of AGR must be either of value 1 or 2; by ranking this constraint higher than AGRNUM, the desired effect is achieved, as I will show immediately. On the other hand, AGRNUM takes care of implementing the lower part of the Person-Number Hierarchy, namely that 3rd person plural DPs rank higher than their singular counterparts. This is done by stating that the NUM feature of AGR must be plural with 3rd person. The case of 3rd person singular is treated by default, such that it may only arise when all the other principles are violated; nevertheless, in Chapter 4 the need for a specific constraint for 3rd person singular features will be considered.

For the sake of completeness, a word must be said about SUBJCOND and F-FAITH, as defined earlier during the discussion in §3.3.2. The general constraint SUBJCOND ranks higher than any of the constraints proposed above, as is generally assumed that all sentences require a subject; it is safe to assume that this condition is very high ranking in all languages. On the other hand, F-FAITH constraint is also part of this OT-based approach and its ranking varies depending on whether the language allows null subjects or not: a *pro*-drop language has a faithfulness constraint F-FAITH ranking lower than SUBJCOND, whereas a non-*pro*-drop language will rank this constraint high enough to avoid allowing a null subject fulfilling SUBJCOND in the f-structure without a proper c-structure correlate. In any case, these two constraints do not have any effect on copular inversion in the theory defended here, unlike Alsina's (2007); as will be shown, the constraints above are enough to explain the data that have been presented. In consequence, SUBJCOND and F-FAITH are not shown in any of the optimization tableaux in this work.

Let us now test the proposed set of constraints against the core data that has been presented so far. For instance, let us begin with our basic minimal pair, as shown in (165a); the lexical entries of *es* '(it) is' and *son* '(they) are' are shown in (166) and (167). The f-structures of each sentence are shown in Figures 3.19 and 3.20, respectively (pages 79 and 80):

- (165) a. El problema son los impuestos
the.m.sg problem.m.sg be.pres.3.pl the.m.pl tax.m.pl
 'The problem is taxes'
- b. *El problema es los impuestos
the.m.sg problem.m.sg be.pres.3.sg the.m.pl tax.m.pl

(166) *es* :

PRED	'be < Int >'				
AGR	<table style="border-collapse: collapse; border: 1px solid black;"> <tr> <td style="padding: 2px 10px;">PERS</td> <td style="padding: 2px 10px;">3</td> </tr> <tr> <td style="padding: 2px 10px;">NUM</td> <td style="padding: 2px 10px;">SG</td> </tr> </table>	PERS	3	NUM	SG
PERS	3				
NUM	SG				
TENSE	PRES				
MOOD	INDIC				

(167) *son* :

PRED	'be < Int >'				
AGR	<table style="border-collapse: collapse; border: 1px solid black;"> <tr> <td style="padding: 2px 10px;">PERS</td> <td style="padding: 2px 10px;">3</td> </tr> <tr> <td style="padding: 2px 10px;">NUM</td> <td style="padding: 2px 10px;">PL</td> </tr> </table>	PERS	3	NUM	PL
PERS	3				
NUM	PL				
TENSE	PRES				
MOOD	INDIC				

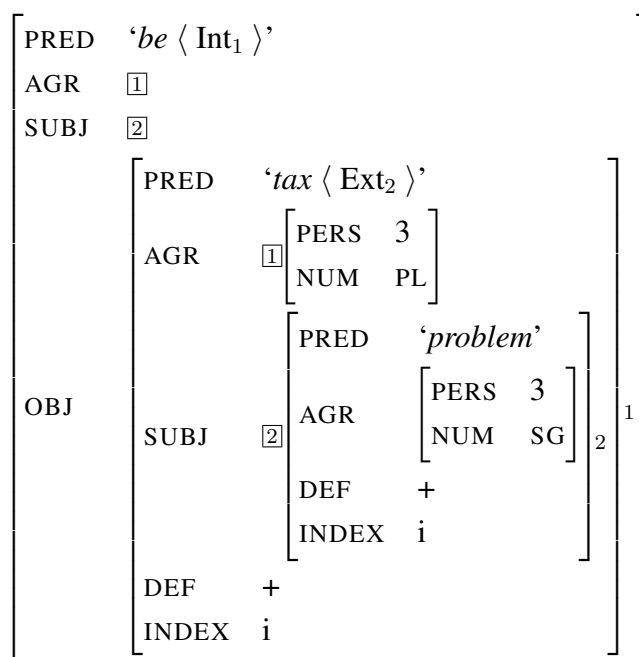


Figure 3.19: f-structure of (165a)

In the f-structure of (165a) (Figure 3.19) the AGR of *son* (cf. (167)) is unified with that of the OBJ function as per AGR-SHARE, because otherwise CONSISTENCY would be violated, namely by attempting unification of a plural verb form with a singular SUBJ. In the case of (165b) (Figure 3.20), the situation is exactly the opposite one: the copula must unify its AGR structure with the AGR of the SUBJ as the only possibility not to violate CONSISTENCY.

The optimization for the sentences (actually their f-structures) is shown in Tableau 3.4 (next page). Both candidates comply with COSUBJAGR as in both cases AGR is unified with the AGR of a cosubject and both violate AGRPERS because in both cases the agreeing cosubject is in the 3rd person. The deciding factor is AGRNUM, as expected: (165a) does not violate this constraint as the agreeing cosubject (the predicate) is plural, while (165b) fails to comply with it due to the agreeing cosubject (the subject) being in the 3rd person singular. Finally, the optimal candidate (165a) violates SUBJAGR, as expected in a copular inversion structure.

Contrast this with the situation in a language without copular inversion, e.g. English. The ranking of constraints in a language like this is (164), which actually leaves the relative order of MARKEDAGR and COSUBJAGR undetermined, as we lack enough evidence to defend one specific order over the other. In any case, the relative order of those two constraints is actually irrelevant, as the key to block all

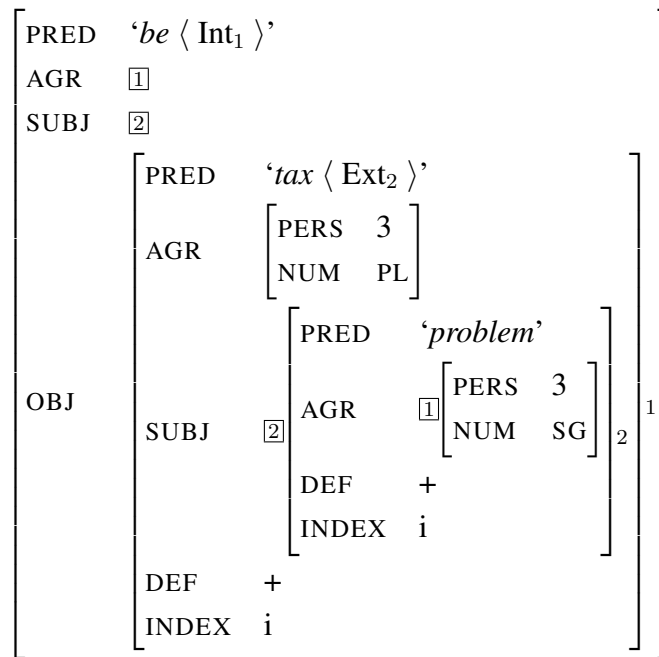


Figure 3.20: Ill-formed f-structure of (165b)

	COSUBJAGR	MARKEDAGR		SUBJAGR
		AGRPERS	AGRNUM	
☞ (165a)		*		*
(165b)		*	*!	

Tableau 3.4: Optimization for (165)

cases of copular inversion in languages that do not have this phenomenon is that SUBJAGR ranks higher than MARKEDAGR. This effect can be seen in Tableau 3.5, corresponding to the data in (168) below.

- (168) a. The problem is taxes
 b. * The problem are taxes

An aspect to be noticed, which I have been leaving aside, is that this analysis does not depend on the f-structure geometry that is chosen to represent preverbal subjects in Spanish, unlike Alsina (2007). Whereas Alsina's (2007) approach explicitly depends on the presence of a null subject in the f-structure, the hypothesis I present here depends only on the features of AGR. If it is accepted that preverbal subjects are actually topics that are anaphorically linked to a null subject (Alsina,

		MARKEDAGR		
	SUBJAGR	AGRPERS	AGRNUM	COSUBJAGR
☞ (168a)		*	*	
(168b)	*!	*		

Tableau 3.5: Optimization for (168)

2007; Vallduví, 1992, 2002), the f-structure changes, but the optimization remains exactly the same. Let us illustrate this: the f-structures of (165a) and (165b), according to this theory, are shown in Figures 3.21 and 3.22, respectively (pages 82 and 83).

As can be seen in Figures 3.21 and 3.22, the only critical difference produced by the f-structure geometry required to model preverbal subjects as topics is that it introduces a third cosubject, the topic, into play. However, this third cosubject will always have the same person-number features as the null subject, because it must be anaphorically linked to a pronominal GF. Therefore, the competition remains between two different sets of features and, consequently, there is no increase in the number of possible candidates. On the other hand, it also must be taken into account that the TOPIC function could be chosen as an option to unify AGR with, but this is equivalent to choosing the null subject, for the same reason stated above.

The proposed set of constraints does not affect in any way how non-inverted cases like these shown in (169): this theory correctly predicts that, in this type of structures, the verb agrees with the preverbal DP.

- (169) a. Los impuestos son el problema
the.m.pl tax.m.pl be.pres.3.pl the.m.sg problem.m.sg
 ‘The taxes are the problem’
- b. * Los impuestos es el problema
the.m.pl tax.m.pl be.pres.3.sg the.m.sg problem.m.sg

		MARKEDAGR		
	COSUBJAGR	AGRPERS	AGRNUM	SUBJAGR
☞ (169a)		*		
(169b)		*	*!	*

Tableau 3.6: Optimization for (169)

The important point here is that these facts are no longer explained by stating that the preverbal DP agrees with the verb because it bears the SUBJ grammatical

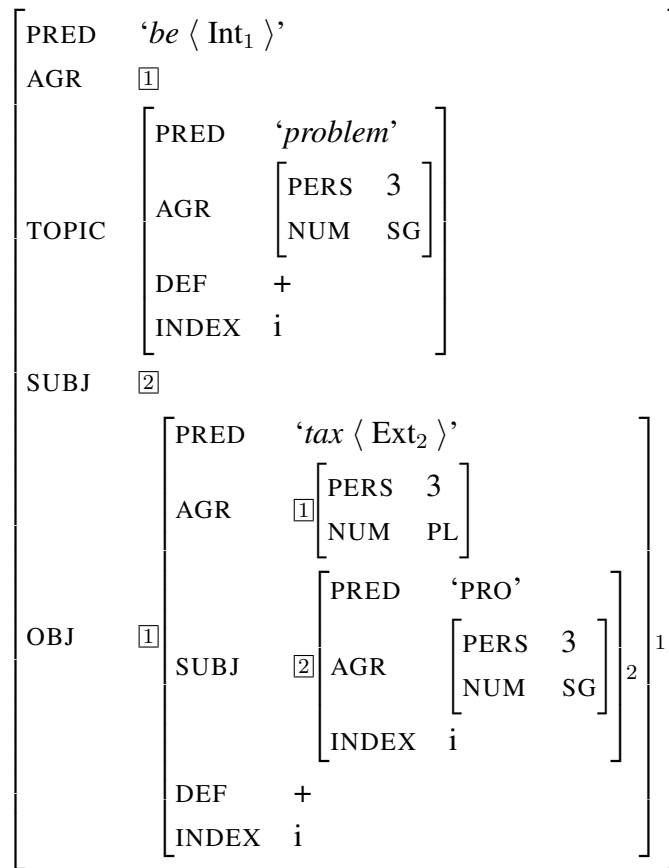


Figure 3.21: Alternative f-structure of (165a)

function. The copula always agrees with the highest cosubject available, which may be the subject or the predicate. While it is true that (169a) complies with SUBJAGR, this is absolutely irrelevant in the competition with (169b); it is the violation of AGRNUM by the latter which makes it the less optimal candidate compared to (169a), meaning that the verb agrees with the preverbal DP because it is the highest ranking cosubject in the sentence.

