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“Contrastive topic and focus in Brazilian Portuguese:
Ordering effects and interpretation”

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Abstract (English)

This dissertation explores the interpretive effects of the ordering restrictions between contrastive topic and focus in Brazilian Portuguese.

In the first part of the dissertation, I put forward new data showing that: 1) A contrastive topic can both precede and follow a focus in base position, and move to a position preceding a focus; 2) A focus can precede a contrastive topic, as long as the F+CT order corresponds to the canonical order of the constituents in the sentence. A moved focus, however, can never precede a contrastive topic. These observations for Brazilian Portuguese are strikingly parallel to the ones made for Dutch by Neeleman and van de Koot (2008), which was the first work to propose that focus movement marks its sister as background.

The second part of the dissertation argues that the ordering restrictions observed earlier receive a natural explanation if one assumes that contrastive topics are simply F-marked phrases in a specific configuration, following Constant (2014). I then discuss sentences with two F-marked phrases, which show that: 1) Both F-marked phrases can be interpreted as focus *in situ*—resulting in double focus sentences; 2) If one F-phrase moves to a position c-commanding another F-phrase, the moved F-phrase is interpreted as contrastive topic, which can give rise both to the configuration CT+F and to the configuration F+CT; 3) An F-phrase under an *in situ* F-phrase may move and still be interpreted as focus, as long as the higher F-phrase stays *in situ*.

With this data in mind, I propose that the sister of a moved F-marked phrase must have only a singleton F-alternative (i.e., only its ordinary semantic value). This proposal gives proper semantic content to the generalization that “focus movement marks its sister as background”; to “be marked as background” is translated into “has only a singleton F-alternative”. In the case of sentences with a contrastive topic interpretation, this is achieved by the insertion of the CT-operator (Constant 2014), whose output is a singleton set; thus, in compliance with my proposal.

Abstract (Deutsch)

Diese Dissertation untersucht die interpretativen Effekte der Abfolgebeschränkungen, denen Fokus und kontrastives Topik im brasilianischen Portugiesisch unterliegen.

Im ersten Teil der Dissertation stelle ich neue Daten vor, die folgendes zeigen: 1) Ein kontrastives Topik kann seine Basisposition sowohl vor als auch nach einem Fokus haben und sich an eine Position vor dem Fokus bewegen. 2) Ein Fokus kann einem kontrastiven Topik vorangehen, solange die Abfolge F+CT der kanonischen Konstituentenabfolge im Satz entspricht. Ein bewegter Fokus kann einem kontrastiven Topik hingegen nicht vorangehen. Diese Beobachtungen zum brasilianischen Portugiesisch weisen auffällige Parallelen zu den niederländischen Daten von Neeleman und van de Koot (2008) auf, die erstmals vorgeschlagen haben, dass Fokusbewegung den Effekt hat, die Schwester des bewegten Fokus als Hintergrund zu markieren.

Im zweiten Teil der Dissertation argumentiere ich, dass sich eine natürliche Erklärung für die beobachteten Abfolgebeschränkungen ergibt, wenn man mit Constant (2014) annimmt, dass kontrastive Topiks einfach F-markierte Phrasen in einer speziellen Konfiguration sind. Ich untersuche dann Sätze mit zwei F-markierten Phrasen und zeige folgendes: 1) Wenn die F-markierten Phrasen beide *in situ* bleiben, können sie beide als Foki interpretiert werden, sodass sich ein Satz mit zweifachem Fokus ergibt. 2) Wenn sich eine F-Phrase in eine Position bewegt, in der sie eine andere F-Phrase k-kommandiert, wird die bewegte F-Phrase als kontrastives Topik interpretiert, wodurch sowohl die Konfiguration CT+F als auch die Konfiguration F+CT entstehen kann. 3) Eine F-Phrase, die sich unterhalb einer zweiten F-Phrase bewegt, kann immer noch als Fokus interpretiert werden, solange die höhere F-Phrase *in situ* bleibt.

Angesichts dieser Daten schlage ich vor, dass die Schwester einer bewegten F-markierten Phrase als Fokusalternativenmenge eine Einermenge haben muss, die als einziges Element die gewöhnliche Bedeutung dieser Konstituente enthält. Dieser Vorschlag verleiht der Generalisierung, dass „Fokusbewegung die Schwester der bewegten Phrase als Hintergrund markiert“, einen konkreten semantischen Gehalt: Als Hintergrund markiert zu werden bedeutet, eine Fokusalternativenmenge zu haben, die nur ein Element enthält. Die Interpretation einer F-markierten Phrase als kontrastives Topik wird durch Einsetzung eines CT-Operators (Constant, 2014) erreicht. Dieser bildet sein Argument auf eine Einermenge ab, was im Einklang mit der vorgeschlagenen Beschränkung steht.

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CHAPTER 1

Introduction

1.1 Overview

Contrastive topics often receive a specific marking across languages. In Brazilian Portuguese (BP) this marking is a distinctive intonational pattern, and in many cases, a syntactic operation where the contrastive topic is moved to a sentence-initial position. Consider the Brazilian Portuguese example below:

- (1) A: Com quem o Paulo saiu ontem?
‘Who did Paul go out with yesterday?’
- B: **O Paulo** eu não sei. **O João** saiu com a Rosa.
the P. I not know the J. went.out with the R.
‘Paulo I don’t know. João went out with Rosa.’ (adapted from Menuzzi and Roisenberg 2010, p. 236)

The two bolded phrases in (1) – *o Paulo* and *o João* – are interpreted as CONTRASTIVE TOPICS. There are a few important things to note about the contrastive topics in (1): First, Brazilian Portuguese speakers pronounce such phrases with a special intonation: a rising contour or, more precisely: a rise-fall-rise contour. Moreover, *o Paulo* is not in its canonical position, but occupies a sentence-initial position – in the left periphery (I will talk more about this shortly).

Finally – and perhaps most importantly to the purposes of this dissertation – the sentence with a contrastive topic has an effect of “partial resolution” (Büring 2003): a sentence with contrastive topic resolves the issue related to the contrastive topic, but at the same time fails to resolve another issue. That is, in the first sentence, B gives the information she has about with whom Paulo went out yesterday – that she “does not

know” – but she does not give any information about João. If the second sentence were not stated, we would simply not know about with whom João went out.

At the same time, the specific answers to A’s question are the FOCUS of these sentences. In simple terms, the focus is the new information in response to a question, and it corresponds to the *wh*-element in the question. In (1), the focus of the first sentence is *don’t know* and, in the second sentence, *with Rosa*. So, both a contrastive topic and a focus occur in the same sentence, and they relate to each other.¹ We can say, in broad terms, that the focus is the information given about the contrastive topic.

Although I just presented a Brazilian Portuguese example in (1), there are few works that investigated contrastive topics – their meaning and realization – in this language. The study of contrastive topic has a long tradition in the Germanic languages – the most influential works build on data from English, German and Dutch (Büring 1997, 2003; Constant 2014; Jackendoff 1972; Neeleman and van de Koot 2008). In these works, the meaning of a contrastive topic is derived in relation to that of a focus, for which much of the relevant literature equally comes from the Germanic tradition (Jackendoff 1972; Rooth 1992).

On the other hand, information structure in general – contrastive topic and focus included – have also received much attention in Romance languages in works subscribing to the Cartographic Project (Rizzi 1997). Only few works, however, have proposed to adopt the formal theories tailored for Germanic languages to account for the interpretive effects in a Romance language. My broader aim with this dissertation is, therefore, to study contrastive topic and focus in Brazilian Portuguese by adopting the premises from focus and contrastive topic semantics (Büring 2003; Constant 2014; Rooth 1992).

We can now zoom in to what will be the main concern of this dissertation: the (im)possible orders of a contrastive topic and a focus in a sentence with respect to each other, and the interpretive effects to which these orderings may give rise. In (1), for instance, the contrastive topic precedes the focus in both sentences. A CT+F order (in which the contrastive topic (CT) precedes the focus (F)) is generally the most common order in the world’s languages, to the point that it has been argued that some languages, like German, only allow for a focus to *follow* the contrastive topic, and never the other way around – i.e. a focus cannot precede a contrastive topic in German (cf. Büring 1997).

Other languages, however, allow for a focus to precede a contrastive topic: this is the

1 Note that there are, however, sentences with a contrastive topic only, that is, without a focus. Those have been referred to as the elements associated to the “rise-fall-rise” tune (see Wagner 2012), or “lone contrastive topics” in Constant 2014. I will not address these cases in this dissertation. Moreover, foci can, of course, exist without a contrastive topic – see chapter 2 for precise definitions of these terms.

case in English and in Brazilian Portuguese. Consider (2) (I indicate the focus by small caps):²

- (2) A: Quem saiu com a Maria ontem?
 ‘Who went out with Maria yesterday?’
- B: Eu não sei, mas o JOÃO saiu com a **Rosa** ontem.
 I not know but the J. went.out with the R. yesterday
 ‘I don’t know, but João went out with Rosa yesterday.’

Note that the contrastive topic *with Rosa* follows the focus *João* in (2). Crucially, the context has changed: in (1), A’s question was about the object – the *wh*-element asked to *with whom* Paulo will go out – whereas in (2) the question is about the subject – the *wh*-element asks about *who* went out with Maria. Thus, as first observed by Jackendoff (1972), such a “contrastive topic-focus swap” (here between subject and object) is possible in some languages (Jackendoff discussed English examples) and, most importantly, this swap is context-dependent. That is, *João* cannot be interpreted as the focus after the question in (1), nor can *Rosa* in (2).

A crucial point that will be discussed at length in this dissertation (chapter §4) is that a F+CT configuration is only possible when this order corresponds to the canonical order of the constituents in the sentence in Brazilian Portuguese. In other words, F+CT is only possible in (2) because the focus corresponds to the subject phrase, which precedes the object – interpreted as contrastive topic in (2) – in canonical order. This is a central empirical contribution of this dissertation, since F+CT configurations have not been discussed before in the literature.

As an alternative to the contrastive topic-focus swap, it is also possible to move a phrase interpreted as contrastive topic in the sentence – without changing the context. Consider (3):

- (3) A: Quem saiu com a Maria ontem?
 ‘Who did go out with Maria yesterday?’
- B: Eu não sei, mas [com a **Rosa**] o JOÃO saiu *t* ontem.
 I not know but with the R. the J. went.out yesterday
 ‘I don’t know, but João went out with Rosa yesterday.’

In (3), *com a Rosa* ‘with Rosa’ was moved to a position in the left periphery, across the focus *João*. This syntactic operation is called TOPICALIZATION – also called “fronting” or

² The reader should bear in mind that a contrastive topic must be realized with a rising contour, even in the cases it follows the focus. More about this will be said in chapter §2.

“preposing” in some works. Such a syntactic operation, of a contrastive topic across a focus, is always possible in Brazilian Portuguese.

The other way around, however, is not possible. If a phrase interpreted as focus moves across a contrastive topic, the sentence is infelicitous. This is what we observe in (4):

- (4) A: Com quem o Paulo saiu ontem?
 ‘Who did Paul go out with yesterday?’
 B: #Eu não sei, mas [com a ROSA] o **João** saiu *t* ontem
 I not know but with the R. the J. went.out yesterday

In (4), the phrase interpreted as focus – *com a Rosa* ‘with Rosa’ – moves across the phrase interpreted as contrastive topic – *João*. I extensively demonstrate in chapter §4 that such an ordering is not possible, or, put differently, that movement of a focus across a contrastive topic is blocked in Brazilian Portuguese. This is parallel to the restriction that has been observed for the ordering of contrastive topic and focus in Dutch, by Neeleman and van de Koot (2008). The fact that two unrelated languages, Brazilian Portuguese and Dutch, present the same pattern of ordering restrictions is in itself interesting. In the present dissertation, moreover, I go one step further and investigate all the (im)possible order of contrastive topic and foci in BP, and the effects of these orderings to the interpretation. One of my research questions is why a focus cannot move across a contrastive topic.

There are two principal steps towards the answer to this question. First, following Neeleman and van de Koot (2008), I assume that focus movement does not mark the discourse function of the moved phrase itself, but rather its background. In other words, a focus does not have to move in order to be interpreted as such; if it moves, however, it does not only marks the moved constituent as focus but, most importantly, marks its sister as background. Thus, another focus cannot be within the sister of a moved focus, because, in this case, that constituent would not be marked as background. My specific proposal, in chapter §5, provides semantic content to what remained to this date a generalization from the data. Specifically, what does it mean, in semantic terms, to be “marked as background”?

My proposal builds on the TOPIC ABSTRACTION account introduced by Constant (2014). This is a configurational account of contrastive topics, in which a phrase interpreted as a contrastive topic is an F-marked phrase (as in Rooth 1985, 1992) in a specific syntactic configuration. Specifically, the phrase interpreted as contrastive topic is combined with a special abstraction operator – dubbed by Constant the “CT operator” – in the left periphery of the sentence. The CT operator has the effect of creating contrastive topic

meanings (i.e., sets of questions) directly in the focus semantic dimension (Constant 2014, p. 5), and does not need to assume a CT-mark for contrastive topic phrases, as the model of contrastive topic interpretation from Büring (2003) does.

One advantage of adopting an analysis of contrastive topic sentences in terms of the topic abstraction is that we can develop an explanation for which orderings of focus and contrastive topic are possible. In Constant’s model, the phrase interpreted as contrastive topic moves to a position above the CT operator, and the phrase interpreted as focus stays *in situ*. I argue that, by assuming that both contrastive topic and focus are F-marked phrases, and that the phrase which has moved to the CT operator is interpreted as the contrastive topic, a formal account of the observed ordering restrictions becomes available. Specifically, I submit that if an F-marked phrase moves to a position c-commanding another F-marked phrase, the moved F-marked phrase *must* be interpreted as contrastive topic.

I provide a semantic implementation to the generalization from Neeleman and van de Koot (2008) that the sister of a moved focus is “marked as background”. This is done by adopting the traditional view from Alternative Semantics (Rooth 1992), in which F-marked phrases are taken to introduce FOCUS ALTERNATIVES. My proposal is that “to be marked as background” is implemented as “may only have the SINGLETON F-ALTERNATIVE”, i.e. the meaning of a backgrounded constituent is not a set of meanings, but a set containing only one member. I argue that movement of an F-marked phrase requires that its sister have only the singleton F-alternative. This proposal allows us to derive that the sister of a moved focus never contains another element introducing alternatives in it, and gives us the basis to explain why a contrastive topic (an F-marked phrase, following Constant 2014) cannot be in the background of a moved focus.

Additionally, the singleton F-alternative requirement is satisfied in contrastive topic sentences through the specific semantic contribution of the CT operator. The focus semantic value of the CT operator is in fact a singleton set – which contains a function from individuals to sets of alternatives. Thus, the requirement that the sister of a moved F-phrase must have a singleton F-alternative is met thanks to the independently motivated semantics of the CT operator:

The proposal I introduce in this dissertation has the advantage of being general enough to account for the interpretive effects on movement structures of phrases interpreted both as contrastive topic and as focus. By building on the idea that the phrase interpreted as contrastive topic is in fact an F-marked phrase, I propose a general account of movement of F-marked phrases, which encompasses both contrastive topics and foci. Given the general nature of this proposal, a logical question concerns the semantic status of double focus

sentences, and whether those are affected by the restrictions I assume for moved F-marked phrases. Therefore, I discuss double focus constructions in §4, where I put forward novel data of double focus sentences in Brazilian Portuguese, and provide empirical arguments for my account that a moved F-marked phrase requires that its sister only introduce the singleton F-alternative.

1.2 Structure of the Dissertation

Chapter §2 introduces the theoretical assumptions I adopt in this dissertation. I first present an overview of the principal properties of focusing, based on the literature from focus realization and focus interpretation in English (Büring 2016b; Ladd 1996; Rooth 1992). The second part of this chapter concentrates on two contrastive topic theories that have been proposed in the literature: the d-trees model from Büring (2003) and the topic abstraction account from Constant (2014). In this dissertation, I adopt Constant’s model, which assumes that contrastive topics are F-marked phrases in a specific configuration; for that reason, at the end of this chapter I address the question of whether contrastive topic and focus should be treated as the same linguistic object. I argue that they do not, as their discourse appropriateness conditions are clearly different.

Chapter §3 presents the linguistic facts about Brazilian Portuguese relevant for the dissertation. I briefly introduce the main morphosyntactic properties of Modern-day Brazilian Portuguese, which has gone through important changes in comparison with European Portuguese. The two principal changes discussed are: the increase of overt subjects; the increase of null objects. Moreover, I discuss how focus is marked in Brazilian Portuguese – via nuclear pitch accent placement – and the little that is known about contrastive topics in the language – that they are realized by a rising contour, in a similar fashion to English. For the readers interested in a full picture of information structure phenomena in BP, I outline an overview of topic-marking constructions in an appendix to this chapter. The appendix – as the name suggests – is not necessary to follow the discussion in the remainder of the dissertation.

Chapter §4 identifies and illustrates the central examples of the ordering restrictions between contrastive topic and focus in Brazilian Portuguese. First, I show that the basic paradigm of the ordering restrictions in BP strikingly parallels that of Dutch observed in Neeleman and van de Koot (2008). Second, I argue that the topic abstraction account proposed by Constant (2014) is equipped to handle the interpretation of CTs and foci

in Brazilian Portuguese. Most importantly, I submit that this account gives us the necessary tools to explain the ordering effects of CTs and foci in BP. Moreover, I propose the “F-over-F Principle”, which states that, if an F-marked phrase moves to a position c-commanding another F-marked phrase, the moved F-marked phrase must be interpreted as contrastive topic. I then discuss a wide range of examples – which include sentences with a contrastive topic as well as with double focus – that confirm the predictions of the Principle.

Chapter §5 turns to my specific proposal, and spells out the derivation I assume for sentences with F-marked phrases. I provide a *semantic* analysis of the ordering effects observed in chapter §4, and accordingly propose the final version of the Principle – the Generalized F-Movement Principle: movement of an F-marked phrase requires that its sister have only the singleton F-alternative. This final version of the Principle subsumes the earlier one and, moreover, correctly derives the predictions of all *in situ* and movement structures involving F-marked phrases in Brazilian Portuguese.

For completeness, **Chapter §6** discusses the Cartographic Project (Rizzi 1997), which is the most widespread theoretical model to deal with information structure-related phenomena in Romance languages. I provide an overview of the principal properties of focus and topic interpretation under this theory, concentrating on the central assumption of Cartography: that information structure categories are interpreted in a functional projection in the left periphery. At the end of the chapter, I informally discuss whether the premises from Cartography could be employed to explain the ordering restrictions in BP (based mostly in the original discussion by Neeleman and van de Koot 2008); I submit that most of the data would remain unaccounted for under a Cartographic approach.

CHAPTER 2

Contrastive topic and focus

This chapter presents the main phenomena of contrastive topic and focus. The concepts and formalization discussed in the following sections will set the ground for the present dissertation, and should therefore be taken as a guide for the forthcoming discussion. Likewise, I will specify most of the terms that I will be using henceforth.

Section §2.1 starts out with a brief discussion on information structure, to then focus on the main discourse contexts in which contrastive are felicitous. This first section will intentionally be rather informal, with priority given to introducing examples of contrastive topics that make reference to certain intuitions all speakers seem to have. This will be detailed to a certain extent, especially in what concerns the description of the prosodic realization of contrastive topics and foci in English.

With these basic facts having been introduced, the discussion will center on the two information structure categories relevant for the dissertation: focus and contrastive topic. Section §2.2.1 starts with an (once again) informal characterization of the prosodic facts of focus realization in English – such as default intonation, pitch accent placement, nuclear pitch accent, and so on. Sections §2.2.2 and §2.2.3 present the main assumptions of the interpretation theory of focused phrases that I assume, the Alternative Semantics (Rooth 1992). It is worth emphasizing from the onset that much of the discussion in these sections is inspired by the recent work of Büring (2016b).

I then zoom in on two formal proposals for the interpretation of contrastive topics: the d-trees model of Büring (2003) and the topic abstraction account of Constant (2014). Büring’s (2003) is by far the most influential theory of contrastive topics, and has argued for the most important claim concerning sentences with a contrastive topic: that they mark a complex discourse strategy, cf. discussion in section §2.3.1. The d-trees model is the point of departure for the novel account outlined in Constant (2014), which proposes to interpret contrastive topics without using a specific CT-value and a CT-congruence

condition. Constant’s account will be the one adopted in this dissertation, principally because it gives us a better way of dealing with the ordering effects of contrastive topics and foci.

The reader is asked to bear in mind that the discussion in this chapter is based on English data. This by no means intends to disregard the many interesting crosslinguistic effects of contrastive topic interpretation (see e.g. Ameka 2010; Constant 2014; É. Kiss and Gyuris 2003; Jordanoska in preparation; Lee 1999; Tomioka 2010a; Tonhauser 2012, among others); but simply to give the most accurate account of it, which is undoubtedly based on English data. A detailed description of focus and contrastive topic phenomena in Brazilian Portuguese will be given in chapter §3.

2.1 The basics

In this dissertation I will be concerned with contrastive topics and foci. These are often taken to be categories of the INFORMATION STRUCTURE of sentences or texts. Information structure refers, in basic terms, to the packaging of linguistic information in order to optimize information exchange in discourse. The term *information structure* was first used by Halliday (1967) in his seminal work on the correlation between English prosody and information. The term has ever since been used as a cover term for a bundle of non-structural categories – like *focus*, *topic*, *background*, *comment*, etc. – all of which, in some form or another, correlate the different morphosyntactic or prosodic means employed by the speakers to convey a message or exchange information.¹

Such meaning-related categories have been the interest of many researchers, covering a wide range of crosslinguistic studies on the different realizations of information structure phenomena. As we will see in this dissertation (particularly chapters §3 and §6), Romance languages are notable for displaying different syntactic means (e.g. word order) to mark, for instance, “focushood” or “topichood”. Other languages, like English, are known for using intonation over syntax. In this section I will informally introduce contrastive topics and foci in English. A formal account will be presented in sections §2.2 and §2.3.

¹ This simple description of information structure will suffice now, since I will come back to certain aspects of it throughout the dissertation. The foundations of information structure can be found in the works of Chafe (1974) and Halliday (1967), and the Prague School Circle (Firbas 1975; Sgall 1993). See Krifka (2008) for an excellent overview of the main information structure notions. For an introduction of information structure in Romance languages, see Cruschina (2016). Another set of works that have looked at information structure from a point of view that explores notions revolving around the mental state of the interlocutors when they exchange information (e.g. the speaker knows/assumes that a certain referent is accessible in the hearer’s mind and therefore uses a certain structure instead of another) can be found in Erteschik-Shir (2007), Lambrecht (1994), Prince (1981), and Vallduví (1990).

2.1.1 Context and intonation

We shall begin by introducing contrastive topics, first by looking at some intuitions about English discourse and intonation. Imagine the following context: you had a party yesterday, and each of your friends was supposed to bring something different to eat. The next day, your mother is asking you how the party went and who brought what.

- (1) Q: What about Skipper, what did he bring?
A: Skipper (/) brought Cheezy Dibbles (\).

Native speakers of English are likely to produce the answer in (1) with a specific intonation pattern: A rising contour on the noun *Skipper* and a falling contour on *Cheezy Dibbles*. Those are indicated by the simplistic (/) after *Skipper* and (\) after *Cheezy Dibbles* (see below for a more accurate description). Such an intonation pattern is context-dependent in English (and in many other languages, such as German, Dutch, Brazilian Portuguese), which means that it is only felicitous if certain discourse appropriateness conditions are satisfied.² Intuitively, if we consider the context that gave rise to the answer in (1), we can say that these conditions are: There is a conversation about a rather larger discourse (all the guests that came to the party and all the foods that were brought) and the answer only addresses one part of this bigger issue.

Specifically, we can say that the answer in (1) does not completely resolve the question: We know that Skipper brought Cheezy Dibbles, but we do not know anything about the other guests or the other foods – they might not even have brought anything! The speaker chose to answer the question by addressing a smaller, sub-question: the one about Skipper. The fact that the question is not fully resolved is then marked by a special intonation on the phrase that is said to be the *topic* of the answer – in other words, the constituent that the speaker gives new information about in her answer.

We say that *Skipper* in (1) is a CONTRASTIVE TOPIC, which is identified by the specific contexts in which it occurs and the specific prosodic contour associated to it. Since the publications of Jackendoff (1972) and Büring (1997, 2003), contrastive topics are known to be used in contexts that imply a more complex discourse strategy than the sentence uttered by the speaker, like the one in (1). More specifically, we say that a sentence with a contrastive topic occurs in a complex discourse strategy, where at least one other issue

² This intuition was first pointed out by Jackendoff (1972). His account will be presented in section §2.3, but for now I will only outline the main intuitions drawn from the contexts, without going into theoretical details.

has not been addressed. In the case of (1), at least a question about one of the other guests has not been addressed by the answer.

Now, the phrase *Cheezy Dibbles* has a function different from the contrastive topic *Skipper* in (1). *Cheezy Dibbles* is the FOCUS in (1), ‘the new information in response to a question’: – observe that it corresponds to *what* in the question. Contrary to the contrastive topic, the focus fully resolves the question that is being asked. In the case of (1), the only thing that Skipper brought is a Cheezy Dibbles. For this reason, the focus is said to be EXHAUSTIVE, since we assume that a speaker will give as complete an answer as she can or thinks it is relevant (Büring 2007, p. 455).³

Following the informal definitions of contrastive topics and focus outlined above, the sentence in (1) can now be annotated accordingly. Throughout this dissertation, small caps will indicate intonational prominence. Since both contrastive topic and focus are prosodically prominent, both will be written in small caps. Furthermore, the subscript “CT” will follow the contrastive topic, and the subscript “F” will follow the focus, as in (2) (where the contrastive topic or the focus are a single word, I will write the CT/F-marker on the word itself, e.g. SKIPPER_{CT}):

- (2) SKIPPER_{CT} brought [Cheezy DIBBLES]_F.

In his seminal work, Jackendoff (1972) proposed that a contrastive topic and a focus do not only bear intonational prominence but can, crucially, be distinguished according to the accent associated to each one of them (as we have already seen when I described that *Skipper* in (1) as having a rising accent, and *Cheezy Dibbles*, a falling one). Building on the characterization of the B- and A-accent put forward by Jackendoff (1972), Büring (2003) proposes that a contrastive topic bears a fall-rise contour (Jackendoff’s B-accent), and a focus bears a falling contour (Jackendoff’s A-accent). More specifically, in Mainstream American English ToBI notation, a contrastive topic is realized by a L+H* pitch accent, which is followed by a L- H% boundary, and a focus is realized by a high tone H* (followed by a L-L% if the focus is sentence final). Moreover, it is often assumed that there is a short pause after a contrastive topic in English. According to this characterization, our Skipper sentence is annotated as follows:

³ Although the discussion at this point is rather informal, it is important to point out that the exhaustiveness property of (free) focus is not related to its truth-conditional effects (on the contrary, focus does not have an impact in the truth-condition of a proposition), but it is probably derived as a conversational implicature of focus. See discussions in Brody and Szendrői (2010), Büring (2007), and Rooth (1992), and Büring (2016b, chapter §8).

A: I_{CT} was [at HOME]_F. (Büiring 2003, p. 523)

As Büiring points out, the answer completely resolves the question (it gives a complete answer to it), but the contrastive topic intonation on the subject implies that someone else's whereabouts are a pertinent question in the context – suggesting perhaps that other people might not have such a good alibi.⁵

What Büiring (2003) calls IMPLICIT MOVE is also an emblematic context for a felicitous occurrence of a contrastive topic:

- (6) A: What did the pop stars wear?
 B: [The FEMALE pop stars]_{CT} wore CAFTANS_F. (Büiring 2003, p. 525)

In fact, the CT-marking (i.e. the fall-rise contour) on *female* is obligatory in such cases. Note that the question does not ask about a specific sub-group of pop stars (e.g. female, male, American, etc.), but an answer that mentions such a sub-group is perfectly felicitous. Büiring argues that this is specifically because the question of *What did the female pop stars wear?* is not explicit in the discourse, but can still be mapped onto it.

Finally, a contrastive topic can be used to mark a shift in the answer:

- (7) A: Where did Fritz buy this book?
 B: BERTIE_{CT} bought it [at HARTLIEB'S]_F. (Büiring 2016, p. 69)

A's question is about Fritz buying a book, but B's answer does not talk about Fritz. Instead, B probably gives all the information she has, i.e. that *Bertie* bought the book at Heartlieb's. The contrastive topic intonation in contexts like (7) is used, then, to mark a shift in the discourse, either because the speaker does not know the answer to the specific question being asked, or because there is a more pertinent question that she thinks should be answered.

After this brief introduction, we are now familiar with contrastive topic and the contexts in which they occur. In general terms, we have seen that sentences with contrastive topics are used in complex discourse strategies, particularly when there is at least another issue that has not been addressed by the answer. Moreover, we have seen that contrastive topics and foci have different prosodic contours, and that this is directly related to the

⁵ Some authors do not consider that the rise-fall-rise contour in (5) indicates that the subject is a contrastive topic, but simply “insinuate that something is left unsaid”. This is specifically the position in Wagner (2012, p. 23), who argues that the interpretation of a constituent in such context as a contrastive topic is orthogonal to the rise-fall-rise contour. See the discussion in Wagner (2012) for more detail.

discourse in which they occur. In section §2.3 this will be developed further, but for now we can stop here and concentrate on the main linguistic facts about foci.

2.2 Focus

This section continues with the basic information and linguistic concepts that will guide the dissertation. I will, in the following discussion, introduce the terminology and the focus theory adopted. This section can also serve as a reference point to which the reader can go back should there be any need for clarification on specific terminology, as well as on the information structure phenomena that guides this dissertation.

The reader will notice that the first two subsections remain rather informal, calling mainly upon intuitions and informal definitions of the linguistic objects investigated; despite this, the discussion in subsections §2.2.1 and §2.2.2 are an accurate description of focus realization and meaning in English. Section §2.2.3 introduces the Alternative Semantics framework (Rooth 1992), where technical terms are finally presented and henceforth used.⁶

2.2.1 Focus realization

An intuition that is often referred to in the literature is focus being used to give emphasis to a piece of information in the sentence, which is done through prosodic highlight (in stress languages).⁷ The main correlate of prosodic prominence in such languages is pitch accents. We shall start by discussing cases where prosodic prominence is considered “unusual”, because the intuitions behind them are easier to grasp. Consider (8):

- (8) a. The penguins LOVE Cheezy Dibbles.
 b. The PENGUINS love Cheezy Dibbles.

Small caps, as introduced above, designate the word as bearing prosodic prominence, the case of *love* in (8-a) and *penguins* in (8-b). Moreover, *love* is the focus (also said “is focused”) in (8-a), but not in (8-b); conversely, *penguins* is the focus in in (8-b) but

⁶ For this overview section on focusing, I mainly base my discussion in Büring (2016b), which summarizes the principal theories and properties of focusing in stress languages. Therefore, while I will refer to this work for many of the theoretical assumptions in this section, this does not mean that they were originally proposed in Büring (2016b). Whenever possible, I will make reference to the original works that first addressed the issue discussed.

⁷ Crosslinguistically, of course, focus can be realized by other linguistic means, such as syntactic positions and morphological markers (or a hybrid of morphosyntactic strategies). For an overview see Büring (2010).

not in (8-a). All the non-focused elements are said to be in the BACKGROUND. In (8-a), for instance, the background is composed of the expressions ‘the penguins’ and ‘Cheezy Dibbles’.

More specifically, *love* and *penguins* in (8-a) and (8-b) both bear the NUCLEAR PITCH ACCENT (NPA): the last pitch accent of the utterance.⁸ The NPA is the last pitch accent of a sentence, but it crucially does not fall on the *last word* of the sentences above. Such cases are called MARKED INTONATION, or NON-DEFAULT INTONATION. *Love* and *penguins* are perceived as the most prominent pitch accents in (8-a) and (8-b) respectively, as there is no other pitch accent that follows them. This description confirms that, in English, the NPA always falls *on* the focus, and moreover that no other pitch accents follow it.⁹

If there is a marked/non-default intonation, there must be an UNMARKED or DEFAULT INTONATION. More precisely, DEFAULT INTONATION in stress languages such as English is the accenting pattern found in out-of-the-blue sentences (also said “citation form” in some works). Default accenting is governed by structural factors, constraints that govern prosody-internal well-formedness. In simpler terms, default intonation in English is realized by the NPA specifically on the last word of the sentence. In the case of our penguins sentence, the output is (9):

(9) The penguins love Cheezy DIBBLES.

There are specific structural factors in this “last word” criterion. One of them concerns content vs. non-content words: content words (nouns, main verbs, adjectives) receive a pitch accent, whereas non-content words (preposition, pronoun, determiner, auxiliary) do not. Assuming, however, that the focus must contain the NPA, an accent might need to be added if a word did not receive one by default intonation. This is particularly the case of focus on non-content words: if a non-content word is the focus, an accent will be added to it.

The constraints at play on accent assignment in English are of course more complex than the simple “last word” characterization I give here but, since this is not the main interest of this dissertation, such an oversimplified description will have to suffice (for much more on English intonation see Ladd 2008 and Büring 2016b, especially chapters §6

⁸ Note that I am here adopting a rather simplistic notation of prosodic prominence, since accents do not fall on words, but rather on syllables. In the case of *love* in (8-a), for instance, the pitch accent is on *lo*.

⁹ Note that, although the NPA is unambiguously *perceived* as the most prominent accent of the utterance, several works have pointed out that this perception is not necessarily confirmed by phonetic cues. Concretely, the NPA is not always the loudest pitch or the pitch with the highest pitch excursion in the utterance (cf. discussion in Büring 2016b, p. 11).

and §7). For us, most important is that focusing has a fundamental effect on intonation: whenever a constituent is focused it will bear the NPA, even if this results in an accenting pattern that was not expected according to the default intonation.

In sum, the focused constituent must contain the NPA, and no pitch accents can occur after the focus. Default prosody is maintained as much as possible, and is only overruled to satisfy the requirement that the focus must contain the NPA. The following discussion will present the other ingredients of a focus theory: first, the necessary terms for a more accurate description of the effects of focus meaning, turning then to the formal semantic theory of focus interpretation.

2.2.2 Focus pragmatics

As we briefly saw in the discussion of contrastive topics and foci in the beginning of section §2.1, focusing has also a pragmatic effect on sentences. This is usually the informal characterizations of focusing that can be found in some of the literature on the subject, e.g. focus is the “highlighted information in a sentence” or the “element to which speakers wish to give emphasis” (maybe not with this exact wording, but this is the idea behind works like Erteschik-Shir 2007; Vallduví 1990; Vallduví and Engdahl 1996). While those characterizations are in accordance with the intuitions speakers have on what focusing does in a sentence (i.e. what its pragmatic function is), such concepts are hard to test and formalize.

For this reason, in this dissertation I assume that a better understanding of the meaning of focus is achieved by accounting for discourse appropriateness conditions (following Büring 2007, 2012; Rochemont 1986; Rooth 1985, 1992; Schwarzschild 1999, and many others). Felicity in a discourse allows us to account for focus meaning, by investigating “which focusing of a given sentence is felicitous as an answer to a particular question, or in response to a particular statement, or as a narrative continuation of a previous sentence” (Büring 2012, p. 106). Such properties can be tested and manipulated by the linguist, contrary to concepts that make reference to the speakers’ minds (e.g. speakers *want* to emphasize some information).

In this sense, the QUESTION-ANSWER CONGRUENCE rule below will be used as a diagnosis for focus in this dissertation (as well as contrastive contexts, to which I will return in due time). In a congruent (i.e. well-formed) answer to a question, the *wh*-element corresponds to the focused constituent. Such a general pragmatic rule gives us a concrete way to test the discourse conditions in which a given focusing pattern is

felicitous. This generalization can be formulated as follows (originally proposed by Rooth 1992):

- (10) QUESTION-ANSWER CONGRUENCE (QAC)
 In an answer to a constituent question, the element corresponding to the *wh*-phrase in the question must be a focus. (Büring 2016b, p. 12)

The foci in such contexts are usually referred to in the literature as INFORMATION FOCUS. Other terms for a similar “type” of focus are NEW INFORMATION FOCUS and PRESENTATIONAL FOCUS.

The alert reader will recall that, in the beginning of section §2.1, focused constituents were represented using an F subscript, $[\cdot]_F$. More precisely, I adopt here the tradition started in Jackendoff (1972), and will represent focused constituents by an F-mark, assumed to be present in the syntactic structure. Putting together (10) and the notation just introduced, our penguin sentences will be rendered as follows:

- (11) Q: What do the penguins love?¹⁰
 A: The penguins love $[\text{Cheezy DIBBLES}]_F$.
 (12) Q: Who loves Cheezy Dibbles?
 A: $[\text{The PENGUINS}]_F$ love Cheezy Dibbles.

As the reader can see in the answers above, the F-marked constituent corresponds to the *wh*-element in the question. Observe that the rule introduced in (10) allows us to identify the *pragmatic* focus, and that the F-marking in the examples above is a way of *syntactically* representing the focus.

Besides the question-answer congruence rule, there is another way of identifying the focus of a sentence. Particularly, the focused-marked phrase could be contrasting with an expression in the previous context, like in (13):

- (13) A: The penguins hate Cheezy Dibbles
 B: (No,) The penguins LOVE_F Cheezy Dibbles.

In (13), *love* in B’s utterance is contrasting with *hate* from speaker A. (13) is an instance of what is called CONTRASTIVE FOCUS. Intuitively, contrastive focus takes place when the focused phrase rejects – or distinguishes in some way – an expression of the previous context. In accordance Büring (2012) and Büring (2015, 2016b), I will call the previous

¹⁰ To keep it simple, I will assume now that the focused DP in the answer in (11) is an answer to an object focus question. This accenting pattern can also signal focus on the VP or the entire clause.

context a TARGET. Note that most of the examples of contrastive focus in the literature are, in fact, instances of a correction (also the case in (13)). I will mainly stick to corrections to illustrate contrastive focus in this dissertation, assuming that they are a special case of contrast. Together with the question-answer congruence, such focus targets will henceforth serve as a test to identify the pragmatic focus of a sentence.

Before moving on with the discussion, I would like to point out that, whether a taxonomy of focus types is really justified, remains an open debate, mainly because there are no conclusive grammatical properties that can be unanimously used to differentiate the types of focus (note as well that I only alluded to the two most common types discussed in the literature, but other classifications have been proposed, e.g. identificational focus in the work of É. Kiss 1998). It appears that, as far as English is concerned, there are no conclusive grammatical properties (e.g. different pitch accents) present in contrastive foci that are not in information foci, and vice-versa. It has been argued, however, that Italian presents a clear difference in realization of contrastive and information foci (cf. Bocci 2013). If some languages differentiate between focus types, then at least for those languages they need to be different grammatical objects. In this case, we can say English just happens to conflate the two categories into a single, less specific one.

In sum, the characterization of focus meaning adopted in this dissertation is that the pragmatic effects of focusing are accounted for considering appropriateness conditions in discourse. I argued that felicity in a discourse is a testable property, which can be manipulated through the question-answer congruence rule and the focus target. From those two “diagnostics” for focus, I introduced a (simple) taxonomy whereby the focus used in answers to a question is called information focus, whereas the one used in contrastive/corrective contexts is called contrastive focus. Now that the main terminology regarding focus realization and focus meaning has been established, we can move forward with the discussion and give formal definitions of the linguistic concepts that will be used in the dissertation.

2.2.3 Focus semantics

In this dissertation I follow the tradition of Alternative Semantics (Rooth 1985, 1992) and assume that the focus value of a sentence can be calculated compositionally. As is standard practice, the denotation of a natural language expression – its ORDINARY SEMANTIC VALUE – will be written $\llbracket \cdot \rrbracket^o$. Rooth (1992) proposes that F-marked constituents introduce focus alternatives, creating a new dimension of meaning. In accordance with Rooth, a phrase also has a FOCUS SEMANTIC VALUE $\llbracket \cdot \rrbracket^f$ (also said the F-value). F-values

are calculated the same way as ordinary values, with the exception that the F-marked constituent will be varied, producing a set of meanings. The meanings composed in the focus value are called ALTERNATIVE SETS, which are, informally speaking, sets of alternatives obtained by making substitutions in the position of the F-marked phrase.

The alternatives introduced depend on the semantic type of the F-marked constituent. So whatever the type of E is, its alternative set $\llbracket E \rrbracket^f$ is a set of all the meanings of that type. For instance, if E is a name and denotes an individual, its F-alternatives will be the set of all individuals; if E is a clause and denotes a proposition, its F-alternatives will be the set of all propositions, and so on. Concretely, the F-alternatives of the F-marked name *Mariana* will be the set of all individuals, as in (14-d):

- (14) a. $\llbracket \text{Mariana} \rrbracket^o = \text{Mariana}$
 b. $\llbracket \text{Mariana} \rrbracket^f = \{\text{Mariana}\}$
 c. $\llbracket [\text{Mariana}]_F \rrbracket^o = \text{Mariana}$
 d. $\llbracket [\text{Mariana}]_F \rrbracket^f = \{\text{Mariana, Kimberly, Julia, Andrea, } \dots\}$

Notice that the focus semantic value of the *non*-F-marked *Mariana* in (14-b) is simply $\{\text{Mariana}\}$. If such a terminal node is not F-marked, it does not introduce alternatives. Formally, however, terminal nodes still have a set of F-alternatives, which is the singleton set of their ordinary semantic meaning.¹¹

The focus semantic value of a sentence is typically written as in (15). Since the subject is F-marked, it introduces F-alternatives; the focus semantic value of the sentence *Mariana_F saw Kim* is the set of propositions obtainable from the ordinary semantic value of the sentence by making a substitution in the subject position:

- (15) $\llbracket [\text{Mariana}_F \text{ saw Kim}] \rrbracket^f = \{\text{Kimberly saw Kim, Julia saw Kim, Mariana saw Kim, } \dots\}$

The exact means by which the F-alternatives are calculated for the entire sentence is a fundamental step to derivation that will be proposed in this dissertation, so it is important to go into some detail here. To have non-F-marked terminal nodes introducing their TRIVIAL ALTERNATIVE (i.e. a singleton set containing only their ordinary meaning) is necessary in Alternative Semantics in order to compositionally calculate the F-value of a sentence: The F-alternatives of each terminal node are combined via function application, resulting in a set that will be the F-value of the mother, and so forth. The

¹¹ In this dissertation, and therefore also in this introduction, I restrict your discussion to focusing on the sentential level (but the concepts discussed apply *mutatis mutandis* to smaller constituents as well).

F-alternatives of each node are thus said to PROPAGATE, outputting at the sentence level the F-value for the entire sentence. Additionally, the composition rule for the elements of the F-alternatives is always the same as that for the ordinary meaning – here, function application.

The discussion in Büring (2016b, p. 37) is informative; consider the Alternative Propagation in Figure 2.1.¹²

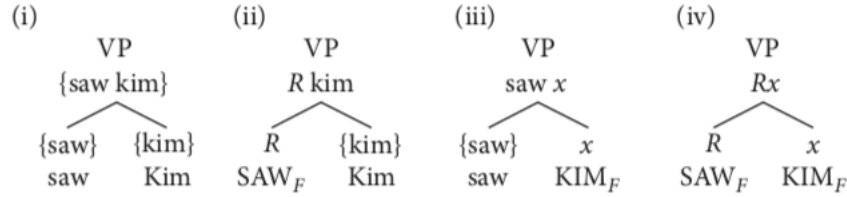


Figure 2.1: F-alternatives for a transitive VP for all the combinations of F-marked and not F-marked nodes (Büring 2016b, p. 37).

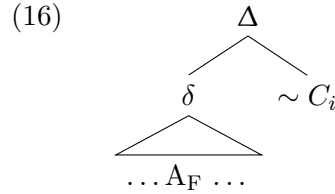
In Figure 2.1, tree (i) has no F-marked nodes, so each node introduces only its trivial alternative (the singleton set containing its ordinary meaning, {saw} and {Kim}).¹³ (ii) and (iii) work similarly, in the sense that only one of the terminal nodes is F-marked (*saw* in (ii) and *Kim* in (iii)), so the VP F-alternatives will change only in the position of the F-marked constituent. In (ii), all the F-alternatives to the verb *saw* are two-place relations (represented by *R* in the Figure), while the F-alternatives to the non-F-marked *Kim* is simply {Kim}. The same reasoning applies to (iii), with the exception that the verb is not F-marked and the object is; this will result in the VP alternatives where the verb is not replaced but the object is. In (iv) both terminal nodes are F-marked, so both introduce non-trivial F-alternatives. Thus, we can say that the focus value of a sentence is compositionally calculated, by point-wise combining the focus semantic value of each of the sentence's nodes.

Now, the focus value of a sentence as proposed in Rooth (1992) is retrieved by the SQUIGGLE operator ($\sim$), which makes the F-values accessible to semantic composition. In short, the squiggle's main effect is to constrain the interpretation of an utterance in a given context. The squiggle introduces the presupposition that there is a contextual

¹² I will be using shorthand notations like '*x saw Kim*' to informally represent sets of semantics objects. In the case of the '*x saw Kim*', this represents the set of propositions obtained by assigning an individual to *x*.

¹³ Note that I am only discussing terminal nodes here. F-marking on non-terminal nodes introduces a new set of F-alternatives, regardless on whether one of the daughters, or both, are F-marked or not. The F-alternatives of an F-marked VP, for instance, will be the set of all properties (Büring 2016b, p. 37).

antecedent C in a specific relation with its complement. We can think of the squiggle as requiring a contextual antecedent to “bind” the focus to this antecedent. Consider the structure in (16). The two possible presuppositions introduced by the squiggle are the following, as proposed in Rooth (1992) (I am here using the definitions given in Büring 2016b, p. 38, since I find his prose easier to follow than Rooth’s original):

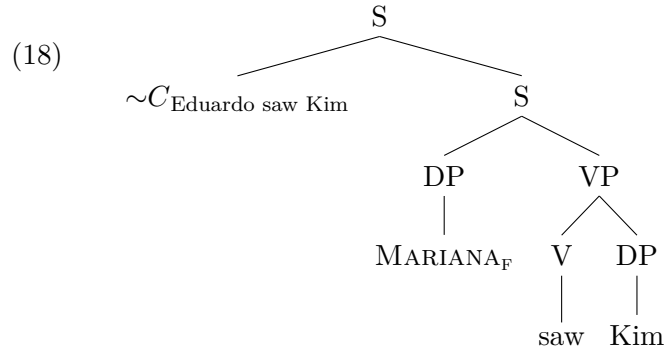


- a. INDIVIDUAL CASE: The contextually supplied value of C_i is identical to an element of the focus semantic value of δ (formally: $\llbracket C_i \rrbracket^o \in \llbracket \delta \rrbracket^f$).
- b. SET CASE: The contextually supplied value of C_i is identical to, or a subset of, the focus semantic value of δ (formally: $\llbracket C_i \rrbracket^o \subseteq \llbracket \delta \rrbracket^f$).

The Individual and Set Cases are actually the formalization of two “types” of focus alluded to in subsection §2.2.2: Contrastive and information focus, respectively. Let us take a look at the connection between these two types of focus and the presuppositions introduced by the squiggle (as defined in (16)). First, consider a case of contrastive focus:

- (17) A: Eduardo saw Kim.
 B: (No,) MARIANA_F saw Kim.

Informally speaking, contrastive focus occurs when the F-marked phrase is replaced by some alternative to obtain the meaning of the preceding utterance. In the case of (17), replacing ‘Mariana’ with ‘Eduardo’ (an alternative to ‘Mariana’) gives us the meaning of A’s utterance. A syntactic representation of the contrastive focus in (17) can be seen below; the squiggle “binds” the focus to a contextual antecedent of the form ‘ x saw Kim’. Note that in the tree below I write a subscript to the variable C , which was not done in Rooth; here and throughout, I write the actual value of C next to it for clarity of exposition.



It can be swiftly seen that the contextually supplied value of C , ‘Eduardo saw Kim’, is a member of the focus semantic value of ‘ x saw Kim’.

We are now equipped to introduce two more important terms to the discussion. First, the TARGET of a focus can presently receive a formal definition (recall that it was informally presented in the previous subsection): A sentence can be the target of a focus iff its meaning is among the F-alternatives of that sentence (i.e. Rooth’s Individual Case). So a sentence can be the target of a focus in $[\sim C Z]$ if its ordinary value is an element of the F-value of Z , and hence a possible value for C (analogously for categories smaller than sentences).

Moreover, in accordance Rooth (1992), I assume that focusing is a relation between a focus, a focus domain and a context. The FOCUS DOMAIN is the (entire) sentence containing the focus – in other words: any sister to a $\sim Ci$ is an F-domain. In (18), for instance, the F-domain of the focus *Mariana* is the sentence *Mariana saw Kim*. So, syntactically, the F-domain is composed of the focus plus the background; semantically, it is composed of both the invariable part of the alternatives plus the variable part of the alternatives (i.e. the focus). The focus domain is an important notion, as it allows us to capture that, even if only one constituent is F-marked (e.g. *Mariana*), we still work with alternatives at the sentential level.

Next, *Kim* in the answer in (19) is an instance of information focus:

- (19) Q: Whom did Mariana see?
 A: Mariana saw KIM_F.

As discussed in subsection §2.2.2, information focus occurs in answers to *wh*-questions: In (19), *Kim* corresponds to *whom* in the question. To see how this is captured by Rooth’s Set Case, one must first assume with Hamblin (1973) that a question denotes the set of all its logically possible answers. It holds that $\llbracket \text{question} \rrbracket_o \subseteq \llbracket \text{answer} \rrbracket_f$ whenever the Set Case is met, since each literal answer is an element of the F-value of the answer. In the

case of (19), the denotation of the question is the set containing all its literal answers ($\{\text{Mariana saw John, Mariana saw Laure, Mariana saw Kim, } \dots\}$), which is in turn a subset of the set ‘Mariana saw x ’ (the F-value of the answer).

As proposed in Rooth (1992), a particular focusing pattern refers back to a contextually salient antecedent. It is worth emphasizing, however, that in the Set Case we are dealing with sets (hence the name), so the focus antecedent is a set of propositions, while in the Individual Case, the focus antecedent is a single proposition. An essential difference between the Individual and the Set Case therefore remains, since the antecedent is a member of the former and a subset of the latter.

Note that the conditions on the squiggle, formulated as presuppositions, are a way to formally capture the felicity conditions of a given focusing pattern, which we discussed in subsection §2.2.2. Specifically, Rooth’s account correctly predicts that (19) is a congruent answer to the question ‘Whom did Mariana see?’, while at the same time ruling out that a sentence with this focusing pattern (i.e. with an F-mark on *Kim*) is a felicitous answer to questions like ‘Who saw Kim?’ or ‘What did Mariana do yesterday?’. These question denotations certainly contain the proposition ‘Mariana saw Kim’ as a potential answer, but their other potential answers do not follow the “mold” presupposed by the F-marking, i.e. ‘Mariana saw x ’. We can thus say that Rooth’s model is a way of ensuring congruence between an accenting pattern and the discourse(s) in which it felicitously appears.

Before closing up, one last property of Rooth’s focus theory must be emphasized. Alternative Semantics is an *in situ* theory of focusing, in the sense that the focus phrase is interpreted *in situ*. The insertion of the squiggle is subject to pragmatic conditions, but it has nothing to do with movement to some specific position in order to be able to communicate to the interfaces its interpretive properties – as it is in the cartographic approach to information structure, see chapter §6. One of the main advantages of such approach, particularly important to the purposes of this dissertation, is that the focus operator (the squiggle) can be inserted recursively, namely there can be more than one squiggle per clause. Once the focus alternatives have been retrieved by the focus operator, nothing prohibits the squiggle to applying again. This is what allows us to account for cases of more than one focus per sentence, as in the instances of Second Occurrence Focus (Büring 2013/2015; Féry and Ishihara 2009) and double focus (see section §4.6 for a detailed discussion).

Summing up, I have introduced the Alternative Semantics theory, which was used to formalize the several informal and intuitive notions that we saw in section §2.2.2. First, by using Alternative Semantics, we are able to compositionally calculate the focus value of a sentence by assuming crucially two things: 1) F-marked phrases introduce focus

alternatives, which are a set containing all the meanings of the same semantic type as the F-marked phrase; and 2) non-F-marked phrases also technically introduce F-alternatives, but in this case the F-alternatives are composed only by the ordinary meaning of the expression (also said the “trivial alternative”). Moreover, we saw that a focus is only a focus within an F-domain, which is the combination of a focus with its background. Alternative Semantics and, specifically the presuppositions introduced by the squiggle in the form Individual and Set Cases, are a technical implementation of the felicity discourse conditions observed in a given focusing (here: accenting) pattern.

Thus, Rooth’s theory provides a way of connecting the accenting pattern of an utterance (by assuming that prosodic prominence is marked by an F-mark in the syntax) with congruence in discourse. Recall the discussion we had at the very beginning of the present chapter, where I presented contrastive topics and foci both as having prosodic prominence in English. A logical question that emanates is how a contrastive topic is analyzed in a theory like Alternative Semantics, given that contrastive topics also bear prosodic prominence like foci, and also introduce alternatives. Are contrastive topics also F-marked – and can their meaning be calculated by applying the same principles as to foci? In the brief discussion in subsection §2.1, however, we indicated some differences concerning contrastive topics and foci (mainly due to their prosodic realization). This question will be investigated further in the following sections.

2.3 Contrastive topic interpretation

Now that we have seen in section §2.1 the main contexts in which contrastive topics are felicitous, and that we are familiar with the calculation of focus alternatives from section §2.2.3, we are able to go a step further and look at two theories that propose to formally capture the felicitous conditions of sentences with contrastive topics. The first one, discussed in §2.3.1, is the influential d-trees model proposed in Büring (2003), which assumes a “second type” of F-mark, there called a “CT-mark”. The model discussed in §2.3.2 sticks to Rooth’s proposal and assumes only one syntactic marking system, proposing to differentiate contrastive topics and foci in the way their alternatives are used in the computation.

2.3.1 D-trees and beans (Büring 2003)

The work of Büring (2003) is the most influential work to this date on contrastive topic interpretation. It discusses contrastive topic sentences in English, based on the author’s

dissertation (Büring 1997, which focused mainly on German data). Büring puts forward what is called the d(iscourse)-trees model, a tree-like representation of discourse hierarchy which underlines discourse structure.

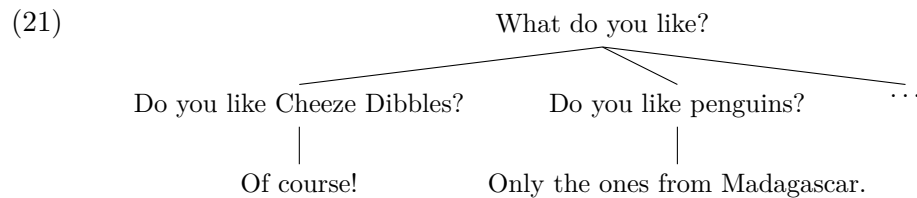
Mapping principle, QUDs and d-trees

We briefly discussed in section §2.1 that contrastive topics and foci have different prosodic contours. It was originally proposed by Jackendoff (1972) – and taken up later by Büring (2003) – that each contour maps onto a different discourse function:

- (20) a. Focus $\iff$ H* L-L% (= A-accent)
 b. Contrastive topic $\iff$ L+H* L-H% (= B-accent)

The goal of my discussion will be to spell out the conditions for this mapping principle, i.e. which accent is (im)possible on which constituent in which context (cf. Büring 2003).

Büring proposes to approach the distribution of CT-F sentences by using the model of discourse structure put forward in Roberts (1996) and Van Kuppevelt (1991, 1995, 1996a,b). In broad terms, Roberts (1996) proposes that the discourse structure can be modeled as a stack of QUESTIONS UNDER DISCUSSION, which consists of all the questions being addressed at a given point in the discourse. Crucial to the DISCOURSE TREES model is that this structure of questions is broken down into sub-questions, in a hierarchical and structured way. (21) is an example of a d-tree:



Each node represents a DISCOURSE MOVE, which can be either a declarative or an interrogative sentence. Crucially, the moves are structured in a hierarchical way, which concretely means that: First, all the moves dominated by a question have the goal to address that question and, second, the structure is built in a left-right direction (i.e. the moves on the left come first). Moreover, the collection of moves used to answer a question are called a STRATEGY.

In order to enforce that the strategy is used to address a relevant issue in the discourse, Büring proposes a constraint of RELEVANCE (also inspired by a proposal from Roberts 1996), “QUD” refers to the immediately dominating move in the d-tree:

(22) RELEVANCE:

- a. an assertion A is relevant in a d-tree DT iff A is an answer to the QUD for A in DT
- b. a question Q is relevant in a d-tree DT iff at least one answer to Q is an answer to the QUD for Q in DT (Büring 2003, p. 518)

In other words, for a move to be relevant, it must answer or address the question under discussion. An assertion is an answer to a question if “A shifts the probabilistic weights among the propositions denoted by Q” (Büring 2003, p. 517).

Keeping the basic machinery of Büring (2003) in mind, we are now able to tackle the more precise conditions that determine the interpretation of a sentence with a contrastive topic and a focus. In the following discussion, Büring’s CT-congruence will be presented, which ensured the fact that a CT-mark indicates the location of a strategy in a d-tree is accounted for.

CT-value

One of the central concerns of Büring’s proposal is to have a model that predicts the correspondence between an intonation contour and contrastive topic and focus interpretation. For this, Büring assumes that both contrastive topic and focus are privatively marked in the syntax, and contribute to the semantic computation. In a similar way in which privative syntactic marker is used for representing a focus-marked phrase ($[\cdot]_F$), Büring (1997) proposes to do the same for contrastive topic-phrases, $[\cdot]_{CT}$ (which he calls “sentential topics” in that work).

The formation of the CT-value of a sentence goes as follows:

(23) CT-VALUE FORMATION:

- Step 1: Replace the focus with a wh-word and front the latter; if focus marks the finite verb or negation, front the finite verb instead.
- Step 2: Form a set of questions from the result of step 1 by replacing the contrastive topic with some alternative to it. (Büring 2003, p. 519)

So the CT-value is calculated by substituting both the F- and the CT-marked phrases. First, the F-marked constituents are varied, which will form a question denotation (step 1), and second, the CT-marked constituent is replaced to produce a set of alternative questions (step 2).

Applying these two steps to the now-legendary beans example in (24) below (originally from Jackendoff 1972), we get the following:

- (24) FRED_{CT} ate the BEANS_F.
- a. CT-value formation:
 - step 1: What did Fred eat?
 - step 2: What did Fred eat?
 - What did Mary eat?
 - What did John eat?
 - b. $\llbracket \text{FRED}_{\text{CT}} \text{ ate the BEANS}_{\text{F}} \rrbracket^{ct} = \{ \{x \text{ ate } y \mid y \in D_e\} \mid x \in D_e \}$

The set of question meanings in (24-b) is the official CT-value of the sentence FRED_{CT} ate the BEANS_F. Note that changing the CT- and F-marks, e.g. *Fred* is F-marked and *beans* is CT-marked outputs a different CT-value – the set of questions {Who ate the eggplant?, Who ate the beans?, ...}.

Next, the d-trees model has to account for the types of discourse in which an utterance with CT-marking can appear. To do so, Büring introduces a constraint on CT-CONGRUENCE, informally defined below:¹⁴

- (25) CT-CONGRUENCE (informal)
- An utterance U with CT-marking answers a question within a strategy containing ≥ 2 questions from the set $\llbracket U \rrbracket^{ct}$.

The CT-congruence constraint is the heart of the analysis. CT-marking in an utterance indicates an answer to a sub-question in a larger strategy and, crucially, that there is at least one other sub-question in the CT-value that is not addressed (i.e. resolved) by the CT-containing utterance.

To say that a CT-F sentence (order irrelevant) is felicitous in a context where there is at least one other sub-question that has not been addressed by the CT utterance is an

¹⁴ I take this informal definition from Constant (2014, p. 37), which simplifies Büring’s definition without losing any of its main features. Büring’s (2003, p. 520) original version is as follows:

- (i) CT-Congruence:
 - a. An utterance U containing a contrastive topic can map onto a move M_U within a d-tree D only if U indicates a strategy around M_U in D.
 - b. U indicates a strategy around M_U in D iff there is a non-singleton set Q’ of questions such that for each Q ∈ Q’,
 - i. Q is identical to or a sister of the question that immediately dominates M_U, and
 - ii. $\llbracket Q \rrbracket^o \in \llbracket U \rrbracket^{ct}$

elegant way of capturing the exact discourse function of contrastive topics.¹⁵ Let us now take a look into the examples we discussed above and see whether the predictions of the CT-congruence condition are borne out.

In the example below, the utterance with the CT- and F-markers is given in line (a); the reader should keep in mind that, although I do not represent the prosodic contours for each example, the CT- and F-marks indicate that the constituent they mark respects the mapping principle hypothesized in (20) – basically: a CT-marked phrase bears a rising accent, a F-marked phrase bears a falling accent. The sentence in (a) is the LF from which the CT-value can be derived. The output of the CT-value in (b) is a set of questions of the form ‘What did x bring?’, which, by the CT-congruence condition, implies that the utterance is answering a question within a discourse strategy containing two or more questions of that form. The d-tree in line (c) illustrates that strategy.