Transitive sentences are predicted never to agree with their object, as long as there is no higher-ranking constraint that might override COSUBJAGR. In languages like Spanish or German, where object-verb agreement is not found, the result of applying this set of constraints to a transitive sentence predicts obligatory subject-verb agreement due to the subject being the only cosubject available. Tableau 3.7 (page 84) shows the competition between both candidates in (170), showing that (170b) is ungrammatical because in that case AGR is unified with a GF that is not a cosubject, as the subject and the object do not share their reference.

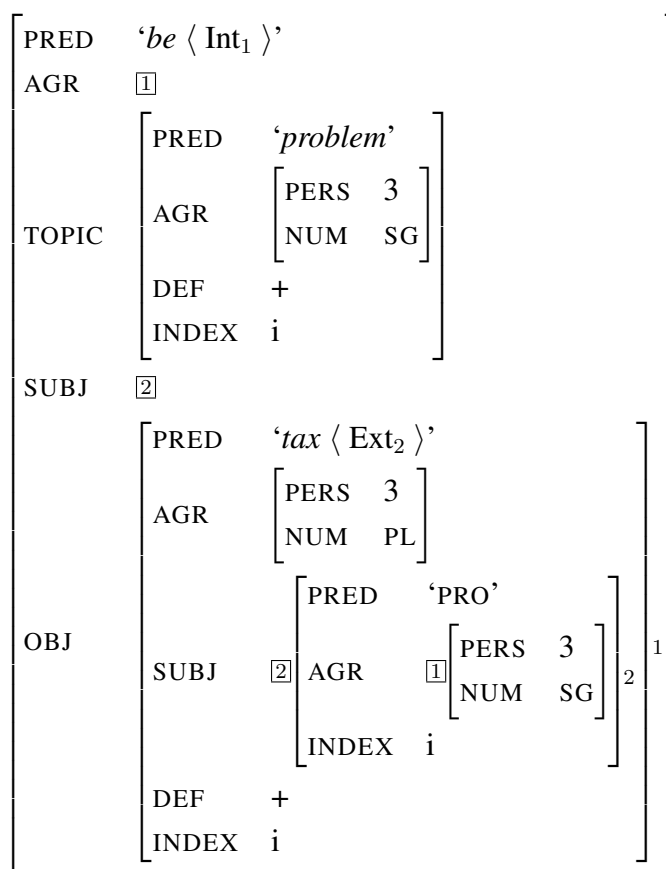


Figure 3.22: Alternative f-structure of (165b)

- (170) a. El niño comió manzanas
the.m.sg boy.m.sg eat.past.3.sg apple.f.pl
 ‘The boy ate apples’
- b. *El niño comieron manzanas
the.m.sg boy.m.sg eat.past.3.pl apple.f.pl

The important aspect to notice here is that the same theory accounts for both the cases in which the copula agrees with the subject (i.e. the case already covered by the standard theories on subject-verb agreement) and those in which it agrees with the complement. This theory subsumes the whole verbal agreement system into one single set of rules, yielding subject-verb agreement as a particular instance of cosubject-verb agreement and still correctly predicting the lack of object-verb agreement in the languages being analyzed.

So far only competition between 3rd person singular and plural has been shown. Let us now show how this proposal correctly predicts the paradigm of

	COSUBJAGR	MARKEDAGR		SUBJAGR
		AGRPERS	AGRNUM	
☞ (170a)		*	*	
(170b)	*!	*		*

Tableau 3.7: Optimization for (170)

agreement in copular sentences where one of the cosubjects is in the 1st or 2nd person:

- (171) a. El artista soy yo
the.m.sg artist.sg be.pres.1.sg I
 ‘The artist is me’
 b. * El artista es yo
the.m.sg artist.sg be.pres.3.sg I
- (172) a. El artista eres tú
the.m.sg artist.sg be.pres.2.sg you.sg
 ‘The artist is you.sg’
 b. * El artista es tú
the.m.sg artist.sg be.pres.3.sg you.sg

The lexical entries of *soy* ‘(I) am’ and *eres* ‘(you.sg) are.sg’ are shown in (173) and (174) below; the lexical entry of *es*, shown in (166), is also repeated for convenience:

- (173) *soy* :
- | | | | | | |
|-------|--|------|---|-----|----|
| PRED | ‘be < Int >’ | | | | |
| AGR | <table style="border-collapse: collapse; border: 1px solid black;"> <tr> <td style="padding: 2px 10px;">PERS</td> <td style="padding: 2px 10px;">1</td> </tr> <tr> <td style="padding: 2px 10px;">NUM</td> <td style="padding: 2px 10px;">SG</td> </tr> </table> | PERS | 1 | NUM | SG |
| PERS | 1 | | | | |
| NUM | SG | | | | |
| TENSE | PRES | | | | |
| MOOD | INDIC | | | | |

- (174) *eres* :
- | | | | | | |
|-------|--|------|---|-----|----|
| PRED | ‘be < Int >’ | | | | |
| AGR | <table style="border-collapse: collapse; border: 1px solid black;"> <tr> <td style="padding: 2px 10px;">PERS</td> <td style="padding: 2px 10px;">2</td> </tr> <tr> <td style="padding: 2px 10px;">NUM</td> <td style="padding: 2px 10px;">SG</td> </tr> </table> | PERS | 2 | NUM | SG |
| PERS | 2 | | | | |
| NUM | SG | | | | |
| TENSE | PRES | | | | |
| MOOD | INDIC | | | | |

$$(175) \text{ es : } \left[\begin{array}{l} \text{PRED} \quad 'be \langle \text{Int} \rangle' \\ \text{AGR} \quad \left[\begin{array}{l} \text{PERS} \quad 3 \\ \text{NUM} \quad \text{SG} \end{array} \right] \\ \text{TENSE} \quad \text{PRES} \\ \text{MOOD} \quad \text{INDIC} \end{array} \right]$$

The optimization for paradigms (171) and (172) are identical, as both, 1st and 2nd person, rank equally in the Person-Number Hierarchy, so in Tableau 3.8 I only show how the optimization is resolved for the cases in (171). The corresponding f-structures of (171a) and (171b) are shown in Figures 3.23 and 3.24 (pages 86 and 87).

		MARKEDAGR			
		COSUBJAGR	AGRPERS	AGRNUM	SUBJAGR
☞	(171a)			*	*
	(171b)		*!	*	

Tableau 3.8: Optimization for (171)

The violation of AGRPERS by (171b) discards this candidate in favor of the sentence (171a), where agreement is established with the higher-ranking cosubject, namely the 1st person pronoun.

What about cases in which both cosubjects are in the 1st and 2nd person? The data of these combinations were presented earlier in (80) and (81), now repeated below for convenience:

- (176) a. Yo soy tú
I be.pres.1.sg you.sg
 'I am you.sg'
- b. * Yo eres tú
I be.pres.2.sg you.sg
- (177) a. Tú eres yo
you.sg be.pres.2.sg I
 'You.sg are me'
- b. * Tú soy yo
you.sg be.pres.1.sg I

As explained earlier, when both cosubjects are in the 1st and the 2nd person, the copula agrees with the subject. The theory presented so far correctly predicts

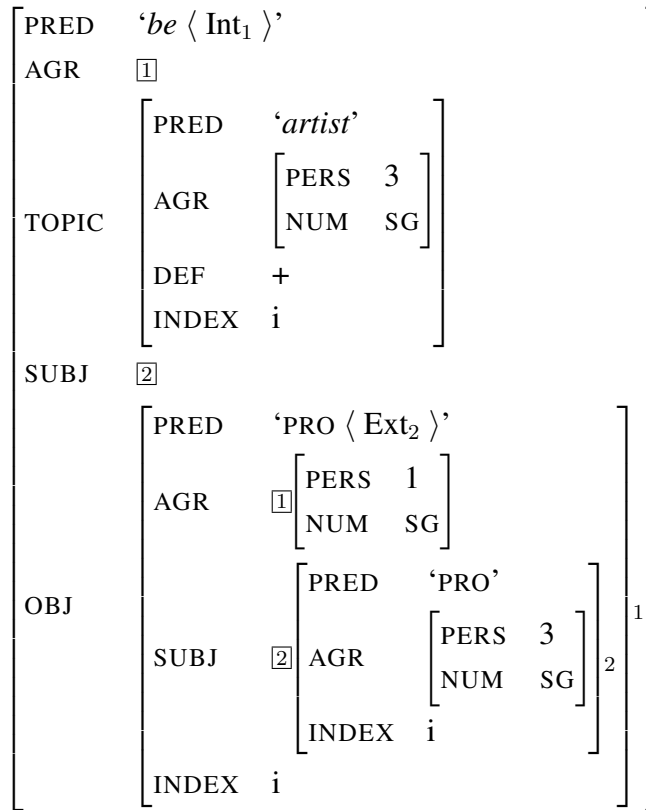


Figure 3.23: f-structure of (171a)

this: all candidates comply with AGRPERS (all of them have AGR with 1st or 2nd person features) and all of them violate AGRNUM (AGR is not 3rd person plural), so the tie between the two candidates of the pairs (176) and (177) is broken by SUBJAGR, which discards the f-structures where AGR is unified with a non-subject. Tableau 3.9 shows this for (177).

		MARKEDAGR		
	COSUBJAGR	AGRPERS	AGRNUM	SUBJAGR
☞ (177a)			*	
(177b)			*	*!

Tableau 3.9: Optimization for (177)

This paradigm is reproducible even when combining 1st and 2nd pronouns singular and plural, as shown below; the copula always agrees with the subject

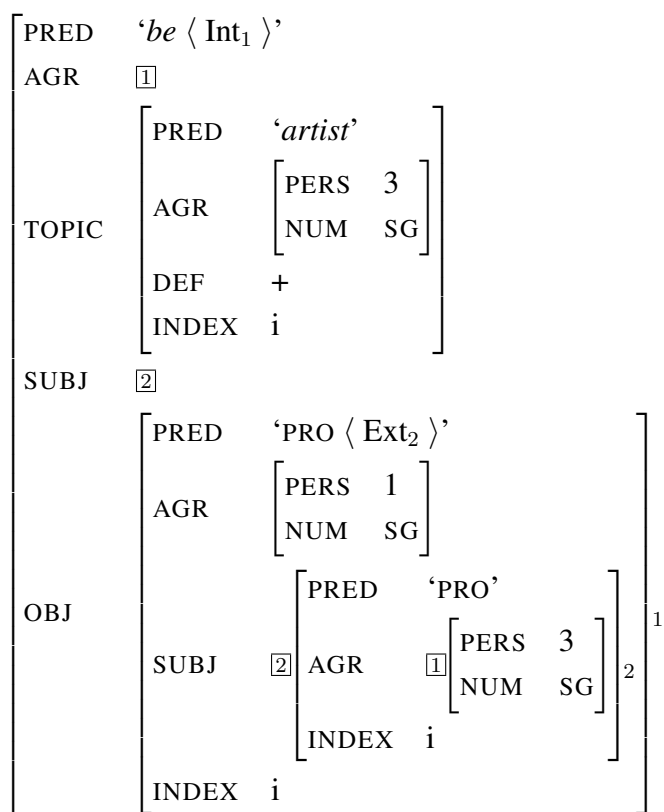


Figure 3.24: Ill-formed f-structure of (171b)

in this subset of cases. Tableau 3.10 (next page) shows the optimization for both (178) and (179).