- (26) a. FRED_{CT} ate $[\text{the BEANS}]_{\text{F}}$.
 b. $[[\text{FRED}]_{\text{CT}} \text{ ate the BEANS}]_{\text{F}}^{\text{ct}}$
 $= \{\text{What did Mary eat?}, \text{What did Fred eat?}, \dots\}$
 c.
- ```

graph TD
 Root[Who ate what?] --- Q1[What did Fred eat?]
 Root --- Q2[What did Mary eat?]
 Root --- Q3[What did ...]
 Q1 --- A1["FRED_{CT} ate [the BEANS]_F"]
 Q2 --- A2["MARY_{CT} ate [the EGGPLANT]_F"]
 Q3 --- A3["..."]

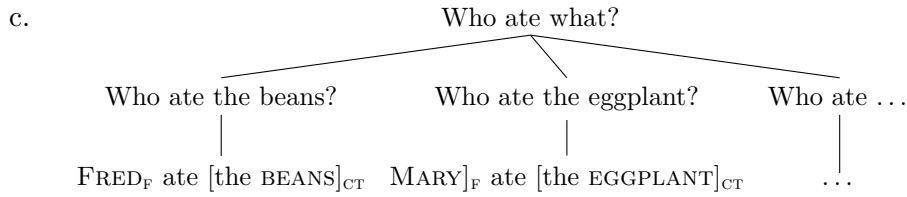
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We can quickly see that the d-tree correctly illustrates the kind of context that licenses the CT+F marking in  $\text{Fred}_{\text{CT}}$  ate  $\text{the beans}_{\text{F}}$ . The set of questions in the middle row are all members of the CT-value of this utterance; *the beans* answers the immediate question ‘What did Fred eat?’ and the CT-marking on *Fred* indicated that there are alternative questions of the form ‘What did  $x$  eat?’ (represented on the other branches of the tree).

We get the same results for a sentence with an F+CT order, i.e. where the focus precedes the contrastive topic. Again, Let us illustrate with the classic beans example:

- (27) a.  $\text{FRED}_{\text{F}}$  ate  $[\text{the BEANS}]_{\text{CT}}$ .  
 b.  $[[\text{FRED}_{\text{F}} \text{ ate } [\text{the BEANS}]_{\text{CT}}]]^{\text{ct}}$   
 $= \{\text{Who ate the beans?}, \text{Who ate the eggplant?}, \dots\}$

<sup>15</sup> In later work, Büring (2016) defined this constraint as what he called the INDEPENDENCE requirement. Specifically, the independence condition requires that there is another sub-question in the discourse that is not resolved by the CT-containing utterance.



The workings of the derivation are the same, except that now the phrase corresponding to the contrastive topic is *the beans* and the one corresponding to the focus is *Fred*. This is correctly derived in the CT-value (line b), which outputs a set of questions of the form ‘Who ate *x*?’. The d-tree illustrates the complex discourse strategy where this marking is felicitous, i.e. a strategy that indicates that there are alternative questions of that form that have not been resolved.

Note firstly that, one, both d-trees in (26) and (27) have the same overarching question, so the discourse is trying to establish, in both contexts, who brought what. However, the different CT- and F- markings indicate that in the first strategy the speaker decides to go by persons, while in the second to go by foods. Second, the order of the contrastive topic and the focus with respect to each other is free, i.e. there is nothing in Büring’s model that requires one to precede the other. Most important is to respect the mapping principle according to which a prosodic contour relates to a discourse function. If the phrase bearing the contour associated to a contrastive topic is the object, it will be CT-marked, and the congruence to this marking is predicted as we just saw in (27).<sup>16</sup>

So the fact that a sentence with a contrastive topic conveys “an additional, discourse-related meaning” (Büring 2003, p. 523) is an important step in understanding the appropriateness conditions of such sentences. Büring observes that speakers of English, when hearing *Fred<sub>CT</sub> ate the beans<sub>F</sub>*, will infer that other people ate other things. Speaker B could have chosen to simply answer *Fred ate the beans<sub>F</sub>*, which lacks the contrastive contour on *Fred*, but is equally felicitous as an answer to the question of what Fred ate. But, as Büring (2003, p. 523) himself asks, how do we get from “there are other questions of the form ‘What did *x* eat?’ ” (which is what contrastive topic, according to CT-congruence, conventionally expresses) to “other people ate different things”?

The answer is that the CT-congruence condition expresses a conversational implicature, which, as any conversational implicature, is cancellable. For instance, speaker B could have continued her answer by ... *and I do not know what the other people ate*. Such continuation is perfectly felicitous in the context of (26-a), and it crucially does not

<sup>16</sup> This issue of the ordering will be discussed at length in the dissertation (see particularly §4), but it is worth pointing out already at this stage of the discussion what predictions Büring’s model makes of it.

invalidate the CT-congruence condition: while a CT sentence indicates that there are other sub-questions in a strategy that have not been addressed, it is “merely a cancellable conversational implicature that other people ate other things” (Büring 2003, p. 523), hence the felicity of a continuation in which the speaker does not know the answer to the other sub-questions.

The main points of the contrastive topic interpretation proposed in Büring (2003) have now been discussed. Büring argues that a sentence with a contrastive topic is part of a larger discourse strategy, which the author illustrates in the form of d-trees (building on Robert’s 1996 model of discourse structure). Additionally, Büring’s model accounts for an underlying mapping principle that predicts that the B-accent on a constituent is mapped onto a contrastive topic interpretation, whereas an A-accent on a constituent is mapped onto a focus interpretation.

In sum, the essence of the d-trees model lies on two things: 1) the CT-value calculation, a new dimension of meaning proposed in Büring (1997, 2003) to compositionally calculate the meaning of a sentence with CT-marking, and 2) the CT-congruence condition, which makes sure that sentences with a CT-marking indicate that there is at least one other sub-question in the CT-value that has not been addressed (i.e. a complex discourse strategy).

Büring’s contrastive topic theory is the most influential and by far the most widely used work on contrastive topic interpretation to date. Some authors have, however, noted certain shortcomings of Büring’s model. For instance, Wagner (2012) challenges the proposal that a contrastive topic and focus can be freely ordered with respect to each other (i.e. a focus can both precede or follow a contrastive topic). Wagner (2012) claims that, at least in Italian and German, a focus cannot precede a contrastive topic, so a model of the interpretation of this linguistic phenomenon should consider these ordering restrictions.

Furthermore, one of the main criticism, made by Constant (2014), is that a new dimension of meaning does not seem to be really necessary; according to Constant, the CT-value calculation introduces additional machinery, “which appears to have no general utility outside of the domain of treating CT” (Constant 2014, p. 62). He also points out that the CT-congruence condition is a stipulation based on several requirements (e.g sentences containing CTs are answers, they answer a particular type of question, etc.), which ideally should be derived from a more general principle. Constant (2014) proposes a model that arguably does away with these two criticisms to Büring’s model. The topic abstraction account treats contrastive topics as F-marked phrases in a specific

configuration, and derives the contrastive topic meaning directly in the focus value dimension. This is what we are going to see in the following discussion.

### 2.3.2 Topic abstraction account (Constant 2014)

In his doctoral dissertation, Constant (2014) proposes a new model to derive the interpretation of sentences with a contrastive topic. His point of departure is the d-trees model of Büring (2003; see subsection §2.3.1 of this thesis), but Constant proposes a whole new mechanism which does away with the shortcomings (according to him) of the d-trees model. While in the present work I am only concerned with the formal implementation of Constant’s model, the discussion put forward in his dissertation is much more extensive than a simple “new formula” to interpret contrastive topics; the author also proposes a detailed account of the prosodic facts of contrastive topic realization in English, as well as an analysis of the Mandarin particle *-ne* as a contrastive topic marker. The reader is referred to Constant (2014, specially chapters §5 and §6) for more on the last two issues.

#### Principal properties

I will now present the main features of the TOPIC ABSTRACTION ACCOUNT, which is the new model introduced in Constant (2014) to handle the interpretation of contrastive topics. As before, I will concentrate on English examples (as does Constant), and in the following chapters apply the generalizations from the basic examples discussed here to Brazilian Portuguese.

Constant seeks to do away with the CT semantic value and the CT-congruence condition introduced in Büring (2003). In this sense, I would like to point out the two substantial differences between the d-trees model and the topic abstraction. First, the way each of the models derives sets of questions (i.e., CT-meanings) is different. Büring’s d-trees model introduces an extra dimension of meaning for this purpose, the CT-value. As we will see below, the Topic Abstraction achieves this by introducing a new operator in the focus dimension, the CT-operator. And although the CT-operator is proposed for the first time in the Topic Abstraction, its effects are all in the focus dimension – which is already traditionally used for the F-alternatives calculation.

Second, once we have this set of questions, the way in which the discourse requirements are specified so that the squiggle can look for an antecedent whose meaning is a set of questions, are also different. In the d-trees model, this is done via the CT-congruence condition, but in the topic abstraction, Constant (2014) proposes that this is done via a generalized version of the squiggle. He observes that the relation to a contextual

antecedent encoded by the squiggle in a sentence with a focus can also be extended to contrastive topic sentences. In this sense, the author points out that both the question-answer congruence (see section §2.2.3, or the original in Rooth 1992, p. 279) and the CT-congruence (see section §2.3.1, or the original in Büring 2003, p. 520) look for a discourse antecedent, and that the denotation of this antecedent contains at least two alternatives (Constant 2014, p. 88).

It appears thus that it should be possible to draw the discourse conditions for contrastive topics via the squiggle conditions. The obvious problem that the denotation of a sentence with a focus is a set of propositions, while the denotation of a sentence with a contrastive topic is a set of sets of propositions.<sup>17</sup> One of the main contributions of the Topic Abstraction account will be to propose a generalized squiggle, so that the variable  $C$  can look for an antecedent whose denotation is a set of questions.

Constant proposes that an F-value can have the same denotation as Büring’s CT-value, through what he calls a SINGLE COMPLEX QUESTION or a SORTED QUESTION. Consider the F-value below:

$$\begin{aligned}
 (28) \quad a. \quad & \llbracket \text{FRED}_{\text{CT}} \text{ brought } [\text{the BEANS}]_F \rrbracket^f \\
 & = \{ \text{What did Fred bring?}, \text{What did Mary bring?} \dots \} \\
 & = \text{For each person, what did they bring?} \quad (\text{Constant 2014, p. 89})
 \end{aligned}$$

In this generalized version of the squiggle, we derive a presupposition of an antecedent  $C$  whose meaning is a set containing at least two member of the F-value.<sup>18</sup> Specifically, Constant assumes that a set of questions can be understood as a single complex question – the F-value of the utterance above. This single complex question can be an antecedent for focus anaphora (note, however, that it needs not be).

By proposing that the complex sets of alternatives can be represented by a single complex question, and that this is the antecedent for focus anaphora, Constant can derive Büring’s CT-meanings at the focus dimension. Concretely, regarding a CT+F sentence like (28), the prediction is that it presupposes a single complex question ‘For each person, what did they bring?’, which contains at least two members of the form ‘What did  $x$

17 Recall that, according to the composition rules of Alternative Semantics proposed by Rooth, the focus semantic value of a declarative could never be a set of questions. As we already saw, the F-value of an expression  $\llbracket \phi \rrbracket^f$  is a set whose members are of the same semantic type as the ordinary semantic value of that expression  $\llbracket \phi \rrbracket^o$ .

18 The only difference in this “generalized” version in comparison to Rooth’s original is that Constant assumes that “ $C$  contains the ordinary value of the sentence somewhere *within* it”, instead of requiring the sentence to be a *member* of the ordinary value (see Constant 2014, p. 93).

bring?’. The reader is referred to Constant (2014, §3.2.2) for the technical details of the proposal.

Furthermore, the topic abstraction account only deals with F-marked phrases. This is an important component of this model, because Constant proposes that a CT-mark in the syntax and a special dimension of meaning, the CT-value, are not necessary to derive sets of sets of propositions. The assumption that contrastive topics are F-marked phrases is not a new one, and has been proposed elsewhere (cf. Tomioka 2010a,b; Wagner 2012). These proposals are often called “configurational”, and assume that a contrastive topic is different from a focus not because of the syntactic marker it bears, “but [from] the way its alternatives are used in the computation” (Constant 2014, p. 85). Such a view explores the intuition that both contrastive topics and foci introduce alternatives, and that it is not because they have a different privative marker that they should be analyzed differently; maybe because both introduce alternatives, although to a different level, one should be derived with respect to the other (which is to some extent what the topic abstraction account proposes, as we’ll see below).

Overall, Constant’s endeavor is to propose an account of contrastive topics that derives their conditions on discourse appropriateness (i.e. in which contexts they are felicitous) using only the squiggle operator and the F-value from Alternative Semantics. Furthermore, this account only considers F-marked phrases in the computation. We will now see how this is implemented through the contrastive topic operator.

### CT-operator

As we have just seen, Constant assumes that a sentence with a CT is a sentence that refers anaphorically to a set of questions meanings. If a sentence with a focus refers anaphorically to a set of propositions, we simply need to “lift up” the type of the denotation of a sentence with a CT to a set of question meanings.

Consider (29), which is the formal definition of the topic abstraction. Constant introduces the TOPIC ABSTRACTION OPERATOR, or “CT-operator” for short. This operator adds “a layer of nesting in the focus dimension by abstracting over alternative sets” (Constant 2014, p. 94):

- |      |                                                                                                                         |                         |
|------|-------------------------------------------------------------------------------------------------------------------------|-------------------------|
| (29) | Topic Abstraction                                                                                                       | (Constant 2014, p. 95)  |
| a.   | $\llbracket \text{CT-}\lambda_i \phi \rrbracket_g^o = \lambda x. \llbracket \phi \rrbracket_{g[i \rightarrow x]}^o$     | Ordinary Semantic Value |
| b.   | $\llbracket \text{CT-}\lambda_i \phi \rrbracket_g^f = \{\lambda x. \llbracket \phi \rrbracket_{g[i \rightarrow x]}^f\}$ | Focus Semantic Value    |

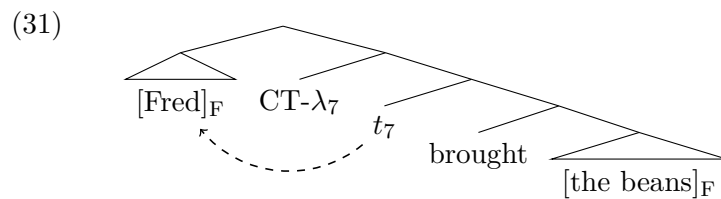
First, note that the account is called topic *abstraction*, and this is intentional, since the

operation described in (29) is similar to the typical predicate abstraction. The novelty is in the focus dimension, where the effect of the abstraction is to output a function from  $D_\tau$  to alternative sets. Consider (30):

$$\begin{aligned}
 (30) \quad & \text{a. } \llbracket \text{CT-}\lambda_3 [t_3 \text{ sneezed}] \rrbracket^f \\
 & \quad = \{ \lambda x. \{x \text{ sneezed}\} \} \\
 & \text{b. } \llbracket [\text{Fred}]_F [\text{CT-}\lambda_3 [t_3 \text{ sneezed}]] \rrbracket^f \\
 & \quad = \{ \text{Fred, Mary, } \dots \} + \{ \lambda x. \{x \text{ sneezed}\} \} \\
 & \quad = \{ \{ \text{Fred sneezed} \}, \{ \text{Mary sneezed} \}, \dots \} \quad (\text{Constant 2014, p. 96})
 \end{aligned}$$

The topic abstraction outputs a function from  $x$  to alternative sets, as we can see in the second line of (30-a). As Constant calls it, this function will be the “seed” to create the nested alternative sets. The singleton set output by the CT-operator combines point-wise with a set of alternatives (second line of (30-b)), and the result is a set of alternative sets. Crucially, the ‘+’ symbol above stands for point-wise composition – specifically, point-wise function application, which is the only composition rule that will be used in the focus dimension to get “CT-values”. That is precisely the task of the CT-operator. In other words, the focus value is a complex question or strategy, sorted by the topic-abstracted argument.

The syntactic structure in (31) is the type of structure that will be interpreted by the topic abstraction. The F-marked phrase *Fred* raises to a position directly above the CT-operator (henceforth abbreviated CT- $\lambda$ ), leaving a trace co-indexed with the binding operator (such as in quantifier raising). At the ordinary semantic value, topic abstraction is vacuous, so the ordinary semantic value of an LF like the one in (31) is simply the proposition that ‘Fred brought the beans’.



The F-value output of the topic abstraction in (31) is a singleton containing a function that takes an individual  $x$  and returns a set of propositions (i.e., a question) of the form ‘What did  $x$  bring?’. This question is then point-wise combined with the focus alternatives to  $[\text{Fred}]_F$  and returns the set of questions  $\{ \text{What did Fred bring, What did Mary bring, } \dots \}$ . So, by topic abstracting  $[\text{Fred}]_F$ , a nested focus value (i.e. a focus

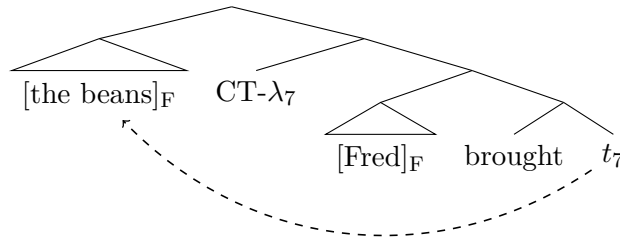
value that contains sets as members) which contains questions varying in the position of *Fred* has been created.

Thus, what is interpreted as the contrastive topic is simply the F-marked phrase that minimally c-commands the CT- $\lambda$ , and the F-marked phrase that stays *in situ* is interpreted as the “real” focus. For this to come out right, a syntactic operation that raises an F-marked constituent to the CT operator position, and which a trace behind, is necessary. Constant call this operation CT RAISING, and it mirrors quantifier raising (covert movement is represented by a dashed arrow in the structure).

Furthermore, in order to interpret surface orders where a focus precedes a contrastive topic (F+CT), Constant assumes that an F-marked phrase undergoes CT-raising at LF, but is still pronounced *in situ*. This is illustrated as follows:

- (32) a. [FRED]<sub>F</sub> brought [the BEANS]<sub>CT</sub>.

b.



Crucially, Constant assumes that the intonation of *Fred* and *beans*, respectively, is different in structures (31) and (32). But when we compare (31) and (32), the target of the LF movement is the only factor that distinguishes the two structures. The natural question is how Constant’s model makes sure that the LF-moved phrases have the right intonation in each structure – that is, that *Fred* is pronounced with a fall-rise contour in (31), but with a falling contour in (32) (and the other way around for *beans*).

His specific proposal is that, in English, the CT-operator is pronounced as a rising boundary tone (L-H%), which is criticized to the right edge of an intonational phrase. Moreover, the CT-operator and the phrase it associates with must be realized in the same intonational phrase.<sup>19</sup> Constant assumes that phonology has (some) access to LF structure, so the F-marked phrase that has moved to the CT-operator position is pronounced with the L-H% boundary tone. The proposal is couched in terms of optimality theory (Prince and Smolensky 1993), where a set of different constraints will determine the realization of the underlying LF form. One of these constraints is the

19 Additionally, he assumes that the presence of a pitch accent is a general reflex of focus, so every F-marked phrase has a pitch accent.

“Scope-Prosody Correspondence”, which makes sure that phonology can “see” the relation between the CT-operator and its associated F-marked phrase.

I will not go into the details of how exactly Constant’s model is capable of accounting for the different intonations depending on which F-marked phrase has moved to the CT-operator – for that, the reader is referred to Constant (2014, especially sections §5.4). It is enough to our purposes here that his proposal derives that difference, and this is done by assuming that phonology has access to LF structure. While such assumption is not traditionally adopted in generative grammar (although several proposals in this direction have been put forward in recent years, see Bobaljik 1995, 2012), I do not see at this point any major consequences for my final derivation by assuming this with Constant.<sup>20</sup>

This is the gist of the topic abstraction account (the reader interested in the details of the derivation of the F-value in this proposal can check chapter §5 of the present dissertation). The model has the advantages of doing away with an additional dimension of meaning (the CT-values), and of guaranteeing discourse well-formedness to a complex discourse strategy without the stipulation of a congruence condition. In simple words, we can say that topic abstracting an F-marked phrase results in the interpretation of that phrase as a contrastive topic.

Lastly, recall that the d-trees model proposed in Büring (2003) did not have any specific predictions about the order of CTs and Fs, as long as the general mapping principle (accent – interpretation) was followed. Constant’s (2014) topic abstraction account, on the other hand, makes a step into the direction of deriving that a contrastive topic is usually found in the left periphery in many languages. Crucially, however, this account does not require or impose that a contrastive topic will always precede a focus; on the contrary, Constant (2014) derives F+CT order perfectly fine (see section §2.3.2). The advantage of the topic abstraction model is that, while it does not require a specific CT+F surface order, it requires a structural relation between the phrase interpreted as the contrastive topic and the phrase interpreted as the focus at LF.

## 2.4 Contrastive topic and focus alternatives are different

Considering Constant’s (2014) assumption that contrastive topics are F-marked phrases in a specific configuration, one might wonder whether contrastive topics and foci are the same semantic object. I would like to briefly outline that, while the topic abstraction

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<sup>20</sup> On the contrary, we’ll see in section xx that some correspondence between PF and LF must be assumed in my proposal as well, in order to account for *all* the ordering effects between contrastive topics and foci in Brazilian Portuguese.

only sees F-marked phrases, the way that alternatives of contrastive topics and foci are used in the derivation are very different, which calls for keeping both apart, at least on the interpretive level (this is clearly the view of Büring 2003, 2016, and Constant 2014 himself).

First, there is a general tendency in the world’s languages (the ones for which there are studies on contrastive topics) for a contrastive topic to precede a focus (see for instance the typological work of Primus 1993). This has generally been assumed in Romance languages, which display a general preference for marking topics in left-dislocation constructions (see discussion in section §3.5). Arregi (2003), for example, argues that every instance of left dislocation in Spanish should be interpreted as a contrastive topic. This has often been explained by a general observation that, when it comes to structuring information, it is preferable to first introduce what we are going to talk about (the “topic”), and then say something about it (the “comment”). In this dissertation, however, I do not subscribe to a view where contrastive topics are considered “topics with an additional contrastive interpretation”, for the simple fact that it is not at all clear what it means for a linguistic expression to be a topic.

The view to which I subscribe is the one exposed at length in sections §2.3.1 and §2.3.2: a contrastive topic occurs in a complex discourse strategy (the reader is referred to those sections for more on the specific contexts in which contrastive topics occur). Within this complex discourse strategy, the language-specific marker of the contrastive topic (in English, German and Brazilian Portuguese: a rising contour) indicates that there is at least one other sub-question from the larger discourse that has not been addressed. Thinking in these terms, it makes sense that the “breaking-up” of the sub-questions is done in the specific order that the speaker wishes to address them, and that the order of the contrastive topic and focus constituents will correspond to this choice. Note that, crucially, this does not at all mean that a topic should come first, but simply that to address the strategy in a certain order was chosen. Moreover, it is clear tendency for foci to surface sentence-finally in the languages that I discussed here (English, BP, and German to a lesser extent), cf. discussion in section §2.2.1.

I do not intend to further address the matter of whether a contrastive topic should be treated as a topic with an additional contrastive interpretation or whether it should be considered as a special type of focus. At this point, I hope it is clear that I consider that contrastive topics have much in common with foci, since they also introduce alternatives. Both interpretation proposals of contrastive topics presented in sections §2.3.1 and §2.3.2 take this to be an essential part of the composition of the meaning of the constituents marked as such, and I also subscribe to this view. As will be made it clear in chapter §4,

the choice to follow Constant's (2014) topic abstraction account in this dissertation has mainly to do with the fact that it gives us a good base to derive the ordering restrictions of foci and contrastive topics in Brazilian Portuguese.

Now, while both CTs and foci introduce alternatives, they are different linguistic objects. This is the view of Büring (1997, 2003, 2016), points out that having different prosodic realizations (e.g. rise-fall accent for CTs and a falling accent for foci in English) is an indicator that CTs and foci should be analyzed differently. Moreover, while it appears that in some contexts CTs and foci can be "swapped", that is not always possible.

Consider first an example where both CT+F and F+CT orders are possible (so more than one strategy is possible):

- (33) a. Who ate what?/ What did people eat?  
           (**Who ate the beans?**) FRED<sub>F</sub> ate [the BEANS]<sub>CT</sub>.  
       b. Who ate what?/ What did people eat?  
           (**What did Fred eat?**) FRED<sub>CT</sub> ate [the BEANS]<sub>F</sub>. (Büring 2003, p. 530)

Note that there are *implicit* sub-questions in both (33-a) and (33-b) – boldfaced and between brackets. So, as we have repeatedly seen, in order for a contrastive topic to occur, there must be a strategy to begin with (which will result in the CT-marking). Moreover, when the CT-marking is present, the speaker will still have to choose the in which she will address the sub-questions: for instance, by going dish-by-dish as in (33-a), or person-by-person, as in (33-b). There is no reason whatsoever as to why a contrastive topic interpretation theory should predict which order will be chosen, since this is a matter of what is in the speakers' minds, and linguists still do not have the means to seriously investigate and test this.

What a theory of contrastive topic and focus interpretation must explain is that contrastive topics and foci have different meanings, i.e. their alternatives *are* different. While in an example like (33) the phrase marked as contrastive topic will depend on the implicit strategy addressed, in other examples the CT and focus constituents are not exchangeable. Consider (34), from Büring (2016, p. 80):

- (34) (When are you guys' birthdays? – )  
       a. [MARCY<sub>CT</sub>'s birthday] is [on the 12th of SEPTEMBER]<sub>F</sub>, and...  
       b. #[On the 12th of SEPTEMBER]<sub>CT</sub> is [MARCY<sub>F</sub>'s birthday], and...

As Büring argues, if we were to consider that contrastive topic and focus are not different, both answers in (34) would have the alternative set '*x*'s birthday is on *y*', which would

not account for the infelicity of (34-b) (i.e., both answers would be possible). This is a good enough argument to convince us that the interpretation of sentences with CT-F (order irrelevant) must distinguish between contrastive topic and focus alternatives.

Following the implicit question strategy discussed for (33), we can say that the implicit sub-question for (34-a) is *When are Marcy's and x's birthdays?*, whereas for (34-b) the implicit sub-question would be along the lines of *Whose birthdays are on the 12th of September and on y day?*.<sup>21</sup> Buring proposes that the difference between the two answers in (34) can be explained by the fact that both speaker and hearer can list all the people that should appear on the list (they probably know who are they referring to when they say/hear *you guys*), but not all the birthdays that will appear in an answer. Regardless of the precise explanation for the infelicity of (34-b), it is clear that CT- and F-alternatives must be interpreted differently.

The few examples I discussed in this section show that a theory of contrastive topic interpretation must differentiate between contrastive topic and focus alternatives, allowing us to account for the specific contextual appropriateness conditions. So, while I assume with Constant (2014) that contrastive topics are F-marked phrases, that does not mean that CTs and foci are the same thing.

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21 (It is even hard to formulate such question in a grammatical way...)

## CHAPTER 3

### Brazilian Portuguese

The goal of this chapter is to present basic linguistic information about Brazilian Portuguese that will be relevant for the dissertation. In what follows, basic facts about BP's morphosyntax (mainly word order and agreement related phenomena) and the principal characteristics of information structure in this language will be summarized. Since BP is a Romance language, comparisons to other Romance languages will often be drawn, which will be helpful in order to see how Brazilian Portuguese sometimes behaves differently from these languages.<sup>1</sup>

Two important differences are that BP is losing its null subjects (i.e., subjects are increasingly being overtly realized), while at the same time it has lost its accusative clitics and has seen an increase in its null objects. Some authors have argued that these morphosyntactic changes have an effect on information structure marking, e.g. topicalizations of objects are more common because objects are often null in BP. Next, in section §3.3 I will outline the principal characteristics of contrastive topics in the language. Finally, we will see that focus in BP is marked in a similar fashion as English, via nuclear pitch accent (dis)placement (as already pointed out in Kato and Martins 2016, p. 30). Appendix §3.5 presents an overview on topic marking constructions in Brazilian Portuguese. These constructions will not be relevant for the remainder of the dissertation, but the reader who wishes to have a general picture of information structure phenomena in BP can take a look at that appendix.

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<sup>1</sup> Whenever the example is in a language that is *not* Brazilian Portuguese, it will be indicated by square brackets next to the sentence's first line.

### 3.1 Overt subjects, null objects

Brazilian Portuguese is an SVO language. In ditransitive sentences, the direct object precedes the indirect object. It is a language that has a – relatively, as we will see – rich verbal inflectional system, which marks person and number agreement with the subject in the verbal morphology. The verb *dar* ‘to give’ is a ditransitive verb, and it agrees with the subject of the clause, *o professor* ‘the professor’ (3SG):<sup>2</sup>

- (1) O professor deu uma boa nota para o aluno.  
       the teacher give.PST.3SG a good grade to the student  
       ‘The teacher gave the student a good grade.’

The next subsections address two morphosyntactic characteristics of Brazilian Portuguese that set this language apart from other Romance languages like European Portuguese (EP) and Italian. First, in section §3.1.1 we will see that subjects are being overtly realized where null subjects were expected (Duarte and Figueiredo Silva 2016; Duarte 1993, 1995, 2000; Figueiredo Silva 2000; Kato 1999, *inter alia*). Second, in subsection §3.1.2, we will see that BP’s pronominal system has changed greatly in the past century (cf. Cyrino et al. 2000; Duarte 1995; Kato 1999), and accusative clitics have been replaced by the nominative forms or simply by a null object.

#### 3.1.1 A partial pro-drop language

In what follows, I will be using the terms “pro-drop” or (to a lesser extent) “Null-Subject Parameter”, from the Principles and Parameters framework of the Government and Binding era (Chomsky 1981; Chomsky and Lasnik 1993). This is not because I particularly subscribe to the theories that introduced these terms, but because the majority of the literature that investigated null subjects related to information structure phenomena in BP follow this theoretical approach. One of the research questions pursued during the Principle and Parameters period was to investigate whether a certain property in a language correlates with other properties of the language. In “parameters talk”, this means that if a parameter exists and is set in a given language, a bundle of other characteristics that correlate to that parameter will (or should) also be found.

Originally formulated by Rizzi (1982), the Null Subject Parameter subsumed several ideas circulating at the time about null subject languages and the properties associated with them. In simple words, Rizzi argues that languages that have the parameter Subject

<sup>2</sup> See §7.2 (Appendix) for the abbreviations used in the glossing. If not otherwise specified in the gloss, the verbal tense is Present.

set to null share certain properties. One such property is that these languages have a rich verbal agreement (first put forward by Taraldsen 1978). Rizzi’s original formulation stated that a rich inflection has a pronominal status, which is necessary for a null subject to be licensed.<sup>3</sup> Other properties include: free inversion, referential and non-referential null subjects, and specific extraction properties (the subject can be extracted from an embedded sentence in the presence of an overt complementizer; the reader is referred to D’Alessandro 2015 for an overview and discussion of the main critics to the theory).

BP is currently classified as a *partial* pro-drop language (cf. Duarte and Figueiredo Silva 2016; Duarte 1995; Holmberg et al. 2009; Lobo and Martins 2017; Roberts 2014). It is not a “full” pro-drop language, in which subject pronouns are often omitted (like EP, Italian or Spanish), nor a non-pro-drop language, where subjects cannot be omitted (like English and French). The fact that BP is “loosing” its pro-drop property has been connected to a reduction in the pronominal paradigm, and to an impoverishment of the verbal inflectional system (as first observed in Duarte 1995, and followed by many others: Barbosa et al. 2005; Costa et al. 2006; Costa and Galves 2002; Cyrino et al. 2000; Duarte and Figueiredo Silva 2016; Duarte 2000; Kato 1999; Kato 2000; Scherre and Duarte 2016).

Table 3.1 draws a comparison of the personal pronouns and the verbal paradigm of the verb *cantar* ‘to sing’ between European Portuguese (EP) and Brazilian Portuguese. The aim here is not to draw a detailed description of the differences of the two varieties of Portuguese, but to show how Brazilian Portuguese differs from a “prototypical” Romance language.<sup>4</sup> Observe that some of the subject pronouns have been replaced in BP’s paradigm (boldfaced in the BP column in Table 3.1). First, *você* ‘you.SG’ has emerged as a 2SG pronoun (originally *você* was a courtesy pronoun), practically taking over *tu* in the majority of Brazil’s regions;<sup>5</sup> *você* takes 3SG agreement. Second, 2PL *vós* has disappeared in BP and has been replaced by the form *vocês*, which takes 3PL agreement. Third, 1PL *nós* is being increasingly replaced by the impersonal form *a gente* (literally ‘the people’; equivalent to the French *on*), which has the same verbal inflection as 3SG.

Furthermore, in the BP column, 2<sup>nd</sup> and 3<sup>rd</sup> persons (singular and plural) share the same verbal marking, while the 1<sup>st</sup> persons (singular and plural) have particular endings.

3 More specifically, a null subject needs to be governed by a head which is [+pronominal] and [+referential] (Rizzi 1982, p. 143).

4 “Prototypical” Romance language makes reference to a Romance language that behaves as expected, i.e. it has null subjects, rich verbal morphology, clitic resumption, etc. (like Italian and European Portuguese). The terminology is also used in Barbosa et al. (2005).

5 The 2SG personal pronoun *Tu* is only used in the southern part of the country (in the states of Rio Grande do Sul and Santa Catarina mainly). In these regions, while 2SG *tu* is used, its verbal agreement is with 3SG, as *voce*.

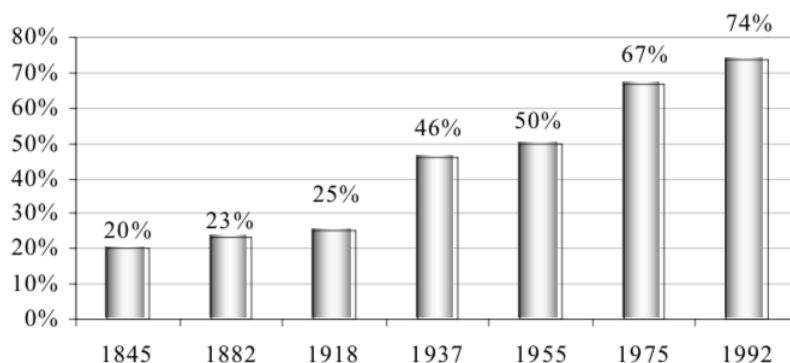
In other words, the 2<sup>nd</sup> person has lost its differential inflectional marker, and the verbal forms do not allow us to differentiate between 2<sup>nd</sup> and 3<sup>rd</sup> persons anymore. So 1SG, 2SG, 3SG and 1PL *a gente* have all the same verbal inflection and cannot be differentiated simply via their verbal morphology (which is still the case in EP, as Table 3.1 shows). Thus, when compared to a prototypical null subject language like European Portuguese, BP behaves differently.

| Person/number | EP               | BP                      |
|---------------|------------------|-------------------------|
| 1 SG          | eu canto         | eu canto                |
| 2 SG          | tu cantas        | <b>você</b> (/tu) canta |
| 3 SG          | ele/ela canta    | ele/ela canta           |
| 1 PL          | nós cantamos     | nós cantamos            |
|               | –                | <b>a gente</b> canta    |
| 2 PL          | vós cantais      | <b>vocês</b> cantam     |
| 3 PL          | eles/elas cantam | eles/elas cantam        |

**Table 3.1:** Verbal paradigm of the the verb *cantar* ‘to sing’ (adapted from Duarte and Figueiredo Silva 2016, p. 237)

Duarte’s (1993; 1995) seminal work was the first to systematically investigate the hypothesis that the impoverished verbal agreement and the reduction in the pronominal systems were related to the loss of null subjects in BP. On a diachronic study that ranged from 1845 and 1992, Duarte (1993, 1995) observed that overt subject pronouns are gradually increasing in BP. Since the work by Duarte, BP is thus argued to be on the way of “lo sing” its null-subjects. The reasoning behind such statement is the frequency in which overt subjects are realized when compared to null subjects, as can be seen on Figure 3.1. The rate of overt pronominal subjects in the first half of the 19th century is 20%; by the end of the century this rate had increased to 74%.

The status of this “ongoing change” is a matter of debate in the literature, and it is a rather complex issue to determine where exactly Brazilian Portuguese can be placed in the evolution of the process of becoming (if at all) a non-null-subject language. A comparison with French is often drawn, since this language went through similar changes in its inflectional system (although it has been convincingly argued in Roberts 2014 that French and BP are following different paths when one considers word order variation, see discussion in subsection §3.5.2), which could indicate that Brazilian Portuguese might reach the same status – i.e., that of a non-null-subject language. I will not go into details about the different stages that null subjects went through in BP and the correlation with other morphosyntactic innovations, but I will instead discuss some of the contexts



**Figure 3.1:** Frequency of overt pronominal subjects over seven periods (Duarte 1993, p. 112, via Barbosa et al. 2005, p. 16).

where overt subjects are used, or at least strongly preferred, over null subjects. This comparison is often made in analogy with data from European Portuguese, which is still a consistent null-subject language.

The generalization is that BP has lost its referential null subjects (Duarte 2000; Rodrigues 2002). In a prototypical null subject language, null and overt subjects often have different functions. Null subjects usually co-refer with a subject antecedent and a topic<sup>6</sup>, while overt subjects co-refer with focused or contrastive subjects (Lobo and Martins 2017, p. 64). This is not the case in Modern-day BP, where overt subject pronouns do not carry an emphatic force (Rodrigues 2002, p. 163).

Furthermore, Duarte (2000) observes that overt subjects can be used in BP when they co-refer with the subject of the matrix clause and to an inanimate referent (illustrated in (2)), which cannot be the case in a consistently null-subject language like European Portuguese.

- (2) A casa<sub>i</sub> virou um filme quando ela<sub>i</sub> teve de ir  
 the house become.PST.3G a movie when she have.PST.3SG of go.INF  
 abaixo.  
 down  
 ‘The house became a movie when it had to be demolished’. (Duarte 2000, p. 22)

Furthermore, an overt pronominal subject appears co-referring with a left dislocated

<sup>6</sup> In this dissertation, I am not concerned with the more general information structure category “topic” – but see an overview of topic-marking in BP in Appendix §3.5. For the few times I will refer to *topics* in the present section, it suffices to say that they are taken to be “what the sentence is about”. Usually, they correspond to NPs that have been mentioned in the previous discourse, or which can be easily recoverable from the pragmatic context.

NP (these are called left dislocation of the subject, and will be discussed in more detail in subsection §3.5.2), which is not the case in EP either. (3) is an example (taken from Costa et al. 2006, p. 136), where the 3SG pronoun *ele* ‘he’ co-refers with *o povo brasileiro* ‘the Brazilian people’:

- (3) Eu acho        que o povo brasileiro<sub>i</sub> ele<sub>i</sub> tem        uma grave doença.  
 I think.1SG that the people Brazilian he have.3SG a serious illness  
 ‘I think that the Brazilian people have a serious illness’.

Other differences in the use of overt and null subjects in BP include: overt subjects can co-refer with the subject or another antecedent of the matrix clause, while null subjects can only co-refer with the closest antecedent; BP does not allow third-person null subjects in out-of-the-blue sentences; among others. See an overview in Lobo and Martins (2017) and Roberts (2014).

It is important to emphasize, however, that null subjects are still possible in BP, and that there is no sign that BP is losing null subjects altogether in the contexts where they are still allowed (Figueiredo Silva 2000; Kato 1999; Negrão and Viotti 2000; Roberts 2014; Rodrigues 2002). These include: when the subject is interpreted as generic (the equivalent of *one* in English and *man* in German), non-third-person subjects in pragmatically neutral contexts, and where expletive subjects are required in other languages, like meteorological verbs:

- (4) — Está chovendo.  
           be.3SG rain.GER  
           ‘It is raining’.

Furthermore, Duarte (1993, 1995, 2000) noticed that the increase of overt pronominal subjects mainly occurred with 1SG and 2SG persons, and to a lesser extent with 3SG. Particularly, 1<sup>st</sup> and 2<sup>nd</sup> persons showed a far more drastic decrease of null subjects than the 3<sup>rd</sup> person. Duarte’s (1995) data show that, at the end of the twentieth century, the total of null subjects in 1SG and 2SG were of 18% and 22% respectively, while the frequency of null subjects with 3SG was of 55% (Duarte 1995, p. 20). This finding has been supported by other works: for instance, Correa Soares (2017) analyzed a spoken corpus with data from 1970 to 1990, and he found, for the whole period, 75% of overt subjects with 2PL and only 39% with 3SG subjects (Correa Soares 2017, p. 47). In other words, 3<sup>rd</sup> person null subjects are still used in BP with frequently.<sup>7</sup>

<sup>7</sup> Correa Soares (2017) points out, moreover, that the observed difference between the use of overt subjects according to the discourse persons does not actually fully support the verbal inflection

Many explanations have been proposed in the literature of the difference in the frequency of null subjects according to the discourse persons. One of the most widespread was suggested by Cyrino et al. (2000), who proposed that the changes that BP is going through in the pronominal system are governed by a “Referential Hierarchy”. This hierarchy states that languages tend to use overt pronouns when these refer to “more referential entities”. According to Cyrino et al. (2000, p. 59), “[+N +human] arguments are the highest in the referential hierarchy, while non-arguments [expletives, propositions] are the lowest”. So, *eu* ‘I’ and *você* ‘you.SG’, the speaker and the addressee, are obviously more referential than a 3<sup>rd</sup> person pronoun, which can refer to non-human and to things that are not nouns, such as a whole proposition.

In sum, we saw that Brazilian Portuguese is a partial null-subject language, because overt pronouns are currently being used more frequently than null pronouns; at the same time, null subjects are still possible in some contexts in the language. The hypothesis for explaining this partial pro-drop status of BP is that significant changes in the pronouns system and the verbal paradigm have led to a necessity to overtly use the subject pronouns. The fact that BP has not become a non-null-subject language is supported by diachronic studies, which put forward data related mainly to the frequency in which overt subjects are realized instead of null subjects (Duarte 1995). It was also discussed that there is no evidence, at this stage, that BP is completely losing its null subjects, since those are still consistently found in certain contexts (e.g. with meteorological verbs). We will now look at a second important change in recent Brazilian Portuguese, regarding object pronouns.

### 3.1.2 Null objects and nominative form in object position

Another significant change in Brazilian Portuguese has taken place in the accusative pronouns system, especially in regards to the third person singular. Several linguists have pointed out that there has been a drastic decrease in the use of 3SG accusative clitics in BP. This decrease started around the nineteenth century, also when null objects became more frequent in BP (Cyrino 1994). Brazilian Portuguese speakers use 3SG accusative clitics so rarely that some researches propose that 3SG clitics are not part of BP grammar anymore, and that speakers only recognize and are able to use them in writing because they learn it in school (see Galves 2001; Kato 2005; Kato et al. 2009).

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impoverishment hypothesis put forward by Duarte (1995, and many others after her). In fact, 3<sup>rd</sup> person is the most ambiguously marked verb form, with the 3SG agreement mark used with 2SG *você*, 3SG *ele/ela* and 1PL *a gente* (see Table 3.1). So it seems somehow counter-intuitive that the most ambiguous verbal agreement would actually be the most used with null subjects, exactly the case where the subject pronoun is not there to potentially disambiguate what the verbal inflection cannot disambiguate anymore.

Corrêa (1991) performed an analysis of oral and written corpora, which she collected through an experiment with participants with different levels of education (illiterate adults, school students between 8-14 years and university students). The overall results of the spoken data show that, out of the total of anaphoric objects, only 1,3% were referred to using a clitic pronoun, while 72% of the objects were referred to with a null object. Conversely, Corrêa (1991) found that in written language, clitics were used in 23% of the total cases (all participants combined), the overwhelming majority employed by university students.

Comparing BP to EP, 3SG accusative clitics are still active in EP. (5) is an EP example, where the accusative clitic *o* attaches to the verb and refers back to an entity in the previous discourse, which can be [ $\pm$ animate]:

- (5) Eu vi- o ontem. [EP]  
 I see.PST.3SG- 3SG.ACC.CL yesterday  
 ‘I saw it/him yesterday’. (Scherre and Duarte 2016, p. 539)

Brazilian Portuguese, on the other hand, employs a nominative form in the same contexts: (in fact, a null object could also be used in this context, as it will be discussed momentarily):

- (6) Eu vi ele ontem.  
 I see.PST.3SG- he/it yesterday  
 ‘I saw it/him yesterday’. (Scherre and Duarte 2016, p. 539)

First, like *o* in (5), *ele* in (6) can co-refer with a human or a non-human antecedent. This is the reason why *ele* in (6) is glossed as ‘he/it’. The convention in the BP literature is to gloss it as ‘he’, because it is the literal translation of the nominative pronoun *ele* (see BP’s nominative pronouns in Table 3.2). But since *ele/ela* in object position can co-refer with [ $\pm$ human] antecedents, I adopt here a different glossing. In other words, the 3SG personal pronouns *ele/ela* can be used in the same way as clitics are used in other Romance languages (i.e., in object position). Crucially, *ele/ela* in object position can also co-refer with non-human antecedents.

Table 3.2 shows an overview of the paradigm of nominative and accusative pronouns in Modern-day BP, taken from Carvalho (2018). The three forms in boldface, *me* and *nos* are the only clitic pronouns left in the accusative paradigm. The reader can see that, for the rest, all the accusative forms are the same as the nominative ones.

|      | NOM         | ACC              |
|------|-------------|------------------|
| 1 SG | eu          | <b>me</b> / eu   |
| 2 SG | tu/você     | <b>te</b> / você |
| 3 SG | ele (ela)   | ele (ela)        |
| 1 PL | nós         | nós / <b>nos</b> |
|      | a gente     | a gente          |
| 2 PL | vocês       | vocês            |
| 3 PL | eles (elas) | eles (elas)      |

**Table 3.2:** Nominative and Accusative pronouns in Modern-day BP (Carvalho 2018, p. 11)

*Ele/ela* in object position did not simply replace the 3SG accusative clitics, however. Their distribution is conditioned to certain pragmatic and semantic factors, and null objects can also be used instead of the nominative forms (as we will see shortly). Galves (1985, 2001) was one of the first researchers to point out that the licensing of *ele/ela* in object position in BP is pragmatic and semantically restricted. Particularly, the antecedent of *ele/ela* has to be an explicit topic NP (Galves 1985, p. 34) – in other words, it must have been mentioned in the previous discourse or be easily recoverable from the pragmatic context (for more on Topics, see Appendix §3.5 below). In (7), *ele* can co-refer either with *João* or *o livro* ‘the book’ (the data from the following three examples are from Galves 2001, via Simões 2010, p. 102):

- (7) Q: O que você fez com o João/ o livro?  
‘What did you do with João/the book?’  
A: Deixei ele em casa.  
leave.PST.1SG he/it at home  
‘I left him/it at home’.

However, *ele* cannot co-refer with a non-human antecedent that has not been previously mentioned. This is the case of (8), where the context triggers a focus interpretation of the answer.

- (8) Q: O que você deixou em casa?  
‘What did you leave at home?’  
A: \*Ele.  
it

On the other hand, *ele* is felicitous as an answer to a question that asks for a human

antecedent ('who'), as shown in (9). Note that in this case *ele* is an answer to a subject question.

- (9) Q: Quem você deixou em casa? 'Who did you leave at home?'  
 A: Ele.  
     he  
     'Him'.

So, the same form *ele/ela* can be used in subject and object position. When in object position, it can have a [ $\pm$  human] interpretation, but crucially, it can only have a non-human interpretation if it has an antecedent in the discourse. When in subject position, *ele/ela* has a [+ human] interpretation.<sup>8,9</sup>

Furthermore, while 3SG accusative clitics are virtually nonexistent in Modern-day BP, null objects are very frequent. In a thorough study of texts that ranged from XVI to XX century, Cyrino (1994) showed that there were 79,1% of null objects as opposed to 20.9% of realized objects (clitics and nominative forms combined) in the texts of XX century. The author points out that null objects were possible in XVI century, although much less frequent (10,7%).<sup>10</sup> Cyrino also argues that the decrease of 3SG accusative clitics and the increase of null objects are connected, and that they happened concurrently in the XIX century.

In some contexts, the object can either be realized by a strong pronoun, or it can be null. (10) is an example of a null object with an inanimate antecedent:

- (10) Dizem que esse filme é bom. A gente vai ver \_\_\_\_ amanhã.  
       say.3PL that this movie is.3SG good we go.3SG see tomorrow  
       'They say that this movie is good. We are going to see (it) tomorrow'. (Schwenter and Silva 2003, p. 102)

8 But see discussion in subsection §3.1.1, where Duarte (1995) observed that overt subjects can co-refer with inanimate referents, since referential null subjects are not used in BP anymore.

9 Such different uses of *ele* are usually explained in the literature by a distinction between strong and weak pronouns, as originally proposed by Cardinaletti and Starke (1994). The proposal by Cardinaletti and Starke (1994) is rather complex and involves several morphosyntactic and semantic properties of pronouns. The main properties that differ the two types of pronouns is that strong pronouns, but not the weak ones, are always [+human], can be coordinated, can be contrastively focused and can be modified by adverbs (cf. overview in Manzini 2014, p. 175). Kato et al. (2009) argue that, before the loss of 3SG accusative clitics, *ele/ela* could only be strong nominative pronouns and could only co-refer with [+human] antecedents; after the loss, however, BP has developed a paradigm of weak pronouns homophonous with the strong ones, which can be used in object position. The question whether those are homophonous forms or it is simply a morphosyntactically strong pronoun which can be used in both subject and object position remains to be answered.

10 Null objects are also possible in European Portuguese, as first pointed out by Raposo 1986.

Now, if both nominative forms and null objects are possible, are they in complementary distribution or can both be used in any discourse situation in BP? In a study of spoken data, Schwenter and Silva (2003) argue that there is in fact a *preference* for one of the options according to the context. The authors claim that two semantic properties are significant when choosing between a null object and an overt form (nominative pronoun and clitics – only 4/1250 occurrences – combined): animacy and specificity (as already proposed in Cyrino et al. 2000).<sup>11</sup> Figure 3.2 shows the overall results from the corpus analysis realized by Schwenter and Silva (2003). First, we can see that there is a clear preference for null objects in three out of the four categories of direct objects: Both [-animate] categories and the [-specific] prefer null objects over pronominal expressions. The exception are the [+animate + specific] objects, where pronominal forms are favored. Note, however, that this is a preference, since null objects are still possible with [+animate] antecedents, as illustrated in (11).

|               | +an/+sp            | +an/-sp            | -an/+sp            | -an/-sp            |
|---------------|--------------------|--------------------|--------------------|--------------------|
| <b>Null</b>   | <b>50 (24.4%)</b>  | <b>102 (75.5%)</b> | <b>151 (87.3%)</b> | <b>604 (81.9%)</b> |
| <b>Pron.</b>  | <b>126 (61.5%)</b> | <b>12 (8.9%)</b>   | <b>0 (0%)</b>      | <b>13 (1.8%)</b>   |
| <b>NP</b>     | <b>29 (14.1%)</b>  | <b>21 (15.6%)</b>  | <b>22 (12.7%)</b>  | <b>120 (13.3%)</b> |
| <b>Totals</b> | <b>205 (100%)</b>  | <b>135 (100%)</b>  | <b>173 (100%)</b>  | <b>737 (100%)</b>  |

**Figure 3.2:** Number of occurrences of anaphoric direct objects by animacy/specificity (Schwenter and Silva 2003, p. 107).

- (11) E o seu avô? Você conheceu \_\_\_\_ também?  
 and the your grandfather you.SG meet.PST.3SG too  
 ‘What about your grandfather, did you meet him too?’ (Schwenter and Silva 2003, p. 109)

Second, the only case in which the pronouns (clitics and nominative combined) are never found are with [-animate + specific] objects, which could indicate that this is

11 I have used [ $\pm$  human] instead of [ $\pm$  animate] above, but Schwenter and Silva (2003) decided to use the term *animacy*. They note, however, that the overwhelmingly majority of the animate referents in their corpus were humans. Furthermore, they define a referent as *specific* if “it could be assumed that the speakers had in mind a uniquely identifiable referent when producing their utterance” (Schwenter and Silva 2003, p. 105). Although the authors recognize that this reads more like the definition of definiteness than that of specificity, they found examples where a definite referent was not specific (see discussion in Schwenter and Silva 2003, pp. 105–106).

the only context where the nominative form and the null object are in complementary distribution. Such case is illustrated in example (12).

- (12) Pega a lata e dá — a ela.  
 take.IMP.2SG the pail and give.IMP.2SG to her  
 ‘Take the pail and give (it) to her’. (Schwenter and Silva 2003, p. 108)

Schwenter and Silva (2003) emphasize in their study that the difference between the use of the nominative form and the null object is not a binary one as it has been claimed by other linguists (e.g. Cyrino et al. 2000). Often, the generalization in the literature is that the pronominal forms co-refer with animate/human objects, while the null objects co-refer with inanimate/non-human antecedents. Schwenter and Silva’s (2003) results suggest that the distinction is not so clear-cut, and that there are different kinds of animate third person objects, namely specific and non-specific.

In sum, the accusative system of Brazilian Portuguese has gone through significant changes. First, 3SG accusative clitics have practically disappeared in spoken BP, and the other persons of the accusative clitics paradigm have also been replaced by the nominative forms. This substitution is very common in the 3SG, where the nominative form *ele/ela* can be used in object position. The nominative form in object position is restricted to some contexts however, and can in many of them be replaced by a null object. Null objects are very frequent in Modern-day Brazilian Portuguese and, according to recent corpus studies, are the preferred form to co-refer with non-specific antecedents and inanimate non-specific antecedents (cf. analysis in Schwenter and Silva 2003, see Figure 3.2).

The increase of overt subject pronouns, the change in the pronominal system (both regarding subject and object pronouns), the impoverishment of the verbal inflections and the increase of null objects are often analyzed together in the BP literature. All of these properties have been extensively studied by scholars interested in the BP language, and much more could be said about the particular contexts or the specificity of each of the changes that were discussed.<sup>12</sup> Although the goal of this section was not to present a detailed account of the historical morphosyntactic changes in Brazilian Portuguese in the past century, it was important to lay out such information in order to have a better understanding of Modern-day BP that have very often been connected to information structure phenomena; that is what we are going to see in the next sections.

<sup>12</sup> See, particularly *The Handbook of Portuguese Linguistics* (Wetzels et al. 2016), which has overview chapters on the main properties of BP’s syntax, morphology, semantics and phonology (relevant to the discussion in this section are chapters §2, §13, §16 and §29).

## 3.2 Focus

This section will concentrate on the main properties of focus marking in Brazilian Portuguese. BP is a stress language, where the nuclear contour is marked on the nuclear syllable and subsequent post-tonic syllable(s) (Frota and Moraes 2016, p. 142). As in most Romance languages, phrasal prominence is rightmost, i.e. the final prosodic word in the phrase is the head and therefore bears the nuclear pitch accent. It is unanimously acknowledged that BP marks focus via pitch accent placement and, as more recently shown, by postfocal pitch range compression (Fernandes 2007a; Frota et al. 2015; Frota and Moraes 2016; Truckenbrodt et al. 2009).

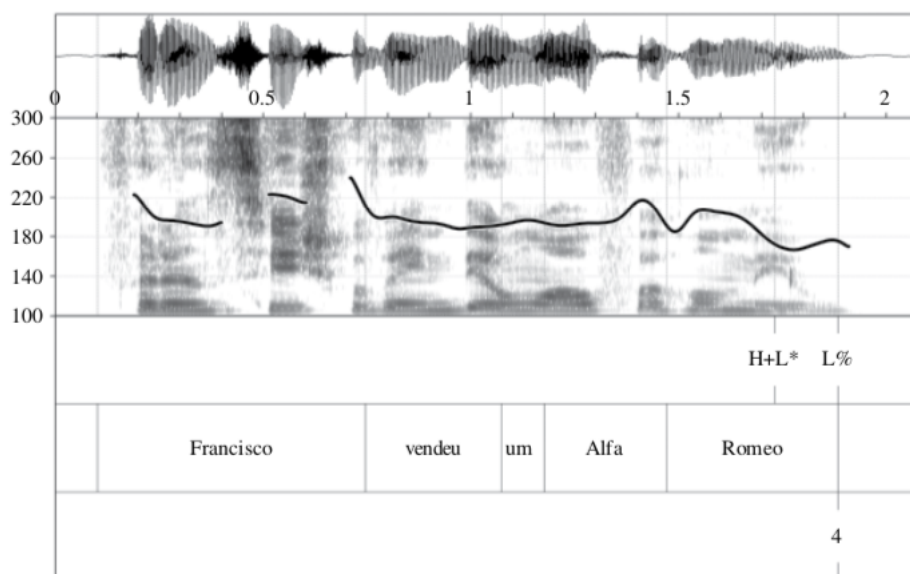
Furthermore, focus (and information structure in general, see section §3.5 on Topics) in Romance languages is also marked via changes in word order (Cruschina 2010b, 2012; López 2009; Vallduví 1990; Zubizarreta 1998). This is also the case in Brazilian Portuguese, but as we will see shortly, BP does not follow the pattern of other prototypical Romance languages. Particularly, subject inversion in BP is very marginal, and never used to mark subject focus.

### 3.2.1 Prosody

There are two main tonal events in Portuguese relevant to the intonational analysis: pitch accents, which may be simple or complex (i.e. only one tone like L\* or bitonal like L\*+H) and boundary tones, which are associated to the right of phrase edges and can also be simple or complex. Frota and Moraes (2016, p. 149) claim that pitch accent type is not a robust strategy used in BP to signal focus. Their data show that H+L\* is the contour used in both clausal focus and when there is narrow focus in the final word of the utterance. Besides that, in the case of what they call an early focus (i.e. focus, both information and contrastive, on a constituent that is not sentence final), the contours H+L\*, L\*+H and H\*+L are all possible (cf. also Fernandes 2007a,b; Frota et al. 2015; Truckenbrodt et al. 2009).

Frota and Moraes (2016) also argue that postfocal pitch range compression is a focus marker in utterances with an early focus in Portuguese. The authors observe, in this sense, that there is no postfocal deaccenting in Portuguese (as in English), but instead that the postnuclear stretch shows a very compressed pitch range. The reason for arguing against deaccenting is that “a postnuclear accent on the last stressed syllable of the IP (Intonational Phrase, MA) is usually found, but with reduced range” (Frota and Moraes 2016, p. 145).

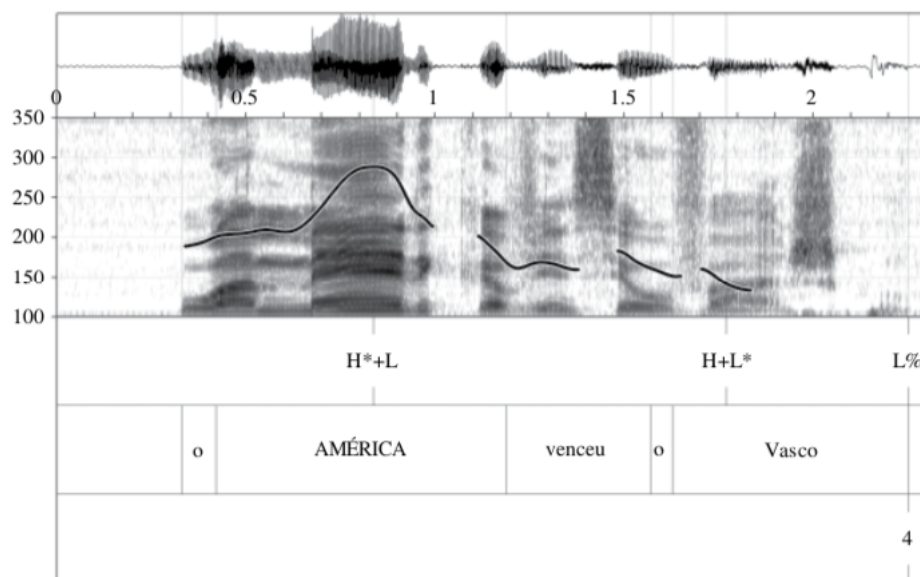
Figure 3.3 is the F0 contour of an utterance with focus on the final constituent, the object *Alfa Romeo*. We can see that this focus pattern is realized by a low fall nuclear contour, with the F0 peak on the syllable preceding the final stressed syllable, and a fall on the stressed syllable *-meo*, realized by a H+L\* pitch accent (this was also observed in Fernandes 2007a,b; Frota and Prieto 2015; Moraes 2008; Truckenbrodt et al. 2009). Frota and Moraes (2016) additionally observe that the same contour is found in a “neutral statement” – i.e., clausal focus – so there isn’t a difference on the pitch contour of a final constituent focus (object in the case of Figure 3.3) and focus on the whole clause.



**Figure 3.3:** F0 contour of the utterance *Francisco vendeu um Alfa Romeo* (‘Francisco sold an Alfa Romeo’), in response to ‘What car did Francisco sell yesterday?’ (Frota and Moraes 2016, p. 148).

In Figure 3.4 we see the F0 contour of an utterance with focus on the subject *América* (a soccer team in Brazil). Again, there’s a H\*+L contour on the focused word. The rest of the utterance displays a strong pitch range compression, but as Frota and Moraes (2016) point out, a nuclear accent can still be distinguished in the postfocal domain of the utterance. A similar effect was found in the data analyzed by Truckenbrodt et al. (2009, p. 107), who emphasize that “the most consistent effect of focus in non-final position is the absence or compression of the H+L\* pitch accent in final position”.<sup>13</sup>

<sup>13</sup> Interestingly, Truckenbrodt et al. (2009) found cases of deaccenting in the postfocal domain of the data they analyzed. Frota and Moraes (2016) and Frota and Prieto (2015) on the other hand, claim that there is no postfocal deaccenting *per se* in Portuguese, as it was mentioned in the main text.



**Figure 3.4:** F0 contour of the utterance *O América venceu o Vasco* (‘America has beaten Vasco’), with focus on the subject *América* in response to the previous utterance ‘Fluminense (a soccer team) has beaten Vasco’ (Frota and Moraes 2016, p. 149).

Furthermore, the studies of Fernandes (2007a,b) found a low phrasal tone on subject focus. The author compared the intonation between utterances with narrow subject information focus and those with focus on the whole clause (Fernandes calls them “neutral sentences”). Regarding focus on narrow subjects, Fernandes found two accents: H+L\* and L\*+H Lp.<sup>14</sup> In the case of L\*+H Lp, the author observes that a low phrasal tone is aligned with the first syllable of the next phonological phrase, or to the end of the last syllable of the phonological phrase that contains the focused subject. The studies of Frota et al. (2015), Frota and Moraes (2016), and Truckenbrodt et al. (2009) did not find a low phrasal tone associated to subject focus in the data they analyzed.

Regarding a (possible) different prosodic realization of information and contrastive focus, the evidence is not conclusive. On the one hand, the analyses of Truckenbrodt et al. (2009) and Araújo (2015) did not show a distinction between the prosodic marking of

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It seems then that the issue is still open to debate, and maybe that there could be a difference in the way that each study analyzed the properties of the postfocal stretch. In any case, I believe that what matters to our purposes is that Portuguese speakers can perceive a drastic change in the prosody of postfocal domains (be it pitch range compression or deaccenting) and that, crucially, this is an effect of focus marking in Portuguese.

<sup>14</sup> Lp is how Fernandes annotates the low phrasal accent, which corresponds to a L<sup>-</sup> in Pierrehumbert (1980).

contrastive vs. non-contrastive narrow subjects. The work of Truckenbrodt et al. (2009) also confirmed this result for narrow verb focus, i.e. there is no difference between the intonation of contrastive verb focus and non-contrastive verb focus.

On the other hand, the studies of Moraes (2008) and Frota and Moraes (2016) observe that, although the pitch accent type is the same in contrastive and non-contrastive focus ( $H+L^*$  in the case of the sentence final object), contrastive focus shows an expanded pitch range, in which the high tone on the prenuclear syllable rises to an extra high level, and the low tone on the nuclear syllable goes on an even lower level. They also observed an increase in duration and in intensity in the stressed syllable (Frota and Moraes 2016, p. 147). In short, these authors argue that narrow contrastive focus in BP is characterized by a higher peak, and increase in the duration and intensity when compared to narrow information focus.

The differences in the results of Truckenbrodt et al. (2009) on the one hand and Moraes (2008) and Frota and Moraes (2016) on the other could be due to a regional variation, since the former analyzed the Portuguese spoken in São Paulo, and the latter the one spoken in Rio de Janeiro. The study of Araújo (2015) analyzed the prosody of sentences spoken in Curitiba, which adds another regional variation to the mix. More research is needed to confirm whether regional variation is a significant factor in the prosodic realization of contrastive vs. non-contrastive focus in Brazilian Portuguese.

Notably, several authors have recently pointed out that focus marking in Brazilian Portuguese does not share a similar pattern with other Romance languages (Duarte and Figueiredo Silva 2016; Kato and Martins 2016). Italian, for instance, has been argued to present different pitch contours for information and contrastive focus, which are consistently produced and perceived by speakers, as extensively argued in Bocci (2013, particularly chapter §6). European Portuguese, as put forward in a series of studies (Frota 2000, 2012; Frota et al. 2015; Frota and Prieto 2015), does not show distinguishing prosodic properties between contrastive and non-contrastive focus, but between narrow constituent and clausal focus:  $H+L^*$  for the former and  $H^*+L$  for the latter. Moreover, while European and Brazilian Portuguese employ postfocal pitch range compression, Italian does not seem to present anything close to a postfocal deaccenting.<sup>15</sup>

In a nutshell, focus is marked in Brazilian Portuguese via nuclear pitch accent placement and, in the case of narrow focus on a non sentence final constituent, concomitant pitch

<sup>15</sup> The picture in Italian is a bit more complex. The experimental work in Swerts et al. (2002) has showed that Italian speakers fail to deaccenting given information, at least in what regards complex DPs (adj+noun). However, Büring (2016b, p. 193) points out that there is postfocal deaccenting in Italian in some very specific cases (like meta-linguistic corrections or sub-constituent information focus). See the discussion in Büring (2016b, chapter §8.1) for an overview.

range compression of the postfocal domain. Importantly, this is how narrow subject focus is marked in BP, contrary to prototypical Romance languages like Italian, Spanish and EP (which employ subject-verb inversion when the subject is interpreted as information focus, as we will see shortly). We also saw that pitch accent type is not a strategy to mark focus in BP, and that there is no consensus on whether different types of focus (contrastive vs. non-contrastive) are marked differently.

### 3.2.2 Word order variation

Romance languages are known to have a great amount of word order variation, which is directly connected to the information structure of the sentence (this empirical observation was the main motivation for the Cartography Project, see more in chapter §6). We saw in subsection §3.2.1 that focus is marked in Brazilian Portuguese via nuclear pitch accent placement. However, syntax can also be employed in the realization of focus in BP, mainly via the use of clefts (Dufter and Jacob 2009; Fernandes 2007a; Kato and Martins 2016; Kato and Raposo 1996; Quarezemin 2009, *inter alia*).

#### Verb-subject inversion

Recall that narrow subject focus is marked by the nuclear pitch accent plus concomitant postfocal pitch range compression in BP. This information is important because it is a property that is not present in prototypical Romance languages (Italian, European Portuguese, Spanish), which employ the so-called VERB-SUBJECT INVERSION (VS) when the subject is interpreted as information focus (cf. Belletti 1999 for Italian, Zubizarreta 1998 for Spanish, Costa 1998 for European Portuguese).

Verb-subject inversion is associated with the possibility of a language to have null subjects. It has been extensively observed that Brazilian Portuguese only employs VS in very limited contexts (Cyrino et al. 2000; Duarte and Figueiredo Silva 2016; Kato 2000; Kato and Raposo 1996; Kato et al. 1988; Menuzzi 2004, *inter alia*), contrary to other languages with null subjects, like European Portuguese in (13-a) below. Crucially, subjects are never focused postverbally in BP. In (13-b), the subject is focused *in-situ*, via nuclear pitch accent placement (Kato and Martins 2016, pp. 29–30):

(13) Quem levou o meu laptop?

‘Who took my laptop?’

- a. Levou [o LADRÃO]<sub>F</sub>. [EP]  
     take.PST.3SG the thief

- b. [O LADRÃO]<sub>F</sub> levou (ele). [BP]  
 the thief take.PST.3SG it  
 ‘The thief took it’.

The proposal that null-subject languages allow for VS was one of the properties of Null-Subject languages argued in Rizzi (1982). The explanation for such connection relies on one’s interpretation of the Extended Projection Principle (EPP) of Chomsky (1982), which stipulates that a preverbal subject is required in Spec,TP. Given that the basic word order in Romance languages is taken to be SVO, inversion structures raise the question on whether these somehow violate the EPP, since there is no (overt) subject in Spec,TP in these constructions. As the reader can see, the correlation of VS and null-subjects is centered in the Government and Binding framework; as before, I do not specifically adopt such theoretical assumptions, but most of the literature on the relation between VS and null-subject is made under the Government and Binding premises.<sup>16</sup>

How VS is connected to focusing is not often made very clear in the literature. Generally, the underlying assumption is that word order variation in Romance is due to information structure, so a change in the order between subject and verb should be due to this. In this sense, several linguists observed that VS is allowed in Romance in specific contexts, with different semantic and pragmatic properties. It has been claimed at least since Antinucci and Cinque (1977) that VS takes place in Italian when the postverbal subject corresponds to information focus (i.e. answers to a *wh*-question). The evoked semantic properties in the literature are about the types of verbs that allow for VS, as we will see below.

First, the generalization is that VS is possible with unaccusative verbs in all Romance languages (with the exception of French, which is not a null-subject language). Let us compare European Portuguese, a consistent null-subject language, and Brazilian Portuguese, a partial null-subject language. VS is quite frequent in EP, and can be used in presentational contexts<sup>17</sup> (14) and in information focus contexts (15).

- (14) (‘I know what happened and I will tell you’.)

16 In a revised version of his 1982 work, Rizzi (1986) argues that null subjects do not violate EPP by assuming that the canonical position in T can be filled by a phonologically unrealized *pro*. Simplifying Rizzi’s (1986) proposal, *pro* is governed by a pronominal referential INFL, which is the case in null-subject Romance languages with rich verbal agreement. Since Spec,TP can be filled by *pro*, no violation of EPP takes place in subject inversion. Thus, under this view, the fact that a null-subject language allows for VS is explained by the presence of *pro*, which is not present in a non-null-subject language like English, where Spec,TP is always filled by an overt form.

17 Duarte and Figueiredo Silva (2016) do not give a precise definition of what a presentational context is, but they mentioned that it is similar to athetic sentence.

- Chegou o carteiro (e tocou a campainha). [EP,BP]  
 arrive.PST.3SG the postman and ring.PST.3SG the bell  
 ‘The postman arrived (and rang the bell)’.  
 (15) (‘Who arrived?’)  
 Chegou [o CARTEIRO]<sub>F</sub>. [EP, #BP]  
 Arrive.PST.3SG the postman  
 ‘The postman arrived’. (Duarte and Figueiredo Silva 2016, p. 244)

Brazilian Portuguese does not allow for VS with information focus, so the only possible context where this word order is felicitous is in presentational contexts like (14). Moreover, EP also allows for VS with unergative verbs. In BP, however, VS with unergative verbs is only felicitous in one specific context: with locative inversion structures, as observed by Pilati (2006, via Duarte and Figueiredo Silva 2016):

- (16) Ali dormem as crianças.  
 There sleep.3PL the children  
 ‘The children sleep there’. (Duarte and Figueiredo Silva 2016, p. 244)

Finally, Duarte and Figueiredo Silva (2016, pp. 244–245) observe that VS is impossible in BP with transitive and ditransitive verbs. This is allowed in EP, provided the postverbal subject is interpreted as information focus:

- (17) (‘Who witnessed the kidnapping?’)  
 Testemunhou o rapto [esta SENHORA]<sub>F</sub>. [EP]  
 witness.PST.3SG the kidnapping this lady  
 ‘This lady witnessed the kidnapping’.

Costa and Figueiredo Silva (2006) propose that subjects can be focused postverbally in European Portuguese but not in Brazilian Portuguese precisely because of the status of the null-subject parameter on each language. Costa and Figueiredo Silva (2006, p. 90) argue that the impossibility of inverting focused subjects in BP derives from a syntactic fact, namely that BP has lost its referential null subjects. Since European Portuguese is a null-subject language, subjects can be licensed in either Spec,TP or in their base-generated position (cf. Costa 1998). Thus, syntax generates two outputs in EP: SV and VS; information structure “considerations” apply post-syntactically.

Brazilian Portuguese, on the other hand, does not qualify as a null-subject language according to the authors, because a referential null subject is no longer available in this language. As a result, BP’s syntax only outputs SV order. The second step in the authors’ analysis regards focus prominence. Assuming the Nuclear Stress Rule (Cinque

1993), they argue that VS is selected in EP because this option felicitously assigns stress to the rightmost element without having to resort to a heavy stress-shift (cf. Reinhart 1995). This is not the case in BP, since the only syntactic output is the SV order, and thus a heavy stress-shift must apply (and assign main prominence to the subject).<sup>18</sup>

We can conclude from this brief exposition that subject-verb inversion in Brazilian Portuguese is highly constrained. When compared to a consistent null-subject language like European Portuguese, BP allows for VS order with unaccusative verbs, withthetic sentences and with unergative verbs, provided they also have a locative inversion (e.g. (16)). Subject inversion is infelicitous in BP with transitive and ditransitive verbs, which is possible in EP if the subject is interpreted as information focus. As discussed, focus on the subject in Brazilian Portuguese is always marked via pitch accent placement and concomitant postfocal pitch range compression.

Postverbal subjects are also possible in other Romance languages if they are interpreted as information focus (see a longer discussion on this matter in Italian in chapter §6.1.2). Preverbal focused subjects, on the other hand, are possible in null-subject Romance languages (EP, Italian, Spanish), but they always receive a *contrastive* focus interpretation (Belletti 2001; Kato and Martins 2016; Zubizarreta 1998, among others). So (18) is possible in EP (and BP), while (19) (repeated from (13-b)) is only possible in BP:

- (18) [O LADRÃO]<sub>F</sub> levou o seu laptop, e não o seu vizinho.  
 the thief take.PST.3SG the your laptop and not the your neighbor  
 ‘The thief took your laptop, and not your neighbor’. (Kato and Martins 2016, p. 30)

- (19) Q: Quem levou o meu laptop?  
 ‘Who took my laptop?’  
 A: [O LADRÃO]<sub>F</sub> levou (ele).  
 the thief take.PST.3SG it  
 ‘The thief took it’.

As some authors have recently pointed out, focus marking in Brazilian Portuguese patterns is (more) in line with English when it comes to subject focus, contrary to prototypical Romance languages like EP, Spanish and Italian. Subject focus always has

18 Costa and Figueiredo Silva (2006) arguments are obviously more complex than what was exposed here. They note that EP and BP behave alike w.r.t. focusing. For instance, in ditransitive constructions, both languages allow the focused object to surface rightmost, bearing thus the sentence’s main prominence. The authors claim that this data supports their proposal, because it shows that in the case that both languages allow for the same syntactic output, focus is marked in the same way in both languages. Since BP and EP do not have the same syntactic output when it comes to SV and VS – due to BP’s loss of referential null subjects – they cannot have the same focus marking pattern.

the nuclear pitch accent in preverbal position (*in situ*), regardless of it being interpreted as information or contrastive focus (Duarte and Figueiredo Silva 2016; Kato and Martins 2016). It is important to emphasize, however, that I am claiming BP to mark focus exactly like English, since such affirmation would require a much more thorough investigation. I just want to point out that BP does not behave like prototypical Romance languages (which have received the most of the attention when it comes to information structure phenomena), and several generalizations have been drawn that should also apply to other languages of this family. As discussed in this entire section, this does not seem to be exactly the case in Brazilian Portuguese.

On the other hand, this does not mean that there exists no word order variation related to information structure in Brazilian Portuguese. Many works have pointed out that the rise in cleft constructions is a strong evidence that BP speakers use syntactic means to mark focus (Dufter 2009; Fernandes 2007a; Kato and Martins 2016; Kato and Raposo 1996; Miotto 2003, 2006; Quarezemin and Tescari Neto 2015). In a series of studies, Quarezemin (2009, 2012a,b, 2014) argues that in some contexts, syntactic focus marking (through the use of clefts) is the preferred way to mark focus in BP (Quarezemin 2009, p. 15).

### Clefts

Quarezemin (2009) collected data on contrastively and informationally focused objects and contrastively focused subjects in Brazilian Portuguese. She conducted two experiments, one that investigated the word order preferences of the participants regarding information and contrastive focused objects, and a second one that looked at contrastive focused subjects (Quarezemin did not conduct an experiment for information focused subjects, for which she used the results from previous literature, as we will see shortly).

Let us first look at the experiment and results concerning object focus. The experiment was realized as follows: participants were presented with a written multiple choice questionnaire and had to choose the best answer, in their opinion, according to the context that was presented. The contexts were set up in a way to give rise to either an information focus interpretation or a contrastive focus interpretation. There were in total 10 items, 5 for information focus, 3 for contrastive focus, and 2 clausal focus (no narrow focus on the object).<sup>19</sup> 21 native Brazilian Portuguese speakers participated, and in total there were 105 sentences with information focus and 63 with contrastive focus on the object.

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<sup>19</sup> It is not clear why these two clausal focus contexts were added, since they do not appear in Quarezemin's statistic, nor she mentions any comparison between them and the narrow foci later on.

(20) is an example of an item of the experiment that tested for information focus on the object.<sup>20</sup> The reader can observe that different word orders are involved in the different examples, among them different types of cleft sentences. (20-a) is an SVO sentence, with canonical word order; the focused object *um jornal* ‘a newspaper’ is thus *in situ*. (20-b) is a cleft sentence, and Quarezemin calls (20-c) a “reduced” cleft, because the copula is absent. (20-d) and (20-e) are both “pseudo-”clefts (also called *wh*-clefts), which are different from the regular cleft in the use of the pronoun ‘what’ (*o que* in BP). (20-e) is called “reduced pseudo-cleft” by the author’, where only the focused part of the sentence is uttered (Quarezemin 2009, p. 118). Finally, (20-f) is an example of focus fronting, where the focused object is fronted to the left periphery; Quarezemin calls these sentences simply OSV, which represents the final order of the constituents.

- (20) Estamos em um bar e na mesa ao lado João lê alguma coisa. Eu não consigo identificar o que é e pergunto a você: O que o João está lendo?  
 ‘We’re on a bar and on the table next to us, João is reading something. I cannot identify what it is and I ask you: **What is João reading?**’
- a. ( ) O João está lendo um jornal.  
           the J. is.3SG read.GER a newspaper  
           ‘João is reading a newspaper’.
- b. ( ) É um jornal que o João está lendo.  
           is.3SG a newspaper that the J. is.3SG read.GER  
           ‘It is a newspaper that João is reading’.
- c. ( ) Um jornal que o João está lendo.  
           a newspaper that J. is.3SG read.GER  
           ‘(It is) a newspaper that João is reading’.
- d. ( ) O que o João está lendo é um jornal.  
           the what J. is.3SG read.GER is.3SG a newspaper  
           ‘What João is reading is a newspaper’.
- e. ( ) É um jornal.  
           is.3SG a newspaper  
           ‘it is a newspaper’.
- f. ( ) Um jornal o João está lendo.  
           a newspaper J. is.3SG read.GER  
           ‘(It is) a newspaper (that) João is reading’. (Quarezemin 2009, p. 113)

20 The translations in the examples from Quarezemin’s (2009) items were made by me. Also, I slightly changed the order of the sentences of examples (20) and (21), for ease of exposition. Nothing hinges on this, since the examples were presented in a random order in the actual experiments.

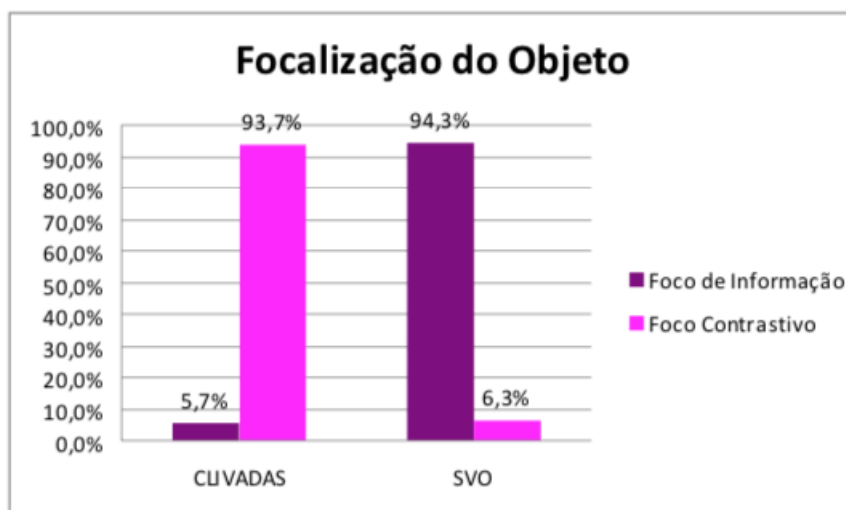
(21) is an item that tested for contrastive focus on the object. The word order and types of clefts are the same from the previous example.

(21) **Léo comprou um carro essa semana.** Karin sabia da nova aquisição do amigo e quando escuta Vítor comentar que **Léo comprou uma moto** ela diz: ‘Léo bought a car this week. Karin knew about the new acquisition of her friend and then she overhears Vítor saying that Léo bought a motorcycle, she says:’

- a. ( ) Léo comprou um carro.  
‘Léo bought a car.’
- b. ( ) Foi um carro que Léo comprou.  
‘It was a car that Léo bought.’
- c. ( ) Um carro que Léo comprou.  
‘(It was) a car that Léo bought.’
- d. ( ) O que o Léo comprou foi um carro.  
‘What Léo bought was a car.’
- e. ( ) Foi um carro.  
‘It was a car.’
- f. ( ) Um carro o Léo comprou.  
‘A car Léo bought.’

(Quarezemin 2009, p. 113)

The results regarding the participant’s choices concerning object focus can be seen in Figure 3.5. The graphic shows that the participants chose the SVO word order (i.e. object *in situ*, like in example (20-a)) for the information focus context, and clefts (all types combined) for the contrastive context. Among the total of clefts in the case of contrastive object focus, the majority were regular clefts (73%, like sentence (21-b)), followed by 22% of pseudo-clefts (e.g. (21-d)) and 5% of reduced clefts (e.g. (21-c)).



**Figure 3.5:** General mean of the strategies used to focus the object, according to the interpretation information (purple) vs. contrastive (pink) (Quarezemin 2009, p. 146)

Regarding the strategies used to focus the subject, Quarezemin did not run an experiment on information subject focus. She based her analysis and statistics on the experiments conducted by Fernandes (2007a) and Guessser (2007). Fernandes (2007a) performed two experiments, one written questionnaire with multiple choice and an oral production experiment, where the participants had to answer a question after reading a given context on a screen. Quarezemin only considers the results of the oral experiment realized by Fernandes (2007a), which she summarizes as following: 53,6% of the sentences produced by the participants were SVO sentences with the nuclear pitch accent on the subject; 33,4% were clefts (regular and pseudoclefts); and 13% were what Fernandes (2007a) calls “neutral sentences”, which are sentences with the nuclear accent on the sentence-final element (see a graphic with the results in Quarezemin 2009, p. 126).

The results reported by Quarezemin from the study in Guessser (2007) show a different pattern: 50% of the sentences produced were clefts, while 38% were SVO sentences (Quarezemin 2009, p. 132).<sup>21</sup> Quarezemin does not report Guessser’s study in much detail, so there is little information on this experiment. What is known is that it was an oral production experiment, where speakers had to orally answer a question after seeing a story on a screen, resulting in a total of 28 sentences. The participants used

<sup>21</sup> I will only describe here the summary of Guessser’s (2007) study given by Quarezemin (2009), since I did not have access to the original work by Guessser. As far as I understood, it was a study focused more on the descriptive side (there were only 28 sentences analyzed), which proposed a cartographic analysis of cleft sentences.

seven different word orders: SVO, VS, cleft, reduced cleft, pseudo-cleft, passive and what Guesser (2007) calls a “truncated” cleft.<sup>22</sup> Guesser (2007) groups all the different types of clefts together, which gives the total of 50%. Quarezemin does not mention whether Guesser conducted a prosodic analysis of her data.

Quarezemin (2009) then ran an experiment to test contrastive focus on the subject, which was missing from the literature until then. The experiment she conducted was different from the one for the focused objects described above. In the case of contrastive subjects, the participants did not have to choose the preferred sentence in a multiple choice questionnaire, but to freely write their own answer. The participants were presented with a written context and had to write down the answer they considered the most natural in that context. 78% of the sentences produced by the participants were clefts and 20% were SVO sentences. (22) is an example of one of the items of the experiment (Quarezemin 2009, p. 135):

- (22) Seus amigos estão comentando que “O PEDRO comprou um carro”. Você sabe que isso não é verdade, pois O PEDRO não comprou nenhum carro agora. E você também sabe que o comprador do carro é O MARCO. Então você entra na sala e diz:  
 ‘Your friends are saying that “PEDRO bought a car”. You know that this is not true, since PEDRO did not buy any car these days. And you also know that the person who bought the car is MARCO. So you enter the room and say:’<sup>23</sup>

Quarezemin put together the results for information subject focus from Fernandes (2007a) and Guesser (2007), and displayed them together with her own results in a graph that can be seen in Figure 3.6. Quarezemin points out that, in the case of focus on the subject, clefts were found with both information and contrastive interpretations, which was not the case with objects. She also observes that there seems to be a balance between

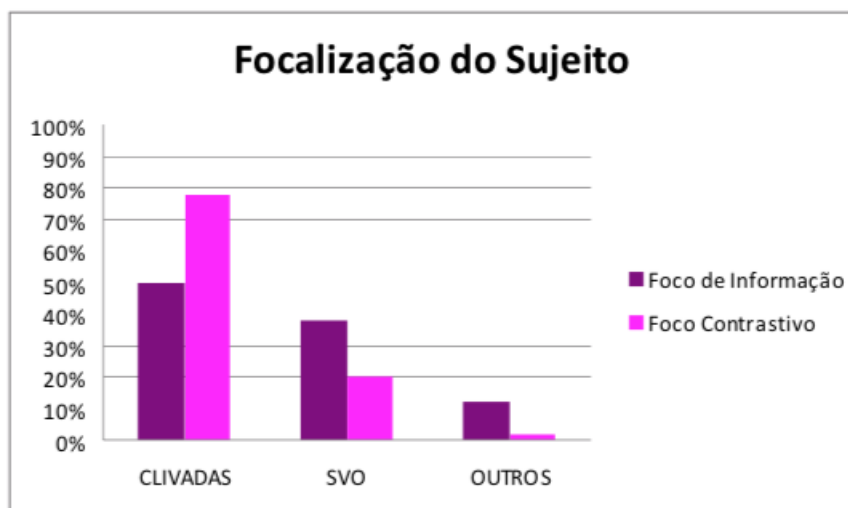
22 An example of a truncated cleft in Guesser’s (2007) and Quarezemin’s (2009) terms is found in (i). According to them, this is cleft without the copula:

(i) O Enéias que perdeu as eleições.  
 the E. that lose.PST.3SG the elections  
 ‘(It was) Eneias who lost the elections’ (Quarezemin 2009, p. 136)

As far as I know, in the Germanic literature, a truncated cleft is not a cleft without the copula, but a cleft with only the focused part (in (i) it would be *It was Eneias*, without the *who lost the elections*; see an overview in Mikkelsen 2007).

23 The capitals are from the original example in Quarezemin 2009. The author notes that these were added to help the participants to visualize “the relation between the two story characters of the discourse” (Quarezemin 2009, 135, fn. 58).

SVO and clefts when it comes to subject information focus. Contrastive subject focus, on the other hand, shows a clear preference for clefts.



**Figure 3.6:** General mean of the strategies used to focus the subject, according to the interpretation information (purple) vs. contrastive (pink) (Quarezemin 2009, p. 146)

The results of Quarezemin's study can be summarized in the following way: the speakers showed a clear preference for leaving the object *in situ* when it received an information focus interpretation, and to use a cleft when it received a contrastive focus interpretation. Concerning focused subjects, the results indicate that information focus can be marked both by clefts (approximately 50% of the total) and by putting the nuclear pitch accent on the *in situ* subject (40%); the results show a clear preference for using clefts when the subject is interpreted contrastively. These results suggest that a cleft can be used with a subject interpreted as information focus, but not when the object is interpreted that way.

Although the results of Quarezemin (2009) show a clear preference of the speakers to use clefts in certain contexts (especially with contrastive focus, with both subjects and objects), one should take some precaution before jumping into conclusions about the use of syntax (particularly clefts) to mark focus in BP. The main reason for this is that the methodology used to gather the data was not the same for all types of constituents and focus interpretations. Recall that the experiment for objects was a written questionnaire where the speakers had to choose their preferred answer according to the context; the experiment testing for contrastive subject focus was not a choice between options given to the participants in the form of a questionnaire, with the participants freely writing their

own answers instead. It is clear how these two methodologies can yield different results, since in one of them the participants are constrained to the options presented by the experimenter, whereas in the other they can freely write whatever comes to mind. Indeed, Quarezemin reports that there was a big variety of strategies employed by the participants of the contrastive subject focus experiment, generating different sentences from the ones that were presented in the multiple choices of the experiment on focused objects. There were two additional types of clefts used by the participants in the contrastive subject focus experiment, inverted pseudo-cleft and “truncated” cleft (see footnote 22 for the “truncated” cleft):

- (23) a. É o Mito quem sabe syntax. [inverted pseudo-cleft]  
           is.3SG M. who know.3SG syntax  
           ‘It is Mito who knows syntax’
- b. O Enéias que perdeu as eleições. [truncated cleft]  
           the E. that lose.PST.3SG the elections  
           ‘(It was) Eneias who lost the elections’.

Still, the different cleft constructions seen in (20), (21) and (23) are all grouped under the label “cleft”, and treated as an ensemble in the statistics.

Another obvious methodological issue that has to be considered is the fact that, except from the data of subject information focus, the data that Quarezemin analyzed derived from written answers. The participants read the contexts and either chose an answer that was already laid out to them or wrote their own answers. In the case where the participants wrote down their answers, it is almost impossible to know whether they chose to write down a particular cleft construction because that’s what they would say if this same context took place in a dialogue (so in spoken language instead of written), or if they wrote it particularly because they could not use prosody in a written experiment. Given these experimental conditions, I believe that the safest conclusion is that, in a written situation, the participants preferred to use a cleft in contrastive focus contexts. Note, however, that this is not the conclusion drawn by Quarezemin (2009), who claims that these results demonstrate that Brazilian Portuguese speakers make use of syntax instead of prosody when they want to convey contrastive focus on the subject or on the object.

Moreover, the fact that data of an oral experiment (subject information focus, according to the experiments in Fernandes 2007a) are put together in the final statistics with the data of written production is also something that has to be considered cautiously. The data from Fernandes (2007a) clearly shows that the speakers preferred to mark the

focused subject with the utterance’s nuclear pitch accent over using a cleft. One could say, then, when comparing Quarezemin’s (2009) written data and Fernandes’ (2007) spoken data, that the speakers prefer to use prosody to mark focus if the experiment’s set up actually allows them to do so. To make such an affirmation would, again, be jumping into conclusions too fast, since the experiments were set up in a way that is hardly comparable. Unfortunately, what is missing from Quarezemin’s analyses is a more detailed take on whether the factor spoken vs. written data had a significant result in any way. Recall, however, that the results for focused objects (see Figure 3.5) showed a clear preference for leaving the object *in situ* in contexts of information focus, which could suggest that speakers were still “aware” of prosody.

I will not go into more detail on the use of clefts in BP in contexts of information focus on the subject, since this is not the main interest of this dissertation (the reader is referred to Fernandes 2007a and Quarezemin 2009, 2012b). Summing up the results from the experiments conducted by Quarezemin (2009) and Fernandes (2007a), they indicate that, in an oral experiment set-up, speakers realize information focus on the subject via pitch accent placement. Speakers also use clefts in this same context. Concentrating on the data from the written experiments conducted by Quarezemin, the speakers overwhelmingly prefer to focus the object *in situ* when this is interpreted as information focus, and to employ (one of the many) cleft construction when the object is interpreted contrastively. The cleft strategy was also preferred when the subject received a contrastive interpretation.

Quarezemin (2009) puts these results together and concludes the following: 1) The strategies used to focus the object are very clear, *in situ* for information focus interpretation and cleft for contrastive focus interpretation; 2) The strategies used to focus the subject are more mixed, mainly because the information focus interpretation was realized both by nuclear pitch accent on the subject and by clefting the subject; contrastive focus on the subject was mainly realized by a cleft.

To summarize, the goal of this section on focus was to give an overview of how focusing works in Brazilian Portuguese. As it hopefully became clear from our discussion about prosody, focus is marked via pitch accent in this language, and postfocal pitch range compression (or deaccenting, as Truckenbrodt et al. 2009 found in some cases). Moreover, BP speakers use different word orders to express different information structures, as we saw via the extensive use of clefts that has been reported in the literature in the past forty-or-so years. Lastly, note that studies claiming that prosody is not the only factor used to mark focus in BP always talk about which strategy the speakers “prefer”, which by itself means that there are several strategies available to speakers in different discourse

situations. For the purposes of this dissertation, it is important for the reader to keep in mind that BP speakers use pitch accent placement to mark focus, and that this is a robust strategy that is employed in all focusing contexts.

### 3.3 Contrastive topic

There is very little literature on contrastive topics in Brazilian Portuguese. What has usually been said is that CTs in BP have a similar prosody to English, and the same pragmatic functions. Menuzzi and Roisenberg (2010), in a paper where they discuss the interaction of information structure and the discourse relations *Parallelism* and *Contrast* (following the Segmented Discourse Representation Theory from Asher and Lascarides 2003), observe that, while contrastive topics and foci have the main accents of a sentence, they have different discourse functions. This is illustrated by the two different contours of CTs and foci, and by the contexts in which they are felicitous. As in English, a contrastive topic has a fall-rise contour and a focus has a falling contour in BP (if in sentence-final position). The authors do not give a detailed characterization of this contour (e.g. ToBI notation), but they provide the diagrams in (24) and (25).

- (24) A: **Quem encontrou a Maria?**
- B: a)  **O PAULO** (encontrou a MARIA).
- b)  # **O Paulo** (encontrou a MARIA).

- (25) A: **Quem o Paulo encontrou?**
- B: a)  # **O PAULO** encontrou a MARIA.
- b)  **O Paulo** encontrou a MARIA.

The question in (24)A is ‘Who met Maria?’, and both answers (24)B are translated as ‘Paulo (met Maria)’. The difference, however, is that the only utterance felicitous in this context is the one where *Paulo* receives a focus accent (falling contour, as represented in answer a) – whereas a fall-rise contour on *Paulo* (contrastive topic) is infelicitous in the

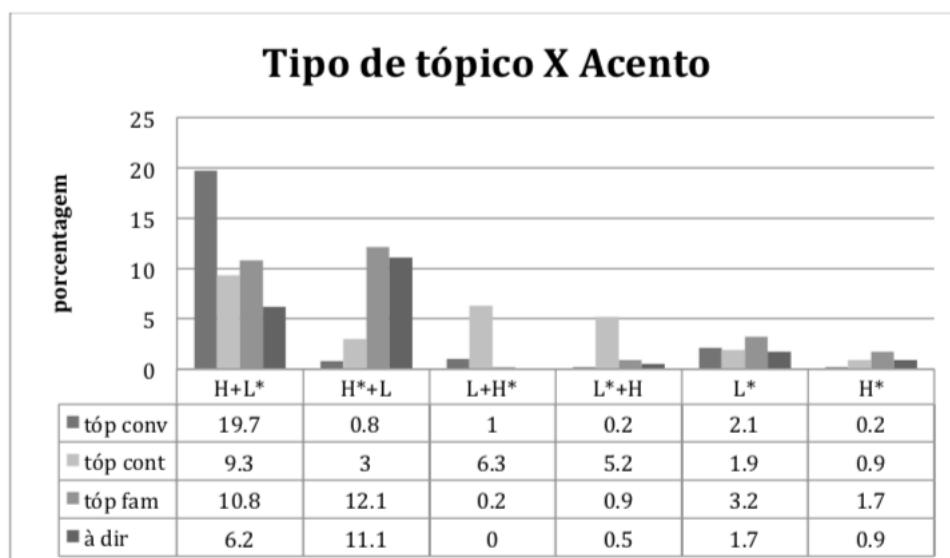
context. (25) shows the opposite pattern: The question here is ‘Who did Paulo meet?’, and only the answer in b is felicitous, with a fall-rise contour, indicating that *Paulo* is interpreted as a contrastive topic (and crucially, not as a focus, cf. discussion in Menuzzi and Roisenberg 2010, p. 237).

The work of Braga (2015) provides a more detailed description of the contrastive topic intonation in Brazilian Portuguese. The main goal of his thesis was to compare the intonation of different types of topics in BP with those in Italian and German, based on the work by Frascarelli and Hinterhölzl (2007, see detailed description in chapter §6.1.1). The author recorded 60 native speakers, who read 12 paragraphs containing sentences with three different types of topics: conversational (aboutness topic, see appendix §??), contrastive and familiar (given constituent, usually destressed and pronominal). Out of the final 1202 retained sentences (it was 1500 in total, but 298 were discarded), there were: 288 conversational topics, 320 contrastive topics and 596 familiar topics (out of which 246 were right dislocated). Braga annotated the utterances according to the type of tonal accent associated to the topic constituent and the occurrence (or not) of a pause between the topic and the rest of the clause.<sup>24</sup>

Figure 3.7 shows the overview of the percentage values of the tonal accents associated to each type of topic. First, note that the total value of each topic is simply the percentage of the total number of occurrences mentioned in the last paragraph. In other words, the (total) percentage of conversational topics (first row) is 24% (which corresponds to the 299 occurrences out of the 1202 total retained sentences). So looking at the numbers of conversational topics, out of 24% of occurrences, 19,7% presented a H+L\* accent. We can see that the contrastive topics (second row) do not seem to be associated with one specific accent; the most common ones are: H+L\*, L+H\* and L\*+H, respectively. Braga observes, however, that both rising accents (L+H\* and L\*+H) occurred almost solely with contrastive topics, since the values of this type of accent were very marginal with the other types of topics.

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24 The prosodic description presented in this section is couched in the auto-segmental metrical theory (Ladd 1996; Liberman and Pierrehumbert 1984; Pierrehumbert 1980).



**Figure 3.7:** Percentage values of tonal accents per type of topic (*tóp conv* = conversational topic; *tóp cont* = contrastive topic; *tóp fam* = familiar topic; *à dir* = right dislocated familiar topic); Braga 2015, p. 74.

Since we are mainly interested in contrastive topics, Let us look at the data in more detail. There were both subjects and objects with a contrastive topic reading. In all CTs examples used in the experiment, the constituent interpreted as contrastive topic is dislocated to the left periphery of the clause. (26) is an example of topicalization of the objects *as luvas* ‘the gloves’ and *as botas* ‘the boots’:

- (26) O João, O Pedro e a Maria conversavam sobre a Mara. E enquanto o Pedro contava sobre como gostava das coisas que a Mara fazia, especialmente cuidar da roupa, o João atendeu o telefone. Logo depois de desligar, o João perguntou pro Pedro: A Mara lavou as luvas?. O Pedro respondeu: **As luvas, a Mara não lavou, mas as botas, a Mara lavou.** (Braga 2015, p. 72)

‘João, Pedro and Maria were talking about Mara. While Pedro was saying how he likes things that Mara does, specially the way she takes care of the clothes, João was on the phone. Right after hanging up, João asks Pedro: Did Mara wash the gloves? Pedro answers: **The gloves, Mara did not wash, but the boots, Mara washed (them).**’

- (26') As luvas, a Mara não lavou, mas as botas, a Mara lavou.  
the gloves the Mara not wash.PST.3SG but the boots the Mara wash.PST.3SG

‘The gloves, Mara did not wash, but the boots, Mara washed (them)’.

Below is an example of a contrastive topic on the subject:

- (27) É aniversário do João e o Pedro conversa o Tiago sobre quem é convidado para a festa. O Tiago desconfiando que a Joana tem ciúmes da Maria diz: **Na festa do João, a Maria, eu acho que vai, a Joana eu nao sei.** (Braga 2015, p. 110)

‘it is João’s birthday and Pedro is talking to Tiago about who was invited to the party. Tiago suspects that Joana is jealous of Maria and says: **At João’s party, Maria, I think (she’ll) go, Joana I do not know.**’

- (27') Na festa do João, a Maria, eu acho que vai, a Joana eu  
in-the party of-the João the Maria I think.1SG that go.3SG the Joana I  
nao sei.  
not know.1SG  
‘At João’s party, Maria, I think (she’ll) go, Joana I do not know’.

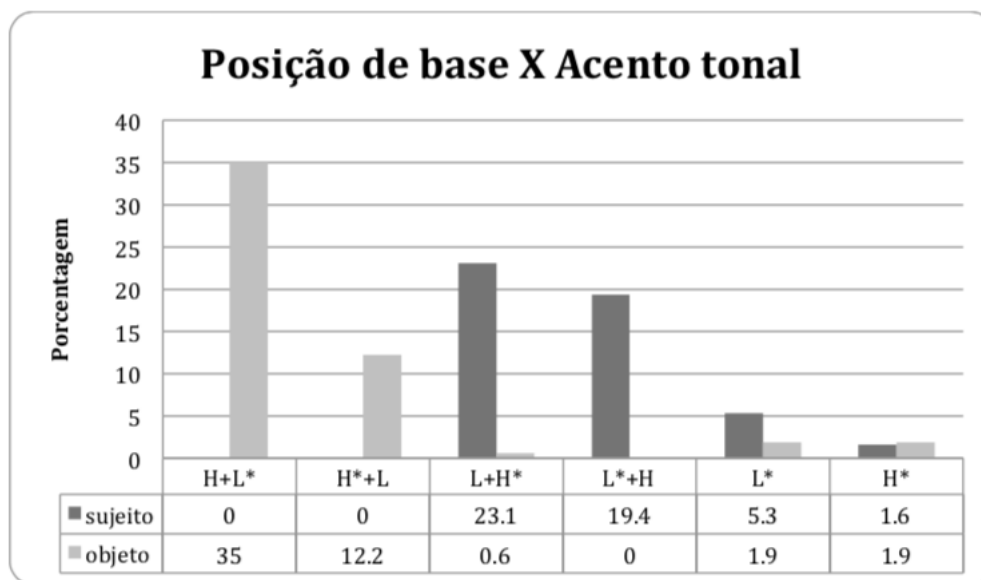
Note that both subjects *Maria* and *Joana* are dislocated in the target sentence above. First, there is a dislocation of the adverb *na festa do João* ‘at João’s party’, and then the subject of the embedded clause *a Maria vai* ‘Maria will go’ is also dislocated to the left periphery of the main clause *eu acho que* ‘I think that’ (the same applies to *Joana*, the subject of the second embedded clause). The author does not give further explanations as to why contrastive subjects always appear in a dislocated/topicalized context<sup>25</sup>, but it is important to keep this information in mind when the results of the contours associated with these phrases are discussed.

Braga found differing contours on CT subjects and CT objects. The four most used accents are the following: With objects, 35% of the phrases had a H+L\* accent and 12,2% showed a H\*+L accent; with subjects, 23,1% of the phrases had L+H\* accent and 19,4% L\*+H (Braga 2015, pp. 82–83). An overview can be seen in Figure 3.8.<sup>26</sup>

<sup>25</sup> I suspect that this is because Braga was inspired by the contexts presented in Frascarelli and Hinterhölzl (2007), all of which had a dislocated topic.

<sup>26</sup> Note that the total percentage numbers of occurrences of subjects and objects is different: 49,4% for subjects and 51,6%. I do not understand why these numbers are different, and also not why the percentage for the each factor (subject vs object) is not given over 100% for each one of them – this would probably be clearer for the comparison.

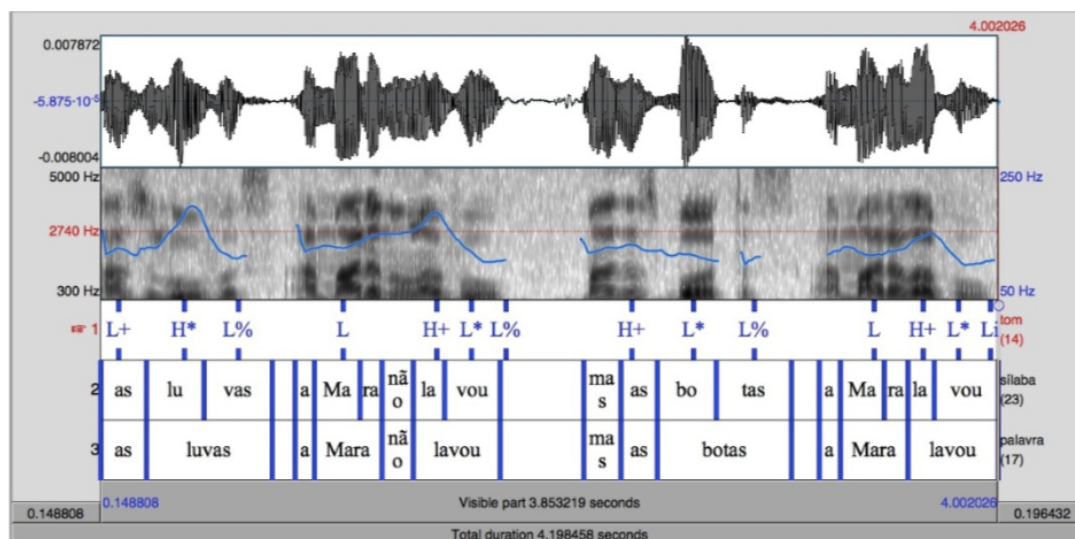
Moreover, Braga's analysis found a clear-cut difference in what regards the presence of a pause between the topicalized constituent and the rest of the clause: When the contrastive topic is an object, there was a pause in 86% of the cases, while with subjects it was only 17%.



**Figure 3.8:** Percentage values of tonal association with contrastive topic, according to the constituent's base position (*sujeito* = subject and *objeto* = object; Braga 2015, p. 84).

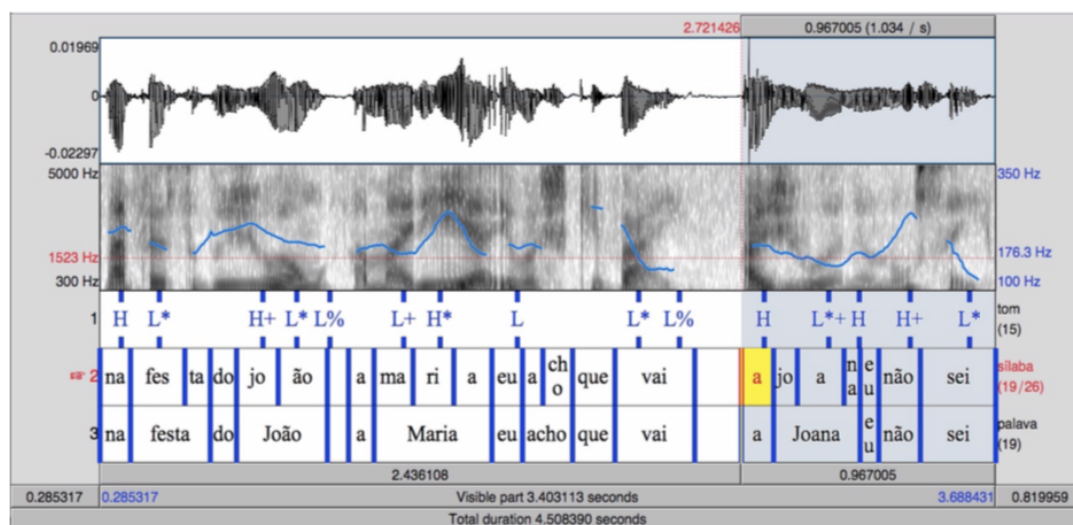
Figure 3.9 is the *Praat* image of the F0 of sentence (26), with the respective ToBI notation realized by Braga. The contrastive topic *as luvas* 'the gloves' has a rising accent followed by a low boundary tone accent (L+H\*L%), with the high peak aligned to the accented syllable. The second contrastive topic in this sentence, *as botas* 'the boots', however, has a different contour, H+L\* (which was, for that matter, the most used contour with objects interpreted as contrastive topics, cf. Figure 3.8). Braga suggests this might be an effect of the coordination, which has its own prosodic requirements (Braga 2015, p. 98). Unfortunately, the author does not give further specifications on the exact number of contrastive topics that appear as the first and second conjunct, nor whether this makes any difference to the distribution of the accent types.

As we can see from the general percentage presented in Figure 3.8, the accents that were the most associated with a contrastive topic in subject position were the two rising ones, L+H\* and L\*+H. Both accents can be seen in Figure 3.10, the F0 of sentence (27),



**Figure 3.9:** F0 and correspondent ToBI notation of the sentence *As luvas a Mara não lavou, mas as botas a Mara lavou* (literaly: ‘The gloves Mara did not wash, but the boots Mara washed’; Braga 2015, p. 87).

on the constituents *Maria* and *Joana* respectively. Observe that in this case, there is a rising accent on both subjects; these two accents are of course different (*Maria* has the H\* on the tonic syllable itself, and *Joana*, has the H\* peak following the tonic syllable), but they pattern with the crosslinguistic description of a rising accent for contrastive topics.