- (178) a. Yo soy vosotros
I be.pres.1.sg you.pl
‘I am you.pl’
- b. * Yo sois vosotros
I be.pres.2.pl you.pl
- (179) a. Vosotros sois yo
You.pl be.pres.2.pl I
‘You.pl are me’
- b. * Vosotros soy yo
You.pl be.pres.2.pl I

The key point here is the definition of AGRNUM, which requires verbs to agree in the 3rd person plural, not any plural: the difference in plural is only

	COSUBJAGR	MARKEDAGR		SUBJAGR
		AGRPERS	AGRNUM	
☞ (178a), (179a)			*	
(178b), (179b)			*	*!

Tableau 3.10: Optimization for (178) and (179)

relevant for the 3rd person, not the 1st and 2nd. If AGRNUM only required verbs to agree in any arbitrary plural form, then (178b) would wrongly be predicted to be grammatical; (178a) would still be violating such constraint but (178b) would not. On the contrary, the actual AGRNUM proposed here is violated by both candidates, leaving SUBJAGR as the deciding factor that resolves the competition in favor of (178a).

A final word must be said about verb-initial copular sentences and the German data, which were presented as the motivation for abandoning an analysis dependent on the *pro*-drop parameter. Interestingly, knowing which DP is the subject irrelevant for predicting the correct results: Tableau 3.11 assumes the subject to be *nuestra salvación* ‘our salvation’ and Tableau 3.12 assumes it to be *unos niños* ‘some children’.¹³

- (180) a. Son unos niños nuestra salvación
be.pres.3.pl INDEF.m.pl child.m.pl our.f.sg salvation.f.sg
‘Some children are our salvation’
- b. * Es unos niños nuestra salvación
be.pres.3.sg INDEF.m.pl child.m.pl our.f.sg salvation.f.sg

	COSUBJAGR	MARKEDAGR		SUBJAGR
		AGRPERS	AGRNUM	
☞ (180a)		*		*
(180b)		*	*!	

Tableau 3.11: Optimization for (180) with *nuestra salvación* as SUBJ

¹³The only cases where subjecthood is relevant are those where 1st and 2nd person are combined. All verb-initial copular sentences with 1st and 2nd person are ungrammatical: **Soy yo tú*, **Eres yo tú*, **Soy tú yo*, **Eres tú yo*, etc. Some non-syntactic constraint is probably required to explain these data, but these data show that SUBJAGR does never intervene in verb-initial copular sentences and, therefore, that it is not necessary to know which DP is the subject in these structures.

	COSUBJAGR	MARKEDAGR		SUBJAGR
		AGRPERS	AGRNUM	
☞ (180a)		*		
(180b)		*	*!	*

Tableau 3.12: Optimization for (180) with *unos niños* as SUBJ

The situation in German is exactly the same as in Spanish, as the principles that have been proposed for copular inversion do not depend on the language analyzed having null subjects or not. Therefore, the paradigm shown below is identical to the one in Tableau 3.4.

- (181) a. Die Ursache sind die Kinder
the.f.sg cause.f.sg be.pres.3.pl the.pl boy.pl
 ‘The cause is the boys’
- b. * Die Ursache ist die Kinder
the.f.sg cause.f.sg be.pres.3.sg the.pl boy.pl

	COSUBJAGR	MARKEDAGR		SUBJAGR
		AGRPERS	AGRNUM	
☞ (181a)		*		*
(181b)		*	*!	

Tableau 3.13: Optimization for (181)

The possibility of explaining the German data, as well as postverbal subject copular sentences in Spanish, shows the great advantage of basing this theory on coreference accepting the premise that verbs may not necessarily agree with their subjects. Previous theories fail to account for these data because they do not decouple agreement from c-structure properties: subject-verb agreement, even in a version of the LFG framework like Alsina’s (2007), requires principles that make reference to c-structure in order to set up the subject in the desired way to explain the data as the subject is assumed to be the GF the verb must agree with. In the specific case of Alsina (2007), the absence of a DP that is assigned the SUBJ function forces the presence of a null subject in the f-structure. In the case of Moro (1997), the framework itself does not allow for any possibility but to use a null subject. By not abandoning the assumption that copular inversion is due to the *pro*-drop parameter, but turning coreference into the deciding factor to take into

account, the way is paved to explaining copular inversion (and other non-subject agreement phenomena, as will be shown in the next chapter) as a consequence of the copula being the only verb that may have two cosubjects so that it chooses the one that is more prominent in the Person-Number Hierarchy.

There is, however, a problem that I will present immediately that does not allow us to leave this discussion here. In this work it has been stated that this type of phenomena occurs only in copular sentences because only the copula requires the subject to be coreferential with the complement, per definition. But, does the copula *always* do so? In fact, it does not: there are copular sentences in which the subject and the complement are not coreferential and this is a matter that a syntactic theory of copular inversion must address in order to be complete.

3.4.3 *The Norman Bates problem: when there is no coreference*

The theory presented so far works upon the assumption that the copula expresses that two DPs are coreferential. However, this is a simplification that has been useful in order to crack the core problem, namely that in some languages there are sentences in which the copula agrees with the DP that is not the subject of the sentence. Now that the core data has been explained, stating why and under which circumstances copular inversion arises, it is time to present a case in which copular inversion would be expected given what has been said so far, yet is not present, and explain how this must be considered with respect to the theory defended here.

Let us consider examples like the following ones, in Spanish, but valid in other languages with copular inversion, such as Italian, Catalan or German:

(182) Norman Bates es muchas personas en *Psicosis*
Norman Bates be.pres.3.sg many.f.pl person.f.pl in *Psycho*
 ‘Norman Bates is many people in *Psycho*’

(183) * Norman Bates son muchas personas en *Psicosis*
Norman Bates be.pres.3.pl many.f.pl person.f.pl in *Psycho*

If the copula always involved coreference of subject and complement, the expected result would be the exact opposite, incorrectly predicting (182) to be ungrammatical and (183) to be grammatical, as in the latter the copula agrees with the higher ranking DP *muchas personas* ‘many people’ (3rd person plural), whereas in the former it agrees with the lower ranking DP *Norman Bates* (3rd person singular).

This contradiction must be resolved in such a way that does not entail disrupting the correct results achieved in §3.4.2. Dimissing the mechanism described by which the agreeing cosubject is chosen with respect to the Person-Number Hierarchy would constitute a step backwards that would leave us without an explanation for the majority of cases that have been explored in this research.

Interesting evidence that solves these apparent contradictions come from the Spanish minimal pair that follows, where both the inverted and the non-inverted versions are possible, but the meaning of both sentences and their pragmatics change radically:

- (184) Helen Mirren soy yo
Helen Mirren be.pres.1.sg I
 ‘I am Helen Mirren’
- (185) Helen Mirren es yo
Helen Mirren be.pres.3.sg I
 ‘Helen Mirren is me (plays my role)’

Sentence (184) is an utterance that the actress Helen Mirren could make to assert her own identity towards an addressee, but (185) is not. The latter may only be uttered by someone whose character has been played by her in some movie, e.g. Queen Elizabeth II, who Helen Mirren played as in the 2006 movie *The Queen* directed by Stephen Frears. This difference in meaning shows that in the inverted case, the subject is coreferent with the complement, whereas in the non-inverted case, there is no coreference, as there is no true identification of Helen Mirren with the 1st person singular, but an identification with something Helen Mirren has done that relates her with the speaker of that utterance.

The paradigm formed by (182) and (183) shows a case in which coreference is impossible exactly because there is no way that the man named *Norman Bates* be a plurality of people (the meaning of *muchas personas* ‘many people’), as being one person and many is a contradiction. The meaning of (182) is that Norman Bates plays the roles of many people, but the claim is that he is still only one person. Therefore, as coreference is impossible, only the non-inverted case is possible, as subject agreement arises as the only alternative.

		MARKEDAGR		
	COSUBJAGR	AGRPERS	AGRNUM	SUBJAGR
☞ (182)		*	*	
(183)	*!	*		*

Tableau 3.14: Optimization for (182) vs. (183)

This explanation is coherent with the OT-LFG analysis of copular inversion defended in this work. When there is no coreference between subject and complement, the only cosubject available, by default, is the former, thus rendering cases like the competition of (182) and (183) analogous to those of transitive sentences, in which the verb never agrees with the object even if it ranks higher than

the subject in the PNH because the object is not a cosubject of the sentence (cf. Tableau 3.7).

In the case of (184) vs. (185) the explanation is that there are two different optimizations due to the two possible readings. One is the “regular” copular inversion optimization where MARKEDAGR chooses the optimal candidate (i.e. the one with the copula in the 1st person singular), because there are two cosubjects available in the sentence, and the other is the one in which the only cosubject is the subject because the complement is not a cosubject.

This discussion may seem to point out that there are two different copular verbs, one that is used for expressing that two entities are coreferential and another one that is used when there is no coreference between two entities that are nevertheless identified one with each other in an indirect or weak way. However, the ideal is to keep the amount of lexical entries as small as required, so that the explanation of the differences that have been found remains in grammar, which allows for better generalizations for phenomena like this one. In fact, an explanation based on two homophonous lexical entries for the copula may not be satisfactory for explaining why in some cases copular inversion is obligatory in some cases, impossible as in the Norman Bates cases and, finally, possible yet not obligatory in the Helen Mirren case above. In a framework like the one that I am using here, it can be stated that the purpose of the copula is to express that two entities identify one with the other in some way. This identification, when possible or obligatory, is interpreted as coreference when in a semantic level, e.g. in the s-structure of the sentence (Dalrymple, 2001), both refer to the same world-object. If we accept this, the “choice” of expressing the subject as coreferential with the complement is not explained by there being two copulas, but by the semantic structure that is associated with the sentence, such that it maps onto the f-structure in the form of the INDEX attribute. Following this idea, a future challenge would be to explore the conditions that allow, force or ban coreference in the s-structure, but in the present work, which is restricted to syntax, this knowledge is assumed to be external to the grammar of copular inversion.

3.5 Summary of the analysis

Let us summarize here the findings of the theory proposed in this chapter. The analysis of copular inversion defended here states that this phenomenon is caused in languages in which verbs agree with the cosubject that ranks higher in the Person-Number Hierarchy.

In order to do so in an OT-LFG implementation, it is assumed that verbs do not specify the agreement features for a specific grammatical function, but that they only specify their own in set or “bundle” of features named AGR, which must

always must be unified with the AGR of some GF in the sentence, as per AGR-SHARE, defined as below:

- (186) AGR-SHARE:
For f an f-structure of category V:

$$\left[\begin{array}{cc} \text{AGR} & \boxed{1} \\ \text{GF} & \left[\text{AGR} \quad \boxed{1} \right] \end{array} \right]^f$$

Therefore, for example, the lexical entry of a verb form like Spanish *son* ‘(they) are’ is the one that follows:

- (187) *son* :
$$\left[\begin{array}{cc} \text{PRED} & \text{'be} \langle \text{Int} \rangle \text{' } \\ \text{AGR} & \left[\begin{array}{cc} \text{PERS} & 3 \\ \text{NUM} & \text{PL} \end{array} \right] \\ \text{TENSE} & \text{PRES} \\ \text{MOOD} & \text{INDIC} \end{array} \right]$$

In order to correctly predict which GF the copula must agree with, the following principles have been proposed and argued for:

- (188) SUBJAGR:
$$\left[\begin{array}{cc} \text{AGR} & \boxed{1} \\ \text{SUBJ} & \left[\text{AGR} \quad \boxed{1} \right] \end{array} \right]$$

- (189) COSUBJAGR:
$$\left[\begin{array}{cc} \text{AGR} & \boxed{1} \\ \text{COSUBJ} & \left[\text{AGR} \quad \boxed{1} \right] \end{array} \right]$$

- (190) MARKEDAGR:
Where GF_{agr} is the GF which the AGR of the verb unifies with:

a. AGRPERS:
$$\left[\text{GF}_{agr} \left[\text{AGR} \left[\text{PERS} \quad 1 \vee 2 \right] \right] \right]$$

b. AGRNUM:
$$\left[\text{GF}_{agr} \left[\text{AGR} \left[\begin{array}{cc} \text{PERS} & 3 \\ \text{NUM} & \text{PL} \end{array} \right] \right] \right]$$

- c. AGRPERS \gg AGRNUM

The typology of languages treated so far is faithfully predicted by these two different orderings of the proposed constraints; languages with copular inversion are due to the ordering (191), whereas languages that do not show this phenomenon are due to the underspecified ordering (192):

(191) COSUBJAGR » MARKEDAGR » SUBJAGR

(192) SUBJAGR » COSUBJAGR
 SUBJAGR » MARKEDAGR

The AGR-SHARE principle is possibly the most important modification to the LFG framework that has been proposed in this work. LFG explains subject-verb agreement by means of lexically specifying the features of the SUBJ GF, but such a system becomes very hard or quite impractical to implement if copulas are to be allowed to agree either with their subject or with their predicate. These principles abstract verbal agreement away from the verbal morphology and restate it as a syntactic problem that must be explained in the domain of sentences; it does so by making the agreement features available at a special f-structure named AGR which must be unified with the corresponding AGR of some GF in the sentence.

The COSUBJAGR and SUBJAGR constraints and the MARKEDAGR “bundle”, combined, are in charge of selecting which GF is allowed to unify with AGR. This is done in the OT-framework detailed in the previous chapter, so what is actually selected is one f-structure candidate over the other. COSUBJAGR requires AGR to unify with a cosubject, whereas SUBJAGR requires AGR to unify with the subject of the sentence. Finally, the two constraints that make up MARKEDAGR implement the Person-Number Hierarchy by penalizing the geometries of AGR that must rank lower.

Finally, data has been presented where the copula does not behave as expected in languages with copular inversion, only allowing the copula to agree with the subject of the sentence, or allowing both an inverted and a non-inverted structure that differ in meaning. These data do not present any problem for my theory as it predicts that copular inversion is barred in copular sentences in which the subject and the complement are not coreferential, thus yielding the subject to be the only available cosubject. Structures that allow both a coreferential and a non-coreferential reading are expected to show, respectively, an inverted and a non-inverted structure for each interpretation.

Chapter 4

Extensions of the analysis

4.1 Introduction

The analysis that has been developed in the previous chapter gives a principled explanation of copular inversion by modifying our views on verbal agreement in languages like Spanish, Catalan or German, as well as also explaining, by means of a different hierarchy of OT constraints, why a language like English does not show copular inversion. The conclusion that has been drawn from my analysis is that copular inversion in the languages analyzed is a case of non-subject agreement that must be reconciled with the “regular” subject agreement patterns that are found elsewhere in those languages.

In this chapter I will proceed to comment on different non-subject agreement phenomena that may be also explained by the theory developed in this work with no further modification than the required addition of principles that may interact with my cosubject-verb agreement theory. These phenomena include some cross-linguistic agreement data from cleft and pseudocleft sentences in languages with copular inversion, Dargwa non-subject agreement phenomena in transitive sentences, English locative inversion and Icelandic “quirky case” agreement.

The commentary of these phenomena will not be exhaustive in any case, as that would lead the discussion well beyond the scope of this research. The aim of this section is rather to show that the principles that have been proposed in this work can be applied to other linguistic phenomena that are related, yet not part, of copular inversion.

4.2 Cleft sentences and copular inversion

Languages with copular inversion show a very particular agreement pattern in cleft sentences, namely that the copula, at least superficially, always agrees with

the clefted DP, which is found immediately after the copula. For example, let us consider the following cases in Catalan:¹

- (193) És el nen que vindrà
be.pres.3.sg the.m.sg child.m.sg REL come.fut.3.sg
 ‘It is the child that will come’
- (194) Són/*És els nens que vindran
*be.pres.3.pl/*sg the.m.pl child.m.pl REL come.fut.3.pl*
 ‘It is the children that will come’
- (195) Sóc/*És jo que vindré
*be.pres.1.sg/*3.sg I REL come.fut.1.pl*
 ‘It is me that will come’

The contrast with English is quite evident. In English cleft sentences always have an expletive *it* subject the verb must agree with in the 3rd person singular, regardless of the features of the clefted DP, as shown by the translations of each of the structures shown above.

A word must be said about the possible ambiguity that might arise from the linear order of cleft sentences in Catalan. A sentence like (193) or (194) can also be interpreted as follows, namely interpreting the embedded clause as a modifier of the noun:

- (196) És [DP el nen que vindrà]
be.pres.3.sg the.m.sg child.m.sg REL come.fut.3.sg
 ‘This/that/he is the child that will come’
- (197) Són [DP els nens que vindran]
*be.pres.3.pl/*sg the.m.pl child.m.pl REL come.fut.3.pl*
 ‘These/those/they are the children that will come’

The structures above are nothing but a regular copular sentence in which the subject is null and where only a DP complement is found. In sentences like the ones above, there is neither any rhematization of *el nen* ‘the child’ or *els nens* ‘the children’ as in a cleft sentence nor coreference between ‘the child/children’ and the embedded clause that follows it. In fact, the embedded clause is a typical “adjectival” embedded clause that selects a subset from the set denoted by the noun. In this section I will never refer to the last kind of sentences from above, but exclusively to cleft sentences.

After having shown in the previous chapter that agreement is not a valid diagnostic in a copular inversion language to determine which constituent is the

¹This discussion is largely based on an earlier account of the problem, presented at Vigo (2014).

subject in a sentence, the assumption that the postverbal clefted DP is the subject because it agrees with the copula is no longer a valid starting point. Moreover, there are facts that show that the clefted element cannot be the subject of the cleft construction, as is discussed as follows.

First of all, the clefted element can be a PP, which is a grammatical category that in Catalan is never mapped to SUBJ:

- (198) És en el parc que donen pastissos
be.pres.3.sg in the.m.sg park.m.sg REL give.pres.3.pl cake.m.pl
 ‘It is in the park that cakes are given away’
- (199) És pel músic que ploriqueja la
be.pres.3.sg for=the.m.sg musician REL weep.pres.3.sg the.f.sg
guitarra delicadament
guitar.f.sg gently
 ‘It is because of the musician that the guitar gently weeps’

When the clefted element is a PP, the copula must obligatorily be in the 3rd person singular. All other feature combinations are barred, regardless of which ones the P⁰-dominated DP has, e.g. 1st person singular or 3rd person plural:

- (200) És/*sóc per mi que vindrà ella
*be.pres.3.sg/*1.sg for I.obl REL come.fut.3.sg PRO.f.3.sg*
 ‘It is because of me that she will come’
- (201) Serà/*seran amb elles que ballareu salsa cubana
*be.fut.3.sg/*pl with they.f.obl REL dance.fut.2.pl salsa.f.sg Cuban.f.pl*
 ‘It will be with them.f that you.pl will dance Cuban salsa’

At this point, these data present, at first glance, three alternative paths to follow for analyzing cleft sentences: that Catalan accepts PPs to be subjects just in the case of cleft sentences, that the grammatical function of the clefted element varies depending, e.g. on the grammatical function of the relative pronoun in the embedded clause or the clefted element is not the subject.

The first proposal is absolutely *ad hoc*, “subject” PPs not being found elsewhere in the grammar of this language. Accepting this would also imply that, somehow, PPs are stipulated to be 3rd person singular regardless of the DP that its P⁰ dominates; the theoretical consequence of this would be that prepositions would show person-number features in the very specific case of cleft sentences and not elsewhere. This path is absolutely undesirable from a theoretical standpoint.

The second path is that the grammatical function of the clefted element is not determined by the copula, but is determined by the embedded clause. This is a

hypothesis that is impossible to follow within a formalist framework like the one defended here; it would imply that there is one specific use of the copula in which a constituent may be mapped to any grammatical function. All the remaining non-cleft copular construction would strictly map one constituent to SUBJ and the other one to OBJ. The ultimate consequence of this would be to state that there are two copulas: one for cleft sentences, that allows for an indeterminate grammatical function that must be set by the verb of the embedded clause, and a copula that is used in all other constructions in the language. It is quite self-evident how this should be avoided at all costs as a hypothesis for explaining these facts.

It is the third path the one that suits the data: that the clefted element is the complement of the copula. Complements can be PPs and PPs are mapped into OBJs in Catalan in certain contexts unrelated to cleft sentences, as for example the preposition *a* ‘to’ is possible (and the most common option) for the object of a transitive verb when the object is a pronoun (and is barred from introducing any other kind of objects, as well):

- (202) No vaig veure (a) ningú
 NEG see.past.1.sg *(to) nobody
 ‘I did not see anybody’

Therefore, the fact that the clefted elements may be PPs is not an obstacle to consider them OBJs, albeit not identical to the OBJ of a transitive verb, like it was already stated for the OBJ function that the copula maps its complement to.

Moreover, the clefted element allows for partitive cliticization, which is barred for subjects in Catalan, as discussed in Chapter 3:

- (203) Ja m’agradava aquest partit polític,
already CL.1.sg.dat=*like*.impf.1.sg *this*.m.sg *party*.m.sg *political*.m.sg
 però en va ser el portaveu que em
but CL.part *be*.past.3.sg *the*.m.sg *spokesman*.m.sg REL CL.1.sg.acc
 va convèncer de votar-lo
convince.past.3.sg *of* *vote*.inf=CL.3.sg.m.acc
 ‘I already liked this political party, but it was its spokesman that convinced me to vote for it’

The best hypothesis, therefore, is to assume that the clefted element is the complement of the copula that heads the cleft sentence. The fact that the clefted element sometimes agrees with the copula is easily explained by applying the principles that have been proposed for copular inversion, but this will be shown immediately below after resolving first the question about which constituent is the *subject* of the cleft construction.

At first sight, given that the clefted element is the complement, there are two candidates for the SUBJ: the embedded clause or a null subject that is only present at the f-structure. In the latter case, the embedded clause would be a second complement.

The null subject approach has the apparent advantage that it would yield the same f-structure for both Catalan and English cleft sentences: in both cases the SUBJ would be fulfilled by an expletive subject, the difference being that in English this subject does have a correlate at the c-structure level (namely, *it*), whereas in Catalan it does not.

However, this solution implies a violation of F-FAITH in Catalan, because of the introduction of functional information that does not have its source in a lexical element. An analysis that does not imply this violation will be preferable over this one, as such is theoretically more economical. The question, thus, becomes whether the embedded clause is eligible for SUBJ; if so, then the SUBJ would be fulfilled by an element that is already present in the c-structure, avoiding the aforementioned violation.

The following data shows that embedded clauses, generally, can take the subject function of a sentence in Catalan:

- (204) Que la situació sigui dolenta
that the.f.sg situation.f.sg be.subj.pres.3.sg bad.f.sg
 desmotiva el personal de l'empresa
demotivate.pres.3.sg the.m.sg staff.m.sg of the.f.sg=company.f.sg
 'The situation being bad demotivates the company staff (lit. That the situation is bad...)'

Although the embedded clause in (204) is not a relative clause, as it is introduced by a complementizer, it serves to show that CPs are perfectly eligible to be subjects in Catalan. Normally, headless relative clauses are the only type of relative clauses that are found to take the subject function, because they include its own antecedent (e.g. *el que*, *la que*, etc., apart from relative pronouns like *qui* 'who'). Headed relative clauses, on the other hand, are normally barred from being subjects precisely because they are not able to access an antecedent for the relative pronoun:

- (205) El que cremi el sopar el
the.m.sg REL burn.subj.pres.3.sg the.m.sg dinner.m.sg CL.3.m.sg.acc
 pagarà
pay.fut.3.sg
 'Who(ever) burns the dinner will pay for it'

- (206) * Que cremi el sopar el
 REL *burn.subj.pres.3.sg the.m.sg dinner.m.sg* CL.3.m.sg.acc
 pagarà
 pay.fut.3.sg

However, this is not a counterargument to considering the embedded relative clause as the subject in cleft sentences. Headless relative clauses like the one in (205) are better analyzed as simple DPs headed by the determiner that acts as the antecedent for the relative clause that it dominates. As already noted before, the ungrammaticality of (206) is due to the lack of antecedent and not due to any categorial restriction that prevents CPs to be the subject of a sentence, as shown to be possible in (204) earlier. However, in a cleft sentence the embedded relative clause has access to its antecedent, namely the clefted element. Therefore, it is perfectly possible to assume that in cleft sentences the subject is indeed the embedded relative clause.