**Figure 3.10:** F0 and correspondent ToBI notation of the sentence *Na festa do João, a Maria, eu acho que vai, a Joana eu não sei* (literally: ‘To João’s party, Maria, I think will go, Joana I do not know’; Braga 2015, p. 84).

Thus, regarding the contrastive topics in his experiment, Braga concludes that there was a difference between the grammatical function of the topic constituent and the accent associated with it: Objects mostly had a H+L\* accent, and subjects had a L+H\* and L\*+H. Furthermore, only a small number of subject CTs presented a pause between the topic and the rest of the clause, while this number was very high for object CTs (86%). Braga also points out that the only correspondence he found between the prosody of contrastive topics in Italian and German from Frascarelli and Hinterhölzl (2007) and the prosody of CTs in BP, was the accent L\*+H, which is the accent associated with contrastive topics in German and (to some subject CTs in) BP.

It is important to point out that all the CTs in Braga’s corpus were dislocated constituents (both objects and subjects), and that they occurred in conjunctions, with both factors having possibly influenced the final results. As already pointed out, Braga does not give the exact distribution of how many CTs were subjects and objects, how many were first or second conjuncts, and whether there was a correspondence between these factors. It could be, for instance, that the H+L\* tone associated to 35% of the object CTs were in fact only (or mostly) found when the CT is the second conjunct, which might suffer an influence from the conjunction’s prosody itself (Braga hints at this, but he does not go into further detail).

Nevertheless, what I think should be pointed out in this study is the resemblance

between BP's CT prosody and that of German – even if only to a certain extent – as opposed to the one found in Italian.. We saw at the beginning of this section that Brazilian Portuguese is setting itself apart from prototypical Romance languages like Italian, especially in certain morphosyntactic properties. Braga's study indicate that this might also be the case with certain prosodic properties of contrastive topics. As we have seen in section §3.2, BP's focus prosody also seems to be closer to languages like English and German, which mark focus via pitch accent placement and deaccenting (cf. Frota et al. 2015; Kato and Martins 2016; Truckenbrodt et al. 2009).

To sum up, we just saw that Menuzzi and Roisenberg (2010) propose that contrastive topics in BP are used in the same contexts as in English (i.e. to mark a complex discourse strategy) and that the prosodic contour associated to them is different from the one associated to foci. In broad terms, the studies of Menuzzi and Roisenberg (2010) and Braga (2015) converge in characterizing the tonal accent of contrastive topics in BP as a rising accent. The work of Braga (2015), however, found that when the CT is an object, its accent is H+L\* (so not a rising accent). I suggested that this difference in the accent associated with a subject or object CT discussed in Braga's study could be due to the fact that all of his topics were dislocated, and that they were realized as conjuncts. The prosody of the conjunction itself might have influenced the prosody of the CT constituent. The issue remains thus open, and a thorough study of the prosody of CT marking in BP is still lacking. Some questions that remain to be answered concern, for instance, the interaction of prosody and word order when it comes to CT marking, or the specific pragmatic and semantic properties of CTs in BP. Hopefully, the present dissertation will at least contribute to building a precise study on the interaction between contrastive topic and focus ordering and interpretation in Brazilian Portuguese.

### 3.4 Summary of chapter 3

This chapter served two purposes. First, in section §3.1 I presented the principal morphosyntactic properties that are setting Brazilian Portuguese apart from other more traditional Romance languages. We have seen that these two morphosyntactic properties are the increase of overt subjects in the language (therefore called a “partial pro-drop language”), and the increase of null objects. I presented studies that argued for a direct correlation between the impoverishment of the verbal paradigm and the change in the pronominal system on the one hand, and the increase in the overt realization of subjects on the other (cf. Duarte 1995). Next, we have seen that 3SG accusative clitics have

practically disappeared in Brazilian Portuguese, and that null objects, or the use of 3SG nominative form *ele/ela* ‘he/she/it’, have replaced it.

Second, sections §3.2 and §3.3 aimed at discussing the main properties of the two information structure categories relevant for this dissertation – focus and contrastive topic – in Brazilian Portuguese. In short, I outlined that foci in BP are marked in a similar fashion to stress languages, as it uses NPA placement and postfocal pitch range compression. I discussed some effects of word order changes in focus-marking in BP, where we have seen that post-verbal subjects are infelicitous as a focus marking strategy, whereas clefts have been argued to be employed frequently to mark focus in the language. Regarding contrastive topics, they have the same discourse functions as in English – to mark a complex discourse strategy – and, moreover, their tonal accent in BP is also a rising accent.

For the purposes of the forthcoming discussion in this dissertation, the facts and properties on BP morphosyntax and contrastive topic and focus presented so far are enough. For the reader interested in a complete overview of information structure-related phenomena in Brazilian Portuguese, Appendix §3.5 offers a general discussion of topic-marking constructions in the language. The reader interested in the ordering effects of contrastive topics and foci in BP, can jump to chapter §4 without loss of necessary background for the discussion.

### 3.5 Appendix: Topic

In section §2.3 we discussed the main properties of contrastive topics; what we did not address were TOPICS (without the *contrastive* bit). In the present section I will outline a brief characterization of topic in Brazilian Portuguese, and use other Romance languages for comparison. While there is a general consensus on what a *contrastive topic* is (it marks a complex discourse strategy), there is no consensus on what a *topic* is. Although this dissertation is not concerned with the more general category *topic*, I believe that it might be interesting to have a general overview of the phenomenon of topic-marking constructions in BP (notwithstanding because some of these constructions are sometimes related to contrastive topics, as it will be discussed shortly).

The term *topic* has received many different definitions in the literature. The recurrent ones are “given/old information”, “psychological subject” and “what the sentence is about”. One can quickly see that these definitions are not similar, and sometimes they do not even converge. Take, for instance, old information vs. aboutness topic: A sentence can be “about” something that is not old information. But this also depends on which

definition one gives to “old information”: Does it only make reference to information that has been given in the previous discourse, or does it also matter that it is shared knowledge between speakers?<sup>27,28</sup> This is only to show some of the confusion involving one of the definitions of what a topic is, and similar problems apply to the other definitions (see Roberts 2011 for an excellent overview).

Yet, some tests have been put forward in the literature to elicit a constituent  $x$  as a topic. As pointed out in Büring (2016, p. 81), the most common way is to prefix the topic sentence with ‘Tell me about  $x$ ’, ‘What about  $x$ ?’, and a sentence with a topic can usually be rephrased in terms of ‘(s)he said about  $x$  that ...’. These all lead to a definition of topics as ‘what the sentence is about’ – although this does not work in all cases (see the discussion in Büring 2016, pp. 81–83, which convincingly shows that the aboutness tests are not sufficient nor necessary to identify a constituent as a topic).

(28) is an example of a sentence with a topic:<sup>29</sup>

- (28) A Avenida das Américas<sub>i</sub>, eles tão      recapeando ela<sub>i</sub> toda né  
 the avenue of-the Americas they are.3PL rebuild.GER she all    right  
 ‘The Avenida das Américas, they are rebuilding it all right.’ (Vasco 2006, p. 40)

*A Avenida das Américas* is analyzed as a topic, which surfaces in a position in the left periphery of the clause and is resumed by a pronoun (we will talk more about these constructions in the section §3.5.2). Such a construction could presumably host a contrastive topic (particularly, if it has the characteristic rising contour of CTs), but let us consider the case in which it does not. *A Avenida das Américas* is part of the background, but it still has a special status in the sentence. Topic-marking constructions do not have a regular truth-conditional effect, but they still shape the pragmatic meaning of the sentence in which they occur (Büring 2016; Roberts 2011, *inter alia*).

That topic-marking constructions do not have an effect on the truth condition of a proposition, but still cannot occur in any context, can be seen in the question-answer pair below:

27 See Gundel and Fretheim (2004) for an interesting discussion between two different types of old/new distinction. In sum, one old/new distinction makes reference to the activation status of the referents in the discourse; the other old/new distinction makes reference to the relation between the different information status of the sentence (assertion and presupposition).

28 Prince (1981) has proposed that entities may be discourse-old/discourse-new (may or may not be already introduced in the current discourse) and hearer-old/hearer-new (may or may not already be present in the hearer’s mind).

29 Throughout, topics will be underlined, as well as their resumptive pronouns.

- (29) Quem o João encontrou ontem no cinema?  
 ‘Who did John meet yesterday at the movies?’
- a. O João encontrou [a MARIA]<sub>F</sub> no cinema.  
 the J. meet.PST.3SG the M. in.the movies  
 ‘João met Maria at the movies’.
- b. #A Maria<sub>i</sub> o João encontrou ela<sub>i</sub> no cinema.  
 the M the J. meet.PST.3SG she in.the movies  
 ‘Maria, John met he at the movies’. (Roisenberg and Menuzzi 2011, p. 207)

While the propositional content of (29-a) and (29-b) is the same (there has been a meeting, *João* is the one who met someone, *Maria* is the one who was met, the meeting happened at the movies), still (29-b) is not felicitous in this context. Arguably, this is because *Maria* is not interpreted as focus in (29-b), but as topic.

Topic-marking constructions are usually divided into two parts: the topic marked constituent and the property expressed by the non-topic part of the sentence. While most works that study topics across languages generally agree that a sentence can be broken up into these two parts (but see Vallduví 1990 for a tripartite proposal), there is no consensus on exactly how these two parts should be called. The most common ways of referring to the partition of a topic sentence are: topic-comment, theme-rheme (Firbas 1957; Halliday 1967), presupposition-focus (Jackendoff 1972; Prince 1981). The most used dichotomy in the Romance literature is by far topic-comment (cf. Brunetti 2009b; Brunetti et al. 2005; Cruschina 2012; Delais-Roussarie et al. 2004; Frascarelli and Hinterhölzl 2007; Kato and Raposo 1996; Pontes 1987; Riou and Hemforth 2015; Rizzi 1997; Samek-Lodovici 2009; Vasco 2006, among many others).

Since the seminal work of Pontes (1987), topic sentences have received much attention from Brazilian linguists (mostly from a generative point of view). Pontes observed that topic-marking constructions have become very frequent in Modern-day spoken BP, and that many configurations that are usually only found in topic-oriented languages can now be found in BP.<sup>30</sup> Pontes distinguished four different types of topic-marking constructions in BP, and this typology has been since widely accepted in BP studies. I will now present

30 A Topic-oriented language, as opposed to a subject-oriented language, was a classification proposed by Li and Thompson (1976). According to the authors, a topic-oriented language is one where the sentence structure “favors a description in which the topic-comment relation plays a major role” (Li and Thompson 1976, p. 459). Among other things, a topic can be differentiated from a subject in the following criteria: topics are always definite, and they do not need to establish selectional relations with the verb. Vasco (2006, pp. 51–55) applies Li and Thompson’s typology to BP, and observes that, indeed, a topic does not need to agree with the verb in BP (as opposed to the subject). In (i), the topic *minhas gavetas* ‘my drawers’ is plural, but the verb is conjugated in the singular form:

some examples from the more recent works, mainly by Andrade and Galves (2014) and Vasco (2006), which are based on Pontes' (1987) classification.

The first one is what Pontes (1987) called SUBJECT-TOPIC construction (Vasco 2006 calls it *anacoluto*, literally “anacoluthon”). In this construction, the topic behaves like the syntactic subject. Moreover, the agreement is between the topic and the verb, and not the subject and the verb (see also footnote 30). (30-a) is an example of a subject-topic, where the locative ‘(n)essa casa’ is in subject position and loses the preposition *em* ‘in’.<sup>31</sup> Compare it with (30-b), the “canonical” version of this sentence, where the locative is in sentence final position and the expletive subject is expressed by a null subject.

(30) SUBJECT-TOPIC

- a. Essa casa bate muito sol.  
this house get.3SG much such
- b. Bate muito sol nessa casa.  
get.3SG much such in.this house  
‘A lot of sun [rays] blazes on this house.’ (Andrade and Galves 2014, p. 118)

Another configuration are the DOUBLE SUBJECTS, called as such because there are two “subjects” in the sentence (the topic and the syntactic subject). In (31), the topic is *apartamento* ‘apartment’ and the subject is *você* ‘you’ in (31):

(31) DOUBLE SUBJECT

- Apartamento você não conhece os seus vizinhos, você não faz  
apartment you not know.2SG the your neighbors you not make.2SG  
amizade.  
friendship  
‘(When you live in an) apartment you do not meet your neighbors, you do not  
make new friendships’. (Vasco 2006, p. 67)

The other two constructions are topicalization and left dislocations. As observed by Pontes (1987) and confirmed by many subsequent works (Duarte 1995; Kato and Raposo 2007; Orsini 2003; Orsini and Vasco 2007; Paula 2012; Vasco 2006), Brazilian Portuguese has, mainly, topicalization of objects and left dislocation of subjects. We will see how these constructions can be differentiated in the next subsections.

- 
- (i) Minhas gavetas não cabe mais nada.  
my drawers not fit.3SG more anything  
‘I cannot fit anything else in my drawers’. (Vasco 2006, p. 55)

31 The preposition *em* ‘in’ is reduced to *n-* before vowels.

Before we go on, the reader should know that right dislocations are also possible in BP:

(32) RIGHT DISLOCATION (of subject)

Ele<sub>i</sub> respondeu a pergunta, o João<sub>i</sub>.  
he answer.PST.3SG the question the J.

‘João answered the question’.

(Kato 2007, p. 96)

In this construction, a constituent is moved to the right of the sentence (*o João* above) and it has a co-referring pronoun in its canonical position (*ele* ‘he’ in (32)). Right dislocations have not been systematically studied in BP, so this simple characterization will have to suffice.

In sum, although the term *topic* is the object of much terminological confusion, there is a general consensus that topic-marking constructions exist. Romance languages are particularly known for that, and we saw that four types of topic-marking constructions have been put forward in the literature in BP since Pontes’ (1987) work. We presented two of them: subject-topics, where the topic of the sentence behaves like the syntactic subject; and double-subjects, where the sentence has two “subjects”, the topic and the syntactic subject. In the next subsections, the two most discussed topic-marking constructions in BP will be presented: topicalization and left dislocation.

### 3.5.1 Topicalization and left dislocation of objects

Let us now look, in more detail, at the two topic-marking constructions that are the most studied in the BP literature: TOPICALIZATION (TOP) and LEFT DISLOCATION (LD). As a point of departure, what these two structures have in common is that a topic constituent surfaces in the left periphery of the clause. The main difference between TOP and LD is that the left peripheral constituent leaves a gap in its canonical position inside the clause in TOP, while in LD there is a co-referent pronoun in the left peripheral constituent’s canonical position (following the literature, I will refer to this pronoun as “resumptive pronoun”). As already mentioned, several authors point out that there seems to be a “division of labor” between TOPs and LDs in BP, since the former occurs mainly with objects and the latter mainly with subjects (Duarte 1995; Orsini 2003; Orsini and Vasco 2007; Vasco 2006). This is different from Italian, for instance, which does not display left dislocation of subjects (Duranti and Ochs 1979), and direct objects can only be dislocated if resumed by a clitic pronoun (so an LD).

The generalization that there are TOP of objects and LD of subjects in BP needs to be taken with caution, because it is virtually impossible to see whether a subject

has been topicalized (recall that in TOP there is a gap in the canonical position of the constituent). Subjects are by default preverbal in BP, so it is not easy to know whether they are simply in their canonical position (Spec,TP) or whether they have moved to a left peripheral position outside the clause. It has been often said that topicalizations present a pause between the topic and the comment. So one diagnostic could be the presence of a pause between the topic and the comment in TOP, and an absence of pause between the subject and the predicate in a canonical SVO sentence. This would require, however, a precise prosodic annotation of both constructions, and corpus studies of topic-marking constructions in BP have not systematically done that. Thus, the issue remains unsolved.

Turning to objects, in (33) the direct object *certas pessoas* ‘some people’ is topicalized, by being dislocated to the left periphery and leaving a gap in the object position inside the clause:

(33) TOPICALIZATION

Certas pessoas eu não condeno —i.  
 some people I not condemn.1SG

‘I do not condemn some people’

(Vasco 2006, p. 171)

The topicalization construction is often studied in Germanic languages (mostly English and German; see Birner and Ward 1998; Frey 2005; Gregory and Michaelis 2001; Prince 1998, also called “preposing” in more recent works like Ward et al. 2002), but not in Romance languages. As Kato and Raposo (2007, p. 207) observe, Portuguese (both European and Brazilian) is the only Romance language that displays topicalizations. Some authors refer to the construction in (33) as English-type Topicalization (see Benincà and Poletto 2004; Bocci 2013; Cinque 1990; Cruschina 2010b; Haegeman 2004; López 2016), since they assume that this construction is different from the Romance-type topicalization constructions (as we will see below).

Topicalizations in Brazilian Portuguese have been often connected to the increase of null objects in the language (Barbosa et al. 2005; Cyrino et al. 2000; Kato and Raposo 1996, 2007; Kato et al. 1988; Pontes 1987). Since there is a tendency for objects to be null in the language, it is expected that a configuration that leaves a gap inside the clause be common. Moreover, several scholars have claimed that topicalization of the direct object is the most common topic-marking construction in BP. For instance, Vasco (2006), in a corpus study of spoken language, found that among all the topic-marking constructions involving an object, 84% were topicalizations (p. 172).

Another possibility is to have a left dislocation of the direct object, with a resumptive pronoun:

(34) LEFT DISLOCATION (of direct object)

A abóbora<sub>i</sub> você lava ela<sub>i</sub> antes de cozinhar né.  
 the pumpkin you wash.2SG she before of cook right  
 ‘You wash the pumpkin before you cook it, right’. (Vasco 2006, p. 163)

Note that the resumptive pronoun in (34) is a nominative form in object position, a common possibility in BP since the language has lost most of its accusative clitics (as discussed in section §3.1.2). Another possibility would be to simply repeat the NP *a abóbora* ‘the pumpkin’, instead of using the resumptive pronoun. In fact, Vasco (2006, p. 40) found that, in the topic-marking sentences where there was a resumptive pronoun with a left dislocated object, repetition of the identical NP was the most used strategy, featuring in 55% of the occurrences (the nominative form was only used in 18% of the cases).

Left dislocations in Romance languages are usually called CLITIC LEFT DISLOCATION (CLLD) in the literature, following a terminology put forward in Cinque’s work (1977; 1982; 1990). This is because the pronoun that resumes the dislocated constituent is a clitic pronoun (but see the difference between CLLD and Hanging Topic Left dislocation below). I follow Barbosa et al. (2005) and do not use *Clitic* Left Dislocation (only Left Dislocation) in the case of Brazilian Portuguese because the clitic system in this language is very different from the other Romance languages (see discussion in section §?? about the changes in the pronominal system in BP).

Some Romance languages, like Spanish, Catalan or Italian, only allow for object dislocation if the object is resumed by a clitic pronoun (crucially, there cannot be a gap inside the clause):

(35) CLITIC LEFT DISLOCATION (of direct object)

La casa \*(l’) ha comprada per pocs diners. [CAT]  
 the house it.CL have.3SG bought for little money  
 ‘He bought the house at a low price’. (Cruschina 2010b, p. 53)

(35) is a Catalan example of CLLD and, as indicated by the star before the clitic, it is only grammatical if the dislocated direct object *la casa* ‘the house’ is resumed by the clitic pronoun. This illustrates that it is not possible to have a dislocated direct object

without a clitic resumption inside the clause in Catalan – and this also extends to Italian and Spanish.<sup>32</sup>

Before we go on, let me introduce a caveat about the possible different derivations involved in TOP and LD. There is extensive literature on the generative tradition that addresses the two topic-marking constructions from the perspective of the nature of the movement of each construction. The most common analysis is that topicalization involves A-bar movement to the left periphery, while in left dislocation the topic constituent is base generated in the left periphery (as first put forward by Ross 1967; but see Cruschina 2010b; Kato and Raposo 2007; Rizzi 1997; Vasco 2006 for works which consider that both TOP and LD are generated via movement). The main argument for distinguishing the two types of movement is that topicalization is sensitive to islands (see (36-a)), while LDs are not (36-b):

- (36) a. \*John, who do you think saw \_\_\_\_  
 b. John<sub>i</sub>, who do you think saw him<sub>i</sub> (Chomsky 1977, via Grohmann 1997, pp. 2–3)

While I use terms like “the dislocated constituent” or the “resumptive pronoun” (which make reference to some movement analysis of the structure), I do not take part in the particular “movement vs. base generated” discussion for TOP and LD. The reason for that is that these constructions are not the main concern of this dissertation, so I do not see the necessity of deciding which approach is the most adequate to the data.

Following the debate of the type of derivation involved in TOP vs. LD, Cinque (1977, 1982, 1990) proposed that Italian has in fact two types of left dislocations: CLLD (same structure as (35)) and HANGING TOPIC LEFT DISLOCATION (HTLD). In sum, Cinque argues that HTLD is base generated, while CLLD is not. This can be seen through different characteristics of each construction. This distinction is widely accepted in the Italian literature, and has since been the matter of interest of many works (see, among many others, Benincà and Poletto 2004; Cruschina 2010b; Frascarelli 2004). The two sentences in (37) are an example of a HTLD and CLLD in Italian respectively (from Benincà and Poletto 2004, p. 64):

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<sup>32</sup> As a matter of fact, clitic resumption is always obligatory in Catalan, independently of the distinction between DP (direct objects) and PP arguments (indirect objects and other prepositional phrases) (Cruschina 2010b; Villalba 2000). Clitic resumption is not obligatory with PPs in Spanish and Italian (cf. Cruschina 2010b, 2012).

- (37) a. Mario<sub>i</sub>, non ne<sub>i</sub> parla piu nessuno. [HTLD]  
 Mario not of.him talk.3SG anymore nobody  
 ‘Mario, nobody talks of him anymore.’
- b. Di Mario<sub>i</sub>, non (ne<sub>i</sub>) parla piu nessuno. [CLLD]  
 of Mario not (of.him) talk.3SG anymore nobody  
 ‘Mario, nobody talks of him anymore.’

While both sentences in (37) resemble a clitic left dislocation (in both constructions a topic constituent surfaces at the left periphery of the clause and it is related to a resumptive pronoun inside the clause), there are some differences between HTLD and CLLD in Italian. The simplest way to distinguish a HTLD from a CLLD is that only CLLD has a Case agreement marker next to the topic (*di* ‘of’ in (37-b)). Some of the other differences are the following: a strong pronoun or an epithet can be the resumptive pronoun in HTLD, while it can only be a clitic in CLLD; HTLD allows only the dislocation of NPs, while CLLD allows PP, NP, and virtually any maximal projection to be dislocated; HTLD can only appear in matrix sentences, whereas CLLD can appear in embedded sentences as well. A combination of these characteristics can be seen in the sentence below (from Cinque 1982, p. 12):

- (38) \*Credo che Mario<sub>i</sub>, lui<sub>i</sub> non venga. [IT]  
 believe.1SG that M. he not come.1SG.COND

According to Cinque (1982, p. 13), (38) is ungrammatical because it is a dislocation that takes place in an embedded context (a diagnostic for CLLD), but the resumptive pronoun *lui* ‘he’ is not a clitic (which can only occur in HTLD).

While the distinction between HTLD and CLLD has been proved useful in Italian (there are clear syntactic differences), no similar distinction seems to occur in Brazilian Portuguese. The main reason for this is that, as already discussed, clitic dislocations are basically nonexistent in BP. Thus, there does not seem to be the motivation to differentiate the two types of LD in first place (but see Galves 1997 for an attempt in this direction). The distinction that does make sense in BP is between a topic-marking construction where there is a gap in the canonical position of the dislocated constituent (topicalization), and a construction in which there is a resumptive pronoun inside the clause that resumes the dislocated phrase (left dislocation). These are, indeed, the two constructions that have received the most attention in the BP literature (Duarte 1995; Kato and Raposo 2007; Orsini 2003; Orsini and Vasco 2007; Paula 2012; Pontes 1987; Vasco 2006). Also, several authors note that there is crosslinguistic variation between the English-type and the Romance-type dislocations. For instance, as Cinque (1990) noted,

CLLD in Italian can occur both in matrix and embedded contexts (contrary to English topicalization with a resumptive pronoun) and there is no uniqueness requirement (i.e., several topics can be clitic left dislocated in Italian, which cannot occur in English).

It is worth pointing out that topicalizations do not only take place with direct object in BP, but also with other arguments (except from the subject, as discussed above). (39) is a topicalization of a PP:

(39) **Topicalization** (of PP)

Os cachorros eu posso cuidar —<sub>i</sub>  
 the dogs I can.1SG take.care  
 ‘I can take care of the dogs’ (Vasco 2006, p. 178)

Note that, although the verb *cuidar* ‘take care’ needs a preposition in BP (the same as in English), there is no preposition with the topicalized phrase *os cachorros* ‘the dogs’. The preposition is optional in these cases. As Vasco (2006) observes, the preposition is disappearing in topicalized constructions, which for the author is another indication that BP is becoming a topic-oriented language (recall that one of the main characteristics of topic-oriented languages is the lack of agreement relations with the verb).

In short, topicalization of the object, where the object is moved to the left periphery and there is a gap in its canonical position, is the most common topic-marking construction in BP. We saw that the most common dislocation of objects in other romance languages is the so-called Clitic Left Dislocation, where a clitic pronoun co-refers with the dislocated topic. CLLD is not present in BP, which is due to the changes in the accusative pronoun paradigm and the increase of null objects (as discussed in subsection §3.1.2). For this reason, following the literature, we refer to these constructions simply as left dislocations (without the *clitic* part). In the next section, we will also discuss left dislocations, but of subjects.

### 3.5.2 Left dislocation of subjects

Several scholars have observed that there has been an increase of left dislocations of the subject in BP in the last century (first proposed in Duarte 1995). In (40), *a Clarinha* is left dislocated and resumed by the pronoun *ela* ‘she’.

(40) **Left dislocation** (of subject)

A Clarinha<sub>i</sub> ela<sub>i</sub> cozinha que é uma maravilha.  
 the C. she cook.3SG that be.3SG a wonder

‘Clarinha, she cooks wonderfully’. (Barbosa et al. 2005, p. 16)

Other Romance languages like Italian, Spanish and Catalan, do not have subject dislocations. This is mainly because of two things: These languages still have null subjects, and they do not have clitic subject pronouns, which would be a condition for there to be a left dislocation in these languages (cf. Duranti and Ochs 1979 for Italian; Casielles-Suárez 2004 for Spanish; Villalba 2000 for Catalan).

On the other hand, languages with obligatory subjects have left dislocation of subjects. This is the case of English and, to give another Romance language example, French.<sup>33</sup> In the past 40 years or so several scholars observed that left dislocation of subjects are common in spoken French, where the subject pronouns are clitics, and thus function as the resumptive pronoun of the dislocated subject (Ashby 1988; Barnes 1985; Brunetti et al. 2012; Cinque 1982; De Cat 2002, 2007). Other authors, however, claimed that subject clitics are actually agreement markers (due to the impoverishment of the verbal morphology, subject pronouns would function as the agreement marker instead of the verbal conjugation), and thus that the DP *les clitiques* ‘the clitics’ in (41) occupies a canonical subject position instead of a left peripheral position (see references in the footnote).<sup>34</sup>

(41) **Left dislocation** (of subject)

|                                                                                                                                                            |                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <u>Les clitiques</u> <sub>i</sub> <u>ils</u> <sub>i</sub> comptent pour du beurre.<br>the clitics they count.3PL for some butter<br>‘Clitics don’t count.’ | [FR]<br><br><br><br><br>(De Cat 2002, p. 1) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|

Following De Cat (2002, 2007), I label the sentence in (42) as a left dislocation, since the author convincingly argues that this construction only takes place with topic subjects (see the discussion in De Cat 2007 for more detail, particularly chapter §3.2).<sup>35</sup>

<sup>33</sup> Note, however, that subject pronouns in English and French are very different. As pointed out by Lobo and Martins (2017, 68, fn. 40), English subject pronouns can be coordinated, focused and separated from the verb – which French subject pronouns cannot. Additionally, the authors observe that subject LDs are much more common in French than in English, which also suggests that subject pronouns have a different status in the two languages.

<sup>34</sup> According to the discussion in De Cat (2007), there are two schools when it comes to the analysis of the clitic subjects in French. On the one hand, some authors believe that they are “syntactic entities”, in the sense that they bear a  $\theta$ -role and cliticize phonologically onto the verb through movement to TP (Belletti 1999; Kayne 1975; Rizzi 1986). On the other hand, some authors believe that subject clitics in French are verbal agreement morphemes which function as the inflectional verbal morpheme that disappeared with the impoverishment of the verbal morphology in the language (Berrendonner 2007; Culbertson and Legendre 2008; Miller and Monachesi 2003).

<sup>35</sup> De Cat’s main argument comes from the comparison of the structures below:

Brazilian Portuguese is in a hybrid position among these two groups of languages (the ones that do not have subject LDs and the ones that do) because, while BP still has null subjects (like Italian and Spanish), its subject pronouns are not clitics (as they are in French). Still, there is a tendency in the literature to relate subject LDs in BP to the same phenomenon in French, since they are the only two Romance language that have it, and they apparently went through similar syntactic and morphological changes (but see Roberts 2014 for a critical view on this generalization). For many authors, Brazilian Portuguese is in certain aspects becoming closer to a system like the French one, where subjects are obligatory, the verbal morphology is not as rich as it used to be, and weak subject pronouns are now acting as verbal agreement morphemes. Consequently, left dislocations of subject became common in BP, as they are in French (cf. Barbosa et al. 2005; Cyrino et al. 2000; Duarte 1993, 1995, 2000; Galves 2000; Kato 1999; Orsini 2003; Orsini and Vasco 2007; Paula 2012; Vasco 2006).

There are, however, some differences between subject LDs in French and BP. One of them is that the resumptive pronoun is not a clitic in BP (while subject pronouns are clitics in French, cf. Cinque 1982; Culbertson and Legendre 2008; De Cat 2002, 2007; Rizzi 1986). As we saw in section §3.1.1, subject pronouns are in fact strong forms in BP. In this sense, Kato (1999) observed that a second type of subject pronouns is emerging in BP, and which are considered weak by the author (so not really clitics, but at least not strong).<sup>36</sup> Note, however, that this claim has not been generally accepted in the BP literature, mainly because these reduced forms pointed out by Kato are very stigmatized, being used in very informal contexts and are not widely spread in standard spoken BP.

Another difference between BP and French subject LD is that the dislocated constituent in BP does not *have* to be a topic. According to Costa et al. (2006), subject LDs in BP can occur in out-of-the-blue contexts (where the subject is part of the focus). Furthermore, the authors observe (Costa et al. 2006, pp. 139–141) that quantified NPs can be left dislocated in BP (42-a), whereas they cannot in French (42-b):

- (i) a. Le malais, c'est difficile. [FR]  
           the Malay it-is difficult  
           'Malay is difficult.'  
       b. #Le malais est difficile.  
           the Malay is difficult

According to the author, Individual Level Predicates (predicates that express permanent properties, which is the case in (i)) force a topic interpretation of their subject, except when there is narrow focus on that subject (De Cat 2007, p. 25).

36 These weak subject pronouns are quasi-homophonous to the strong forms which have been subject to phonological reduction. To give the reader an idea, here are some phonological transformations that are taking place in BP from the strong to the weak form: 1SG : [ew] → [o]; 2SG: [vose] → [se]; 3SG.FEM: [elə] → [e]; etc. (Kato 1999, p. 14).

- (42) a. Cada criança<sub>i</sub> ela<sub>i</sub> leva seu livro pra escola.  
 each child she take.3SG her book to-the school  
 ‘Each child takes her book to school.’  
 b. \*Chaque enfant il apporte son livre à l’école. [FR]  
 each child he take.3SG his book to the-school

In this sense, Roberts (2014) points out that, although French and BP share properties like an extreme simplification of agreement inflection and a (partial, in the case of BP) loss of null subjects, the changes in BP and French did not follow the same path. Particularly, the changes in the French system were triggered by a difference in word order (loss of V2), whereas in BP the trigger was due to a change in the pronominal system. The fact that the pronominal system of the two languages is so different could be related to the differences seen in subjects LDs in the two languages.

In short, one can say that the increase in left dislocations of subjects in BP is connected to the increase of overt subject pronouns. In support of this hypothesis, Duarte (1995) has convincingly shown that the increase of the subject LDs has happened at the same time as the increase in the overt subjects. Additionally, as discussed by Costa and Figueiredo Silva (2006), dislocated subjects in BP are not always interpreted as topics, as is the case of dislocated subjects in French. We will further discuss the pragmatic functions of TOP and LD in BP below, but the reader should be warned that such properties have not been consistently studied.

### 3.5.3 Pragmatic and prosodic properties of topic-marking constructions in Brazilian Portuguese

While there is consensus on the fact that subject LDs in BP are connected to the (partial) loss of null subjects and the impoverishment of the verbal inflection paradigm, the exact syntactic and semantic nature of these dislocated subjects and their resumptive pronoun still lack a systematic study. Most studies look at it from a generative perspective, so the questions in these works surround discussions such as ‘Is the dislocated constituent in AgrP or IP?’, ‘Is LD base generated or an instance of A-bar movement?’, etc. (see Barbosa et al. 2005; Cyrino et al. 2000; Duarte 1993, 1995, 2000; Kato 1999; Kato and Raposo 2007; Vasco 2006).

Furthermore, all of these works allude to the pragmatic effects of LDs (and TOP too, any topic-marking construction in general) such as “mark the dislocated constituent as the topic of the sentence”, but no systematic study has been done to this day on the exact pragmatic properties of these constructions (and how they are connected to the

syntactic characteristics). In English, for instance, the usual characterizations revolve around something along the following lines: While LDs can occur with a discourse-new topic, TOPs can only occur with a discourse-old entity (Ward et al. 2002, p. 1409). From this, it follows that LDs in English are used to establish a new topic of discourse, while TOPs are used to refer back to an already established topic.<sup>37</sup>

To my knowledge, there is only one systematic study of pragmatic functions of topic-marking constructions in BP, that being the seminal work by Pontes (1987). Other works only make reference to either what Pontes has claimed or apply to BP what has been said for English. Pontes (1987) observes that, in fact, there is not a clear-cut difference between TOP and LD in BP, and that both constructions refer back to topics that are discourse- or hearer-old (Pontes 1987, p. 140). Some authors have also pointed out that contrast can be a distinguishing factor between the two constructions, since TOP can have a contrastive interpretation, while LDs cannot (cf. Orsini 2003; Pontes 1987; Vasco 2006).

Furthermore, in a study that compared left dislocated subjects and preverbal (non-dislocated) subjects in a spoken corpus of Brazilian Portuguese (Assmann 2016), I observed that a significant factor on the choice of subject LDs over preverbal subjects is what I referred to as “foreground” (following Barnes 1985; Hopper and Thompson 1980). “Foreground” is very close to “establish a new topic” (that has been attributed to LDs in English), and it basically means that the topic that has been left dislocated became the topic of discourse for several (approx. five) following utterances. In this study, I did not find that contrast was a factor that favored the use of LD over that of a preverbal subject, which can suggest that the claim that LDs do not have a contrastive function in BP is indeed correct. However, it is important to point out that in Assmann (2016), I did not compare left dislocations to topicalizations (which are said to be able to convey contrast in BP), but only dislocated subjects to non-dislocated ones. A systematic study that analyses different topic-marking constructions and their pragmatic functions (among them, contrast) in BP is still needed.

The reader can see, however, that the pragmatic definitions that were hinted at are not all very clear, and the fact that different authors use so many different terms does not

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<sup>37</sup> The terminology is very confusing when one enters pragmatic waters. Gregory and Michaelis (2001) use the term “topic promotion” for both LD and TOP in English. Other authors refer to a “topic shift”, which can be done both by a newly introduced topic and by a topic that has been introduced earlier in the discourse and is now being referred back to (De Swart and Hoop 2000; see also Frascarelli and Hinterhölzl 2007 for Italian). Moreover, even more terms have been proposed, which mix discourse old/new with hearer old/new. Brunetti et al. (2012), for instance, proposed a 3-way classification into “active topics”, “semi-active topics” and “reintroduced topics”; the last two can be used as a topic shift.

help a serious pragmatic characterization of topic-marking constructions. As pertinently pointed out by Büring (2016, p. 83), a systematic study of these constructions should seek to establish their exact properties independently. Among other things, the author observed that it is relevant to know whether the marking can: a) establish a new discourse referent as the aboutee (roughly, a topic) for the following, or b) establish an existing discourse referent as the new aboutee, or c) refer to an established aboutee throughout its tenure as ‘what the passage is about’?, or d) do something altogether different. And this would be only the beginning.

A final word on the prosody of topic-marking constructions in BP. Callou et al. (1993) analyzed 122 sentences of TOP and DE in total (79 TOP and 43 LD). They looked at prosodic contour (rising and falling) and presence of pause between the dislocated constituent and the rest of the sentence. In a comparison between the two constructions, they found that TOP present mostly a rising contour, while LDs do not have a characteristic contour (both rising and falling are possible and none is preferred over the other). Regarding the presence of pause, both TOP and LD did not show a clear pattern, so pauses can occur but do not have to.

The authors have then grouped TOP+LD and compared it to canonical SVO sentences. Here, the pause was a “distinctive factor”: 74% of SVO did not have a pause between subject and verb (Callou et al. 1993, p. 347), while only 32% of TOP+LD did not have a pause (Callou et al. 1993, p. 336).<sup>38</sup> As Braga (2015, p. 45) points out, Callou et al.’s (1993) study, although pertinent, did not have much of the advantages we have nowadays regarding software and computer analyses. There are, thus, several points that remain open for further work, e.g. what the significant factors on the comparison of the constructions are, and more detail on the exact nature of a rising and a falling accent.

We have now finished the exposition of the main topic-marking constructions in BP: subject-topic, double-subject, topicalization and left dislocation. We have seen that topicalization of objects and left dislocation of subjects are the two most common structures to mark a topic in BP. The high number of topicalization of objects found in corpus studies (Vasco 2006) has been connected to the increase in null object in BP, while the existence of left dislocation of subjects has been connected to the increase of overt subject pronouns in BP (recall that null-subject Romance languages do not have subject LD). Moreover, there is little information on the discourse functions of topic-marking

<sup>38</sup> In fact, the author do not explicitly give the percentage of topic-marking constructions without pause, but only their absolute numbers. I calculated the percentage based on these numbers, so the comparison with the SVO sentences would be clearer. For transparency, there are 40 sentences out of 122 that do not present a pause in TOP+LD constructions (cf. Callou et al. 1993, 336, Table 7), which makes approximately 32,7%.

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constructions in BP (except from the very general “they are used to mark the topic of discourse”). According to Pontes (1987), there does not seem to be a relevant pragmatic difference in the use of TOP and LD in BP. We have also seen that, according to the study of Callou et al. (1993), the prosody of TOP is not very different from that of LD. TOP and LD have a different prosody from canonical SVO, however, mainly in what regards pauses (TOP and LD have a pause between the dislocated constituent and the comment, whereas SVO do not have a pause between the subject and the predicate).

## CHAPTER 4

### Ordering effects

In the last two chapters I presented the basic facts about focus and contrastive topics, first concentrating on English data (chapter §2) and then zooming in on Brazilian Portuguese (chapter §3). We have seen that, while the literature is vast when it comes to contrastive topics in English (and Germanic languages in general, although I have only talked about English), the same is not true for Brazilian Portuguese. What we can safely say at this point, considering the two papers on contrastive topics in BP (Menuzzi and Roisenberg 2010, more on the theoretical side, and Braga 2015, who looked at the prosody of dislocated contrastive topics in BP), is that contrastive topics are marked in this language in a similar fashion to English, i.e. through a rising intonation on the CT-marked constituent and a falling intonation on the F-marked constituent.

With this in mind, we can finally turn to the matter at the heart of the present research: The ordering effects of contrastive topics and foci in Brazilian Portuguese. As mentioned in the introduction, this subject has not received much attention in the literature until the first decade of the 2000's. Before that, it was mostly taken for granted that a focus could not precede a contrastive topic in German, following a brief discussion in Büring (1997, p. 65). On the other hand, this order (F+CT) is possible in English, and it has been generally assumed in the literature at least since Jackendoff (1972). Section §4.1.1 sets the scene for the following discussion by reviewing some of the main arguments and examples from the literature on this (im)possible swap between a contrastive topic and a focus.

Section §4.1.2 presents the generalizations and analysis proposed in Neeleman and van de Koot (2008), which discuss the main semantic effects of A-bar scrambling in Dutch, and argue that a focus can precede a contrastive topic in this language. Furthermore, they put forward a crucial generalization: the ordering possibilities of contrastive topic and focus is not the same in base position and in transformed structures. From that,

they conclude that focus movement marks its sister as background, and (contrastive) topic movement marks its sister as comment.

The observation made for the Dutch data in Neeleman and van de Koot (2008) will be the point of departure of the discussion of the Brazilian Portuguese ordering effects in section §4.2, where I will also lay out the basic steps for the interpretation of data using the Topic Abstraction account (Constant 2014). In section §4.3 I introduce the F-over-F Principle, which will guide the discussion of the following sections, and will serve as the base for the formal implementation I propose in chapter §5.<sup>1</sup>

## 4.1 Contrastive topic and focus order

In order to set the scene for the discussion of the ordering effects of contrastive topics and foci, I will briefly go through the main claims made in the literature on this matter, going from contrastive topic and focus swap to the ordering restrictions of CTs and foci in the sentence (the difference will be made clear momentarily). The investigation in this dissertation starts from the question of whether a focus can precede a contrastive topic or not. This question poses itself not because this has been a subject of research in the contrastive topic literature (with the clear exception of Wagner 2012), but on the contrary: a systematic study on the matter is missing to this date. Some works even refer to the F+CT order as a case of “misalignment” (e.g. Bobaljik and Wurmbrand 2012). Of course, such an assumption is based on a clear generalization: In the vast majority of examples, this is indeed the case, i.e. the most discussed examples involve a CT+F configuration. Yet, some authors have addressed the issue, usually by simply mentioning whether it is fine or not (meaning: felicitous in a given context) for a focus to precede a contrastive topic in the language on which they are working.

### 4.1.1 Contrastive topic and focus swap

The first mention of the possibility of the two orders (CT+F and F+CT) was made in the seminal work of Jackendoff (1972). The author bases his analysis on a proposal made by Bolinger (1965), which uses the terms “A-” and “B-accent”. As already discussed at length in chapter §2, Jackendoff proposes that the A-accent (fall) associates to the focus, while the B-accent (fall-rise) associates to the topic.<sup>2</sup> Moreover, he observed

<sup>1</sup> For reasons of simplicity, I will often refer to an *F-marked phrase* as an *F-phrase*, or sometimes simply *F*.

<sup>2</sup> Precisely, Jackendoff (1972, p. 262) proposes that the A-accent is associated to the comment, “what there is to be said about the topic”. Arguably, the focus is within the comment (or it can be the whole comment too, as Jackendoff discusses around example (6.152), same page).

that the position of the two accents (i.e. the constituent they are associated with) is context-dependent:

- (1) A: Well, what about FRED? What did HE eat?  
 B: FRED ate the BEANS. (B+A)
- (2) A: What about the BEANS? Who ate THOSE?  
 B: FRED ate the BEANS. (A+B) (Jackendoff 1972, p. 261)

Observe that the accents change according to the interpretation they receive. If the phrase is interpreted as the focus (which we can tell because it directly answers to the *wh*-element in the question), it receives the A-accent, and if it is interpreted as the contrastive topic, it receives the B-accent. Concretely, examples like (1) and (2), in which a prosodically prominent phrase can be interpreted as focus or a contrastive topic according to the context, are what I call a CONTRASTIVE TOPIC-FOCUS SWAP. Important to our purposes here is that, while the accents have shifted in the answers in (1) and (2), the order of the constituents has not. Both answers follow canonical word order, with an SVO order. Particularly, the object in (2) does not have to move to a position preceding the focus in order to be interpreted as a contrastive topic.

Sentence (2) thus shows that a contrastive topic can occur after a focus in English. Buring (1997) claims that this is not possible in German. In his discussion of the syntax of topics in this language, he first points out that contrastive topics may occur at the left periphery of the sentence, but they do not *have* to. He notes that “not every constituent in Spec,C is a [contrastive, MA] Topic nor do [contrastive] Topics need to move to Spec,C” (Buring 1997, p. 63). So contrastive topics may occur in many positions in German, middle-field, left periphery, scrambled; the only restriction regarding the position of a contrastive topic in the language is that it has to precede the focus. Consider (3):

- (3) Wer hat die älteren Stücke von Brecht gelesen?  
 ‘Who read Brecht’s earlier plays?’
- a. ?\*[ICH]<sub>F</sub> habe [die ÄLTEREN Stücke von Brecht]<sub>CT</sub> gelesen.  
 I have the older plays by Brecht read
- b. [die ÄLTEREN Stücke von Brecht]<sub>CT</sub> habe [ICH]<sub>F</sub> gelesen *t*<sub>CT</sub>.  
 the older plays by Brecht have I read  
 ‘I read Brecht’s earlier plays’. (Buring 1997, p. 65)

Speakers strongly reject (3-a), as indicated by both the question mark and the star. Answer (3-b), where the contrastive topic *die älteren Stücke von Brecht* ‘the earlier plays

by Brecht' is topicalized (i.e. preposed) is perfectly felicitous. Büring does not discuss this example further, nor what could be the reasons for such a restriction. Based on examples like this, we can say that a contrastive topic-focus swap is not possible in German, and that foci generally cannot precede contrastive topics in this language. So, even by looking only at two languages (and from the same family), the generalization regarding the order of contrastive topic and focus is different: a focus can precede a contrastive topic in English, but in German the CT-phrase has to be topicalized, so it can surface in a position preceding the focus.

These couple of examples of English and German contrastive topic-focus swap are important to set the scene for the coming discussion. Observe that in the English example in (2), the CT and the focus constituent have been exchanged, and no movement of constituents was involved in those sentences. In sum, following Jackendoff (1972), a focus can both precede and follow a contrastive topic in English – at least when only canonical word order is involved. The German example in (3) illustrates that a focus cannot precede a contrastive topic in German. In that context, the only possible order was to topicalize the constituent interpreted as a contrastive topic, so it surfaces before the focus.

Now, notice that the German example introduces something new to the equation: What if one constituent moves, does this have any effect on the discourse appropriateness conditions of the sentence? In the English example we were only concerned with canonical word order, and the focus can precede the CT in that case. In the next section, I am going to discuss the order of contrastive topic and focus taking the (im)possible movements of constituents *within* the sentence into account, with the study of Neeleman and van de Koot (2008) as a point of departure. That is what I will refer henceforth to as CONTRASTIVE TOPIC AND FOCUS ORDERING RESTRICTIONS (or ORDERING EFFECTS).

#### 4.1.2 Discourse templates

Neeleman and van de Koot (2008) investigate the interaction of A- and  $\bar{A}$ -scrambling and the different interpretive effects associated with them in Dutch. The authors observe that  $\bar{A}$ -scrambling operations require that the moved DP be a focus or a (contrastive) topic (I will come back to the Neeleman and Van de Koot's terminology shortly), while A-scrambling operations mark the scrambled DP as discourse anaphoric. I will henceforth only concentrate on the discussion of  $\bar{A}$ -scrambling effects, the reader is referred to Neeleman and van de Koot (2008, p. 166 onwards) for more on A-scrambling.

Neeleman and van de Koot (2008) propose that, whether A-bar scrambled DPs are

interpreted as either a focus or a contrastive topic, is accounted for by a set of mapping rules that associate syntactic representations with information structure. This proposal is different from a theory where a phrase is interpreted in the specifier of a functional projection, as proposed in the Cartographic Project (see Rizzi 1997, and chapter §6 of this dissertation).

For the discussion in this section, it will be important to clarify the terminology employed by Neeleman and van de Koot (2008, henceforth N&vdK ) and what exactly they mean by it (the authors are concerned with “focus” and “topic” in a particular sense). It will suffice to clarify that they consider a focus to be “the constituent that corresponds to the *wh*-operator” in an answer to a *wh*-question (N&vdK 2008, p. 146), and that what they call “topic” is equivalent to Büring’s (2003) contrastive topic. For N&vdK, “a context that favors an interpretation of a constituent as [contrastive, MA] topic is one in which the hearer answers a question that differs somewhat from the one being asked” (N&vdK 2008, p. 147).

Moreover, in addition to the pragmatic characterization just given, N&vdK also refer to the intonational clue of focus and contrastive topic, which are the A- and B-accent respectively from Jackendoff (1972).<sup>3</sup> The attentive reader will have noted that, while the authors only talk about *topic* (without the *contrastive* bit), they are indeed concerned with contrastive topics.<sup>4</sup> Finally, another useful diagnostic for topichood employed throughout the paper, is that a topic DP cannot be replaced by a negative quantifier. We’ll see momentarily that the definition of focus and topic are reflected in the way that the examples are constructed by the authors.

The following two examples establish the baseline for the argumentation in Neeleman and van de Koot (2008). Consider (4): the subject *Wim* answers to the *wh*-question and is interpreted as the focus, and the object *de bonen* ‘the beans’ marks a change in topic, being interpreted as a contrastive topic. Observe that scrambling the object across the subject is felicitous in this context, as shown in (4-b). N&vdK also indicate that *Wim* bears an A-accent, and *de bonen* ‘the beans’ bears a B-accent.<sup>5</sup>

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3 N&vdK note that, while these tunes are characteristic of English, they are realized in very similar way in Dutch (although a thorough phonetic study still lacks). They precise that “the A-accent is realized as a plain high tone, while the B-accent is realized as a tune consisting of a high tone, a low tone and a high boundary tone” in Dutch (Neeleman and van de Koot 2008, p. 147, fn. 11).

4 For this reason, and for reasons of consistency with the general terminology I use in the dissertation, I will write a CT subscript after the constituent interpreted as such in Neeleman and Van de Koot’s (2008) examples. Also, I will stick to the term “contrastive topic”, even if the authors just use the term “topic” to refer to the same linguistic object.

5 Furthermore, Neeleman and van de Koot (2008, p. 148) point out that a topic DP cannot be replaced by a negative quantifier, which makes a good diagnostic for topichood. Following this, all the

- (4) A: Hoe zit het met de SOEP? Wie heeft DIE gegeten?  
What about the soup? Who ate that?
- B: Nou, dat weet ik niet, maar...  
'Well, I don't know, but...'
- a. ik geloof dat WIM<sub>F</sub> [van de BONEN]<sub>CT</sub> meer gegeten heeft dan vorig  
I believe that Bill from the beans more eaten has than last  
jaar.  
year
- b. ik geloof dat [<sub>PP</sub> van de BONEN]<sub>CT</sub> WIM<sub>F</sub> t<sub>PP</sub> meer gegeten heeft dan  
I believe that from the beans Bill more eaten has than  
vorig jaar.  
last year  
'I believe that Bill has eaten more from the beans than last year.'  
(N&vdK 2008, p. 148)

(4) shows us two things: first, an *in situ* focus can precede an *in situ* contrastive topic in Dutch, as (4-a) illustrates. Second, a contrastive topic can move across a focus in Dutch, as shown by the felicitous answer in (4-b), where the object *van de bonen* 'from the beans' interpreted as contrastive topic is scrambled across the focused subject *Wim*.

Now, compare (4) with the dialogue in (5). While the sentences are the same linearly, the context has changed, and so did the felicity judgements. The focus is the constituent that answers to the *wh*-element, *de bonen* 'the beans'. Speaker A asks about *Fred*, establishing it as the topic, and asks what he ate. But B's answer changes the topic to *Wim*, addressing a different sub-question, 'What did Wim eat?' – *Wim* is thus interpreted as a contrastive topic.

- (5) A: Hoe zit het met FRED? Wat heeft HIJ gegeten?  
What about Fred? What did he eat?
- B: Nou, dat weet ik niet, maar...  
'Well, I don't know, but...'

---

examples discussed by the authors were also tested using the "quantifier test", illustrated below for the sentence (5) in the main text:

- (i) a. #ik geloof dat NIEMAND<sub>CT</sub> [van de BONEN]<sub>F</sub> meer gegeten heeft dan vorig jaar.  
I believe that nobody from the beans more eaten has than last year
- b. ik geloof dat WIM<sub>CT</sub> NERGENS<sub>F</sub> meer gegeten heeft dan vorig jaar.  
I believe that Wim nothing more eaten has than last year  
'I believe that Bill has not eaten more of anything than last year.'

When Wim in (i-a) is replaced by niemand 'nobody', the sentence is infelicitous ("odd" according to N&vdK). However, if the focus is replaced by a negative quantifier, as in (i-b), the sentence is felicitous. N&vdK rely on this test throughout the paper, but I will refrain from repeating every test here. The reader is referred to Neeleman and van de Koot (2008) for more detail on this.

- a. ik geloof dat WIM<sub>CT</sub> [van de BONEN]<sub>F</sub> meer gegeten heeft dan vorig  
 I believe that Bill from the beans more eaten has than last  
 jaar.  
 year  
 ‘I believe that Bill has eaten more from the beans than last year.’
- b. #ik geloof dat [<sub>PP</sub> van de BONEN]<sub>F</sub> WIM<sub>CT</sub> t<sub>PP</sub> meer gegeten heeft dan  
 I believe that from the beans Bill more eaten has than  
 vorig jaar.  
 last year

(N&vdK 2008, p. 147)

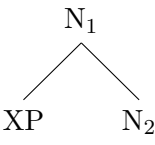
The authors argue that the answers in (5) show two things: first, an *in situ* contrastive topic can precede an *in situ* focus, as in (5-a). Second, if the focus moves across the contrastive topic, as is the case of the object scrambled across the subject in (5-b), the sentence is infelicitous. Thus, according to N&vdK, the four sentences in (4) and (5) show that a contrastive topic can move across a focus (4-b), but a focus cannot move across a contrastive topic (5-b).

N&vdK argue that such a paradigm is illustrative  $\bar{A}$ -scrambling operations in Dutch. They propose to account for it by assuming the hierarchical representation of information structure illustrated below. According to the authors, a focus-background structure can be embedded in a comment (6-a), but topic-comment structure cannot be embedded in the background of a focus, as the ill-formed (6-b) illustrates. In other words, a topic can contain a focus in its comment, but a focus cannot contain a topic in its background. These two information structure configurations are represented below (Neeleman and van de Koot 2008, p. 146):<sup>6</sup>

- (6) a. topic [<sub>COMMENT</sub> FOCUS [<sub>BACKGROUND</sub> ]]  
 b. \*FOCUS [<sub>BACKGROUND</sub> topic [<sub>COMMENT</sub> ]]

Next, N&vdK propose the mapping rules in (7), which apply when movement takes place. These mapping rules are responsible for the interpretation of structures with  $\bar{A}$ -scrambling (adapted from Neeleman and van de Koot 2008, p. 144):

<sup>6</sup> The structures in (6) have been slightly modified: I deleted the Kleene star that followed the topic, which indicated that topics can iterate – I do not see the necessity of this notation, neither did (Neeleman et al. 2009) in later work.

- (7) a. 
- b. *Comment mapping rule*  
If XP in (7-a) is interpreted as topic, then interpret N2 as comment.
- c. *Background mapping rule*  
If XP in (7-a) is interpreted as focus, then interpret N2 as background.

It is important to emphasize at this point that the interpretation of a constituent as focus or as contrastive topic is completely independent of movement in the discourse templates proposed by N&vdK. On the contrary, we have just seen in the examples above that both CT and focus can be interpreted *in situ*, i.e. the mapping rules in (7) do not *have* to apply for the respective syntax-semantics mapping rules to take place. Obviously, such a view is different from one which advocates that information structure categories are interpreted at the interfaces after movement to a specific functional projection, like in the proposal from the Cartographic Project. The reader is referred to chapter §6 for more on this discussion.

Let us see how the interpretation of examples (4) and (5) go about. Consider first the (b) answers, where  $\bar{A}$ -scrambling applied. They are repeated below to make the explanation clearer.

- (4-b) ik geloof dat  $[_{PP}$  van de BONEN] $_{CT}$  WIM $_F$   $t_{PP}$  meer gegeten heeft dan  
 I believe that from the beans Bill more eaten has than  
 vorig jaar.  
 last year  
 ‘I believe that Bill has eaten more from the beans than last year.’

In (4-b), the moved *van de bonen* ‘from the beans’ is interpreted as a contrastive topic, so rule (7-b) applies, marking the remainder of the clause as the comment. This comment contains a focus, and this is allowed according to (7). The sentence with movement of the contrastive topic to a position preceding the focus is thus felicitous, and predicted by the mapping rules in (7).

Consider now (5-b):

- (5-b) # ik geloof dat  $[_{PP}$  van de BONEN] $_F$  WIM $_{CT}$   $t_{PP}$  meer gegeten heeft  
 I believe that from the beans Bill more eaten has  
 dan vorig jaar.  
 than last year

In the case of answer (5-b), rule (7-c) applies, which states that since *van de bonen* ‘from the beans’ is interpreted as a focus, the remainder of the clause to its right will be interpreted as background. The problem is that this background contains a contrastive topic, and according to the information structures in (6), this configuration is ill-formed. So the mapping rules in (7), in combination with the well- and ill-formed structures in (6), correctly predicts that a focus cannot move across a contrastive topic, but that a contrastive topic can move across a focus.

The natural question to be asked next is why we do not observe this for the answers in (a). For instance, given NK’s observation that a focus cannot move across a contrastive topic, couldn’t one simply say that generally foci cannot precede contrastive topics, in terms of a linear constraint? The answer is ‘no’; this is exactly what is shown in answer (4-a), where the focus precedes the contrastive topic in that context:

- (4-a) ik geloof dat WIM<sub>F</sub> [van de BONEN]<sub>CT</sub> meer gegeten heeft dan vorig  
       I believe that Bill from the beans more eaten has than last  
       jaar.  
       year

The relevant property here is that the focus is *in situ*, while in (5-b) it has moved. Precisely, the mapping rules in (7) only apply when movement takes place. I will not repeat (5-a) here, because it should be clear at this point that subject *Wim* is interpreted as a contrastive topic *in situ*, so no mapping rule from (7) applies. Thus, sentences with *in situ* foci and contrastive topics are not affected by the mapping rules. It is worth noting that the fact that the mapping rules only apply to movement structures is a stipulation of the model proposed in Neeleman and van de Koot (2008). So, according to the authors, when the word order of the sentence corresponds to the canonical/base order, their interpretation as either a focus or a contrastive topic is “free”. Crucially, no background/comment is marked in *in situ* structures.

One of the features of N&vdK’s account is that movement of a constituent does not affect the interpretation of the moved constituent itself (e.g. the moved constituent is interpreted as a focus), but “rather that of the constituent to which it adjoins”. In other words, the mapping rules do not predict that a phrase that moves to a specific position will be interpreted as a focus, but that, once that constituent interpreted as, say, a focus has moved, its sister will be marked as background. The authors point out that such a generalization is essential to capture that *in situ* phrases can still be interpreted as foci and contrastive topics *in situ*.

Such an observation is a very important step for the derivation I will propose in chapter

§5. It is worth emphasizing that the sister of an *in situ* focus is not necessarily its background, and the sister of an *in situ* contrastive topic is not necessarily its comment. N&vdK discuss the following examples:

- (8) Mary bought [a HAT]<sub>F</sub> in Paris.
- (9) Q: Do you know who John gave the book to?  
A: I'm not sure, but he gave [the RECORD]<sub>CT</sub> to Susan. (N&vdK 2008, p. 143)

In examples (8) and (9) the background and the comment, respectively, are not a surface constituent. In (8), the background is composed of ‘Mary’, ‘bought’, ‘in’, ‘Paris’ (the F-value of this sentence is *Mary bought x in Paris*); crucially, the focus *hat* is surrounded by backgrounded information (both to its left and to its right), so in this sense this background is not syntactically “marked”. In the same vein, the comment of the answer in (9) is *he gave x to Susan*, where the comment does not surface as one syntactic constituent. Many times it might be the case that everything to the right of an *in situ* focus is its background (e.g. subject focus in English), but that is not always the case. However, the generalization is that when there is focus movement, the sister of the moved constituent *is* necessarily marked as background.

The idea that the background of a moved focus is marked has not been explicitly mentioned in the literature before the proposal by N&vdK, but one can find this idea behind some of the discussions in the focus literature. For instance, it is usually acknowledged in the Romance literature that the background of a focus that has been fronted is “given” (for more on focus fronting in Romance see section §6.1.2), in the sense that it only contains old information.<sup>7</sup>

I will have more to say about the marking of the background of a moved focus at the end of this chapter. For now, the core of the proposal made by Neeleman and van de Koot (2008) has been discussed, and I will come back to some of the other details that the mapping rules predict. In order to do so, I will concentrate on Brazilian Portuguese data, taking the proposal made for Dutch in Neeleman and van de Koot (2008) as a point of departure.

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<sup>7</sup> The exception to this is mirative focus fronting, as extensively argued in Cruschina (2011) and Cruschina and Remberger (2017).

## 4.2 The order of contrastive topic and focus in Brazilian Portuguese

In this section I discuss the main facts of the ordering restrictions of contrastive topic and focus in Brazilian Portuguese. First, I show that the restrictions we observe in Brazilian Portuguese are strikingly parallel to the ones observed in Dutch by Neeleman and van de Koot (2008), as just discussed in section §4.1.2. That is, a focus can precede a contrastive topic (short: F+CT) in Brazilian Portuguese, as long as F+CT order also corresponds to canonical word order. On the other hand, if movement takes place, a contrastive topic can move to a position preceding the focus, but movement of foci across contrastive topics is infelicitous.

The examples discussed in this section come from different sources. Some of the sentences are from an experiment I conducted, in which the prosodic realization of contrastive topics in Brazilian Portuguese was tested. The items of the experiment that were consistently realized with a rise-fall contour were retained for the discussion here. Other examples are adaptations from examples from the literature on contrastive topics in other languages (e.g. Büring 2003; Constant 2014; Neeleman and van de Koot 2008, among others). All the examples were checked with at least one other Brazilian Portuguese speaker (most often two), who validated that the intonations were judged felicitous in the given contexts.

The contexts are set up in a way that the focus is the constituent that corresponds to the answer to the *wh*-element in the question, and the contrastive topic is the constituent in the answer that differs from what has been asked in the question. Additionally, whenever it made sense in the discourse, the most “prototypical” instances of CTs and foci were used. For example, our CTs are definite expressions (see Brunetti 2009b, for more on the prototypical characteristics of topics) and bear a rising contour, whereas foci are often indefinite expressions and bear a falling accent. Also, where applicable, the phrase that corresponds to the focus does not belong to a clear list or set that the speaker already has in mind; the opposite was attempted for contrastive topics (cf. discussion in Büring 2016, p. 80, ex. (41), where the author argues that the constituent which corresponds to a list that the speakers can easily identify is more readily interpreted as a contrastive topic).

### 4.2.1 Basic paradigm

Like Germanic and other Romance languages, BP always allows for a contrastive topic to precede a focus. In (10), we have a typical complex discourse strategy context: there is a broader question ‘who brought what?’, and the speaker in the answer addresses it into sub-questions, going by people:<sup>8</sup>

- (10) Contexto: retorno de sacoleiros de uma viagem ao Paraguai.  
 Context: Some informal sales men come back from a trip to Paraguai (where they go buy big quantities of cheap goods to sell on the streets in Brazil).  
 A: Quem trouxe o quê desta vez?  
 Who brought what this time?  
 B: [O PAULO]<sub>CT</sub> trouxe [uma sacola de RELÓGIOS]<sub>F</sub>, [o JOSÉ]<sub>CT</sub>, [dez  
 the P. brought one bag of watches the J. ten  
 I-PODS]<sub>F</sub> ...  
 I-Pods  
 ‘Paulo brought a bag full of watches; José brought ten I-Pods ...’ (Menuzzi and Roisenberg 2010, p. 236)

The subjects *Paulo* and *José* are interpreted as contrastive topics, and the direct objects *uma sacola de relógios* ‘a bag of watches’ and *dez I-Pods* ‘ten I-Pods’ are interpreted as foci.

As discussed earlier, the focus in the sentences below answers to the *wh*-element *what*, and the contrastive topic corresponds to the constituent that differs from what has been asked in the question (speaker A asked about the queen, but B’s answer is about the king):<sup>9</sup>

- (11) A sabe que B tem um bom relacionamento com o rei e a rainha do Marrocos, os quais B visitou umas semanas atrás.  
 A knows that B has a good relationship with the king and queen of Morocco, whom B visited a few weeks ago.  
 A: E a rainha, o que ela te deu?  
 ‘What about the queen, what did she give you?’

<sup>8</sup> From this chapter on, I will not write the broken-up gloss of the verbs (e.g. *saw* = see.PST.1SG) in Brazilian Portuguese as I did in chapter §3. This level of detail is irrelevant for the discussion to come.

<sup>9</sup> Also from this chapter on, I will indicate that a constituent has moved by writing a *t* (trace) in its base position. Moreover, I add a CT or F subscript to it, only to make it simpler to see which constituent interpreted as CT or F has moved. Moreover, by writing a subscript to the trace, I do not commit that that phrase was already generated in Numeration with an F or CT feature.

- B: Bom, eu não me lembro mais, mas ...  
 ‘Well, I do not remember, but...’
- a. [o rei]<sub>CT</sub> me deu [um cocar de índio]<sub>F</sub>.  
 the king to.me gave a headdress of indigenous
- b. #[um cocar de índio]<sub>F</sub> [o rei]<sub>CT</sub> me deu *t<sub>F</sub>*.  
 a headdress of indigenous the king to.me gave  
 ‘... the king gave me an indigenous headdress’.

Like the Dutch data in section §4.1.2, focus movement across a contrastive topic results in an infelicitous sentence. (11-b) illustrates this restriction: It is impossible to interpret the subject *o rei* ‘the king’ as a contrastive topic when preceded by the fronted focused object *um cocar de índio* ‘an indigenous headdress’.

Let us now look at an example of a focus preceding a contrastive topic, where the order of focus and CT corresponds to the canonical word order of the syntactic constituents in the sentence. In (12-a), the subject *um peruano* ‘a Peruvian’ is focused and the direct object *esse cocar de índio* ‘this indigenous headdress’ is the contrastive topic, illustrating that an *in situ* focus can precede a CT in BP:

- (12) Essa é a primeira vez que A vem à casa de B, e A percebe que B tem vários objetos estranhos na sua sala de estar.  
 This is the first time A comes to B’s house, and A notices that B has a lot of weird objects in her living room.
- A: E essa espada de samurai, quem te deu?  
 ‘What about this samurai sword, who gave it to you?’
- B: Bom, eu não me lembro, mas ...  
 ‘Well, I do not really remember, but ...’
- a. eu acho que [um PERUANO]<sub>F</sub> me deu [esse cocar de índio]<sub>CT</sub>.  
 I think that a Peruvian to.me gave this headdress of indigenous
- b. eu acho que [esse cocar de índio]<sub>CT</sub> [um PERUANO]<sub>F</sub> me deu *t<sub>CT</sub>*.  
 I think that this headdress of indigenous a Peruvian to.me gave  
 ‘I think that a Peruvian gave me this indigenous headdress’.

In such a context, furthermore, it is perfectly fine for a contrastive topic to move across a focus, as indicated by the felicitous sentence (12-b).

This is the basic paradigm of the ordering restrictions in Brazilian Portuguese, and the forthcoming discussion will follow the same underlying idea: It is possible to have an *in situ* focus preceding a topic, like in (12-a), but crucially moved foci cannot precede a

|                 |   |
|-----------------|---|
| CT+F            | ✓ |
| F+CT            | ✓ |
| $F_i > CT\ t_i$ | ✗ |
| $CT_i > F\ t_i$ | ✓ |

**Table 4.1:** The four logical orderings between CTs and foci.

contrastive topic, as in the infelicitous sentence (11-b). The attentive reader will have realized at this point that those are the same effects observed for the  $\bar{A}$ -scrambling operations in Dutch by Neeleman and van de Koot (2008). The BP data just put forward is remarkable, since it shows a parallelism in the interaction of information structure marking and movement configurations between two languages, Dutch and Brazilian Portuguese, that do not have a lot in common when it comes to syntax (at least).

Table 4.1 presents a summary of the (im)possible orderings between contrastive topic and foci in Brazilian Portuguese. The two last rows represent moved structures ( $t$  is the trace of the moved constituent at its base position).

With the paradigm above in mind, in the following sections I will discuss in more detail all the (im)possible orders of contrastive topic and foci in Brazilian Portuguese. First, I will show that contrastive topics can move to the left periphery of the clause: across a focus, and even across an embedded clause. In section §4.5.2 we'll see that moved foci cannot precede a contrastive topic. These two observations are base for the proposal on the interpretation of contrastive topics that we start to develop in section §4.3.

### 4.2.2 Contrastive topics can go higher

We have just seen in section §4.2.1 that the basic paradigm of the order of contrastive topic and focus in Brazilian Portuguese can be summarized as twofold: 1) If both focus and contrastive topic are *in situ*, the order of the constituents is free; in other words, if the order of CT and focus corresponds to the canonical word order of the constituents in the sentence, both orders are possible: CT+F and F+CT (cf. examples (11-a) and (12-a)). 2) In movement structures, a contrastive topic can precede a focus (cf. (12-b)), but a focus cannot precede a contrastive topic (cf. (11-b)). Put differently, moved contrastive topics can precede foci, but moved foci cannot precede contrastive topics.

In this section, I show that movement of contrastive topics is indeed not constrained (at least not by pragmatic conditions, basic syntactic rules of BP still have to be respected). In addition to sentence (12-b) from the basic paradigm presented previously, the example below shows that a contrastive topic can move to a position preceding a focus. Here, the

direct object *um beijo* ‘a kiss’ is the focus, and the indirect object *pro João* ‘to João’ is the contrastive topic (recall that the canonical order is DO-IO in Brazilian Portuguese):<sup>10</sup>

- (13) João, Pedro e Maria são grandes amigos e estão sempre juntos. Nos últimos tempos, parece que tem algo mais do que amizade rolando entre os três...  
João, Pedro and Maria are very good friends and are all the time together. These last days, it seems that there is something more than only friendship going on between the three of them...
- A: E a Maria, o que o Pedro pediu pra ela?  
And what about Maria, what did Pedro ask her for?
- B: Bom, eu não vi, mas...  
Well, I did not really see, but...
- a. eu vi que o Pedro pediu [um BEIJO]<sub>F</sub> [pro JOÃO]<sub>CT</sub>.  
I saw that the P. asked a kiss to.the J.
- b. eu vi que [pro JOÃO]<sub>CT</sub> o Pedro pediu *t*<sub>CT</sub> [um BEIJO]<sub>F</sub>.  
I saw that the P. to J. asked a kiss  
‘I saw that Pedro asked João for a kiss’.

In (13-b), the CT moves to a position preceding the focus, and the sentence is felicitous. So a moved contrastive topic can precede a focus without problems.

Furthermore, a contrastive topic can go to “higher” positions in the sentence (i.e. to the left periphery): The contrastive topic direct object *o relógio* ‘the clock’ can move to the left of the embedded subject (14-b), and also to the left of the matrix clause (14-c):

10 Note that in (13-b) the contrastive topic actually moves to a position preceding the subject of the embedded clause. A version where *pro João* ‘to João’ moves to a position directly following the subject sounds a little odd:

- (i) ?eu vi que o Pedro [pro JOÃO]<sub>CT</sub> pediu *t*<sub>CT</sub> [um BEIJO]<sub>F</sub>.  
I saw that the P. to J. asked a kiss  
‘I saw that Pedro asked João for a kiss’.

I do not have an explanation for this preference at this point. However, Lacerda (2018) assumes that movement of CTs and foci to the “middle-field” in BP is constrained, proposing in simple terms that both CT and focus must move and that they have to be adjacent to each other. This could be an explanation for the oddity of (i). At the same time, I do not think that moving the focus to a position following the contrastive topic makes the sentence any better:

- (ii) ??eu vi que o Pedro [pro JOÃO]<sub>CT</sub> [um BEIJO]<sub>F</sub> pediu *t*<sub>CT</sub>.  
I saw that the P. to J. a kiss asked  
‘I saw that Pedro asked João for a kiss’.

On the contrary, I judge this sentence on the borderline of ungrammatical (verb final sentences are very marginal in BP). I cannot offer an explanation for the preference of one landing position over the other. I will explore the issues regarding other the possibilities of movement in section §??, and show that, at least, they do not contradict my final proposal.

- (14) Vovô morreu e deixou várias coisas de herança, mas a gente não sabe o quê ele deixou pra quem.  
Grandpa died and left various things as heritage, but we do not know what he left to whom.
- A: E o antigo armário, pra quem o vovô deixou?  
‘What about the old cupboard, to whom did he leave it?’
- B: Bom, eu não sei, mas...  
‘Well, I’m not sure, but...’
- a. eu acredito que o vovô deixou [o RELÓGIO]<sub>CT</sub> [pra uns  
I believe that the grandpa left the clock to some  
VIZINHOS]<sub>F</sub>.  
neighbors
- b. eu acredito que [o RELÓGIO]<sub>CT</sub> o vovô deixou *t*<sub>CT</sub> [pra uns  
I believe that the clock the grandpa left to some  
VIZINHOS]<sub>F</sub>.  
neighbors
- c. [o RELÓGIO]<sub>CT</sub> eu acredito que o vovô deixou *t*<sub>CT</sub> [pra uns  
the clock I believe that the grandpa left to some  
VIZINHOS]<sub>F</sub>.  
neighbors  
‘I believe that grandpa left the clock to some neighbors.’

Also, note that this “freedom in movement” of the constituent interpreted as contrastive topic has nothing to do with its base position. That is, it is true that in (14) the contrastive topic *o relógio* ‘the clock’ precedes the focus *pra uns vizinhos* ‘to some neighbors’ in base position, but this is not the case in example (13-b). There, the focus *um beijo* ‘a kiss’ precedes the contrastive topic *pro João* ‘to João’ in base position, and yet the CT can move to a position preceding the focus. As in (14), it can precede the embedded clause and even go to the left of the matrix clause:

- (15) a. eu vi que [pro JOÃO]<sub>CT</sub> o Pedro pediu *t*<sub>CT</sub> [um BEIJO]<sub>F</sub>.  
I saw that to P the J. asked a kiss
- b. [pro JOÃO]<sub>CT</sub> eu vi que o Pedro pediu *t*<sub>CT</sub> [um BEIJO]<sub>F</sub>.  
to J. I saw that the P. asked a kiss  
‘I saw that Pedro asked João for a kiss.’

Examples (13), (14) and (15) show that, at the very least, there is no problem with the interpretation of the sentences where CT has moved, regardless of the CT’s base position and of what is in its comment. Again, the same ordering effects are found in

Dutch by N&vdK. Recall that according to the mapping rules proposed by the authors, movement of a contrastive topic marks its comment, i.e. if a contrastive topic moves, the remainder of the sentence to its right is interpreted as comment. As Neeleman and van de Koot (2008, p. 151) themselves observe, it is not simple to show that topic movement marks a comment, simply because there are no restrictions of which elements can be part of a comment. This is different for the background of moved foci, which cannot contain CTs, as we'll discuss in detail in section §4.3

Overall, the basic proposal by Neeleman and van de Koot (2008) has guided the discussion we had so far: focus movement marks its sister as background. It is crucial to their model (and to the derivation I am proposing in this dissertation, see chapter §5), that focus movement does not mark the moved constituent as focus, but rather that it has an effect on its sister, i.e. the sister of the moved focus is unambiguously marked as background. For N&vdK, this means that there cannot be a contrastive topic following a moved focus.

We have seen evidence that, strikingly, the paradigm of the ordering restrictions of contrastive topic and focus in Brazilian Portuguese parallels that of Dutch in many aspects. First, I have shown that the base position of the focus is irrelevant if in the final structure the moved focus precedes the contrastive topic (cf. (32-b)). On the other hand, if the focus moves, but the contrastive topic precedes it, the sentence is fine (cf. (33-b)).

One would not necessarily expect that Dutch and BP would behave similarly regarding information structure. Dutch and BP display different sentence structure; for instance, there is no scrambling in BP, and Dutch is a V2 language, which is not the case of Brazilian Portuguese. It is true that I pointed out at different moments in this dissertation (see §3.2 and §6.1.2) that BP appears to mark information structure in a similar fashion to English, and to Germanic languages in general. But this is not reason enough to dismiss how important the parallel made between the ordering effects between Dutch and BP are.

### 4.2.3 Interpretation

Before we move on to the specific discussion of moved foci, I would like now to review the topic abstraction proposed by Constant (2014), already presented in section §2.3.2. My goal here is to show that the topic abstraction can capture the generalizations of the ordering restrictions between contrastive topics and foci in Brazilian Portuguese.

It is worth pointing out that using the topic abstraction for the interpretation of the data is already a noteworthy property of my proposal, since the ordering generalizations put

forward in Neeleman and van de Koot (2008) have not received a semantic implementation so far. Moreover, my proposal does not only account for the Dutch data, but also for the parallel Brazilian Portuguese examples and the additional effects of the ordering restrictions of CTs and foci in BP that will be discussed in detail in section §4.3. Building on the topic abstraction, I propose that a simple additional condition on F-moved structures can capture the data: Insertion of the CT- $\lambda$  makes the interpretation of a moved F-phrase as focus impossible. This will all be developed in detail shortly.

To begin with, we shall see how the topic abstraction can derive the interpretation of the Brazilian Portuguese examples from section §4.2.1. First, recall an important aspect of the model: A contrastive topic is an F-marked phrase interpreted in a specific configuration. So from now on, based on Constant’s (2014) proposal, I will speak only of F-marked phrases (which correspond to F- and CT-marked phrases in Buring 2003), and about contrastive topic and focus interpretation.

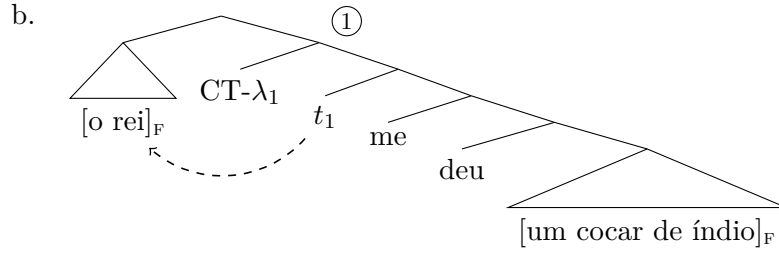
The topic abstraction essentially consists of adding a layer of “nesting” in the focus value, via the CT operator (CT- $\lambda$ ). In sum, a syntactic operation raises an F-marked phrase above the CT- $\lambda$ , which will abstract over alternative sets, creating nested alternative sets. After the CT- $\lambda$  abstraction has taken place, the focus value is nested, i.e. it contains sets as members. The complex topic alternative (“complex nested alternatives”, in Constant’s terms) are directly calculated in the F-value dimension, without the need for a special CT-dimension of meaning.

Let us see how the topic abstraction can be used to derive the Brazilian Portuguese examples. Consider the derivation in (16), which is the topic abstraction applied to the Brazilian Portuguese sentence *O rei<sub>CT</sub> me deu um cocar de índio<sub>F</sub>* ‘The king gave me an indigenous headdress’ from section §4.2.1. The phrase *o rei* ‘the king’ has been raised to the position above the CT operator, leaving a trace co-indexed with this operator:<sup>11</sup>

- (16) a. [O REI]<sub>CT</sub> me deu [um cocar de ÍNDIO]<sub>F</sub>.  
           the king to.me gave a headdress of indigenous  
           ‘The king gave me an indigenous headdress’.

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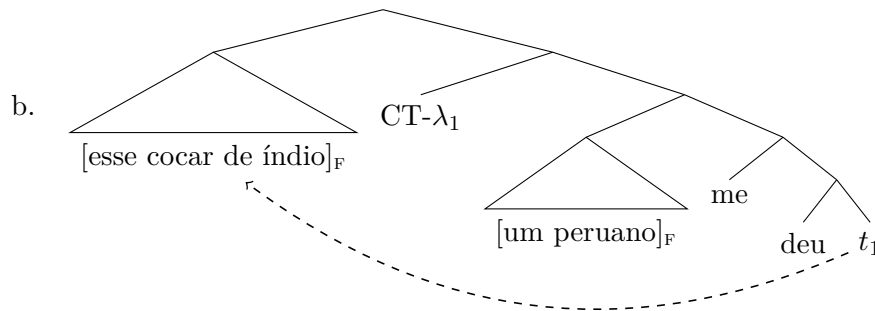
11 Note that *me* ‘to me’ is an indirect object, whose canonical position is after the direct object (in the case of ??, after *um cocar de índio* ‘an indigenous headdress’). I represent it preceding the verb in ?? because this is its position in which it is spelled out when in its pronominalized form.



The F-value of the topic abstraction at node ① is a singleton containing a function that takes an individual  $x$  and returns a set of questions of the form *What did  $x$  give you*. This function is then point-wise combined with the focus alternatives to *o rei* ‘the king’ and returns the set of questions { *What did the king give you?*, *What did the queen give you?*, ... }.

Next, in order to interpret F+CT surface orders, Constant assumes that an F-marked phrase undergoes CT-raising at LF, but is still pronounced *in situ*. Consider example (17). By applying topic abstraction to the sentence *Um peruano<sub>F</sub> me deu esse cocar de índio<sub>F</sub>* ‘A Peruvian gave me this indigenous headdress’, the result is the LF in (17-b):

- (17) a. [Um PERUANO]<sub>F</sub> me deu [esse cocar de ÍNDIO]<sub>CT</sub>.  
           a Peruvian to.me gave this headdress of indigenous  
           ‘I think that a Peruvian gave me this indigenous headdress’.



In (17-b), the F-marked phrase [esse cocar de índio]<sub>F</sub> ‘this indigenous headdress’ undergoes CT-raising at LF, but is still pronounced *in situ*. Covert movement is represented by a dashed arrow in both ?? and (17-b) above. In the examples discussed for far in this section, CT-raising is an operation which takes place at LF, and is needed in order for the CT- $\lambda$  be effective.<sup>12</sup>

Importantly, (17) is the representation of the F+CT order in the only configuration that it is possible, i.e., when the focus precedes the contrastive topic in canonical word

12 CT-raising can also be overt, which is the implementation of topicalizations. I discuss this below.

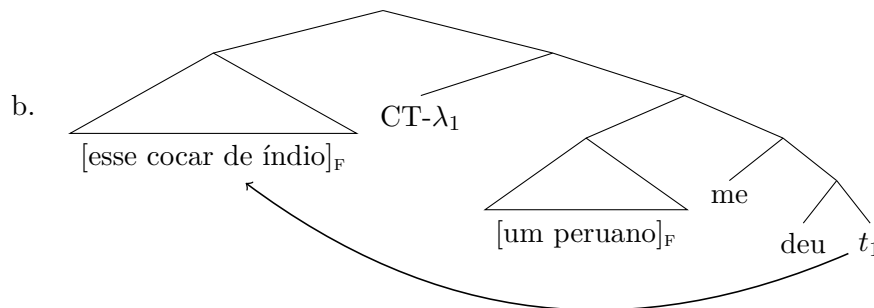
order. Now, a question one might ask is the following: How do we know that (17-b) is the LF for sentence (17-a), specifically with the focus preceding the CT, and not the other way around? That is, why (17-b) is not the LF of the following sentence:

- (18) [Esse cocar de índio]<sub>CT</sub> [um PERUANO]<sub>F</sub> me deu *t*<sub>CT</sub>.  
 this headdress of indigenous a Peruvian to.me gave  
 ‘This indigenous headdress, a Peruvian gave (it) to me’.

The answer is discussed by Constant (2014, p. 101), who points out that the “choice to CT-raise” has consequences for how the sentence will be realized. In the case of (18), CT-raising is in fact overt, which is the implementation of topicalizations.

These constructions are widely attested crosslinguistically, and are used to overtly mark the contrastive topic of a sentence. Constant (2014, p. 100), in discussing an example of overt topicalization in English (*The beans*<sub>CT</sub>, *Fred*<sub>F</sub> *brought*), points out that such an operation is natural when the moved phrase is interpreted as contrastive topic, but unnatural when the moved phrase is interpreted as focus. Following this reasoning, the LF of (18) is as follows, with overt movement of *esse cocar de índio* ‘this indigenous headdress’ to the position above CT-λ:

- (19) a. [Esse cocar de índio]<sub>CT</sub> [um PERUANO]<sub>F</sub> me deu *t*<sub>CT</sub>.  
 this headdress of indigenous a Peruvian to.me gave  
 ‘This indigenous headdress, a Peruvian gave (it) to me’.



This being said, a second question is how exactly an LF representation like the one in (17-b) can be used to derive what I called so far, following Neeleman and van de Koot (2008), an “*in situ*” F+CT configuration (in the sense that the F+CT order corresponds to the canonical order of the constituents so-marked). Precisely, how can an account which assumes that a contrastive topic is an F-marked phrase which has moved to above the CT-λ be compatible with a model that assumes that CTs and foci can be interpreted *in situ*?

I assume with Constant (2014) that an F-phrase *must* move to above CT- $\lambda$  to be interpreted as contrastive topic. This might be conflicting, to a first approximation, with N&vdK's generalizations, particularly because their proposal is based on the very observation that *in situ* and moved contrastive topic and foci do not follow the same mapping rules (in fact, the interpretation of *in situ* CTs and foci does not follow any rule, it is free). But I argue that, to assume with Constant (2014) that a contrastive topic is an F-marked phrase which has moved to a position above the CT- $\lambda$ , is still consistent with the generalizations we have drawn from the data in section §4.2.1. And not only that, we gain a formal analysis for what has remained a (mere) generalization in Neeleman and van de Koot (2008).

First, the Topic Abstraction is well suited to account for what I have been calling *in situ* CT+F and F+CT structures, as I just discussed with the representations in ?? and (17-b). I do not see at this point any undesirable consequences of assuming this derivation for the generalization of the data. In other words, we still maintain the generalization that a focus can only precede a contrastive topic if this order corresponds to canonical word order. CT+F sentences are also borne out by Constant's model. (Also, although Neeleman and van de Koot 2008 do not talk about foci as being F-marked phrases, I do not see at this point any consequences to their generalization by assuming this.)

Second, things get interesting when we look at movement structures, and how the Topic Abstraction can be used, with some additional assumptions (sneak peek: the *F-over-F Principle* presented in section §4.3 and its formal implementation in chapter §5), to account for the ordering restrictions between contrastive topics and foci we observed earlier. We will see that this is a noteworthy property of my proposal, which will be explored in detail in the next section.

### 4.3 The F-over-F Principle

In sections §4.2.1 and §4.2.2 above I presented the main data of the ordering restrictions between contrastive topics and foci in Brazilian Portuguese. The three generalizations regarding the data are the following: 1) *In-situ* foci can both follow or precede *in-situ* contrastive topics, that is: in sentences with canonical word order, both CT+F and F+CT orders are possible; 2) CTs can felicitously move to different positions in the left periphery, including to a position c-commanding a focus, as discussed in section §4.2.2; 3) Movement of foci is restricted, because they cannot move across a contrastive topic; in other words, focus movement marks its sister as background (Neeleman and van de Koot 2008). It was sufficient for Neeleman and van de Koot (2008) to assume that to mark

the sister as background means that a contrastive topic cannot be within the so-marked constituent. Note that, while accurate, to say that there cannot be a CT-constituent in a background is a generalization of data, and not an account of it.

In the present section I will concentrate on generalization number 3), by investigating further the syntactic and semantic conditions involved in the observation that the sister of a moved focus is marked as background. I will show that this can be accounted for by using Constant's (2014) Topic Abstraction account (cf. discussion in section §4.2.3), with a simple additional condition: A focus interpretation of the moved F-phrase is blocked by the CT- $\lambda$ , and that's why F+CT is impossible in configurations where an F-phrase has moved to a position c-commanding another F-phrase. I propose that, by the presence of the CT- $\lambda$ , an F-marked phrase that has moved to a position c-commanding another F-marked phrase cannot be interpreted as a focus. It can (and *will*, as I argue below), however, be interpreted as a contrastive topic.

Therefore, the only felicitous configuration in movement of an F-marked phrase across another F-marked phrase, or more precisely of an F-marked phrase to a position where it c-commands another F-marked phrase, is CT+F. This is summarized in the principle below:

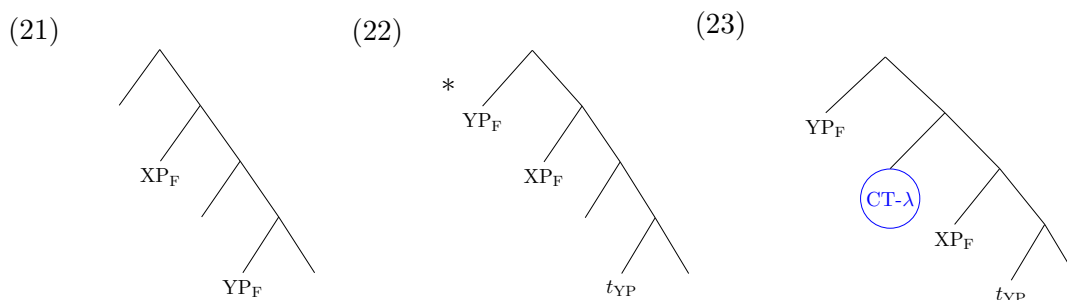
(20) **The F-over-F Principle (FOF)**

If an F-phrase has moved to a position c-commanding another F-phrase, the moved F-phrase must be interpreted as contrastive topic.

This Principle in (20) will receive its final version – stated in formal terms – in chapter §5), but FOF as it stands in (20) will be enough to follow the remainder of the present chapter. To do so, some assumptions and predictions from it must be made clear. First, recall that I am now applying Constant's (2014) model to the generalization of the data, i.e., I assume with him that a contrastive topic is an F-marked phrase in a specific configuration (precisely: which has moved to the CT- $\lambda$ ). My specific proposal here is that the ban on movement of a focus across a contrastive topic (using N&vdK's terms) can be accounted for by using the Topic Abstraction. By assuming that both phrases, the one interpreted as contrastive topic and the one as focus, are F-marked phrases, we gain our way towards a formal analysis on why it is impossible for a focus to move across a CT. If this takes place (thus one F-phrase moves across the other), the F-over F Principle in (20) applies, and the only interpretation available is that of a CT+F structure (moved F-phrase is interpreted as contrastive topic, and *in situ* F-phrase is interpreted as focus).

Consider the three representations below. I will go through each possibility in detail in

the following sections, but here is a summary that might help visualizing my proposal. (21) is simply the representation of a sentence with two F-marked phrases *in situ*. Those sentences are cases of double focus, and will be discussed in detail in sections §4.4 and §4.6. The configuration in (22) is ungrammatical: one F-marked phrase has moved to a position c-commanding another F-phrase. In other words, the background of the moved  $YP_F$  contains another F-phrase,  $XP_F$ . I argue that this is impossible, unless ...CT- $\lambda$  is inserted. This is exactly what is represented in (23). In a configuration with two F-phrases, if one F-phrase moves to a position c-commanding the other F-phrase, insert CT- $\lambda$  and interpret the moved F-marked phrase as contrastive topic.



Second, FOF in (20) does not only make predictions on the interpretation of the moved F-phrase, but also on the interpretation of its sister. In other words, by inserting CT- $\lambda$ , the moved F-phrase is interpreted as contrastive topic, and the F-phrase which stayed *in situ* is interpreted as focus. How is this compatible with the observation that movement of an F-phrase marks its sister as background will be developed in detail in chapter §5, but it is enough for now to assume that the singleton set output by the CT- $\lambda$  is the semantic spell-out of a what is means to be “marked as background”.

Third, by stating FOF in (20) in terms of a moved structure, I also make a prediction about *in situ* structures: the interpretation of an *in situ* F-marked phrase as focus is perfectly fine. Observe that to assume that *in situ* F-marked phrases can be interpreted *in situ* also has consequences for the sister of this focus; the prediction is that the background of an *in situ* focus has no restrictions regarding its constituency (e.g. the background can extend both to the left and to the right of the F-marked phrase), and the possibility of having other alternatives in it (e.g. there can be another F-marked phrase in the background). These predictions will be discussed in section §4.6.

Before closing, I would like to address some of the differences and similarities between what FOF in (20) proposes and the conditions on the interpretation of contrastive topics

and foci by Neeleman and van de Koot (2008). At first glance, the F-over-F Principle in (20) says, with other words, what N&vdK had observed about the movement of contrastive topics, namely that CTs can felicitously move across a focus. But not only that: FOF in fact *requires* that this be the case (I will give further arguments for this in section §4.4 below), which is already a stronger prediction than that of N&vdK. In fact, by building up on the Topic Abstraction, FOF poses a condition on movement of F-marked phrases in general, also the ones interpreted as contrastive topic. While at the same time it requires that a moved F-phrase c-commanding another F-phrase must be interpreted as contrastive topic, it also predicts that the moved F-phrase will *never* be interpreted as a focus, therefore explaining the ban on movement of a focus across a contrastive topic from N&vdK.

Now, note that there are two necessary conditions for FOF to apply: 1) The presence of two F-phrases in the structure, and 2) movement of one F-phrase to a position c-commanding the other F-phrase. I argue that these conditions must *both* apply. If taken independently, however, neither of them forces a contrastive topic interpretation of the moved F-marked phrase. In the next sections I explore the predictions made by FOF in (20) in detail.

## 4.4 Two F-marked phrases

In this and in the following sections, I will discuss the predictions of the F-over-F Principle in detail. For this, each section will be comprised of one or more subsections with the relevant data, and conclude with a generalization of the empirical facts, which, we will see, are all invariably subsumed by FOF in (20). It will be important to have these generalizations laid out for the final implementation of my proposal in chapter 5.

### 4.4.1 Double focus

For the F-over-F Principle (FOF) in (20) to apply, there must be *two* F-marked phrases in the structure to begin with. However, it is possible for two F-phrases to co-occur in the same sentence without this resulting in a contrastive topic interpretation of either. One example is Second Occurrence Focus, where the domain of a focus is contained in the background of another focus (see Büring 2013/2015 for discussion).<sup>13</sup>

<sup>13</sup> I will not address Second Occurrence Focus (SOF) any further here. These are different from the double foci examples I discuss below, as it has been argued in the literature. SOFs are foci associated to a focus sensitive particle (e.g. *only*, *even*). The reader is referred to Büring (2008) and Féry and

Another example are double focus configurations, in which there are two F-marked phrases in the same clause, and they are both interpreted as free foci. One example is (24), from Büring (2016, p. 68):<sup>14</sup>

- (24) (Churchmoth wrote this song in eighty-three.)  
 No, MUCKENSTURM<sub>F</sub> wrote it in SEVENTY-TWO<sub>F</sub>.

Büring points out that this sentence cannot be interpreted as a CT+F sentence, because of a pragmatic reason: songs are only written once. If Muckensturm wrote the song in seventy-two, there cannot be other questions about when other people wrote this song (or who wrote it in another year), which would be required by the contrastive topic reading of this sentence. For that reason, (24) can only be interpreted as a sentence with two foci.

Compare (24) with (25) below, which has a slightly different context. Here, a contrastive topic interpretation of one of the F-phrases is possible:

- (25) (Churchmoth recorded this song in eighty-three.)  
 a. And MUCKENSTURM recorded it in SEVENTY-TWO.  
 b. And in SEVENTY-TWO, MUCKENSTURM recorded it. (Büring 2016, p. 68)

The context in (25) is different, since there is no pragmatic reason to block an interpretation where a song was *recorded* by more than one person, or more than once. That is, CT-questions like ‘And who recorded it in *y*?’ or ‘When did *x* record it?’ are perfectly fine. Büring argues that one of the indicatives of the CT+F pattern is exactly the fact that one of the F-phrases (“prosodically prominent” phrases in his terms) can be preposed across the other F-phrase, as in (25-b).

Now, following this line of argumentation, what happens if we try to move one focus in front of the other in the context of (24)? Büring argues that the sentence is infelicitous:

- (26) (Churchmoth wrote this song in eighty-three.)  
 # No, in SEVENTY-TWO, MUCKENSTURM wrote it.

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Ishihara (2009) for more on SOF (see Assmann et al. forthcoming; Büring 2015, for an Unalternative Semantics take on the subject).

14 Notice that Büring (2016) originally does not indicate the F subscripts on *Muckensturm* and *seventy-two*, arguably because at that point he intends to leave it open whether the pitch accented words are interpreted as contrastive topics or foci. I added the F subscripts to the examples because, as we’ll see momentarily, (24) can *only* be interpreted as a double focus sentence.

On the other hand, still no CT-interpretation of (26) is possible, because of pragmatic reasons. Arguably, that's why (26) sounds odd in this context.

Let us develop this argument further by looking at a Brazilian Portuguese example, which illustrates the same reasoning:

- (27) (Bill Gates invented the iPhone in 2008.)
- a. Não, [o Steve JOBS]<sub>F</sub> inventou (o iPhone) [em 2007]<sub>F</sub>.  
no the S. J. invented the iPhone in 2007  
'No, Steve Jobs invented it in 2007'.
  - b. #Não, [<sub>PP</sub> em 2007]<sub>F</sub> [o Steve JOBS]<sub>F</sub> inventou o iPhone *t<sub>PP</sub>*.

Just as in (24), both [Steve Jobs]<sub>F</sub> and [em 2007]<sub>F</sub> are interpreted as foci in (27-a): There cannot be other questions like 'Who invented the iPhone in 2007?' (or 'When did Steve Jobs invent it?'), because things are only invented once. Crucially, if we move one F-phrase across the other as in (27-b), the sentence is infelicitous. I submit that (27-b) is infelicitous exactly because it indicates a complex discourse strategy, where the fronted F-marked constituent is interpreted as contrastive topic. But a contrastive topic interpretation is impossible here, for the pragmatics reasons just explained. The impossible interpretation of the moved F-phrases in (26) and (27-b) as contrastive topics is exactly the argument we needed to confirm the strong prediction made by FOF in (20), according to which a moved F-phrase c-commanding another F-phrase must be interpreted as a contrastive topic.

Notice that the above discussion of the double focus examples is a continuation of the argument presented in section §4.2.2 on the "freedom" of movement of contrastive topics (we saw there that movement of a contrastive topic is less restricted than movement of foci). I observed there that contrastive topics can move to positions preceding foci and still be interpreted as contrastive topics. There, the felicitous moved-CT+F structure contrasted with the impossible moved-F+CT (movement of focus across a contrastive topic). Here, the infelicity of the movement sentences (26) and (27-b) corroborates FOF (20), which *requires* a CT interpretation of the moved F, explaining the freedom of movement of CTs observed earlier. Moreover, the two-F-phrases examples just discussed show that indeed the moved F-phrase would be interpreted as a contrastive topic, in compliance with FOF, but since such an interpretation is not possible in that context, the sentence can only be infelicitous.

While FOF is not yet at this point a formal account of the data, I believe that by building up the analysis of the data on the topic abstraction we get one step closer to explaining why movement of contrastive topics is so unconstrained while movement of

foci is so restricted. The CT- $\lambda$ , in combination with FOF, guarantees that an F-phrase c-commanding another F-phrase will invariably be interpreted as a contrastive topic, while at the same time it allows us to capture a general constraint on focus movement.

Sentences with double focus have received little attention in the literature, and at the same time they provide crucial arguments to my proposal, as we have just seen. I will have more to say about double focus sentences in section §4.6, where their relation with movement will be explored further. For now, the examples discussed in this section are enough to show that the predictions from the FOF in (20) are correct.