This analysis also explains the following paradigm, where the contrast between a cleft sentence and its corresponding *wh*-cleft is shown, such that the latter only allows for headless relative clauses to occupy the preverbal position exactly because in that position no other constituent can act as the antecedent for the relative pronoun, but the pronoun's own incorporated antecedent (this explains the 3rd person singular inside the headless relative clause in (208)):

- (207) Sóc jo que vindré
 be.pres.1.sg I REL *come.fut.1.sg*
 ‘It is me that will come’
- (208) El que vindrà sóc jo
 the.m.sg REL *come.fut.3.sg* *be.pres.1.sg I*
 ‘Who will come is me’
- (209) * Que vindré sóc jo
 REL *come.fut.1.sg* *be.pres.1.sg I*

In summary, the analysis for a cleft sentence like (210) entails a *c*-structure like the one shown in Figure 4.1 and an *f*-structure like the one shown in Figure 4.2:

- (210) Són els nens que vindran
 be.pres.3.pl the.m.pl child.m.pl REL *come.pres.3.pl*
 ‘It is the children that will come’

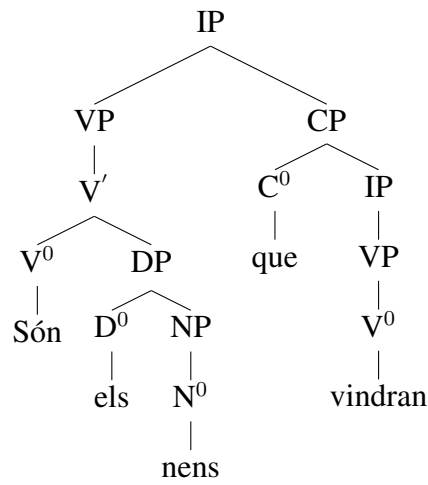


Figure 4.1: c-structure of (210)

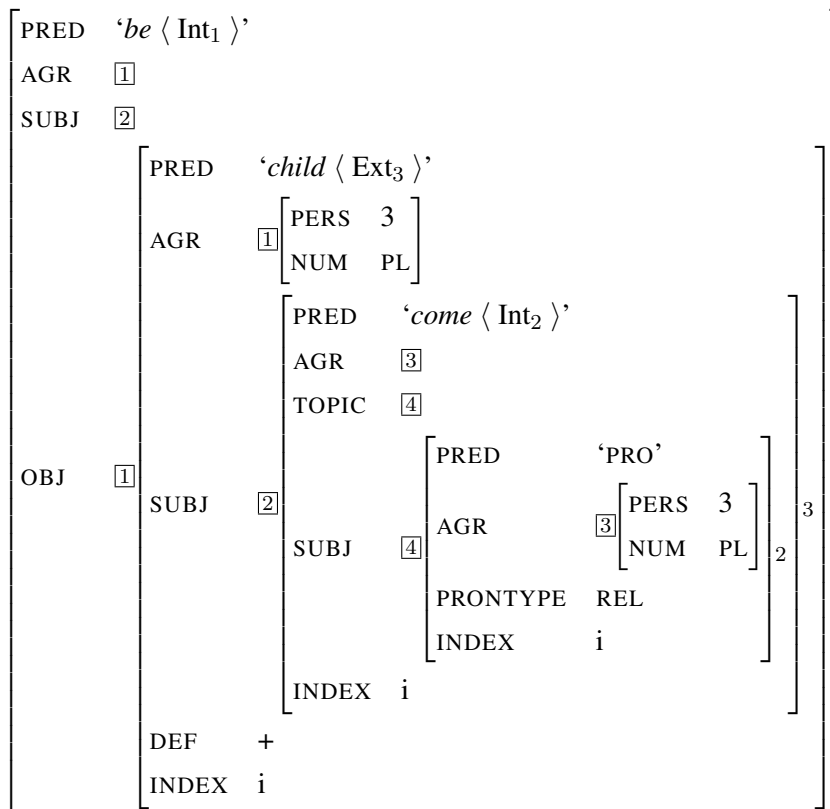


Figure 4.2: f-structure of (210)

In the f-structure shown in Figure 4.2 there is an interesting phenomenon that

must be addressed. As was shown in the previous chapter, the subject of the copular sentence is also the subject of the complement, because of the predication relation that is established between both elements. In “regular” copular sentences the SUBJ of the OBJ is a DP, whereas in cleft sentences it is a whole clause, such that its own AGR is actually determined by its syntax and not by any lexical means (in this particular case, by the relative pronoun, which is 3rd person plural and is the subject (and only cosubject) of the embedded clause. In this particular case all AGR bundles coincide, so no conflict arises, but in a sentence like the one that follows it is required that the theory avoids predicting that the head copula should be in the 1st person singular because the AGR of the embedded clause is in the 1st person singular:

(211) Són els nens que ensenyaré
be.pres.3.pl the.m.pl child.m.pl REL teach.fut.1.sg
 ‘It is the children that I will teach’

(212) *Sóc els nens que ensenyaré
be.pres.3.pl the.m.pl child.m.pl REL teach.fut.1.sg

The f-structures corresponding to (211) and the ill-formed case (212) are those in Figures 4.3 and 4.4 (page 104), respectively.

In order to avoid having the matrix AGR unify with the AGR of the embedded clause, the potential scope of unification must be restricted locally so that it may not arise if the AGR is of a grammatical function that is part of another independent (tensed) clause. Raising structures, however, do allow AGR-SHARE with a complement of the embedded structure, as shown below for Catalan (also valid for Spanish):

(213) El problema semblen/*sembla ser els impostos
*the.m.sg problem.m.sg seem.pres.3.pl/*sg be.inf the.m.pl tax.m.pl*
 ‘The problem seems to be taxes’

The constraint CLTRANS (CLAUSAL TRANSPARENCY) defined below states that AGR may only unify with the AGR of a GF of an embedded clause if and only if that embedded clause has one of its functions raised to be the subject of the matrix clause. In structures where no embedded clause is found –as those discussed in the previous chapter– vacuously comply with this constraint because in those cases AGR unifies with the AGR of a GF of the same clause.

(214) CLTRANS:

For an f-structure f of category V :

$$\left[\begin{array}{l} \text{AGR} \quad \boxed{1} \\ \text{GF} \quad \left[\text{AGR} \quad \boxed{1} \right]_f \end{array} \right] \rightarrow \left[\begin{array}{l} \text{SUBJ} \quad \boxed{2} \\ \text{GF} \quad \left[\text{GF} \quad \boxed{2} \right]_f \end{array} \right]$$

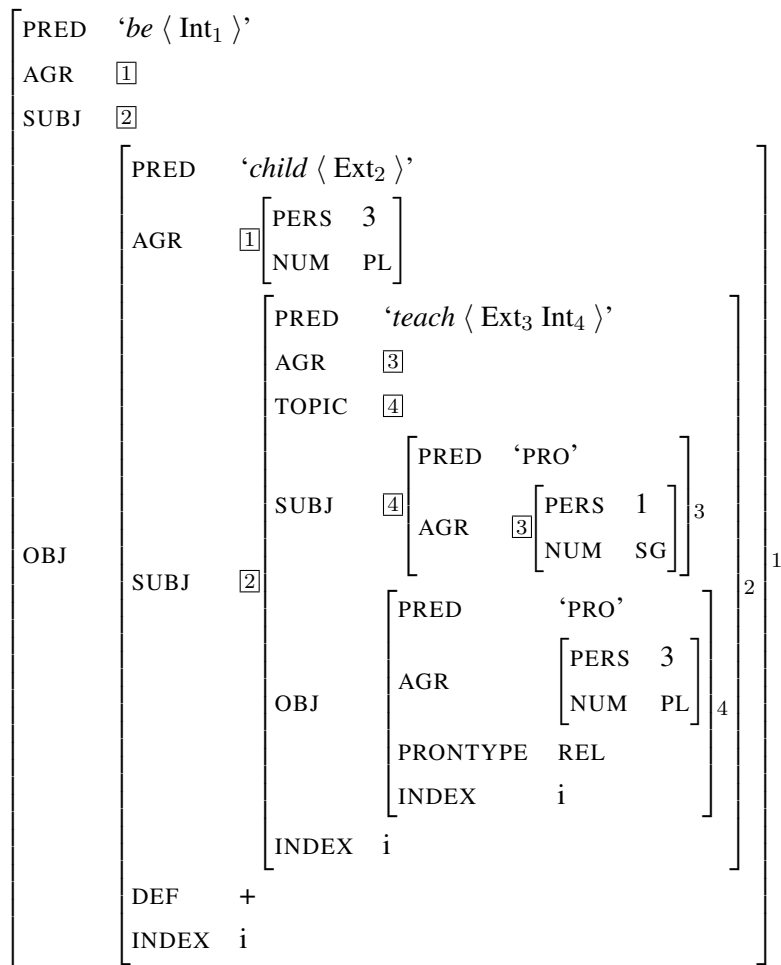


Figure 4.3: f-structure of (211)

The fact that AGR-SHARE resides in the *Gen* component strikes as a very odd exception in the theory developed so far. This assumption is easily challenged as soon as we try to explain the case when the clefted element is a PP, in which the copula agrees in the 3rd person singular, as in the example below: As shown by the data before, the copula seems to always agree with its complement in cleft sentences, except when the complement is a PP. The issue to address here is how come the copula shows 3rd person singular features, regardless of the features of the nominal element inside the clefted PP and without being able to unify with the AGR of the embedded clause.

First of all, this means that in these specific constructions there is actually no agreement in place, meaning that AGR-SHARE is actually violable under very specific conditions. Moreover, it means that there is some property of prepositions

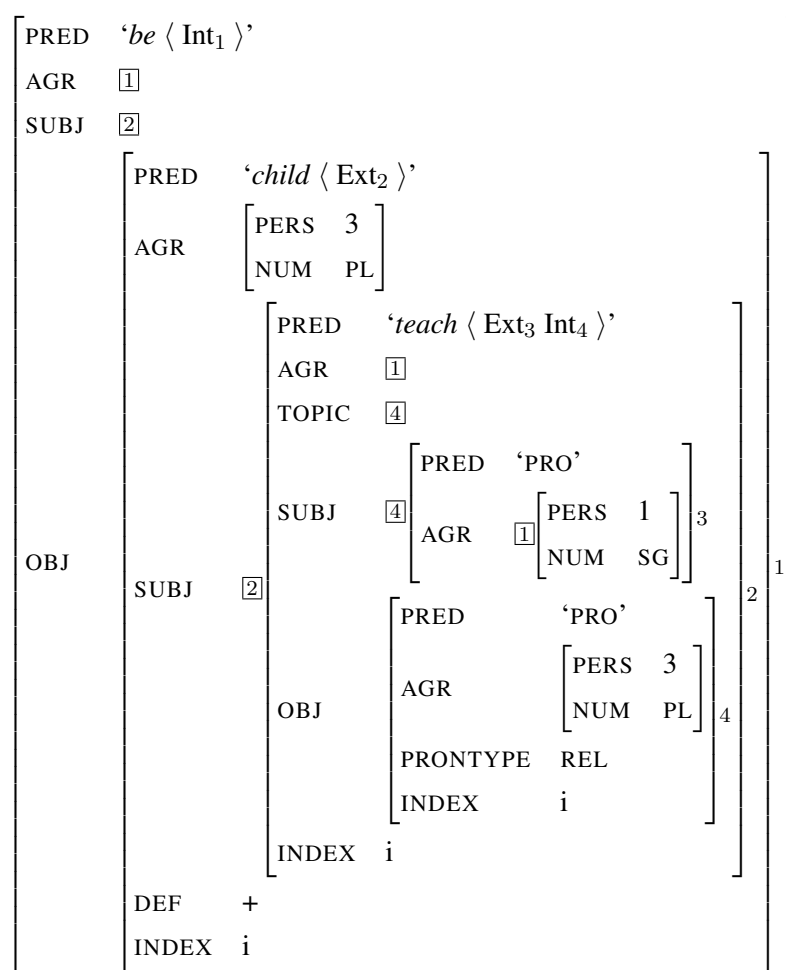


Figure 4.4: Ill-formed f-structure of (4.4)

that bars the head copula to agree with the nominal element inside the PP and it means that 3rd person singular must be chosen as a “default” bundle of features.