#### 4.4.2 Generalization of section 4.4

In this section we have just seen that a contrastive topic interpretation of the moved F-phrase is required in a configuration where an F-phrase has moved to a position c-commanding another F-phrase. This was shown with an example that did not allow, for pragmatic reasons, for a contrastive topic interpretation of one of the F-marked phrases (regardless of movement). We have seen that, if we try to move on F-phrase across the other in this context, the sentence is infelicitous. I argued that this is exactly because a contrastive topic interpretation should arise, but this is impossible in the context.

The two generalizations are the following:

- (28)
- a. Two *in situ* F-phrases can be both interpreted as foci – double focus construction.
  - b. Contrastive topic interpretation of the moved F-phrase in two-F-phrases configuration required, if there is another F-phrase in the c-command domain of the moved F-phrase.

### 4.5 Movement of F-marked phrase

In section §4.4.1 we have seen the first condition for the F-over-F Principle to apply, namely that there are two F-marked phrases in the structure. The second necessary ingredient is movement of an F-phrase to a position c-commanding another F-phrase. In the following discussion, I will address three predictions of this condition on movement of F-marked phrases. First, by looking at some examples of focus fronting in Romance, we will see that an F-marked phrase can move to the left periphery of the clause and not be interpreted as a contrastive topic (recall that a CT interpretation will only arise if there is another F-marked phrase within the sister of the moved F-marked phrase). Second, in section §4.5.2 we will see that movement of an F-phrase requires that its sister is marked

as background (as already observed by Neeleman and van de Koot 2008), and, third, in section and §4.5.3 I review what has been said in the literature about the background of a moved focus. We will see that the generalization that there can never be alternatives in that background are in conformity with FOF and the derivation I am proposing for the interpretation of CT sentences.

#### 4.5.1 Focus fronting

I will now discuss in more detail focus fronting, a syntactic operation which moves an F-marked phrase to the left periphery of the clause, resulting in a (narrow) focus interpretation of the moved phrase. Focus fronting is a focus marking operation widely attested across languages, Romance being particularly known for it (see eg. Cruschina and Remberger 2017; Leonetti and Escandell-Vidal 2009; Rizzi 1997).

In (29), the direct object *aquele carro* ‘that car’ is moved to the left-periphery of the sentence, and is unambiguously interpreted as focused:

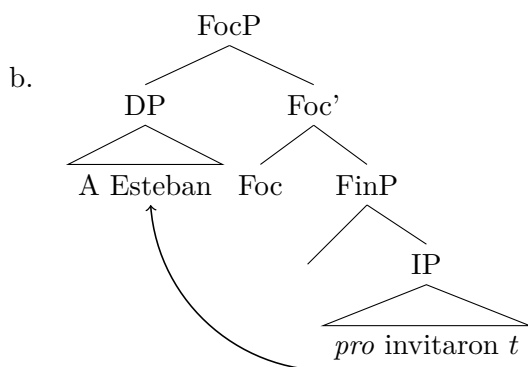
- (29) [Aquele CARRO]<sub>F</sub> o João comprou *t<sub>F</sub>* (e não aquele avião).  
           that car           the J.   bought           and not that plane  
           ‘John bought that car (and not that plane)’. (adapted from Mito 2003, p. 176)

Examples like (29) abound in the Romance languages literature, since this appears to be a very common construction used to mark focus in these languages. In a survey chapter, Cruschina and Remberger (2017, pp. 503–504) observe that focus fronting “leads to a partition of the clause into a focus part and a background”. The authors propose the following structure to account for the partition of the sentence achieved by the focus fronting operation in Romance:

- (30) a. [A ESTEBAN]<sub>F</sub> invitaron. [ESP]  
           ACC E.           invited  
           ‘It was Esteban that they invited’.<sup>15</sup>

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15 Notice that Cruschina and Remberger (2017) chose to translate this example into a cleft in English. While focus fronting in Romance is not always equal to the meaning of a cleft in English, I keep the translation as in the original.



The attentive reader will notice that, while the syntactic labels in the tree above follow a cartographic approach to syntax and information structure (see chapter §6), they have one thing in common with the view advocate by Neeleman and van de Koot (2008) and in this dissertation: Focus movement marks a clear divide of the sentence into a focused part and a background.

Cruschina and Remberger (2017) observe that such a bi-partition of the sentence goes back to a traditional new/given partition, where the focus would correspond to new information and the background to given information. The authors argue that, in most of the cases of fronting (with the exception of mirative fronting)<sup>16</sup>, this correspondence generally holds true, provided that “given/background” is understood in terms of “the part of the sentence that stays constant within the set of focus alternatives” (Cruschina and Remberger 2017, p. 504).

Two important conclusions can be drawn from this brief discussion of focus fronting in Romance. First, an F-marked phrase can move to a position in the left periphery and still be interpreted as a focus.<sup>17</sup> That is, FOF in (20) does not apply to sentences with only one F-marked phrase, so a contrastive topic interpretation of the moved F-constituent in

16 Specifically, Cruschina and Remberger (2017, p. 519) point out that cases of mirative focus fronting (focus fronting with a particular import of surprise or unexpectedness) do not have a given background, since they are usually uttered in out-of-the-blue situations (see example below). We will not be dealing with these special cases of focus movement here.

(i) Non ci posso credere! **Due bottiglie** ci siamo bevuti!  
 not CL can.1SG believe two bottles REFL be.1PL drunk  
 ‘I can’t believe it! We drank two bottles!’ (Cruschina 2012, p. 120)

17 It is important to point out that, while the generalization is the same – a constituent moved to the left periphery is interpreted as focus – Cruschina and Remberger 2017 assume a cartographic approach to information structure, thus one where a constituent bears an F-feature from the Numeration and moves to the Focus Position in the left periphery. I assume in this dissertation with Rooth 1992 that an F-marked phrase can be interpreted as focus *in situ*, i.e. it does not have to move to a focus position in order to the interfaces to read the relevant interpretive properties off the syntactic structures.

not forced to occur here. Second, focus fronting, and I extend this to any movement of an F-marked phrase, marks a clear divide of the sentence. This is another way of saying what has already been pointed out by Neeleman and van de Koot (2008) and is a crucial part of my analysis: movement of an F-phrase marks its sister as background.

#### 4.5.2 Movement of F-marked phrase marks its sister as background

Let us now concentrate on movement of an F-phrase to a position preceding another F-phrase.<sup>18</sup> As discussed in section §4.1.2, the mapping rules predict that focus movement marks its sister as background and, according to the the information structures proposed by Neeleman and van de Koot (2008), a contrastive topic cannot be inside a constituent marked as background. This was already illustrated in the basic paradigm (see sentence (11-b) in section §4.2.1), and can be further corroborated by examples (31-b) below:

- (31) Vovô morreu e deixou várias coisas de herança, mas a gente não sabe o quê ele deixou pra quem.  
Grandpa died and left various things as heritage, but we do not know what he left to whom.
- A: E o antigo armário, pra quem o vovô deixou?  
‘What about the old cupboard, to whom did he leave it?’
- B: Bom, eu não sei, mas...  
‘Well, I’m not sure, but...’
- a. eu acredito que o vovô deixou [o RELÓGIO]<sub>CT</sub> [pra uns VIZINHOS]<sub>F</sub>.  
I believe that the grandpa left the clock to some neighbors  
‘I believe that grandpa left the clock to some neighbors.’
- b. #eu acredito que [pra uns VIZINHOS]<sub>F</sub> o vovô deixou [o RELÓGIO]<sub>CT</sub> *t<sub>F</sub>*.  
clock

The answer in (31-b), where the focused indirect object *pra uns vizinhos* ‘to some neighbors’ has moved across the contrastive topic *o relógio* ‘the clock’, is infelicitous.

Crucially, I assume with Neeleman and van de Koot (2008) that movement of an F-phrase (e.g. to a specific position in the left periphery) does not mark the moved constituent as focus, but rather *its sister as background*. This is an essential assumption

<sup>18</sup> Note that I am now only considering movement of foci in a sentence with a contrastive topic as well. That is, I am not addressing other focus movement structures, like focus fronting.

of their model and mine, because foci can be interpreted *in situ*. Thus, movement of the F-phrase to a specific position in the left periphery is not required for that phrase to be interpreted as a focus. Moreover, as I have already discussed at the end of section §4.1.2, *in situ* contrastive topics and foci have no requirements whatsoever on their sisters. In other words, I assume that just because a phrase is interpreted as focus, it does not mean that its sister is marked as background. The marking of the sister as background only happens in case the F-marked phrase is, furthermore, moved.

The first piece of evidence which confirms that movement of an F-phrase requires that its sister is marked as background has just been given in (31): If an F-phrase moves across another F-phrase, and the moved F has to be interpreted as focus according to the context, the sentence is infelicitous. But to say that “movement of a focus marks its background” actually makes a stronger prediction: moved foci cannot precede contrastive topics – regardless of whether the focus originates below the contrastive topic in base position or above it.

In other words, it is not only focus movement “*across* a CT” (which is how N&vdK phrase it throughout their paper) that should result in ungrammaticality, but simply any CT following a moved focus. The examples in the remainder of this section will discuss instances of this configuration. Notably, I will present additional sets of examples, that were not discussed by N&vdK, in order to build step by step the necessary set of data for the final derivation that I propose in chapter §5.

First, consider (32): In base position, the focus precedes the CT (cf. answer (32-a)). In (32-b), the focused object *um beijo* ‘a kiss’ has moved to the left, but crucially not across the indirect object *pro João* ‘to João’ (interpreted as contrastive topic). Nevertheless, the answer in (32-b) is infelicitous:

- (32) João, Pedro e Maria são grandes amigos e estão sempre juntos. Nos últimos tempos, parece que tem algo mais do que amizade rolando entre os três...  
João, Pedro and Maria are very good friends and are all the time together. These last days, it seems that there is something more than only friendship going on between the three of them...
- A: E a Maria, o que o Pedro pediu pra ela?  
And what about Maria, what did Pedro ask her for?
- B: Bom, eu não vi, mas...  
Well, I did not really see, but...
- a. eu vi que o Pedro pediu [um BEIJO]<sub>F</sub> [pro JOÃO]<sub>CT</sub>.  
I saw that the P. asked a kiss to J.

- b. #eu vi que [um BEIJO]<sub>F</sub> o Pedro pediu *t<sub>F</sub>* [pro JOÃO]<sub>CT</sub>.  
 I saw that a kiss the P. asked to J.  
 ‘I saw that Pedro asked João for a kiss’.

(32) shows that if the focused constituent precedes the contrastive topic constituent in canonical order, and if the focus moves to the left, it is not possible to have a contrastive topic following that focus. So it is not about moving *across*, it is about (simply) moving, or more accurately: marking the sister of the moved focus as background.<sup>19</sup>

As the reader might have seen already, this restriction is captured by FOF in (20), which specifically addresses movement of an F-phrase to a position *c-commanding* another F-phrase. If we apply FOF to the sentences in (32), we get the correct prediction. Since the F-phrase *um beijo* ‘a kiss’ has moved in (32-b) and there is another F-phrase (*pro João* ‘to João’) in its *c-command* domain, FOF requires that the moved F is interpreted as a contrastive topic. This cannot be the case in this context, *um beijo* ‘a kiss’ answers to the *wh*-element in the question and should be interpreted as a focus.

Furthermore, as long as the F-phrase interpreted as contrastive topic is not in the sister of the moved F-phrase, the sentence should be fine. This is indeed what we observe in examples where the CT precedes the focus in canonical order, and the landing site of the moved focus is below the CT. Imagine a context where world leaders give presents to important people from their country:

- (33) A: E o presidente do Peru, pra quem ele deu esse cocar ?  
 ‘What about Peru’s president, to whom did he give this headdress?’  
 B: Eu não vi, mas...  
 ‘I did not really see, but...’
- a. eu vi que [o presidente do BRASIL]<sub>CT</sub> deu o cocar [para um  
 I saw that the president of Brazil gave the headdress to a  
 jogador de FUTEBOL]<sub>F</sub>.  
 player of football
- b. eu vi que [o presidente do BRASIL]<sub>CT</sub> deu [para um jogador de  
 I saw that the president of Brazil gave to a player of  
 FUTEBOL]<sub>F</sub> o cocar *t<sub>F</sub>*.  
 football the headdress  
 ‘... I saw that Brazil’s president gave the headdress to a football player’.

(33) is different from sentence (32-b) above in two things: one, the focus follows the

19 Neeleman and van de Koot (2008, p. 150) have also observed that the landing site of the moved focus is irrelevant, since the sentence will be infelicitous from the moment a moved focus precedes a contrastive topic. My discussion adds to this extra evidence, as discussed in example (33-b) below.

contrastive topic in base position, cf. answer (33-a). Two, in sentence (33-b), the focus has moved, and the sentence is still felicitous. Crucially, the contrastive topic subject is not in the sister (the constituent marked as background) of the moved indirect object *pra um jogador de futebol* ‘to a football player’, the CT still precedes the focus after the movement has taken place.

What is in the sister of that focus is given information (*o cocar* ‘the headdress’), which is simply repeated from the question. In fact, a sentence without the repetition of *o cocar* ‘the headdress’ would be perfectly felicitous:

- (34) eu vi que [o presidente do BRASIL]<sub>CT</sub> deu t [para um jogador de  
I saw that the president of Brazil gave to a player of  
FUTEBOL]<sub>F</sub>.  
football  
‘... I saw that Brazil’s president gave (the headdress) to a football player’.

Thus, a configuration like (33) is not ruled out by FOF in (20), because the contrastive topic interpretation is only required if the moved F-phrase c-commands the other F-phrase. This is not the case in (33), where the moved F-phrase *pra um jogador de futebol* ‘to a football player’ does not have another F-phrase in its c-command domain. We begin to see that the predictions of the F-over F Principle are in fact broader than a simple requirement on the interpretation of a moved F-phrase in a two F-phrases configuration; FOF also makes exact predictions about *in situ* F-marked phrases and, notably, about which movement structures of F-marked phrases are allowed.

### 4.5.3 The background of a moved F-marked phrase

Now, I want to discuss more closely what has been said in the literature about the semantic status of the background of a moved focus. Although studies which looked into it (or at least mentioned something in this sense) have discussed it from different theoretical perspectives, they all agree on the generalization that, once there is focus movement, the background is fixed, i.e. it cannot contain (other) alternative introducing elements. For instance, in Neeleman and van de Koot (2008), the generalization was that a contrastive topic – which introduces alternatives – cannot occur in the sister of a moved focus.

In a pragmatic study of information structure in Italian, Brunetti (2009a) arrives at a similar conclusion: post-focal background material (in the author’s terms, the background of a focus that has moved to the left-periphery of the clause) cannot be interpreted contrastively. Brunetti concludes that post-focal background material has

tail-like properties in Italian (following a proposal made by Vallduví 1990, tails are post-focal and discourse given expressions, and often occur in right-clitic dislocations). Consider (35), from Brunetti (2009a, p. 771):

- (35) Did anybody write to the twins?
- a. A Ugo, TUTTI<sub>F</sub> (gli) hanno scritto.  
     to Ugo all DAT.CL have wrote  
     ‘As for Ugo, everybody wrote him’.
- b. #TUTTI<sub>F</sub>, a Ugo (gli) hanno scritto.  
     all to Ugo DAT.CL have wrote

*Did anybody write to the twins?* is a question containing a plural, *the twins*, which typically elicits a contrastive topic in the answer (cf. Büring 2003, 2016). The CT-value of the answer is ‘Who wrote to *x*-twin?’, with *Ugo* being interpreted as a member of the set *x*-twin. According to Brunetti, the answer (35-b) does not allow an interpretation of *Ugo* as a contrastive topic, specifically because it follows the fronted focus *tutti* ‘all’. This is not the case in (35-a), where *Ugo* is topicalized (more precisely: clitic left-dislocated), and followed by the focus.<sup>20</sup>

From yet a different theoretical perspective, the framework of Unalternative Semantics (UAS), put forward in Büring (2015), provides a straightforward way of formally modeling the observation that the sister of a moved focus cannot contain alternatives. Without going into all the details of Unalternative Semantics here, in this model Büring proposes to calculate focus alternatives via the use two relational constraints which apply between sisters in a metrical (“prosodified”) tree: The weak and the strong restriction.

Important to our purposes here is the strong restriction, which, among other cases, applies whenever there is non-default intonation (prosodic reversal or demotion).<sup>21</sup> For instance, if we consider an English sentence in which the subject is focused, there a shift of the default, clause-final rightmost NPA, to the clause initial subject position. The only

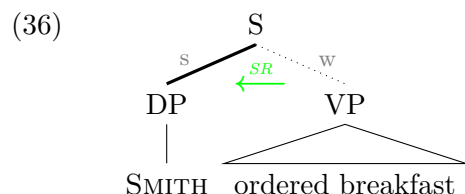
20 It is worth noting that Brunetti (2009a) argues that tails are never interpreted contrastively, regardless of the position of the focus (i.e., if the focus has been fronted or not). But the point is still that, in all the examples of moved focus discussed in Brunetti (2009a), the background of a moved focus never hosts a contrastive topic.

21 The strong restriction is formally defined in Büring (2016a, p. 69) as following:

(i) If  $\alpha$  has undergone prosodic reversal,  $\alpha$  excludes all focal targets in  $\text{alt.dom}(\alpha) \setminus (\text{alt.dom}(S_{\text{strong}}) \setminus \llbracket S_{\text{strong}} \rrbracket_O) \otimes_a \{\llbracket S_{\text{weak}} \rrbracket_O\}$

Where  $\text{textalt.dom}(S)$  is the alternative domain of  $S$ , which I take to be the set of all meanings in the same domain as the meaning of  $S$  that can be expressed by expressions of the same category as  $S$ .  $\otimes_a$  stands for the semantic composition rule needed to combine the alternatives of  $\alpha$ ’s daughters.

interpretation available with this prosodic realization is that the subject is (narrowly) focused and the rest of the sentence is backgrounded. UAS represents this as following:<sup>22</sup>



(36) is a metrically annotated tree, in which the branches are marked as s(trong) or w(eak) sister. Prosodic reversal (non-default intonation) is also indicated by the dashed arrows from S to VP – which has been demoted from strong to weak sister.

The strong restriction – the green arrow in (36) – states that the strong sister (at the head of the arrow) is focal, and that the weak sister (the whole VP at the tip of the arrow) is not, where the remainder of the clause at the tip of the arrow of the strong restriction cannot be interpreted as focal. A terminal node is focal “iff its literal meaning is not used for the computation of the focal target” (Assmann et al. 2019, p. 75). Specifically, only the literal meaning(s) of the constituent(s) prosodically demoted may be used in the calculation of the focus alternatives.

Unalternative Semantics assumes that in focus movement structures, a strong restriction applies too; the moved phrase is interpreted as focal, and its sister is not. Buring (2015) proposed this for focus fronting in Hausa, where a focus position structurally introduces the strong restriction. Arguably, the same derivation applies to focus fronting in other languages in general, like in the Romance examples discussed above. The strong restriction from the Unalternative Semantics provides us with a formal implementation of the observation on the sister of a moved focus: only the literal meanings (so no “focal” F-alternatives) of the sister of the moved focus are used in the computation of the F-alternatives at the sentence level.

It is worth pointing out that, although Neeleman and van de Koot (2008), Brunetti (2009a) and Buring (2015) all agree that the background of a moved focus cannot contain alternatives, there is a considerable difference between the first two on the one hand, and the last proposal on the other. What N&vdK and Brunetti (2009a) point out is an observation of the data, which is of course accurate and crucial for the analysis, but it is not a formal account. Unalternative Semantics, in addition, proposes a semantic

<sup>22</sup> The tree in (36) is based on an example discussed in Buring (2015, p. 556), plus a representation using the “arrowed restrictions” proposed in later work on Unalternative Semantics (Assmann et al. 2019).

account of what it means to be a background, and it is thus a formal implementation of the observation of the data.

In sum, we have seen in this section on movement of the F-phase two important points: First, it is possible for an F-marked phrase to move to a higher position in the clause without being interpreted as a contrastive topic. Importantly, not all movement of an F-phrase to a higher position will give rise to the CT- $\lambda$  operation. Focus fronting is a clear example of movement of an F-marked phrase that still allows an interpretation of the moved F-phrase as focus. This is an important observation, because from the moment that we only talk about F-phrases (following Constant 2014), we have to make sure that not all movement of an F-marked phrase are affected by FOF. In fact, this is an essential feature of the analysis I am proposing here: it generally allows movement of an F-marked phrase, and depending on what the meaning of its sister is, the interpretation of the moved F-phrase will be that of a contrastive topic or of a focus.

Moreover, “to be marked as background” corresponds to different terms by different authors, but I argue that they all agree on an underlying idea that the sister of a moved focus cannot contain alternatives. Neeleman and van de Koot (2008) stated that a contrastive topic cannot be in (the constituent marked as) background of a moved focus, Brunetti (2009a) proposed that the background is a tail, namely that it cannot be interpreted contrastively, and in the Unalternative Semantics framework (Büring 2015), the strong restriction makes sure that the moved phrase introduces F-alternatives, while its sister does not (or more precisely: the sister only introduces the literal meaning as alternatives).

Overall, in discussing the F-over-F Principle, we have seen that there are two conditions for it to apply, and that they are both necessary: the presence of two F-phrases in the sentence and movement of an F-phrase to a position c-commanding the other F-phrase. I argued that both conditions exist independently, that is, there are sentences with two F-phrases where both are interpreted as foci (section §4.4), and there are movement configurations where the moved F-phrase is interpreted as a focus (section §4.5.1). The CT- $\lambda$  operation will be obligatory when both conditions are satisfied, thus interpreting the moved F-phrase as contrastive topic.

#### 4.5.4 Generalizations of section 4.5

The generalizations of this section can all be summarized into one: Movement of an F-phrase marks its sister as background. While this seems simple, there are several effects to this generalization, which I will review below.

First, I argued that one should not talk about movement of an F-phrase across the other, but simply to a position c-commanding the other. This was crucial to explain examples where the phrase interpreted as focus already preceded the phrase interpreted as contrastive topic in canonical order, but movement of the focus still made the sentence infelicitous (cf. example (32-b)).

Second, we have seen that an F-marked phrase can move to a position in the left periphery and be interpreted as a focus. Thus, FOF in (20) does not exclude in any way a focus interpretation of a moved F-phrase. This is exactly what happens in focus fronting configurations (discussed in section §4.5.1).

Third, one could think at this point that focus movement (i.e. movement of a phrase interpreted as focus) is possible only in sentences with exactly one F-phrase (e.g. focus fronting). But I have argued that this is not the only case in which a moved F-phrase can be interpreted as focus. At the end of section §4.5.2, I have shown that an F-marked phrase that follows another F-marked phrase can move, and still be interpreted as focus – as long as it does not move to a position c-commanding the other F-phrase (recall discussion of example (33-b)). Thus, an F-phrase can move in a two-F-phrases structure and be interpreted as focus; as long as there is not another F-phrase in its c-command domain. This shows that movement of an F-phrase in a configuration with two F-phrases does not exclude a focus interpretation of the moved one in general.

The two principal effects of movement of an F-phrase just discussed can be summarized as follows:

- (37) a. Focus interpretation of moved F-phrase in one-F-phrase configuration possible – the case of focus fronting;
- b. Focus interpretation of moved F-phrase in two-F-phrases configuration possible, as long as “higher” F-phrase is *in situ*.

These, in turn, can be summarized into the following generalization:

- (38) Movement of an F-phrase requires that its sister is marked as background.

The main points of the analysis of the BP data have now been introduced. In the following, I will explore further double focus constructions, and I will argue that they provide additional arguments for the analysis of the ordering restrictions of contrastive topics and foci in BP. This is naturally expected under the derivation of such constructions we are assuming here with Constant (2014), in which the interpretation only sees F-marked phrases. Is the proposal I am making here strong enough to make sure that

F+F structures are correctly interpreted as double focus structures and not as CT+F or F+CT? I will show in the next section that the answer to this question is “yes”.

## 4.6 More on double focus (F+F)

In this section I propose the first systematic study of double focus sentences. This will be done mainly by outlining a brief comparison between English on the one hand, and Italian and Brazilian Portuguese on the other. My discussion will be guided by the F-over-F Principle (FOF), presented in section §4.3. It is worth emphasizing at the onset that, while the arguments in this section are not necessarily new, it is the first time that a discussion of double focus constructions is methodically connected to that of focus movement and contrastive topic interpretation.

Double focus examples were occasionally discussed in the literature of focus semantics and focus realization in Germanic languages, but they have not received a systematic investigation. It is generally accepted nevertheless that double (or multiple) focus is grammatical at least in German and English, the languages for which there has been some investigation (see e.g. Büring 2016b, 2019; Jacobs 1991/2b; Krifka 1991/2; Williams 1997). I will discuss now some of the most famous English examples.

To the best of my knowledge, one of the first examples proposed in the literature is from Lakoff (1976; via Büring 2016b, p. 128):

(39) (She called him a Republican, and then) HE insulted HER.

This example is usually used in the literature to illustrate that context (perhaps more precisely here: world knowledge) is enough to license a contrastive focus interpretation of a phrase, even if the antecedent is not exactly of the same form as the focused sentence (in this case call someone a Republican is enough to allow a ‘*x* insulted *y*’ reading; see e.g. Rochemont 2016). But to our purposes here what matters is that there are two foci in the sentence above, *he* and *her*. Moreover, notice that the two foci are pronouns, which would not normally be accented, unless focused. Such a focusing configuration is justified by assuming that there is a presupposition in the context that to call someone a Republican is an insult, then the verb can be deaccented in the sentence in question.

Sentence (39) above has also been analyzed in the literature with a CT+F pattern, i.e. *he* is rendered with a fall-rise contour, thus being interpreted as a contrastive topic (see e.g. Roberts 1996). While I do not exclude such a possibility, the reader is asked to bear in mind that I am treating this example with two focus accents (A-accents), so a H\* on

*he* and a falling H\* L% on *her*. A double focus interpretation is licensed by the context, where both foci contrast with each other, and no one insulted anyone else. A contrastive topic interpretation seems less likely to me, once there does not seem to be anyone else left to be insulted (which would be the CT reading of the sentence, arguably ‘who did *x* insult?’).

Such a reasoning is similar to a discussion in Büring (2016, pp. 64–65), in which a CT+F sentence is differentiated from an F+F by considering the (sub-)questions they are answering to, and whether the answer completely resolves the question asked or not. Consider the answer-pair questions in (40) and (41):

- (40) A: Did you kick her out?  
 B: SHE<sub>F</sub> kicked ME<sub>F</sub> out!

As Büring points out, in (40), the two prosodically prominent elements should be analyzed as foci. The pragmatic inference of (40) is along the lines of “it was her who did the kicking out, and it was me who got kicked out; no one else kicked anyone out”.

Now, in a slightly modified context, the two accented phrases can be interpreted differently, that is, as a CT+F configuration:

- (41) A: Who do they want to kick out?  
 B: SHE<sub>CT</sub> wants to kick ME<sub>F</sub> out.

Note that the difference between (40) and (41) lies in the context. Crucially, (41) has a contrastive topic interpretation because it answers to an implicit sub-question, that of *Who did she kick out ?*, among questions of the form ‘Who did *x* kick out?’. This is not the case in (40), where the answer completely resolves the question *Did you kick her out?*, and no other sub-question in the context is left “open”.

Another classical example much cited in the literature is (42), originally from Schwarzschild (1999, p. 170):

- (42) (John cited Mary) but he DISSED SUE.

In the example above, both the verb *dissed* and the object *Sue* are focused. The intuition for this focusing pattern is pretty straightforward: *dissed* contrasts with *cited*, and *Sue* contrast with *Mary*, therefore both are focused.<sup>23</sup>

<sup>23</sup> I will not go into the details of the problems that such example poses to a focus projection theory (Selkirk 1984). The reader is referred to Schwarzschild (1999) and Büring (2016b, §4.5) for a thorough discussion of the issues revolving around this F-marking pattern.

I could go on in citing examples from the English literature, but what we have seen so far is enough for the reader to be convinced that double focus examples are perfectly grammatical in English. We will see below that the picture is not so clear when it comes to Romance languages (more precisely, Italian).

#### 4.6.1 Double focus in Italian

The examples of double focus mentioned so far were all English examples. There is a wide consensus that such patterns are perfectly possible in English (regardless of the problems that it might pose to focusing theories, see discussion for instance in Schwarzschild 1999, or Büring 2016b, §4.5). On the other hand, it has been often assumed that F+F sentences are not possible in Romance languages, due to the general tendency of these languages to mark focus through syntax. It would be impossible to have two moved foci, or one moved focus and an *in situ* focus (I will discuss this momentarily). While there has been some mention to the fact that Spanish (Zubizarreta 1998) and Catalan (Vallduví 1994; Vallduví and Zacharski 1994) do not allow for more than one focus in the same clause, Italian is the only Romance language to my knowledge for which a detailed study of this construction has been proposed, in Bocci (2013).

Rizzi (1997) proposed that a focus is unique in the clause. This follows from the author's proposal that focus is marked by movement to a specific functional position in the left periphery, which then divides the sentence into the focused phrase (Spec,FocP) and what Rizzi calls the "presupposition" (equivalent to background in this dissertation). According to the author, there cannot be another focus inside the presupposition, therefore blocking the possibility of having two foci in the same sentence (see section §6.1.2 for a detailed discussion of this idea).

Bocci (2013) takes up on Rizzi's (1997) focus uniqueness condition and further argues that this is indeed the case in Italian. Bocci starts by pointing out that some of the double focus examples from the English literature are simply impossible in Italian. Consider, for instance, the Italian translation in (43-b) from the English example below, originally from Truckenbrodt (1995):

- (43) a. A STUDENT of chemistry asked advice from a PROFESSOR of chemistry.  
 b. \*Uno STUDENTE di chimica ha chiesto aiuto a un PROFESSORE di chimica.  
 (Bocci 2013, p. 60)

A indicated by the star before (43-b), such a sentence with two focal accents, on both *studente* 'student' and *professore* 'professor', is ungrammatical in Italian (contrary to

the perfectly grammatical English example (43-a)). Bocci argues that this is consistently the case in Italian, i.e. that every time one tries to translate one of the double focus sentences from English to Italian, native speakers judge them ungrammatical.

In his discussion of multiple focus in Italian, Bocci (2013) explores some possible explanations for the difference between English and Italian. For instance, the author suggests that the impossibility of sentences like (43-b) in Italian could be explained by some phonological constraint (along the lines of “Italian fails to shift the accent within a phonological phrase”). Bocci ends up by concluding that this is not the case, i.e. that it is not due to phonology, but to the general focus uniqueness constraint in Italian. He proposes the following example, which, according to him, shows that a noun can be “more prominent” (as Bocci puts it) than its complement (i.e., PA has shifted to the left in *PROFESSORE di chimica*):

- (44) Uno studente di chimica ha chiesto aiuto a un PROFESSORE di chimica. (Bocci 2013, p. 61)

According to the author, this example shows that the impossibility of having a double focus sentence like in English is not due to a phonological constraint, since in (44) it is possible to have the leftmost element of a complex DP receiving the NPA. Bocci argues then that the only explanation left is that it is simply impossible to have two foci in the same clause in Italian.

It is worth noting, however, that the examples discussed in Bocci (2013) all involve some kind of focus parallelism, in the sense that both (potential) foci only differ in one word, like the adjective or the noun’s complement (Bocci’s discussion has as a point of departure the famous *farmer sentence* from Rooth 1992). So it might be that the ungrammatical sentences proposed by Bocci are not necessarily due to a ban on multiple focus in the language, but that it has to do with how Italian marks (or not) givenness, and in the specific examples just discussed, givenness deaccenting.

It has been often mentioned that givenness deaccenting is not present in Italian grammar, at least not to the same extent as it is in English. It has been convincingly demonstrated that Italian fails to deaccent given information within a complex NP (formed by a noun+adjective; note that the order of the NP constituents is different in English and Italian). Swerts et al. (2002) showed, in an experiment where participants had to name a shape of a certain color (e.g. *red triangle*), that zero out of eight Italian speakers deaccented the phrase given in the preceding sentence (capitals mark pitch

accents). In (45), although the color *nero* ‘black’ was given, it was not deaccented in the following sentence:<sup>24</sup>

- (45) (Previous mention: rettangolo nero – ) triANgolo NEro  
 rectangle black triangle black

If we extend the results from Swerts et al. (2002) – which only looked at complex NPs made up of a noun + adjective – to a general inability of Italian to deaccent given information within a complex constituent, we are left wondering what is the explanation for a sentence like (44), where *di chimica* arguably is deaccented withing its NP. I argue that Bocci’s proposal (that is, (44) is grammatical because it has only one focus) also does not explain why the PA falls on *professore*, and not on the right-most word *di chimica*.

Furthermore, in the discussion of Bocci (2013), we are left wondering how Italian marks the more “genuine” cases of double focus, that is, those examples in which givenness deaccenting does not have a role to play, like the *Republican* (39) or the *dissed Sue* (42) examples discussed in the beginning of the present section. As the reader can see, the workings of givenness (deaccenting) in Italian are pretty complex; since this language is not the main focus of the dissertation, I will not discuss it further.<sup>25</sup>

Other authors have briefly discussed double focus examples in Italian. The following example is found in Frascarelli (2000, p. 91):

- (46) GIOVANNI<sub>F</sub> ha dato un bacio a MARIA<sub>F</sub> (non Antonio a Luisa).  
 G. has given a kiss to M. not A. to L.  
 ‘Giovanni gave a kiss to Maria (not Antonio to Luisa)’.

Frascarelli observes however that examples like (46) are marginal in Italian, and crucially subject to syntactic constraints. Among them, both foci have to be *in situ* (the same argument is made in Cardinaletti 2001), and one of the foci has to be the subject. Thus, (47-a) is ungrammatical because one of the foci, the indirect object *a Maria* ‘to Maria’ has moved, and (47-b) because the foci are the direct object *un bacio* ‘a kiss’ and the

24 The prosodic realization of the same experimental setting in Dutch was sharply different from that of Italian. All of eight Dutch speakers always deaccented the given word:

(i) (Previous mention: gele vierkant – ) BLAUwe vierkant  
 yellow rectangle blue rectangle

25 It is worth pointing out that, while several authors have argued that there is no givenness deaccenting in Italian, this does not mean that givenness does not play a role in Italian grammar. Bocci himself makes this very clear, by discussing several examples of dislocations and resumptive pronouns in Italian. A good overview is offered in Büring (2016b, §8.1).

indirect object *a Maria* (Frascarelli observes that this is regardless of the order of the objects):

- (47) a.  $*_{[PP]} [A \text{ MARIA}]_F$  ha dato  $GIOVANNI_F$  un bacio  $t_{PP}$  (non a Luisa  
to M. has given G. a kiss not to L.  
Antonio).  
A.
- b.  $*_{[NP]} [Un \text{ BACCIO}]_F$  ha dato (Giovanni)  $t_{NP}$   $[a \text{ MARIA}]_F$ .  
a kiss has given G. to M

Similarly, Brunetti (2004a, p. 97) points out that it is possible to have two foci in the same clause in certain contexts in Italian, but that those are rare because they involve contrast between two pairs:

- (48)  $[A \text{ GIANNI}]_F$   $[il \text{ LIBRO}]_F$  darò (non a Piero l'articolo).  
to Gianni the book will.give not to Piero the-article  
'I will give the book to Gianni (not the article to Piero). (Brunetti 2004a, p. 97)

First, note that in (48) the foci are the indirect object *a Gianni* 'to Gianni', and the direct object *il libro* 'the book'. That is, none of them is a subject, which was claimed to be ungrammatical by Frascarelli (2000).

Second, (48) was originally proposed by Rizzi (1997), who actually reported this example as ungrammatical. So, while Brunetti considers (48) possible in Italian, it seems that this judgment is not unanimous among Italian speakers. This is in fact what seems to be, at this point, the only safe conclusion that one can draw from the discussion of double foci in Italian, i.e., that the grammaticality of such a construction is disputable. Moreover, in the few cases in which it is considered grammatical, double focus seems to be highly constrained: there has to be a contrast between two pairs and no movement of one of the foci is allowed.

If we assume with Brunetti (2004b), Cardinaletti (2001), and Frascarelli (2000) that double focus is indeed grammatical in Italian (at least to some speakers), there is a clear requirement that both foci must be *in situ*. Notably, this jibes well with FOF in (20), in which a contrastive topic interpretation of an F-phrase is required only if there is movement, but *in situ* configurations are not affected by it.

Additionally, note that the possibility of movement of one of the foci is not discussed in the English literature. I believe that this is for two reasons: One, focus is marked *in situ* in English, so a movement discussion does not even arise; and two, as I've been arguing, if one F-phrase moves to a position c-commanding the other, the moved F will

be interpreted as a contrastive topic. I will have more to say about movement in F+F constructions in section §4.6.3. Given that Italian is not the focus of this dissertation, the natural question to ask now is what do we know (or can say) about double focus constructions in Brazilian Portuguese. As already discussed in section §4.4, I argue that double focus sentences are felicitous in BP. I will discuss a few more examples in what follows.

#### 4.6.2 Double focus in Brazilian Portuguese

Double focus sentences have not been discussed in the Brazilian Portuguese literature. However, given the discussion about focus marking in BP that we had in section §3.2, and the BP examples we have been discussing in this whole chapter, one can assume that double F is indeed possible in this language. Consider (49) (I thank Renato Lacerda for providing some of the contexts and for double checking the grammaticality judgments of the examples below):

- (49) (Eu vi dois competidores se cumprimentarem no pódio. Quem apertou a mão de quem?)  
 ('I saw two competitors shaking hands at the podium. Who shook whose hand?')
- [O PRIMEIRO colocado]<sub>F</sub> apertou a mão [do TERCEIRO colocado]<sub>F</sub>.  
 the first ranked shook the hand of-the third ranked  
 'The first ranked (winner) shook the hand of the third ranked (winner).'

(49) is inspired by an example from Bocci (2013), in which the two foci are contrasting and differ only in the adjective, which receives the NPA in its focus domain. As already observed in the discussion of the *Steve Jobs* example in section §4.4, it is perfectly fine to have two foci in the same clause in Brazilian Portuguese. Moreover, a pitch accent can shift to the left if required by focusing, as it is the case in the two foci above: according to default intonation, the right-most word *colocado* 'ranked' should receive the NPA, but since the adjective *primeiro* 'first' is contrasting with the adjective *terceiro* 'third', it is the adjective who receives the NPA within the complex NP. We already see here that BP is different from Italian, since a sentence like (49) is grammatical in BP.

Close translations of the English examples are also grammatical in Brazilian Portuguese:

- (50) O João mencionou a Maria, mas ele [DESRESPEITOU]<sub>F</sub> [a SUZANA]<sub>F</sub>.  
 the J. mentioned the M. but he disrespected the S.  
 'João mentioned Maria, but he disrespected Suzana'.

Another example that is not possible in Italian, but is perfectly fine in BP is the following:

- (51) (No departamento de química, os estudantes sempre pedem ajuda aos professores.  
Mas desta vez... )  
(‘At the Chemistry department, the students always ask help to the professors.  
But this time...’)
- [Um PROFESSOR de química]<sub>F</sub> pediu ajuda [pra um ESTUDANTE de química]<sub>F</sub>.  
one professor of chemistry asked help to one student of chemistry  
‘A chemistry professor asked help from a chemistry student.’

Overall, from this brief discussion, we can conclude that double focus sentences are grammatical in Brazilian Portuguese, and the picture seems to be pretty close to the one in English. Again, focus marking in BP is similar to accent languages (English, German, Dutch), and not so close to the focusing system of its cousin Italian. In the remainder of this dissertation, I assume that double focus constructions are perfectly fine in BP.

Before closing this discussion, one last thing should be pointed out. In considering double focus in Italian, the point of departure was the proposal of a focus uniqueness condition from Rizzi (1997), which, due to the universal character in which this argument is included (the Cartographic Project), should apply to all languages. This proposal will be discussed in much more detail in chapter 6 (see particularly §6.1.2), but it should be clear at this point already that such a condition is not at all universal. The examples in English have clear grammaticality judgments, as well as the BP ones; that is, double focus is grammatical in English and Brazilian Portuguese. Whether they are in Italian or not is still a matter of debate, but even if one assumes that the occurrence of more than one focus per clause is somehow language specific (e.g. Italian does not allow it, English and BP allow it), the necessity of a parametric condition such as “only one focus per clause is allowed” is at best problematic.

### 4.6.3 F+F and movement

One last piece of data that is crucial to the analysis I am advocating here concerns the (im)possibility of movement in double F-phrase constructions. A configuration with two *in situ* F-phrases was first discussed with the *Steve Jobs* example from section §4.6, repeated below for convenience:

- (52) (Bill Gates invented the iPhone in 2008.)

- a. Não, [o Steve JOBS]<sub>F</sub> inventou (o iPhone) [em 2007]<sub>F</sub>.  
     no the S. J. invented the iPhone in 2007  
     ‘No, Steve Jobs invented it in 2007’.
- b. #Não, [<sub>PP</sub> em 2007]<sub>F</sub> [o Steve JOBS]<sub>F</sub> inventou o iPhone *t<sub>PP</sub>*.

Recall that this set of examples was our first step in demonstrating that the prediction made by FOF was on the right track. As FOF states, movement of an F-phrase to a position c-commanding another F-phrase is only felicitous if the moved F is interpreted as contrastive topic. But the context above does not license a contrastive topic interpretation (things are only invented once), hence the infelicity of (52-b).

What about other movement configurations? That is, we know by now that F2+F1 *t<sub>F2</sub>* is not possible, but what about other structures which involve movement but not necessarily of the linearly second focus across the linearly first focus?<sup>26</sup> Consider first a structure in which only F2 moves, and F1 stays *in situ*:

- (53) A: Bill Gates invented the iPhone in 2008.  
       B: #[O Steve JOBS]<sub>F1</sub> eu acho que *t<sub>F1</sub>* inventou (o iPhone) [em 2007]<sub>F2</sub>.  
           the S. J. I think that invented the iPhone in 2007

The sentence in (53) is infelicitous. A similar example was already discussed in section §4.5.2, in which I pointed out that the impossible movement is not only of one F-phrase across the other, but simply movement of F-phrase to a position c-commanding another F. This is exactly the case in (53), in with F2 stays *in situ* (so no movement “across”), but F1 moves to the left of the embedded clause. Since the sister of the moved F, *eu acho que inventou o iPhone em 2007* ‘I think that (he) invented the iPhone in 2007’, is marked as background, no other phrase can be interpreted as a focus within that constituent.

The reader might guess the result by now of a structure in which both Fs move: it is also infelicitous (the context remains the same, of course).

- (54) #[O Steve JOBS]<sub>F1</sub> [em 2007]<sub>F2</sub> eu acho que *t<sub>F1</sub>* inventou (o iPhone) *t<sub>F2</sub>*.  
       the S. J. in 2007 I think that invented the iPhone

Since F1 moves to a position c-commanding F2, this should give rise to a CT+F sentence according to FOF, but that is pragmatically blocked by the context. Notably, movement of F2 does not salvage the interpretation of (54). One could hypothesize that, as long

<sup>26</sup> I will call the linearly first focus F1 and the linearly second focus F2. This is for simple reasons of ease of exposition, and should not be understood as primary and second focus (as in the Second Occurrence Focus literature). I might also refer to them as higher (= F1) or lower (=F2) F. Also, “F2+F1 *t<sub>F2</sub>*” is an abbreviated way of writing a structure in which the focus that originally followed the first focus was moved across it, like in (52-b).

as we keep the relative order of F1 and F2 the same, or if we move F2 closer to F1, the sentence would be improved; this is not the case. It seems, at this point, that one could claim that F+F structures are only possible if both foci are *in situ*.

But there is another structure with movement that *is* possible in a F+F structure, and that is if only the lower F-phrase moves. Consider (55), judged felicitous by the speakers I consulted:

- (55) Eu acho que [O Steve JOBS]<sub>F1</sub> [em 2007]<sub>F2</sub> inventou (o iPhone) *t*<sub>F2</sub>.  
 I think that the S. J. in 2007 invented the iPhone  
 ‘I think that Steve Jobs invented the iPhone in 2007’.

In (55), the PP [em 2007]<sub>F2</sub> has moved to a position right after the subject of the embedded clause, [O Steve JOBS]<sub>F1</sub>. Crucial in this structure is that, since F1 has not moved, its sister is not marked as background, so another focus, F2, can occur in F1’s sister. So an F-phrase under an *in situ* F-phrase may move, and it will still be interpreted as a double focus sentence. The important thing here is that the higher F (F1) is not moved. Recall that this was already a generalization I drew of the discussion of moved F-phrases in section §4.5.4; we have seen there that a focus interpretation of a moved F-phrase is possible, as long as there is no other F-phrase in its c-command domain.

Overall, the entire discussion of double focus sentences in this section did not only confirm the direct prediction made by FOF (that a moved F-phrase to a position c-commanding another F-phrase must be interpreted as contrastive topic), but it also provided additional evidence that FOF actually follows from a more general condition on movement of F-marked phrases. Specifically, the data discussed in section §4.6.3 has shown that an F-marked phrase can move in a two F-marked phrases structure and be interpreted as focus, as long as it does not move to a position where it c-commands another F-phrase.

#### 4.6.4 Generalization of section 4.6

The discussion of this section also brought up important predictions of the F-over-F Principle in (20). Although this might sound trivial to a first approximation, that FOF specifically does not make any predictions regarding the sister and the interpretation of *in situ* F-phrases is in fact an important property. From this, we are able to derive the interpretation of double focus sentences, where both F-marked phrases are *in situ*.

The generalizations drawn from the discussion above are as follows:

- (56)
- a. An *in situ* F-phrase allows for another F-phrase in its sister, which results in a double focus interpretation (cf. (52-a));
  - b. An F-phrase under an *in situ* F-phrase may move, and therefore have its sister marked as background; as just explained, the crucial thing is that the higher F-phrase is not moved (cf. (55)).

## 4.7 Summary of chapter 4

This chapter began with an old observation regarding the possibility of contrastive topic-focus swap, from which is assumed that a focus can both follow and precede a contrastive topic in English. In the remainder of the chapter, I investigated whether a focus can generally precede a contrastive topic in Brazilian Portuguese, by putting forward new data of the ordering effects of CTs and foci in the language.

By looking at the ordering effects of CTs and foci in Brazilian Portuguese, I concluded that the basic paradigm is strikingly parallel to the one put forward for Dutch by Neeleman and van de Koot (2008). The principal observations from that discussion are that a focus cannot move across a contrastive topic, and that focus movement marks its sister as background (in N&vdK's terms). In section §4.2.3, I started to build up the basis for my final proposal, by proposing that the topic abstraction (Constant 2014) is well suited to account for the interpretation of the data (although the final implementation will be given in chapter §5).

From this, I stated the Principle, which is repeated below for convenience:

(57) **The F-over-F Principle (FOF)**

If an F-phrase has moved to a position c-commanding another F-phrase, the moved F-phrase must be interpreted as a contrastive topic.

The F-over-F Principle in (57) guided the entire discussion that followed, which put forward several generalizations regarding the data and the effects of movement and *in situ* configurations. From the thorough discussion we had involving *in situ* and moved F-marked phrases, I put forward now the following generalizations:

- (58)
- a. If one F-phrase moves to a position c-commanding another F-phrase, the moved F-phrase is interpreted as contrastive topic, which can give rise both to the configuration CT+F and to the configuration F+CT;
  - b. Thus, a moved F-phrase above another moved F-phrase must be interpreted as a contrastive topic;

- c. An F-phrase under an *in situ* F-phrase may move, and therefore have its sister marked as background, as long as there is not another F-phrase in the c-command domain of the moved F;
- d. An *in situ* F-phrase allows for another F-phrase in its sister, which results in a double focus interpretation.