About what could be the property of prepositions that blocks agreement with a PP in cleft sentences, interesting cross-linguistic data comes from German cleft sentences. German cleft sentences behave exactly as in Catalan, but agreement with the complement is blocked regardless of its ranking on the PNH not only when it is a PP, but also if it shows morphological marking of grammatical case that is *distinct* to the nominative. Cases that are syncretic with the nominative do not block agreement.

- (215) Es waren/*war meine Kinder, die dich gesehen
*it be.past.3.pl/*sg my.pl child.pl REL.pl you.sg.acc see.part*

haben

have.pres.3.pl

‘It was my children that saw you.sg’

- (216) Es waren/*war meine Kinder, die ich gesehen habe
*it be.past.3.pl/*sg my.pl child.pl REL.pl I.nom see.part have.pres.1.sg*
 ‘It was my children that I saw’

- (217) Es war/*waren meinen Kindern, den ich den
*it be.past.3.sg/*pl my.pl.dat child.pl.dat REL.pl.dat I.nom the.m.sg.acc*
 Kuchen gegeben habe
cake.m.sg give.part have.pres.1.sg
 ‘It was my children that I gave the cake’

Catalan does not have nominal case marking, but following Alsina (1996), prepositions can be considered to be akin to case markers, such that a simple PP like (218) has the f-structure shown in Figure 4.5, contrary to the standard representation (Bresnan, 2001; Dalrymple, 2001) that assumes that the preposition provides a PRED value that requires an argument, namely the DP that is under the PP.

- (218) En el bar
in the.m.sg bar.m.sg
 ‘In/at the bar’

$$\left[\begin{array}{l} \text{PRED} \quad 'bar' \\ \text{AGR} \quad \left[\begin{array}{ll} \text{PERS} & 3 \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{MASC} \\ \text{CASE} & \text{LOC} \end{array} \right] \\ \text{DEF} \quad + \end{array} \right]$$

Figure 4.5: f-structure of PP (218)

Following this route, the explanation why in Catalan the copula never agrees with a PP even if the DP inside it ranks higher than 3rd person singular is that the case attribute provided by the preposition blocks agreement, even though the whole PP might still be a cosubject of the sentence. The actual value of CASE is irrelevant: it is the presence of a non-null value for CASE inside AGR which triggers the blocking. For this, I propose *AGRCASE, ranking the highest of all constraints:

$$(219) \quad *AGRCASE: \text{ For } g \neq \emptyset: * \left[GF_{agr} \left[AGR \left[CASE \quad g \right] \right] \right]$$

I will shown later that *AGRCASE is also relevant for explaining the data of English locative inversion and Icelandic verbal agreement in “quirky case” constructions.

The situation now is that in cleft sentences where the clefted element is not eligible for agreement with the copula there is no agreement at all, as I noted before, because the embedded clause is not eligible either. So a principle is needed for 3rd person singular to be the “last resort” set of agreement features of the *matrix* AGR. (AGRDEF will be later modify for Icelandic in order to include gender information relevant for that specific language.)

$$(220) \quad AGRDEF: \left[AGR \quad \left[\begin{array}{ll} PERS & 3 \\ NUM & SG \end{array} \right] \right]$$

The ranking of constraints for a copular inversion language becomes the following one now:

$$(221) \quad CLTRANS \gg *AGRCASE \gg AGR-SHARE \gg COSUBJAGR \gg \\ MARKEDAGR \gg SUBJAGR \gg AGRDEF$$

In a non-copular inversion language, like English, SUBJAGR ranks higher than COSUBJAGR, so cleft sentences are predicted to always agree with the expletive *it* that introduces them.

Let us now observe how the optimizations in the different cases result with this new ranking. First, let us analyze the case of a cleft sentence where the copula agrees with the clefted element. Now that AGR-SHARE is part of the *Eval* component, there are three candidates to take into account: the one in which the copula agrees with the clefted element, the one in which the copula agrees with the features of the embedded verb, and the one in which it has 3rd person singular features “by default”. The optimization for (222) is shown in Tableau 4.1.²

$$(222) \quad \begin{array}{l} \text{a. } \text{Són} \quad \text{els} \quad \text{nens} \quad \text{que} \quad \text{cuidaré} \\ \text{be.pres.3.pl} \text{ the.m.pl} \text{ child.m.pl} \text{ REL} \text{ take.care.of.fut.1.sg} \\ \text{'It is the children that I will take care of'} \\ \text{b. } * \text{Sóc} \quad \text{els} \quad \text{nens} \quad \text{que} \quad \text{cuidaré} \\ \text{be.pres.1.sg} \text{ the.m.pl} \text{ child.m.pl} \text{ REL} \text{ take.care.of.fut.1.sg} \end{array}$$

²For formatting reasons, the names of the constraints have been shortened. CLTR is CLTRANS; *ACASE is *AGRCASE; A-SH is AGR-SHARE; COSAGR is COSUBJAGR; APERS is AGRPERS; ANUM is AGRNUM; SAGR is SUBJAGR; and ADEF is AGRDEF.

- c. *És els nens que cuidaré
be.pres.3.sg the.m.pl child.m.pl REL take.care.of.fut.1.sg

	CLTR	*ACASE	A-SH	CoSAGR	MARKEDAGR		SAGR	ADEF
					APERS	ANUM		
☞ (222a)					*		*	*
(222b)	*!						*	*
(222c)			*!					

Tableau 4.1: Optimization for (222)

The reader should notice that (222c) does not violate constraints COSUBJAGR, MARKEDAGR nor SUBJAGR precisely because there is no agreement. Those constraints place restrictions over features of a grammatical function which the verb agrees with, so these may only be violated in presence of actual agreement.

For a paradigm like the one that follows, the optimization is the one shown in Tableau 4.2. The candidates are the one with default agreement, the one in which the copula agrees with the DP inside the PP and the one in which the copula agrees with the embedded verb:

- (223) a. És a mi que volen matar
be.pres.3.sg to I.obl REL want.pres.3.pl kill.inf
 ‘It is me (that) they want to kill’
- b. *Sóc a mi que volen matar
be.pres.1.sg to I.obl REL want.pres.3.pl kill.inf
- c. *Són a mi que volen matar
be.pres.3.pl to I.obl REL want.pres.3.pl kill.inf

	CLTR	*ACASE	A-SH	CoSAGR	MARKEDAGR		SAGR	ADEF
					APERS	ANUM		
☞ (223a)			*					
(223b)		*!				*	*	*
(223c)	*!				*			*

Tableau 4.2: Optimization for (223)

An interesting application of this is that it explains cross-linguistic differences between Spanish and Catalan regarding the agreement of the copula with a clefted object. It is well-known that in Spanish human (or animate, even metaphorically) direct objects require the presence of the preposition *a* ‘to’, while in Catalan the

preposition is barred from direct objects except for certain pronouns, as has been shown before. When a human or animate direct object is clefted, it not only keeps the preposition, but repeats it in front of the headless relative clause:³

(224) *Spanish*

- a. Fue a las vecinas a las que conocí
be.past.3.sg to the.f.pl neighbor.f.pl a the.f.pl REL meet.past.1.sg
 ‘It was the girls next door that I met’
- b. *Fueron a las vecinas a las que conocí
be.past.3.pl to the.f.pl neighbor.f.pl a the.f.pl REL meet.past.1.sg
- c. Fueron las rosas las que corté
be.past.3.pl the.f.pl rose.f.pl the.f.pl REL cut.past.1.sg
 ‘It was the roses that I plucked’
- d. *Fue las rosas las que corté
be.past.3.sg the.f.pl rose.f.pl the.f.pl REL cut.past.1.sg

(225) *Catalan*

- a. Van ser les veïnes que vaig conèixer
be.past.3.pl the.f.pl neighbor.f.pl REL meet.past.1.sg
 ‘It was the girls next door that I met’
- b. *Va ser les veïnes que vaig conèixer
be.past.3.sg the.f.pl neighbor.f.pl REL meet.past.1.sg
- c. Van ser les roses que vaig tallar
be.past.3.pl the.f.pl rose.f.pl REL cut.past.1.sg
 ‘It was the roses that I plucked’
- d. Va ser les roses que vaig tallar
be.past.3.sg the.f.pl rose.f.pl REL cut.past.1.sg

In Catalan, as has already been explained, the lack of any preposition makes the clefted object absolutely transparent for the copula to agree with it. Agreeing with *les veïnes* is not only possible, but also obligatory because it ranks higher than the feature-less embedded clause. In Spanish, however, the cross-linguistic variation does not originate from a different ranking of constraints, but from a difference in the c-structure of the construction that corresponds to a difference in the f-structure (i.e. the presence of CASE), but only in cases in which the preposition

³Spanish lacks real cleft sentences; all of them are pseudocleft sentences where a compound relative pronoun (D⁰ + relative pronoun) is used or *wh*-cleft constructions where a *wh*-pronoun is used. Despite of this, the Spanish linguistics literature calls the pseudocleft constructions *oraciones escindidas*, namely “cleft sentences”; cf. Plaza de la Ossa (2008).

is obligatory, e.g. (224a) vs. (224b). When the clefted element is not human or not felt as an animate entity, Spanish behaves exactly as Catalan.

Apart from the good signal that a hypothesis that has been originally developed for copular inversion can be applied for another phenomenon, the discussion found in §4.4 about instances of non-subject agreement in Icelandic and English shows that the set of constraints that have been proposed is strong enough to cover different phenomena in different languages. This proves that copular inversion, cleft sentences, and the other phenomena to be discussed below are part of a bigger picture, namely that subject-verb agreement is just a particular subset of agreement even in languages that are traditionally characterized as “subject-verb” agreeing.

4.3 Dargwa agreement patterns

The languages of the Dargwa family show agreement patterns that are an interesting case of extension of the present analysis of copular inversion. Belyaev (2013) (whose work I take the data for this section from) shows that in certain Dargwa dialects transitive verbs agree in person either with their subject or with their object depending on a Person-only Hierarchy that is quite similar to the proposed Person-Number Hierarchy in this work for copular inversion. Number in Dargwa is closely tied to gender⁴ and verbs always agree in number-gender with the DP that is in the absolutive case, so it can be safely left aside from this discussion. In this section I provide evidence that both, this Dargwa phenomenon and copular inversion, can be unified under the OT-LFG constraints proposed here as two cases of non-subject agreement.

First of all, it must be noted that some Dargwa dialects only allow for person agreement with the subject. These dialects show little interest for this work, as these are easily included in the group of languages where SUBJAGR ranks higher than all other agreement constraints. Some of these dialects, however, show the possibility of optional non-subject agreement that I will comment on later.

The importance of Dargwa lies on those dialects in which verbs agree in person with the constituent that ranks highest in its sentence, without any trace of coreference, in transitive sentences. The relevant dialects are some variants of Shiri, Icari, Ashti, Aqusha (Standard Dargwa), among others. The Shiri data shown below have been taken from Belyaev (2013):

(226) du-dil ʔa^hli us-a-di
 I-erg Ali m.catch-pfv-pret-1

⁴In the singular, Dargwa shows three genders, the masculine, the feminine and the neuter. In plural, however, there are only two genders, a human and a non-human gender.

‘I caught Ali’

- (227) ʔa¹li-dil du us-a-di
Ali-erg I m.catch-pfv-pret-1
 ‘Ali caught me’

In (226) the verb agrees with the ergative subject 1st person singular pronoun, while in (227) it also agrees with the 1st person singular pronoun, which in this case is the object of the sentence, not the subject. The situation is, therefore, the same as found in copular inversion, but with a transitive verb meaning ‘to catch’ in this case. The fact that prominence-driven non-subject agreement occurs in Dargwa with transitive verbs must be accounted for in a way that does not resort to coreference, as there is no coreference between Ali and the speaker in either of the sentences above.

This is explained by Belyaev (2013) by means of an OT-LFG framework which seeks to constrain the mapping between the f-structure and the so-called m-structure (*morphological structure*, Frank and Zaenen, 2004), which is in charge of representing morphological information in a way that isolates it from information that is specific to the functional level. The reason that Belyaev (2013) cites for using an additional level of representation is because Dargwa has constructions that are exclusively oriented to the subject, regardless of its morphological case (i.e. ergative or absolutive) and regardless of which constituent the verb agrees with in case the sentence is transitive. The conclusion the author draws is that, given that person agreement control in Dargwa shows no other effects in any other area of grammar, then its grammatical function is irrelevant.

The problem with that view is that a way can be shown to explain the same results without resorting to a new level of representation. Grammatical functions can be shown play a role in the person agreement system of Dargwa. For instance, oblique arguments never agree with the verb in Dargwa, which forces to restrict the possible candidates to just SUBJ and OBJ. This renders Belyaev’s (2013) constraints, described below, to be easily translatable to those proposed here for copular inversion. The m-structure attribute TH refers to the person-number features of the constituent the verb agrees with; as usual, S below refers to intransitive subjects, A to transitive subjects, and O to objects.

- (228) 1TH:
 TH is 1st person
- (229) 2TH:
 TH is 2nd person
- (230) TH-PIV:
 TH is S/O (= absolutive case)

- (231) TH- \widehat{GF} :
 TH is A/S (= ergative case)

The TH m-structure function is absolutely equivalent to the AGR bundle that is proposed in the f-structure in the analysis defended in this work. The theoretical device that makes it possible for this hypothesis to explain the data from Dargwa is the TH-PIV constraint, which relies on the idea that there is a “pivotal” grammatical function, which is the one the verb agrees with, which can be either the subject or the object. Therefore, TH-PIV is the constraint that allows the verb to agree with a non-subject, similar to my COSUBJAGR, but without taking coreference into account. On the other hand, TH- \widehat{GF} is absolutely equivalent to SUBJAGR, but the latter defined for f-structure. The constraints 1TH and 2TH play exactly the same role as MARKEDAGR, namely determining which is the grammatical function the verb agrees with.

For the Dargwa dialects where the verb agrees with the grammatical function that shows the most prominent person features, the ranking hierarchy of constraints proposed by Belyaev (2013) is the one that follows:

- (232) 2-OVER-1 RANKING:
 2TH \gg 1TH \gg TH-PIV, TH- \widehat{GF}

For those dialects in which the verb may freely choose between 1st and 2nd person the ranking is the one shown below:

- (233) 2-EQUI-1 RANKING:
 2TH \vee 1TH \gg TH-PIV, TH- \widehat{GF}

Assuming the hypotheses adopted in this work, the ranking available is therefore easily translatable into the following one:

- (234) MARKEDAGR \gg ABSAGR, SUBJAGR

Remember that the AGR-SHARE requires AGR to unify with the AGR of a GF in the f-structure, so that third person agreement is guaranteed as the outcome when MARKEDAGR is violated due to the absence of any constituent in the 1st or 2nd person. In that case, which only arises when both constituents are in the 3rd person, the verb agrees with either the subject or the object in the 3rd person. ABSAGR should be defined as below, namely as a constraint that requires AGR to unify with a GF whose case is absolutive, so that AGR must have that case and never another one (GR_{agr} is again the GF which AGR unifies with):

- (235) ABSAGR: $\left[GF_{agr} \left[AGR \left[CASE \quad ABS \right] \right] \right]$

As already said above, when both the subject and the object are in the 3rd person, the sentence redundantly complies with both ABSAGR and SUBJAGR. It is irrelevant to know which constituent the verb agrees with if both are in the 3rd person, even if they differ in gender-number features. An example of this is shown for Ashti (Belyaev, 2013):

- (236) pat'imat-li rasul us-aj
Patimat-erg Rasul m.catch.pfv-pret.3
 'Patimat caught Rasul'

It is only person agreement which is based on prominence, whereas the verb always agrees in gender-number the argument expressed in the absolutive case. Therefore, in (236) the verb agrees in gender-number with *rasul* in the masculine(-singular),⁵ while the person information is just 3rd person, which is constrained by the prominence hierarchy and unconstrained regarding grammatical function. The conclusion to be drawn is that in (236), the verb agrees in the 3rd person with either the subject or the object, and that it is actually irrelevant to determine which one it really agrees with.

It is evident that the constraints that are grouped under MARKEDAGR must be redefined to match the data of the dialects where the ranking is 2-OVER-1. The 2-EQUI-1 ranking is already covered by the combination of AGRPERS and AGRNUM, as defined for my account of copular inversion. This implies accepting that the *concept* of MARKEDAGR is universal, i.e. that there is always a ranking of precedence of features regarding agreement, but the actual constraints might be language-specific.

- (237) MARKEDAGR (For 2-OVER-1 Dargwa):
- a. AGR2PERS: $\left[\text{AGR} \left[\text{PERS} \ 2 \right] \right]$
 - b. AGR1PERS: $\left[\text{AGR} \left[\text{PERS} \ 1 \right] \right]$
 - c. AGR2PERS \gg AGR1PERS

Agreement in the 3rd person is only possible when there is no other element that is higher in the hierarchy. There is no number information in these constraints because of the distribution of number features, which is tied to gender in Dargwa and always agrees with the absolutive constituent in the sentence, as explained earlier.

There are Darwga dialects in which subject agreement is always available, but, if the object is higher in the person hierarchy, object agreement is also allowed.

⁵Remember, as noted above, that the plural organizes nouns in human vs. non-human.

Data from a subdialect of the Shiri dialect, which Belyaev (2013) names “Shiri-3”, follow:

- (238) a. du-dil ?u r-uc-a-di
I-erg you f-catch.pfv-pret-1
 ‘I caught you.f.sg’
 b. du-dil ?u r-uc-a-t:i
I-erg you f-catch.pfv-pret-2
 ‘I caught you.f.sg’
 c. ?u-dil du r-uc-a-t:i
you-erg I f-catch.pfv-pret-2
 ‘You.f.sg caught me’
- (239) a. du-dil pat’imat r-uc-a-di
I-erg Patimat f-catch.pfv-pret-1
 ‘I caught Patimat’
 b. pat’imat-li du uc-aj
Patimat-erg I m.catch.pfv-pret-3
 ‘Patimat caught me’
 c. pat’imat-li du uc-a-di
Patimat-erg I m.catch.pfv-pret-1
 ‘Patimat caught me’

The data above shows how, for example, in (238), subject agreement is always possible, but object agreement is only when the object is in the 1st person, which ranks lower than the 2nd in this dialect, i.e. in (238a) and (238b). The same can be observed in (239): object agreement is only allowed in (239c) as the 1st person ranks higher than the 3rd.

For these dialects, Belyaev (2013) proposes an underspecified order of constraints that allows these dialects to have two different interchangeable rankings, following a formalism established by Anttila and Cho (1998). For the Shiri-3 dialect, the pair of rankings proposed by Belyaev (2013) is:

- (240) TH- \widehat{GF} \gg TH-PIV
 2TH \gg 1TH

The underspecified ranking above only claims that TH- \widehat{GF} \gg TH-PIV and 2TH \gg 1TH, but makes absolutely no claim about the ordering between, e.g. 1TH and TH-PIV. This yields several theoretically possible rankings, but their effects can be reduced to just two groups, namely orderings where TH- \widehat{GF} dominates and orderings where 2TH dominates. The former group corresponds to absolutive-agreement in these Dargwa dialects and the latter, to person-based agreement. In

practice, the best way to represent them in a way that is conceptually sound is the one that follows in (241), as it can be “reduced” to the more abstract versions using MARKEDAGR in (242):

- (241) a. TH- \widehat{GF} \gg TH-PIV \gg 2TH \gg 1TH
 b. 2TH \gg 1TH \gg TH- \widehat{GF} \gg TH-PIV
- (242) a. SUBJAGR \gg ABSAGR \gg MARKEDAGR
 b. MARKEDAGR \gg SUBJAGR \gg ABSAGR

The interesting point here is that grouping the constraints over the person of AGR allows us to have a more intuitive set of constraints even though other permutations might be possible and yield the same predictions for these data. Having an abstract, expressive set of principles where a concept like MARKEDAGR encompasses constraints that are closely related⁶ is a more desirable than a working theory that is difficult to make sense of from a conceptual point of view. A group of constraints like MARKEDAGR is more natural to us than dealing with two separate yet suspiciously similar constraints. Obviously, this does not modify the nature of the hypothesis, but is equivalent to reorder the terms of an algebraic expression in order to make it easier to discover new ways to simplify it further.

The ability to “manipulate” a concept like MARKEDAGR proves to be much better than dealing with its components separately. The interesting consequence of this is it shows that COSUBJAGR is just a special version of TH-PIV that further restricts the possible grammatical functions the verb can agree with to those that are coreferential to the subject (and the subject itself). Following this, copular inversion proves that the prediction by Belyaev (2013) that there must exist languages where TH-PIV ranks higher to the actual prominence constraints to be right.

The aim of this theoretical exercise is to show that the basic data of Dargwa can be explained by means of the concept of AGR in the f-structure in a similar way as copular inversion can be explained. In fact, Dargwa person-based agreement should be treated as a particular case of agreement based on the PNH and the superficial account of theoretical compatibility between my model and Belyaev’s (2013) should be a first step towards a unification of the accounts of copular inversion, Dargwa-like phenomena and other phenomena of non-subject agreement where person as well as number take over the assignment of grammatical functions.

⁶They might be considered to be “closely related” because they affect the same set of features just changing their values. It may be even more intuitive to talk about these constraints having the same “function” (in this specific context, “resolve agreement features”) within the linguistic system of these specific languages (Coseriu, 1973, 1981), but this type of claims are more suited to a philosophical account of the nature of grammar rather than an account of its formal properties.

4.4 Oblique subjects: Icelandic and English

The phenomena discussed above are based on person or number: both cleft sentences in Romance languages and German, and Dargwa person-based agreement show the possibility that verbs may agree with a constituent that is not the subject of the sentence. This makes these two phenomena quite similar to copular inversion, which is also triggered by the presence of a set of person-number features that ranks higher than the set of features of the subject.

There is however a different phenomenon, namely clauses with oblique subjects, where the verb *must* agree with a non-subject constituent because the subject is found in an oblique case (i.e., non-nominative case). Icelandic and Hindi are the languages in which this phenomenon has received most attention and it is in the scientific literature about these languages where the label “quirky case subjects” arose for non-nominative subjects that do not allow agreement with the verb of the clause. However, the phenomenon is not really restricted to languages where case marking is morphologically overt; as will be shown, English locative inversion – and inversion due to *there* insertion – are also instances of this type of non-subject agreement. Given that the “quirky case subject” label is so tied up to the notion that there is morphological case as found in Icelandic or Hindi, I propose using the label “oblique subjects” as the preferred one for making reference to those subjects that verbs are barred to agree with because of grammatical case, regardless whether the language morphologically shows it or not.

It is uncontroversial that oblique subjects in Icelandic are indeed subjects (Andrews, 1982; Boeckx, 2000; Zaenen et al., 1990, among others). They can be raised, may be the antecedent of reflexives, are postposed to an immediately postverbal position in case another constituent becomes topicalized, and in general fulfill all properties that nominative subjects show except for agreement.

As already said before, the presence of an oblique subject triggers non-subject agreement with a non-subject nominative constituent that may be found in the sentence if there is one.⁷ Some examples follow of classical oblique subject constructions, taken from Zaenen et al. (1990):

(243) Konunginum voru gefnar ambáttir
king.m.sg.dat.def be.past.3.pl give.part.f.pl slave.f.pl
 ‘The king was given maidservants’

(244) Ambáttin var gefin konunginum
slave.f.sg.def be.past.3.sg give.part.f.sg king.m.pl.def
 ‘The slave was given to the king’

⁷It is highly improbable if not absolutely impossible that there might be more than one non-subject nominative constituent, so it is safe to ignore the possibility of any conflict between more than one non-subject nominative constituents in the same sentence

In case (243) the verbal complex agrees with the object in the 3rd plural and the feminine, but in (244) the subject is not in an oblique case, thus forcing the verb to agree with the subject.

The situation here resembles the situation that was to be avoided regarding Spanish and German cleft sentences, namely to bar unification of AGR with a constituent that has a non-null case attribute. However, there are no hints of agreement being controlled by any hierarchy of person-number features; except for the case of oblique subjects, Icelandic behaves as English as a language where SUBJAGR ranks higher than MARKEDAGR and COSUBJAGR. Therefore, the ranking of constraints for a language like this must be the one that follows:

(245) *AGRCASE \gg SUBJAGR \gg MARKEDAGR, COSUBJAGR

The difference with the hypothesis proposed in §4.2 is that in Icelandic case is lexical, not imposed by any preposition. It is assumed, as earlier, that nominative consists of the lack of a CASE attribute. Consequently, nominative constituents are the only ones that are able to comply with *AGRCASE. For ease of exposition, the lower ranking constraints MARKEDAGR (AGRNUM and AGRPERS) and COSUBJAGR will be ignored in the optimization tableaux that follow in the present section, as they are irrelevant for the choice of the optimal candidate.

Therefore, for a paradigm like the one below, the optimization is shown in Tableau 4.3:

- (246) a. Konunginum voru gefnar ambáttir
king.m.sg.dat.def be.past.3.pl give.part.f.pl slave.f.pl
 ‘The king was given maidservants’
- b. * Konunginum var gefinn ambáttir
king.m.sg.dat.def be.past.3.sg give.part.m.sg slave.f.pl

	*AGRCASE	SUBJAGR
☞ (246a)		*
(246b)	*!	

Tableau 4.3: Optimization for (246)

There is an interesting case in Icelandic: the verb must agree in the 3rd singular (the participle, neuter singular) when its only argument is an oblique subject, such that there is no other constituent available in the nominative the verb could agree with (taken from Zaenen et al., 1990):

- (247) Þeim var hjálpað
they.dat be.pres.3.sg help.part.n.sg
 ‘They were helped’

In this case AGR-SHARE (AGR must unify with some GF) is not satisfied; AGR is not unified with any constituent, yet the sentence is grammatical. In Icelandic, it is found that this constraint ranks lower than *AGRCASE, as shown in (250) and exactly as in Catalan for cleft sentences. In these cases, default agreement also arises, so resorting to AGRDEF seems to be the best option. However, this constraint must be adapted so that it covers the correct gender information for Icelandic, namely that default agreement always shows neuter gender features:

- (248) AGRDEF: $\left[\begin{array}{c} \text{AGR} \left[\begin{array}{cc} \text{PERS} & 3 \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{N} \end{array} \right] \end{array} \right]$

- (249) *AGRCASE \gg AGR-SHARE \gg SUBJAGR \gg AGRDEF \gg
 MARKEDAGR, COSUBJAGR

In the Tableau 4.4 the optimization is shown for the paradigm (250), adapted from Zaenen and Maling (1990).

- (250) a. Mér býður við setningafræði
I.dat nauseate.pres.med.3.sg by syntax
 ‘I am nauseated by syntax’
 b. * Mér býð við setningafræði
I.dat nauseate.pres.med.1.sg by syntax

	*AGRCASE	AGR-SHARE	SUBJAGR	AGRDEF
☞ (250a)		*	*	
(250b)	*!			*

Tableau 4.4: Optimization for (250)

Interestingly, this analysis explains locative inversion in English if it is assumed, following Bresnan (1994), that *from the marshes* is the subject of sentences like (251a):

- (251) a. From the marshes come our enemies
 b. From the marshes comes our enemies

The case of *from the marshes* is not nominative due to the preposition setting an oblique value to the CASE attribute, as was shown earlier in 4.2. The exact value of the CASE attribute is not relevant, as *AGRCASE bars agreement with any constituent that has some case, whatever it might be.

The optimization for (251) is shown below, using the same ranking that has been applied above for Icelandic constructions with oblique subjects.⁸ Again, MARKEDAGR and COSUBJAGR are ignored from the discussion for ease of exposition.

	*AGRCASE	AGR-SHARE	SUBJAGR	AGRDEF
☞ (251a)			*	*
(251b)	*!			

Tableau 4.5: Optimization for (251)

The result is exactly the one that Icelandic yields in its oblique subjects constructions. English locative inversion is another case of non-subject agreement that can be explained as case-controlled agreement, where nominative is more prominent than all other cases with respect to verb agreement, regardless of the grammatical function of the constituent the verb agrees with. More interestingly, this brings together these phenomena with Spanish cleft sentences, where *AGRCASE is also necessary to block agreement with PP “clefted” elements.

4.5 A summary and the way for further research

The phenomena that have been briefly described in this chapter show that the OT-LFG analysis defend in this work for copular inversion is easily adapted to deal with several non-subject agreement phenomena, leading to the conclusion that further research should try to bring all of these and other similar grammatical phenomena together.

The most interesting conclusion that can be drawn from these data is, for sure, that AGR-SHARE is probably better postulated as a violable principle, meaning that agreement may be actually barred under certain conditions. This does not modify the analysis of copular inversion in Chapter 3, as per the high ranking of the aforementioned constraint, and it allows for establishing an interesting relation between the paradigms of Catalan cleft sentences when agreement is not possible

⁸GF-AGR and AGRDEF have exactly the same position the ranking in English as in Icelandic, as there are cases of Internet slang that may be analyzed as cases of default agreement: data like *Me knows/*know* behave exactly like the Icelandic cases described above.

and the phenomena related to oblique case subjects in Icelandic, for instance. This strengthens the observation that copular inversion is a natural member of the family of non-subject agreement phenomena.

In summary, copular inversion consists of person-number-based prominence constrained to GFs that are coreferential with the subject; Dargwa person-based agreement is actually the same, but unconstrained with respect to coreference; Icelandic and English oblique subjects reveal that agreement in these languages is actually case-based, where nominative takes precedence over all other grammatical cases, subject agreement being the most widespread, yet particular instance of nominative agreement.

All these phenomena are nothing but different cases of prominence-based agreement. The only language-specific aspect is which are the criteria that form the prominence scale against which constituents are compared. OT proves to be an interesting framework to implement the different scales so that the linguistic data is predicted, but also to reveal cross-linguistic similarities that otherwise would probably remain hidden.

Chapter 5

Conclusions and summary

The findings of this research can be summarized in a very simple statement: subject-verb agreement is a particular instance of prominence-based agreement, even in languages that are traditionally analyzed as having their verbs always agree with the subject of sentence. It has been found that what is found as the norm may be just an accidental consequence of failing to meet other prominence criteria that would render another grammatical function the function the verb would agree with. Along these lines, then, subject-verb agreement in languages that show copular inversion is just a particular case of the more general cosubject-verb agreement phenomenon; the instances of Dargwa subject-verb agreement in the dialects studied by Belyaev (2013) are just particular cases of person-based agreement in which the verb just happens to agree with the subject; and the instances of English and Icelandic subject agreement are just particular cases of case-based agreement in which the nominative constituent just happens to be the subject.

Non-subject agreement arises in Spanish, Catalan and German only in copular sentences because the copula is the only verb that may trigger a coreferential interpretation of both subject and predicate. When a grammatical function is coreferential with the subject or is the subject itself, it is considered a cosubject, so while the copula may have two cosubjects, all other kinds of verbs only show one, namely the subject. This explains why non-copular sentences always have their verb agree with the subject, because the subject is its only cosubject. This implies that these languages, which are traditionally considered subject-verb agreement languages, are actually cosubject-verb agreement languages.

When two cosubjects are available, the data shows that the grammar of copular inversion languages invariably choose which grammatical function the copula must agree with by virtue of the person-number features of the competing DPs. The Person-Number Hierarchy, implemented in my OT-LFG framework under the constraint “bundle” MARKEDAGR, yields that the copula will always agree with the DP that is in the 1st or 2nd person; if no constituent is available with those

features, it will with the one that is in the 3rd plural; agreement in the 3rd person singular will only be possible if both DPs have those exact features. In case both DPs have features that rank equally according to the PNH, the copula invariably agrees with the subject.

There are cases, as shown in §3.4.3, where the copula does not express coreference between the subject and the predicate, but, for instance, an indirect identification between both. In these cases the data shows that the copula only may agree with the subject. This is expected: if the predicate is not coreferential, the subject is the only available cosubject and, therefore, the only eligible grammatical function the copula can agree with, analogously to any other transitive or intransitive verb.

There are, however, languages where copular inversion is not found, e.g. English. In these languages copular sentences still have two cosubjects, but the requirement to agree with the subject is stronger than the one requiring the verb to agree with any cosubject. This led me, from a theoretical standpoint, to choose an OT-based framework to explain the cross-linguistic variation that is found. The alternative rankings that are possible for all three constraints COSUBJAGR, SUBJAGR, and MARKEDAGR, predict languages in which copular inversion is found (COSUBJAGR ranking highest), others in which is not (SUBJAGR ranking highest), and languages in which person-number features take over as the agreement criterion, over grammatical function (MARKEDAGR ranking highest, namely the case of Dargwa dialects).

Also from a theoretical standpoint, this work shows that the standard LFG vision of verbal agreement falls short to explain a phenomenon like this. The standard LFG representation of verbal agreement consists in the verb specifying the features of the relevant grammatical functions it is stated to agree with (the subject and other grammatical functions). Prominence-based agreement phenomena require knowing all relevant grammatical functions that are part of the sentence in order to predict which one the verb must agree with. This makes it impossible to specify the agreeing function or functions beforehand in the lexical entry. Therefore, the function-independent AGR “feature bundle”, in which the person-number features of the verb are represented, is proposed, together with the GF-AGR PRINCIPLE that requires it to be unified with some grammatical function, so that agreement is always guaranteed (except for those cases of default agreement discussed in §4).

As said before at the beginning of this chapter, the phenomena discussed in §4 show that the hypothesis defended in §3 is extensible outside copular inversion itself. Additional principles are required –e.g. *AGRCASE, AGRDEF, and the reconsideration of the violability of GF-AGR– to cover prominence-based agreement phenomena that are based neither on person and number features nor on the presence of coreference, but the kernel hypothesis is shown to be applicable with-

out further modification: bundling agreement features in a function-independent “bundle” and adopting that the agreeing grammatical function is determined evaluating the whole f-structure, not in the lexical level.

In summary, this research opens the way for an integrated study of a typology of phenomena that have been studied in isolation so far. Leaving aside the assumption that it is the verb that determines the agreeing grammatical function in favor of the assumption that it is the grammar that does it is the key to simplify the account of phenomena in which the verb does not agree with its subject. The openness of the proposed theoretical system allows for explaining similar phenomena that might be based on other factors that have not been considered in this work, as well as reanalyzing already known phenomena in a much simpler way. The advantages of the analysis provided here appear to be evident and desirable.

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