The underlying idea behind the generalization above, and the discussion of the ordering effects in general, is that movement of an F-phrase marks its sister as background. This has crucial consequences for the interpretation of the moved F-phrase and its sister. In section §4.5.3, I presented an overview of what has been said in the literature about the sister of a moved focus, and we have seen that the Unalternative Semantics framework (Büiring 2015) proposes a formal way of capturing that there are restrictions regarding the F-alternatives of the sister of a moved focus. In chapter §5, I will put together all these theoretical points and data observations, and will propose a formal analysis of why a focus cannot move across a contrastive topic.

## CHAPTER 5

### Derivation

In this chapter I will explore how the FOF Principle introduced in §4.3, and thoroughly discussed in sections §4.4, §4.5 and §4.6, can be implemented. In a nutshell, my proposal is that the sister of a moved F-marked phrase must have a singleton focus semantic value. I will argue that this is the semantic implementation of “being marked as background” from Neeleman and van de Koot (2008) and, moreover, that through the semantics of the CT operator, we ensure that the sister of the moved F-marked phrase – the latter interpreted as contrastive topic – has a singleton semantic value.

In section §5.1, I present the final version of the Principle (the “Generalized F-Movement Principle”, see below) on , with the proper semantic characterization that will guide the discussion of the rest of the chapter. I additionally take a moment to clarify the terminology that will be employed in the chapter, which is an essential step in accounting for all the predictions of the final version of the Principle on moved F-phrases. I will then review all the ordering restrictions observed in chapter §4; starting, in section §5.2, by discussing the structure in which there cannot be another F-marked phrase in the sister of a moved F-phrase. Section §5.3 focuses on *in situ* F-marked phrases, and discusses configurations with both a single F-marked phrase and with two F-marked phrases (double focus sentences). In §5.4, I introduce my account of why “a focus cannot move across a contrastive topic” (using Neeleman and Van de Koot’s 2008 terms) or, more precisely, why a moved F-marked phrase c-commanding another F-marked phrase must be interpreted as contrastive topic. In section §5.5 I briefly discuss focus fronting constructions, following with a broad assessment of my proposal in §5.6.

Section §5.7 goes through all the structures accounted for by my proposal, as well as discussing what I will call “double movement” structures, in which both F-marked phrases overtly move. After reviewing all these structures, I explore in section §5.8 a possible explanation for the only configuration that is not accounted for by GeFMoP–

when an F-marked phrase overtly moves below an F-phrase which has covertly moved to the CT- $\lambda$ - and argue that this type of mismatch falls under more general economy principles that have been argued elsewhere (Bobaljik and Wurmbrand 2012).

## 5.1 Introduction and terminology

As I have already pointed out, to say that the sister of a moved focus is marked as background is rather a generalization of the data than a formal account. In the following, I propose a semantic implementation of this observation, in which to be “marked as background” means “has only a singleton focus semantic value”. I will spell out the details of this proposal below.

First, recall the Principle stated in section §4.3, repeated here for convenience:

(1) **The F-over-F Principle (FOF)**

If an F-phrase has moved to a position c-commanding another F-phrase, the moved F-phrase must be interpreted as contrastive topic.

A first clear prediction from FOF in (1) is that a contrastive topic interpretation of the moved F-phrase is the only one available in the movement configuration described, i.e. if an F-phrase is in the c-commanding domain of a moved F-phrase. That this prediction is borne out was argued at length in section §4.3, through examples that elicited a double focus reading: a sentence where one of the F-phrases could not move to a position c-commanding the other was infelicitous, precisely because this should give rise to a contrastive topic reading – impossible given that context. Moreover, we have seen that FOF in (1) still correctly allows for double focus sentences, as it does not impose the contrastive topic reading in sentences with two *in situ* F-phrases. And not only that: It equally rules in structures with two F-phrases where the lower F-phrase moves within the c-commanding domain of the *in situ* F-phrase. This will all be spelled out in the following sections.

FOF as it stands in (1), however, is still not a full implementation of the generalizations drawn from the empirical facts. It correctly rules in all the grammatical structures, as well as ruling in the ungrammatical ones; but, at this point, the desiderata is to have a proposal strong enough to give a semantic content to the empirical facts, which can be tested and implemented. With this in mind, I present a new, final version of the Principle, stated as follows:

(2) **The Generalized F-Movement Principle (GeFMoP):**

The sister of a moved F-marked phrase must have a singleton focus semantic value.

Recall that the underlying idea of the entire discussion we had of the data concerning the ordering restrictions is that movement of an F-marked phrase marks its sister as background. In the final version of the Principle in (2) – now GeFMoP – I propose that to be “marked as background” is formally defined semantically as “has a SINGLETON SEMANTIC VALUE”.

In the following sections, I will discuss in detail the generalizations from chapter §4 are in fact all derivable from GeFMoP in (2). We can see from the outset, nevertheless, that the GeFMoP does not pose any requirements concerning the F-alternatives of the sister of an *in situ* focus. In other words, the singleton semantic value requirement only applies to movement structures, but not to *in situ* F-marked phrases. I argue that this is an asset of my proposal, as it allows us to also account for double focus sentences. In this configuration, two *in situ* F-marked phrases are interpreted as focus; in other words, there is an F-marked phrase within the sister of another F-marked phrase – and an F-marked constituent does not have a singleton focus semantic value, since it introduces F-alternatives, resulting in a set of meanings. Thus, we naturally rule in double focus sentences with GeFMoP in (2), which only imposes the singleton semantic value requirement to the sister of *moved* F-marked phrases.

Before moving onto the specific application of my proposal to the Brazilian Portuguese data, some terminology needs to be made clear. First, it will be convenient to distinguish between what I refer to as “real” F-alternatives in opposition to “singleton” F-alternative:

- (3) F-alternatives:<sup>1</sup>
- a. REAL F-ALTERNATIVES: a set of F-alternatives with a cardinality greater than 1.
  - b. SINGLETON F-ALTERNATIVE: a set of F-alternatives with cardinality 1.

I use the term REAL F-ALTERNATIVES to mean the focus semantic value of (a phrase containing) an F-marked phrase (cf. Rooth 1992). The term SINGLETON F-ALTERNATIVE refers to the set of alternatives of a non F-marked phrase, so with only one element in it: its ordinary semantic meaning. While I assume with Rooth (1992) that every node introduces F-alternatives – necessary to calculate the focus value of the entire sentence – these are of a fundamentally different nature. F-marked phrases introduce a

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<sup>1</sup> I thank an anonymous reviewer of my proceedings paper of Sinfonjia 12 (Assmann forthcoming), for the suggestion of making the cardinality of the set explicit in the definitions.

set of meanings – so there is more than one element in the set – whereas non-F-marked phrases introduce a singleton set containing only their ordinary semantic value – so there is only one element in the set, i.e. it is a singleton set.<sup>2</sup> By introducing the explicit distinction between real and singleton F-alternatives, we are equipped to give proper semantic content to what has remained to this date a generalization of the data.

The proposal by Neeleman and van de Koot (2008) that movement does not affect the interpretation of the moved constituent itself, but rather of the constituent to which it adjoins, is precisely captured by the implementation I introduce here. That is, “marked as background” is not simply the opposite of “marked as focus”. A constituent can be marked as focus *in situ* – it does not have to move to some position to be interpreted as such – and, crucially, *in situ* F-marked phrases do not impose any restrictions regarding the F-alternatives of their sister. We can, informally, say that “everything is allowed” within the sister of an *in situ* F-phrase: the sister can have a singleton F-alternative – so no other F-marked phrases within it – but it can also have real F-alternatives, giving rise to a double focus sentence.<sup>3</sup> Thus, just because a constituent has been marked as focus, it does not mean that its sister must be marked as background (i.e., have only the singleton F-alternative.)

On the other hand, when we say that a constituent must be marked as background, this makes specific predictions: it is the result of movement of an F-marked phrase, and there cannot be another F-marked phrase within the background-marked constituent. In my terms, the sister of a moved F-marked phrase can only have a singleton semantic value, which automatically excludes real F-alternatives from occurring within that constituent. Another way of saying this is that the c-command domain of a moved F-marked phrase must be (part of) its background. Crucially, notice that I write *part of* between brackets because I do not make any commitments concerning *the* background of a moved F-marked phrase. That is, I assume that the entire sister of a moved F-phrase must be part of the background, but not that the background is composed of only that constituent; the background can, for instance, extend above the F-marked phrase, and encompass any material surrounding the F-phrase. The crucial difference, thus, is that the sister of a

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2 Moreover, notice that the terminology introduced above is a simple specification of Rooth’s F-alternatives (i.e., there is nothing new to it). My intention by using these terms is to simply make the discussion clearer, and to propose a simple way of referring to the alternatives of an F-marked phrase (real F-alternatives) and non-F-marked phrases (singleton F-alternative).

3 Or, virtually, to a multiple focus sentence – as the squiggle can be introduced as many times as needed. I do not talk about *multiple* focus sentences because I do not know of sentences with more than two foci in it.

focus is simply its syntactic sister, whereas the background of a focus is a more complex constituent.<sup>4</sup>

Now that the terminology that I will employ has been made clear, we have the necessary tools to explore the formal implementation of GeFMoP in (2). In particular, I will address the following predictions:

- (4) Predictions of the Generalized F-Movement Principle (GeFMoP)
- a. An *in situ* F-phrase allows for another F-phrase in its sister, which results in a double focus interpretation.
  - b. A double focus interpretation is incompatible with movement of an F-phrase to a position c-commanding another F-phrase.
  - c. An F-phrase in the sister of an *in situ* F-phrase may move, as long as there is not another F-phrase in the c-commanding domain of the moved F-phrase.
  - d. The sister of a moved F-phrase can have a singleton F-alternative through the insertion of the CT- $\lambda$ , which results in a contrastive topic interpretation of the moved F-phrase.

## 5.2 No real F-alternatives in the sister of a moved F-phrase

I will start by discussing structures with two F-marked phrases, where one of the F-phrases moves to a position c-commanding the other – and how GeFMoP correctly rules out such a structure. Since I am addressing here structures with two F-marked phrases and I want to show how the sister of a moved F-phrase *cannot* have real F-alternatives, a good idea is to look at double focus constructions, where both F-marked phrases introduce real F-alternatives. The question now is: If one F-phrase moves to a position c-commanding the other, can a double focus interpretation still arise? I argue that the answer is ‘no’. Consider the (by now famous) Steve Jobs example, repeated below:

- (5) (Bill Gates invented the iPhone in 2008.)

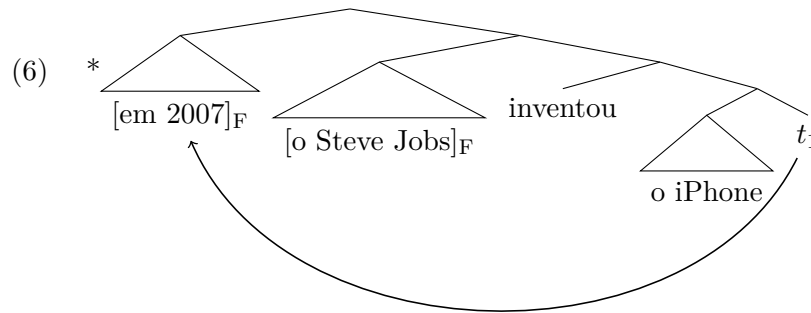
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<sup>4</sup> One needs to rely on independent ways of identifying the background of a focus, which involves focus domains, squiggles, and pragmatic contrast. I deliberately choose to go with an intuitive generalization here, because I do want to go through all of these details of focus semantics here. This intuitive generalization has been laid out in the main text: if one considers a narrow focus on, say, the verb, the background is composed of all the constituents surrounding  $[V]_F$ , and not only its syntactic sister.

- a. Não, [o Steve JOBS]<sub>F</sub> inventou (o iPhone) [em 2007]<sub>F</sub>.  
     no the S. J. invented the iPhone in 2007  
     ‘No, Steve Jobs invented it in 2007’.
- b. #Não, [<sub>PP</sub> em 2007]<sub>F</sub> [o Steve JOBS]<sub>F</sub> inventou o iPhone *t*<sub>PP</sub>.

In chapter §4, I pointed that the sentences above illustrate two things: One, two F-marked phrases *in situ* can be both interpreted as focus, giving rise to a double focus sentence, as in (5-a) ; and two, if one of the F-phrases moves to a position c-commanding the other, as in (5-b), the sentence is infelicitous. Moreover, I also argued in section §4.4 that the moved structure in (5-b) could only elicit a contrastive topic interpretation, but since this is not possible in the context, the sentence is ruled out.

What is important to our purposes now is that, once there is movement of one F-phrase to a position c-commanding the other, a double focus interpretation is no longer possible; in other words, there cannot be real F-alternatives in the sister of a moved F-phrase. In order to appreciate how exactly this is ruled out by GeFMoP, consider the structure below, which is the LF of (5-b):



In (6), the F-marked phrase [em 2007]<sub>F</sub> moves across the F-phrase [o Steve Jobs]<sub>F</sub>. Since there is movement of an F-phrase to a position c-commanding another F-phrase – [o Steve Jobs]<sub>F</sub> is in the c-command domain of the moved [em 2007]<sub>F</sub> – GeFMoP applies to this structure. GeFMoP requires that the sister of the moved F-phrase has a singleton F-alternative; this, however, is not the case in (6), since that sister contains another F-marked phrase. F-marked phrases introduce real F-alternatives, which trivially contradicts the singleton F-alternative requirement.

A double focus interpretation of a structure where one of the F-phrases moves across the other is thus correctly ruled out by GeFMoP, as just illustrated in (6). This was one of the predictions from GeFMoP, repeated below:

- (7) A double focus interpretation is incompatible with movement of an F-phrase to a position c-commanding another F-phrase.

### 5.3 *In situ* F-marked phrases

I will now discuss *in situ* F-marked phrases and what kind of F-alternatives there can be within their sister. As I have pointed out at the beginning of this chapter, *in situ* F-marked phrases are more “permissive” when compared to moved F-marked phrases, in the sense that both real and singleton F-alternatives are allowed within the sister of an *in situ* F-phrase.

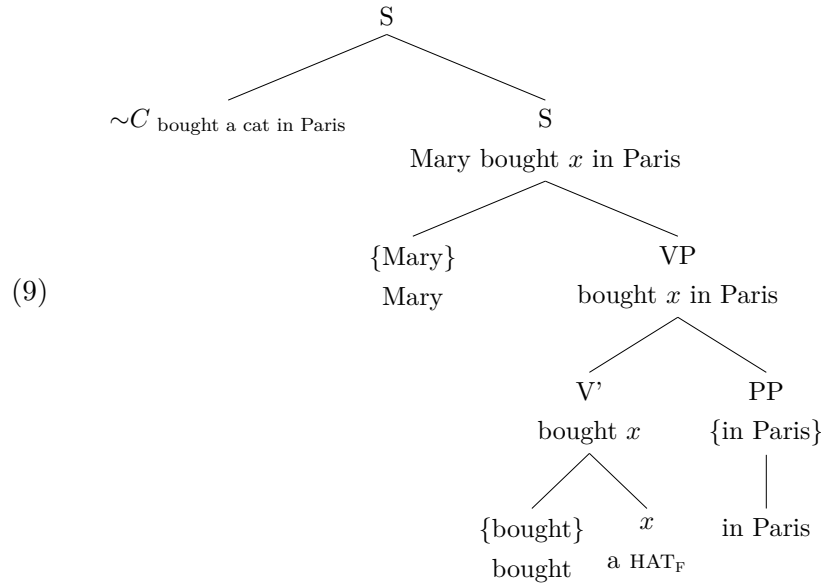
Let us first look at configurations where an *in situ* F-phrase combines with a singleton F-alternative: This is simply the case of a sentence with one F-marked phrase. Recall that Rooth (1992) proposes that every branching node has F-alternatives, even the ones that are not F-marked. The difference is that an F-marked phrase will introduce a set of alternatives whereas a non-F-marked phrase will introduce a singleton set with their ordinary semantic meaning. Consider (8), originally from Neeleman and van de Koot (2008, p. 143), and briefly discussed in section §4.1.2:<sup>5</sup>

- (8) (Mary bought a cat in Paris –)  
 Mary bought [a HAT]<sub>F</sub> in Paris.

First, [a hat]<sub>F</sub> introduces real F-alternatives – technically, a set with more than one element in it – and the other (non F-marked) terminals introduce a singleton set with their ordinary semantic value in it. These alternatives are combined at each branching node, as represented below:<sup>6</sup>

<sup>5</sup> I added the previous utterance to (8) just to make the focusing pattern clearer in the example.

<sup>6</sup> As already mentioned in chapter §2, I use the variable notation (e.g.  $x$ ) as an abbreviation for a set in a specific domain.



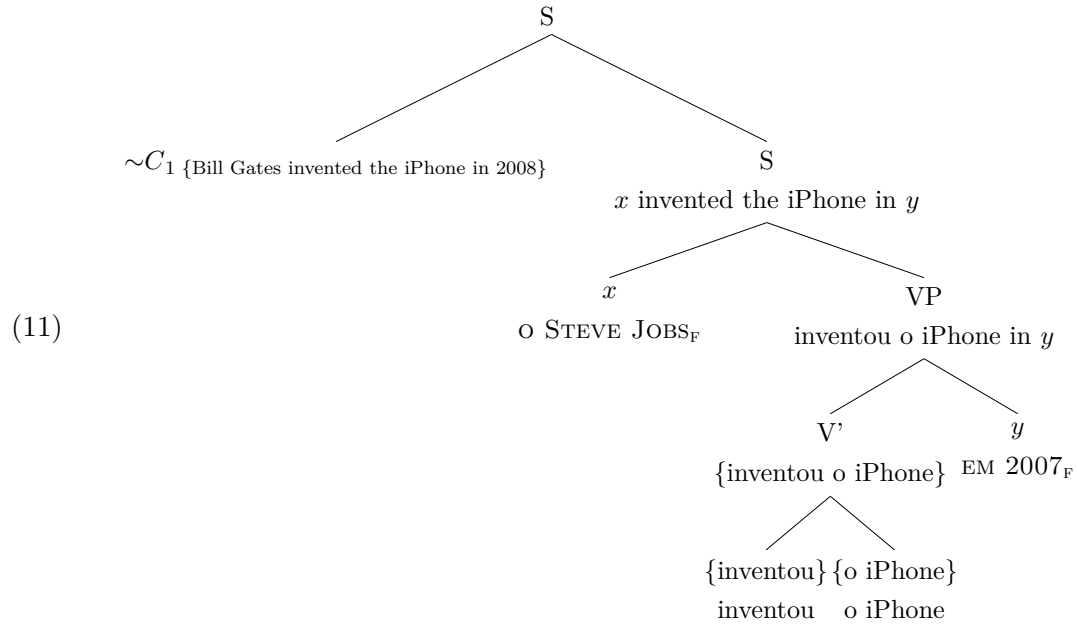
Once we combine the F-alternatives of each branching node, the focus semantic value of the sentence is a set of propositions. This can be written as ‘Mary bought  $x$  in Paris’, where  $x$  ranges over individuals. This is an example of an *in situ* F-phrase combining with a singleton F-alternative: all of the non-F-marked nodes introduce a set with only their ordinary meaning in it, hence a singleton set.

Consider now double focus configurations, in which there is an F-marked phrase within the sister of an *in situ* F-marked phrase. This is the case of the Steve Jobs example, repeated below:

- (10) (Bill Gates invented the iPhone in 2008.)  
 Não, [o Steve JOBS]<sub>F</sub> inventou (o iPhone) [em 2007]<sub>F</sub>.  
 no the S. J. invented the iPhone in 2007  
 ‘No, Steve Jobs invented it in 2007’.

There are two *in situ* F-marked phrases in (10), [o Steve Jobs]<sub>F</sub> and [em 2007]<sub>F</sub>, and they are both interpreted as focus. Each F-marked phrase introduces real F-alternatives and, crucial to our purposes here, [em 2007]<sub>F</sub> is within the sister of [o Steve Jobs]<sub>F</sub>.

Let us take a look at how the focus semantic value of a sentence with two *in situ* F-marked phrases is calculated. In (11), real F-alternatives combine with real F-alternatives. In other words, the set of alternatives introduced by [o Steve Jobs]<sub>F</sub> combines with the set of alternatives introduced by [em 2007]<sub>F</sub>.



So, note that GeFMoP is general enough to allow for double focus configurations, since the singleton F-alternative requirement only applies to moved F-phrases. The sentence in (11) illustrates that there can be real F-alternatives in the sister of an *in situ* F-marked phrase; this was one of the predictions of GeFMoP, repeated below:

- (12) An *in situ* F-phrase allows for another F-phrase in its sister, which results in a double focus interpretation.

Now, while I'm mostly concentrating on *in situ* structures in this subsection, there is one case of a movement structure that I would like to discuss: when an F-marked phrase moves *within* the c-commanding domain of an *in situ* F-phrase. Consider (13), which illustrated this configuration:

- (13) Eu acho que [O Steve JOBS]<sub>F</sub> [em 2007]<sub>F</sub> inventou (o iPhone) *t*<sub>F2</sub>.  
 I think that the S. J. in 2007 invented the iPhone  
 'I think that Steve Jobs invented the iPhone in 2007'.

In (13), [em 2007]<sub>F</sub> moves, which, per GeFMoP, requires that its sister has a singleton F-alternative; this is correct, since there is no other F-marked phrase within its sister. [O Steve Jobs]<sub>F</sub> does *not* move, which means that GeFMoP does not apply to this phrase. There can, therefore, be real F-alternatives within its sister; this is precisely the case in (13), where [em 2007]<sub>F</sub>, which introduces real F-alternatives, is within the sister of the *in situ* [o Steve Jobs]<sub>F</sub>. In other words, as long as the F-marked phrase with another

F-marked phrase in *is sister* remains *in situ*– [o Steve Jobs]<sub>F</sub>, in the case of (13)– the structure is grammatical.

Thus, example (13) illustrates that another prediction of GeFMoP is borne out:

- (14) An F-phrase under the c-command domain of an *in situ* F-phrase may move, as long as there is not another F-phrase in the c-command domain of the moved F.

This is exactly the structure of (13), where [em 2007]<sub>F</sub> moves under the c-command domain of the *in situ* [o Steve Jobs]<sub>F</sub>, and there is no other F-marked phrase within the sister of [em 2007]<sub>F</sub>.

Let us recap what has been discussed so far. Essentially, *in situ* and moved focus have different requirements towards their sister. *In-situ* foci simply do not impose any restrictions regarding the presence of real F-alternatives in their sister, whereas moved foci require that their sister has a singleton F-alternative. I have presented a structure in which one F-phrase moves across the other (cf. (6)), and showed that there cannot be real F-alternatives within the sister of the moved F-phrase – which is correctly ruled out by GeFMoP. Moreover, I have shown that GeFMoP allows for the correct structures of *in situ* F-marked phrases: they can combine with a singleton F-alternative (cf. (9)), or with real F-alternatives (cf. (11)).

The question now is how exactly GeFMoP allows for a sentence with a contrastive topic interpretation, that is, a structure in which an F-marked phrase moves to a position c-commanding another F-marked phrase. In section §5.4 I present my proposal for this derivation, which is the main contribution of this dissertation.

## 5.4 CT operator: Singleton F-alternative in the sister of a moved F-phrase

I will now show why exactly a contrastive topic interpretation of the moved F-phrase to a position c-commanding another F-phrase is the only one possible in this configuration. In other words, the generalization from Neeleman and van de Koot (2008) will now be formally derived. Instead of stipulating that the constituent marked as background of a moved focus cannot contain a contrastive topic – as do N&vdK– we apply GeFMoP to this structure, which requires that the sister of the moved F-phrase has a singleton F-alternative. A crucial and novel step in this analysis is to propose that the sister of an F-phrase interpreted as contrastive topic has a singleton F-alternative through the semantics of the CT operator (Constant 2014). Let us see how this works step by step.

From example (6), we have derived that movement of an F-phrase to a position c-commanding another F-phrase is ruled out: this is impossible because the sister of the moved F-phrase must have a singleton focus semantic value by GeFMoP; as there is another F-phrase within that sister, this is (trivially) excluded. The natural question now is: How can a structure with a contrastive topic interpretation comply with GeFMoP's requirement – that the sister of a moved F-phrase has only the singleton alternative? Strictly speaking, there is an F-marked phrase (interpreted as focus) within the sister of the moved F-phrase (interpreted as contrastive topic), and an F-marked phrase introduces real F-alternatives; thus, at first glance, such a structure does not comply with GeFMoP. But, in fact, it *does* comply with GeFMoP, due to the semantics of the CT operator.

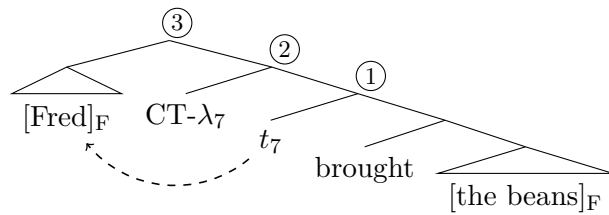
My proposal is that, due to the output of the CT- $\lambda$ , the sister of the F-phrase interpreted as contrastive topic has only the singleton F-alternative. In a nutshell, insertion of the CT- $\lambda$  guarantees that the sister of the moved F-phrase has only a singleton focus semantic value, as the CT- $\lambda$  outputs a singleton set (which contains a function from individuals to sets of propositions, as we will see below). In order to see how, we should begin by taking a closer look again at the implementation of the topic abstraction to a CT+F sentence. Recall the formal definition of the topic abstraction from Constant (2014, p. 95):

(15) Topic Abstraction

- |    |                                                                                                                           |                         |
|----|---------------------------------------------------------------------------------------------------------------------------|-------------------------|
| a. | $\llbracket \text{CT-}\lambda_i \phi \rrbracket_g^o = \lambda x. \llbracket \phi \rrbracket_{g[i \rightarrow x]}^o$       | Ordinary Semantic Value |
| b. | $\llbracket \text{CT-}\lambda_i \phi \rrbracket_g^f = \{ \lambda x. \llbracket \phi \rrbracket_{g[i \rightarrow x]}^f \}$ | Focus Semantic Value    |

Consider now the derivation of a CT+F sentence outlined in Constant (2014, p. 97):

(16)



(17) a.  $\llbracket \textcircled{1} \rrbracket_g^f = \{ g(7) \text{ brought the beans, } g(7) \text{ brought the pasta, } \dots \}$

b.  $\llbracket \textcircled{2} \rrbracket_g^f = \{ \lambda x. \{ x \text{ brought the beans, } x \text{ brought the pasta, } \dots \} \}$

c.  $\llbracket \textcircled{3} \rrbracket_g^f = \left\{ \begin{array}{l} \{ \text{Fred brought the beans, Fred brought the pasta, } \dots \}, \\ \{ \text{Mary brought the beans, Mary brought the pasta, } \dots \} \\ \dots \end{array} \right\}$

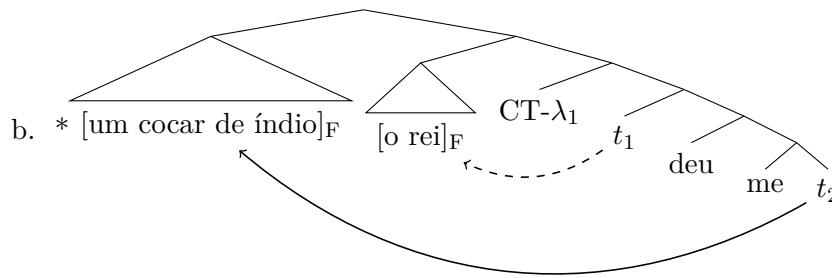
= For each person, what did they bring?

Up to ①, the F-alternatives to  $[\text{the beans}]_F$  are still active (i.e. are real F-alternatives). But at node ② that the background of the moved F-phrase becomes a *singleton* containing a function from individuals to sets of propositions. From here up, the F-value of the lower F-phrase will be “fixed”. Finally, at node ③, we apply the function output by the CT- $\lambda$  to the F-value of  $[\text{Fred}]_F$ , and we get the set of questions {What did Fred bring?, What did Mary bring?, ...}.<sup>7</sup> In sum, at level ① we have real F-alternatives, at level ② we have singleton F-alternatives, and at level ③ we have real F-alternatives again, but the “lower” focus is not “replaced” anymore, it is fixed.

Adding GeFMoP to this derivation, we see that the CT- $\lambda$  is crucial for meeting the requirement that the sister of the moved F-phrase must have a singleton F-alternative. Crucially, the CT- $\lambda$  outputs a singleton set (node ②), in compliance with the requirement that the sister of a moved F-phrase must have a singleton F-alternative. Note that, within this singleton set, there is a function from individuals to alternative sets, which is responsible for creating “higher” order alternatives (a set of questions) – the meaning of a sentence with a contrastive topic. Finally, although the example above is the original English example from Constant (2014), the derivation applies *mutatis mutandis* to Brazilian Portuguese.

With this implementation in mind, we are equipped to derive why a “focus cannot move across contrastive topic” that we have discussed at length in chapter §4. Consider (18): the structure in (18-b) is the required LF representation of the sentence in (18-a):

- (18) a.  $\#[\text{um cocar de índio}]_F$   $[\text{o rei}]_{CT}$   $t_F$  me deu.  
           a headdress of indigenous the king to.me gave



The overt movement of  $[\text{um cocar de índio}]_F$  ‘an indigenous headdress’, by GeFMoP,

<sup>7</sup> As I have already discussed in section §2.3.2, Constant writes the CT meaning as a sorted question – *For each person, what did they bring?*. This is his way of representing that a sentence with a CT presupposes a question made up of multiple questions.

brings with it the requirement that its sister has a singleton F-alternative. This is impossible in the representation in (18-b), since  $[o\ rei]_F$  ‘the king’ is within that sister and it introduces real F-alternatives.<sup>8,9</sup>

We have hence derived the CT meaning of the sentence  $Fred_{CT}$  *brought the beans*<sub>F</sub> in (16) and, moreover, explained why a “focus cannot move across a contrastive topic”. GeFMoP in (2) requires that the sister of a moved F-phrase has a singleton F-alternative, and this proposal has the remarkable property of ruling out sentences where the moved F-phrase is interpreted as focus – because the lower F-phrase introduces real F-alternatives – while at the same time ruling in sentences where the moved F-phrase is interpreted as contrastive topic – as the semantics of the CT- $\lambda$  ensures that its sister is a singleton set. Particularly, we have just shown that the first prediction of GeFMoP (repeated below) is borne out:

- (19) The sister of a moved F-phrase can have singleton F-alternatives through the insertion of the CT- $\lambda$ .

## 5.5 Focus fronting

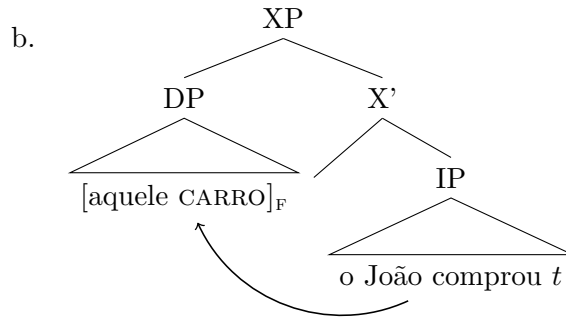
GeFMoP in (2), furthermore, correctly rules in focus fronting sentences. Here I follow the previous literature, and assume that focus fronting creates a clear divide of the sentence: the moved constituent is interpreted as focus and its sister is marked as (part of) background. This bi-partition between focus and background can be translated into my terminology: the moved F-phrase is interpreted as focus and, according to GeFMoP, its sister must have a singleton F-alternative. The structure below is the representation I assume for focus fronting:<sup>10</sup>

- (20) a.  $[Aquele\ CARRO]_F$  o João comprou  $t_F$ .  
           that car the J. bought  
           ‘João bought that car’.

8 I mark the sentence with a hashtag to indicate that it is infelicitous in the context, but the representation in (18-b) with a star, because it is an impossible LF. Likewise, I may mark a tree with a hashtag to indicate that it is a possible LF, but infelicitous in that context (see (29) below).

9 An important observation regarding the relation of the position of the CT operator and the F-phrase it c-commands arises. While, following Constant (2014), I stay agnostic to the exact position to which the CT- $\lambda$  moves (e.g. to a Focus Position in the left periphery), this does not mean that its landing side will not have consequences to the interpretation of the F-phrases. Crucially, not only the F-marked phrase interpreted as topic has to move to a position above the CT- $\lambda$ , but also the F-marked phrase interpreted as focus must be in the c-command domain of the CT operator (the reader can see that this is precisely the case in the derivation of  $Fred_{CT}$  *brought [the beans]*<sub>F</sub> in (16) below). I will discuss the consequences of the exact position of the CT- $\lambda$  in section §??.

10 In (20-b), XP could, but need not, be a Focus Position. Nothing on my analysis hinges on the labeling of this projection.



In (20),  $[\text{aquele carro}]_F$  moves to a focus position, requiring that its sister have only the singleton F-alternative. This is exactly the case in focus fronting sentences, in which the sister of the moved F-phrase does not contain another F-marked phrase, thus meeting GeFMoP. The fact that there is no other F-phrase in the IP (i.e. the sister of the moved F), is enough to assume that this entire constituent introduces the literal meaning of its elements.

I would like to point out that the derivation in (20) is analogous to the representation of focus movement structures under the Unalternative Semantics framework (Büring 2015). As we briefly discussed in section §4.5.3, the assumption that the sister of a moved focus cannot introduce real F-alternatives has been made in connection with focus movement in UAS. This is the first place where the generalization “to be marked as background” has received a formal account. Precisely, the relation between focus movement and its sister is captured by the Strong Restriction, which basically requires that the moved constituent introduces real F-alternatives – “is focal”, in UAS – and its sister introduce only non-trivial focus alternatives – our singleton F-alternatives. GeFMoP in (2) and the derivation I am discussing in this section, thus, build on the semantic implementation from Unalternative Semantics.<sup>11</sup>

Overall, one of the main advantages of GeFMoP in (2) is that it makes only reference to F-marked phrases, but is general enough to capture the interpretive and ordering effects of sentences where the F-marked phrase is interpreted as focus *or* as contrastive topic. By assuming with Constant (2014) that contrastive topics are F-marked phrases that have moved to the CT- $\lambda$ , and by giving a semantic account to “marked as background” from Neeleman and van de Koot (2008), I have derived an account of the ordering restrictions

<sup>11</sup> One could ask, at this point, why I do not simply adopt Unalternative Semantics in this dissertation and derive all my structures using its machinery. While I believe that UAS provides most of (if not all) the formal tools necessary to account for my data, I prefer in the dissertation to keep my proposal within the more traditionally assumed Alternative Semantics from Rooth (1992). This idea remains on the table, though, and could be implemented in future work.

of contrastive topics and foci and their interpretive effects. Moreover, in section §5.3, I demonstrated that my account is comprehensive enough to also capture the interpretive and ordering effects of *in situ* F-marked phrases.

## 5.6 Broad assessment

The basic paradigm of the ordering restrictions of contrastive topics and foci in Brazilian Portuguese has now been reviewed under GeFMoP’s (2) requirement, repeated in (21) below:

(21) **The Generalized F-Movement Principle (GeFMoP):**

The sister of a moved F-marked phrase must have a singleton focus semantic value.

We have seen that (21) correctly rules in CT-F sentences, both where the CT precedes and follows the focus. This is achieved through the semantics of CT- $\lambda$ , which ensures that the sister of the moved F-phrase has a singleton F-alternative. It also explains why a focus cannot move across a contrastive topic: an F-marked phrase in the c-command domain of a moved F-marked phrase can only satisfy GeFMoP through insertion of the CT- $\lambda$ , but this in turn requires that the moved F-phrase is interpreted as contrastive topic, and not as focus. It thus correctly rules out the “focus movement across a CT” configuration, since the moved F-phrase cannot be interpreted as focus after movement. Furthermore, my proposal also makes the correct predictions regarding *in situ* F-marked phrases. Overall, I have shown that *in situ* F-phrases allow for another F-phrase within their sister, which is predicted by GeFMoP, since it only imposes the singleton F-alternative requirement to movement structures.

While my Generalized F-Movement Principle in (21) is in line with the original generalization from Neeleman and van de Koot (2008), there is one important difference, which I believe makes my proposal in some way more abstract, and thus more general. Specifically, I assume with Constant (2014) that all F-marked phrases are equal in the eyes of the interpretation before movement takes place. That is, I do not talk about a “focus moving across a contrastive topic”, as what moves is an F-marked phrase (not an information structure category), and depending on the landing site of this phrase, in relation to other potential F-phrases in the structure, their interpretation is determined.

In a nutshell, my proposal integrates into GeFMoP in (21) an observation about focus movement from the literature – focus movement marks its sister as background, from

Neeleman and van de Koot (2008) – and gives it an analysis in semantic terms. Notably, something that was discussed only in terms of movement of foci, can be extended to the interpretation of sentences with contrastive topics, and provides a comprehensive account of movement of F-marked phrases.

Furthermore, while my proposal puts together two assumptions from the literature, it is nevertheless a new account of the interpretive effects of movement of F-marked phrases. One notable property of my proposal is that we can capture with a simple semantic condition on the sister of a moved F-phrase things that were unrelated until now: the impossible movement of a focus across a contrastive topic (cf. Neeleman and van de Koot 2008); that the sister of a moved focus is marked as background (Neeleman and van de Koot 2008); that F+F structures do not allow for non-canonical ordering of the two Fs (cf. Büring 2016, although notice that I have shown that the lower F can move below the higher F); and that a contrastive topic interpretation of a moved F above another is favored/required (Büring 2016). Furthermore, my proposal does not only provide an unified formal analysis of these generalizations, but it also accounts for double focus sentences, as it considers that F-marked phrases can be interpreted as focus *in situ*.

In section §5.7 below, I will provide the derivation of all sentences that we have discussed so far in the dissertation, as well as some extra configurations that have not been addressed in detail before, where two F-marked phrases move. This section will be a demonstration of GeFMoP, and how it provides a formal implementation of the sentences I discussed in the dissertation.

## 5.7 Exploring the proposal

In this section I will go through the predictions of my proposal in yet more detail. In the first part of the discussion, I will provide a summary of the sentences presented in sections §4.2.1, 4.2.2 and 4.5.2, and outline their derivation. In the second part I will discuss sentences with “double movement”, in which both of the F-marked phrases move (covertly or overtly).

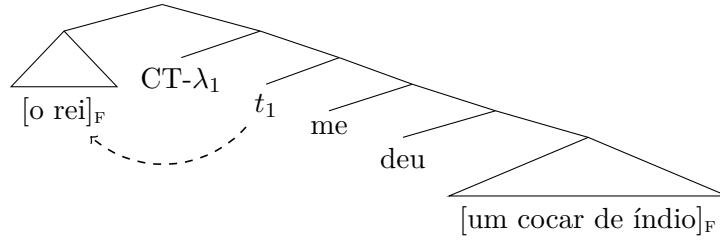
### 5.7.1 Contrastive topic interpretation

I start by discussing a CT+F structure, in which an F-phrase moves covertly to the CT operator and is interpreted as a contrastive topic. A second F-phrase in its c-command domain is interpreted as focus. This derivation is in line with the requirement that the

sister of a moved F-phrase must have a singleton F-alternative, because the output of the CT- $\lambda$  is a singleton set (see discussion in section §5.4).

- (22) a. [O REI]<sub>CT</sub> me deu [um cocar de índio]<sub>F</sub>.  
           the king to.me gave one headdress of indigenous  
           ‘The king gave me an indigenous headdress’.

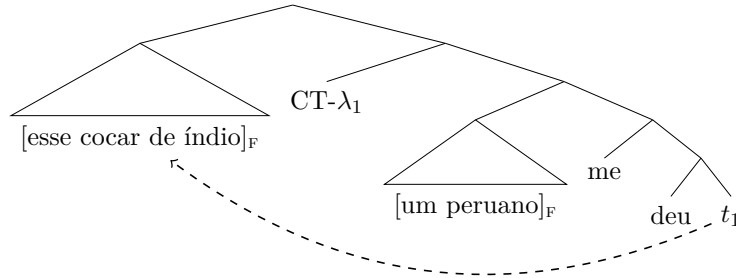
b.



Next, the representation in (23) is the only one where a focus can precede a contrastive topic; that is, when the F+CT order corresponds to the canonical order of the constituents in the sentence. This is analogous to cases analyzed in Constant (2014): The F-phrase [esse cocar de índio]<sub>CT</sub> undergoes covert movement to the CT- $\lambda$  at LF, but it is pronounced *in situ*. Such a structure is also ruled in by GeFMoP in (21), since the introduction of the CT- $\lambda$  guarantees that the sister of the moved F-phrase have a singleton F-alternative.

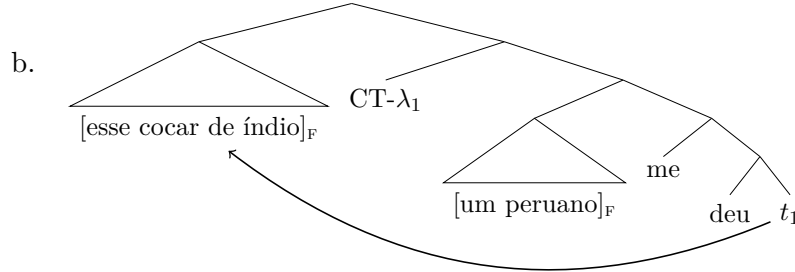
- (23) a. [Um PERUANO]<sub>F</sub> me deu [esse cocar de índio]<sub>CT</sub>.  
           a Peruvian to.me gave this headdress of indigenous  
           ‘A Peruvian gave me this indigenous headdress’.

b.



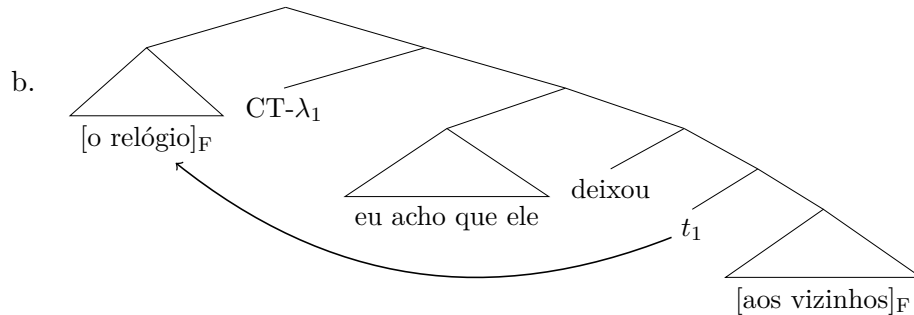
(24) below is the representation of a topicalization, where the F-marked phrase interpreted as contrastive topic overtly moves to a position c-commanding the other F-phrase. GeFMoP is satisfied through insertion of the CT- $\lambda$ .

- (24) a. [Esse cocar de índio]<sub>CT</sub> [um PERUANO]<sub>F</sub> me deu  $t_{CT}$ .  
 this headdress of indigenous a Peruvian to.me gave  
 ‘A Peruvian gave me this indigenous headdress’.



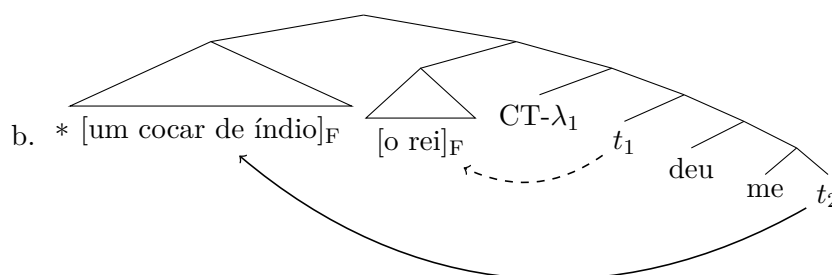
This is generally the representation of sentences in which the F-phrase interpreted as contrastive topic overtly moves to a position in the left periphery. I will not go through all of them here, but (25) below is a sentence where the contrastive topic from an embedded clause moves to a position preceding the entire matrix clause:

- (25) a. [O RELÓGIO]<sub>CT</sub> eu acho que o vovô deixou  $t_i$  [aos VIZINHOS]<sub>F</sub>.  
 the clock I think that the grandpa left to.the neighbors  
 ‘I think that grandpa left the clock to the neighbors’.



Crucially, if the sister of the moved F-marked phrase does not have a singleton F-alternative, the structure is ungrammatical. This is what happens when the “focus moves across the contrastive topic”, as we have already discussed for example (18), in section §5.4, repeated below.

- (26) a. #[um cocar de índio]<sub>F</sub> [o REI]<sub>CT</sub> me deu  $t_F$ .  
 one headdress of indigenous the king to.me gave



We have reviewed the basic sentences with contrastive topics that were the object of our discussion in the beginning of chapter 4 (mostly sections §4.2.1 and §4.2.2). In the next section, I discuss structures in which both F-phrases move, and explore the predictions of GeFMoP for them.<sup>12</sup>

### 5.7.2 Double focus interpretation

In section §4.6.3 we have seen that double focus sentences were correctly captured by the Principle. During that discussion, I was still making reference to the preliminary version of the Principle (see (20), section §4.3), which stated that a contrastive topic interpretation must arise in a configuration where an F-phrase moved above another F-phrase. Now that the Principle has received a more precise definition in semantic terms – the sister of a moved F-phrase must have a singleton F-alternative – I would like to review the discussion of the double focus sentences, so that their derivation is made explicit.

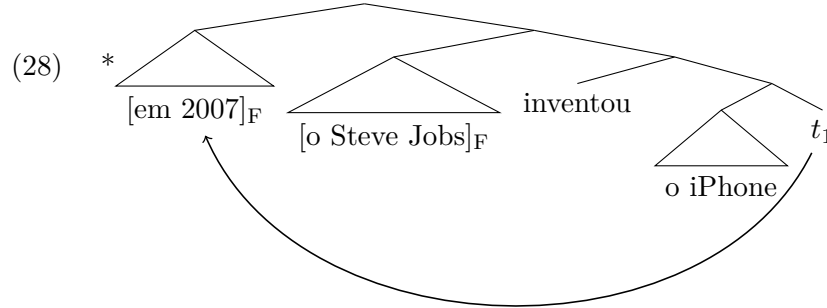
It is worth pointing out that these structures are not different from the ones we have seen so far in this chapter, specifically because I assume a proposal that only sees F-marked phrases. So the structures that allow for a contrastive topic interpretation discussed above (see e.g. (35), (37) and (38)) are not different from the ones we are going to see now; the difference lies in the context. More precisely, in the following discussion, a contrastive topic interpretation is blocked by the context.

In the following discussion, for sake of completeness, I will repeat what I have already argued in section §5.2, at the beginning of this chapter. There, I argued that the Steve Job’s example, repeated in (27), shows us that there cannot be real F-alternatives in the sister of a moved F-phrase. The impossible LF is represented in (28).

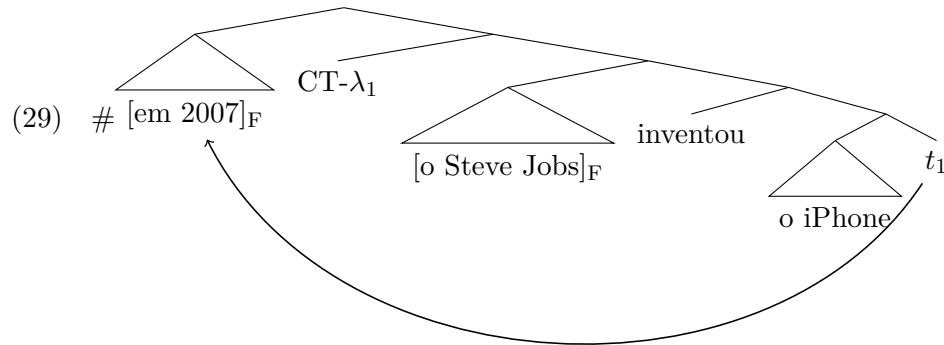
(27) (Bill Gates invented the iPhone in 2008.)

<sup>12</sup> The structure in (26-b) also contains movement of two F-phrases, but I preferred to review it in the present section, since it is part of what I called the “basic paradigm”.

- a. Não, [o Steve JOBS]<sub>F</sub> inventou (o iPhone) [em 2007]<sub>F</sub>.  
 no the S. J. invented the iPhone in 2007  
 ‘No, Steve Jobs invented it in 2007’.
- b. #Não, [<sub>PP</sub> em 2007]<sub>F</sub> [o Steve JOBS]<sub>F</sub> inventou o iPhone *t*<sub>PP</sub>.



Recall that (27-b) is infelicitous because the context does not allow a contrastive topic interpretation (things are only invented once; see detailed discussion in §4.4). The structure below would be the representation of (27-b) if the moved F-phrase were interpreted as contrastive topic:



Notice that what renders (27-b) infelicitous is not that the sister of the moved [em 2007]<sub>F</sub> ‘in 2007’ does not have the singleton F-alternative; it actually *does* in (29), through the insertion of CT-λ. What renders it infelicitous is that the moved F-phrase cannot be interpreted as focus in this context. Structurally, (29) above is grammatical, and it derives an interpretation of [em 2007]<sub>F</sub> as contrastive topic and of [Steve Jobs]<sub>F</sub> as focus. So, we could try to satisfy GeFMoP for the sentence in (27-b) by introducing a CT-λ, but this would result in the wrong interpretation in the given context. Recall one of the predictions of GeFMoP:

- (30) The sister of a moved F-phrase can have singleton F-alternatives through the insertion of the CT- $\lambda$ .

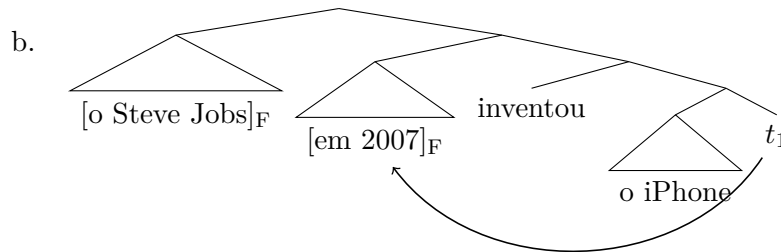
Importantly, there are “two sides” to this prediction: insertion of the CT- $\lambda$  in the structure is the only means to achieve a singleton F-alternative on the sister of the moved F-phrase, but it also, in consequence, requires that the moved F-marked phrase is interpreted as contrastive topic. The issue in (30) is exactly about this interpretive requirement, ruled out for pragmatic reasons.

The same reasoning applies to both moved configurations in (31). Since  $[\text{Steve Jobs}]_F$  moves, and there is another F-phrase ( $[\text{em 2007}]_F$  ‘in 2007’) in its c-command domain, the CT- $\lambda$  would need to be inserted in this structure to GeFMoP. Notice that it does not matter if  $[\text{em 2007}]_{F2}$  stays *in situ*, as in (31-a), or if it moves lower than F1, as in (31-b); in both cases, movement of F1 requires that  $[\text{o Steve Jobs}]_F$  is interpreted as contrastive topic, in turn blocked by the context.

- (31) A: Bill Gates invented the iPhone in 2008.
- a.  $\#[\text{O Steve JOBS}]_{F1}$  eu acho que  $t_{F1}$  inventou (o iPhone)  $[\text{em 2007}]_{F2}$ .  
     the S. J. I think that invented the iPhone in 2007
- b.  $\#[\text{O Steve JOBS}]_{F1}$   $[\text{em 2007}]_{F2}$  eu acho que  $t_{F1}$  inventou (o iPhone)  
     the S. J. in 2007 I think that invented the iPhone  
      $t_{F2}$ .

Moreover, as we have discussed in section §5.3, the lower F-phrase can move, as long as the higher F-phrase has not moved. Consider the structure in (32):

- (32) a. Eu acho que  $[\text{O Steve JOBS}]_{F1}$   $[\text{em 2007}]_{F2}$  inventou (o iPhone)  $t_{F2}$ .  
     I think that the S. J. in 2007 invented the iPhone  
     ‘I think that Steve Jobs invented the iPhone in 2007’.



Observe that the structure above is felicitous without the insertion of the CT operator. This shows that the movement of an F-marked phrase in a configuration with two

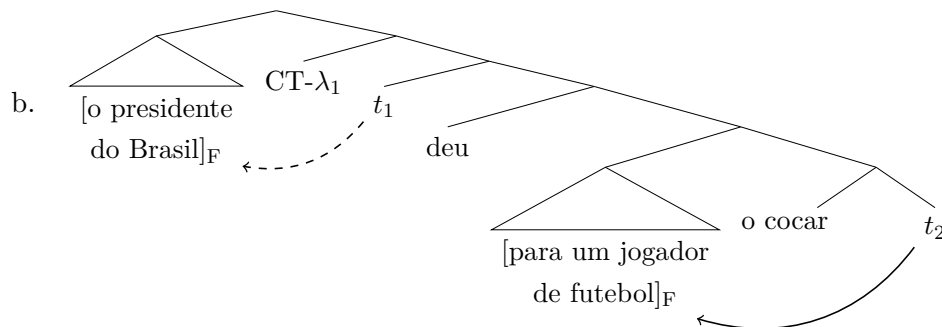
F-phrases interpreted as focus is not completely blocked; it just cannot have another F-phrase in its c-command domain if it has moved. That is not the case in (32), in which [em 2007]<sub>F</sub> moves, and requires that its sister has a singleton F-alternative. This is fine, since there is no other F-marked phrase in its sister.

### 5.7.3 Both F-marked phrases move

I will now take a at into sentences that have not been discussed in chapter §4, because they were not particularly relevant there. These sentences involve “double movement”, namely where both F-phrases move – overtly or covertly, as we will see momentarily. I delayed the discussion of these sentences up to here because I believe that they are not essential to my proposal, but provide further evidence that GeFMoP is adequate to account for the majority of the data involving movement of F-phrases. I say “majority” because we will see that there is exactly one structure that is not ruled out by GeFMoP when it should be. This will be discussed in section §5.8.

I begin by providing the derivation of a sentence that we discussed in section §4.5.2. This example illustrates that it is possible for the lower F-phrase to move, as long as it did not move to a position c-commanding another F-phrase. Consider (33):

- (33) a. [O presidente do BRASIL]<sub>CT</sub> deu [para um jogador de FUTEBOL]<sub>F</sub> o  
           the president of Brazil gave to a player of football the  
           cocar  $t_F$ .  
           headdress  
           ‘I saw that Brazil’s president gave the headdress to a football player’.



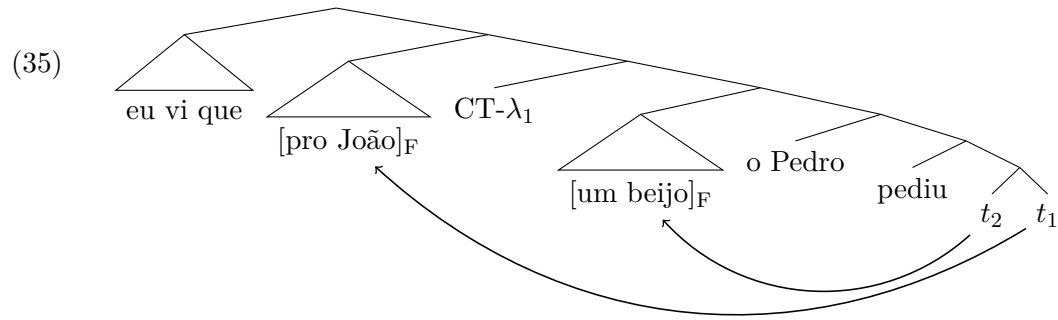
In (33), [para um jogador de futebol]<sub>F</sub> moves, and is still interpreted as a focus. Movement of an F-phrase requires that its sister has a singleton F-alternative, which is possible in (33), since material that comes after the focus does not contain an F-phrase (in the original discussion of the example, I even mentioned that material that comes after the

focus can be deleted altogether, see (33-b), in section §4.5.2.) Moreover, [o presidente do Brasil]<sub>F</sub>, moves to a position above the CT-λ, which results in its interpretation as a contrastive topic. Since the CT operator is inserted, it ensures that the sister of [o presidente do Brasil]<sub>F</sub> have a singleton F-alternative.

Next, consider structures in which both the F-phrases have moved overtly. The prediction is, following GeFMoP, that as long as the F-marked phrase interpreted as contrastive topic ends up in a position preceding/c-commanding the F-marked phrase interpreted as focus, the structure is fine. Again, this is because this will ensure that the sister of the moved F has a singleton F-alternative via the CT-λ. In (34-a) below, [pro João]<sub>F</sub> ‘to João’ moves to a position c-commanding [um beijo]<sub>F</sub> ‘a kiss’, which also moves. The phrase [pro João]<sub>F</sub> is interpreted as contrastive topic, and [um beijo]<sub>F</sub>, in the c-command domain of the moved F, is interpreted as focus.

- (34) João, Pedro e Maria são grandes amigos e estão sempre juntos. Nos últimos tempos, parece que tem algo mais do que amizade rolando entre os três...  
 João, Pedro and Maria are very good friends and are all the time together. These last days, it seems that there is something more than only friendship going on between the three of them...
- A: E a Maria, o que o Pedro pediu pra ela?  
 And what about Maria, what did Pedro ask her for?
- B: Bom, eu não vi, mas...  
 Well, I did not really see, but...
- a. eu vi que [pro JOÃO]<sub>CT</sub> [um BEIJO]<sub>F</sub> o Pedro pediu  $t_{CT}$   $t_F$   
 I saw that to J. a kiss the P. asked  
 ‘I saw that Pedro asked João for a kiss’.

Crucially, the lower phrase [um beijo]<sub>F</sub> moves to a position that does not c-command the higher F-phrase. Moreover, because the CT operator is inserted in the structure, the sister of the moved F-phrase has a singleton alternative. This structure is felicitous, as we can see in (35):



A configuration that is ruled out by assuming that movement of an F-phrase requires singleton F-alternatives in its sister is presented in (36). The general idea is the same:  $[\text{aos vizinhos}]_F$  ‘to the neighbors’ has moved to a position c-commanding the lower F-phrase; thus the lower F-phrase  $[\text{o relógio}]_F$  ‘the clock’ cannot be interpreted as contrastive topic.

- (36) Vovô morreu e deixou várias coisas de herança, mas a gente não sabe o quê ele deixou pra quem.  
 Grandpa died and left various things as heritage, but we do not know what he left to whom.

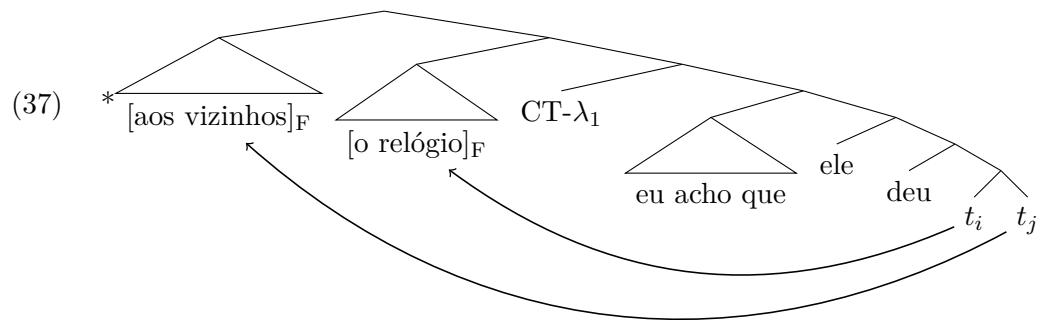
A: E o antigo armário, pra quem o vovô deixou?

‘What about the old cupboard, to whom did he leave it?’

B: Bom, eu não sei, mas...

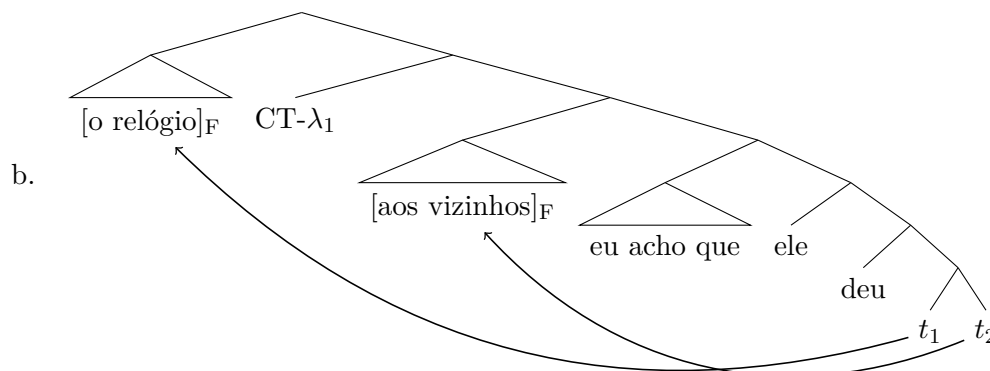
‘Well, I’m not sure, but...’

- a.  $\#[\text{aos vizinhos}]_F [\text{o relógio}]_{CT} \text{eu acho que ele deu } t_{CT} t_F$ .  
 to.the neighbors the clock I think that he gave



On the other hand, if the higher F-phrase is the one interpreted as a contrastive topic, the sentence is felicitous, as in (38).

- (38) a. [O RELÓGIO]<sub>CT</sub> [aos VIZINHOS]<sub>F</sub> eu acho que ele deu  $t_{CT}$   $t_F$ .  
 the clock to.the neighbors I think that he gave  
 ‘I think he gave the clock to the neighbors’.



Notice that this is regardless of the base position of each phrase, as long as the higher one gets interpreted as a contrastive topic. In (35), the F-phrase interpreted as contrastive topic followed the F-phrase interpreted as focus in (its) base position; in (38), the phrase *o relógio* ‘the clock’, interpreted as contrastive topic, precedes the F-phrase interpreted as focus in base position. In both cases, the sister of the moved F-phrase is ensured to introduce the singleton F-alternative through the CT operator.

The configurations we have just seen in (35), (37) and (38) all involve double overt movement, that is, both F-marked phrases overtly move. I argued that, as long as the final order is CT+F, the sentences were felicitous. This is another way of stating one of the prediction of GeFMoP (which is in fact how the preliminary version of it – FOF – was expressed in section §4.3) – that is, if one F-marked phrase moves to a position c-commanding another F-marked phrase, interpret the moved one as contrastive topic. Furthermore, these double movement structures just discussed show that movement of the lower F-marked phrase is not prohibited. As long as the lower F-phrase moves within the c-command domain of the higher F-marked phrase, the structure is fine.

In sum, I have shown that the GeFMoP in (21) correctly accounts for all the configurations I have presented in chapter §4, plus a wide range of “double movement” configurations, which had not been explored before. My proposal has the advantage of putting together two assumptions from the literature – so, in its core, it does not propose anything unestablished – and explaining through them the ordering effects of F-marked phrases in general, accounting for sentences with contrastive topics, focus movement and double focus. Specifically, by assuming with Constant (2014) that contrastive topics are F-marked phrases in a specific configuration, and by combining this with the crucial

new semantic specification of the effect of F-movement – that the sister of a moved F-phrase must have singleton F-alternatives (what N&vdK called “mark as background”) – GeFMoP accounts for all of the ordering effects discussed so far in this dissertation.

We can now look at the only structure that is not fully captured by GeFMoP.

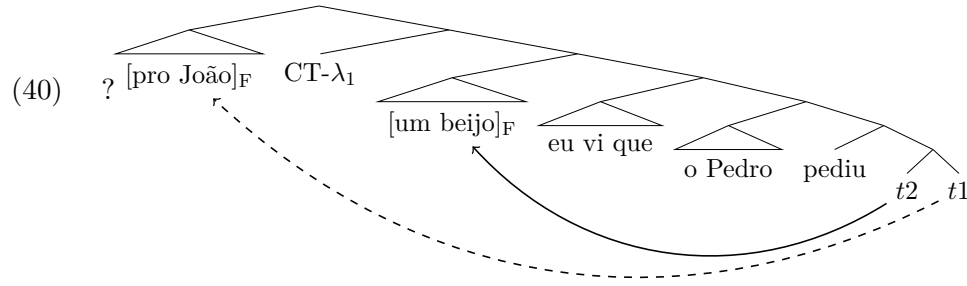
## 5.8 When covertly moved F-phrase outscopes overtly moved F-phrase

In section §4.5 I argued that a moved F-marked phrase above another F-marked phrase cannot be interpreted as focus. This illustrated that the restriction was not about a “focus moving across a contrastive topic” (as argued by Neeleman and van de Koot 2008), but to any position where a moved F-phrase c-commands another F-phrase. Consider example (39) again, which illustrates this configuration:

- (39) João, Pedro e Maria são grandes amigos e estão sempre juntos. Nos últimos tempos, parece que tem algo mais do que amizade rolando entre os três...  
 João, Pedro and Maria are very good friends and are all the time together. These last days, it seems that there is something more than only friendship going on between the three of them...
- A: E a Maria, o que o Pedro pediu pra ela?  
 And what about Maria, what did Pedro ask her for?
- B: Bom, eu não vi, mas...  
 Well, I did not really see, but...
- a. eu vi que o Pedro pediu [um BEIJO]<sub>F</sub> [pro JOÃO]<sub>CT</sub>.  
 I saw that the P. asked a kiss to J.
- b. #eu vi que [um BEIJO]<sub>F</sub> o Pedro pediu *t<sub>F</sub>* [pro JOÃO]<sub>CT</sub>.  
 I saw that a kiss the P. asked to J.  
 ‘I saw that Pedro asked João for a kiss’.

In (39), the phrase interpreted as focus – [um beijo]<sub>F</sub> ‘a kiss’ (direct object) – precedes the phrase interpreted as contrastive topic – [pro João]<sub>F</sub> ‘to João’ (indirect object) – in base position, as illustrated in (39-a). If [um beijo]<sub>F</sub> moves to a position c-commanding [pro João]<sub>F</sub>, as in (39-b), the sentence is infelicitous, since there are real F-alternatives in the sister of the moved F-phrase. This seems naturally explained with GeFMoP: as the sister of [um beijo]<sub>F</sub> does not have a singleton F-alternative, the sentence is excluded.

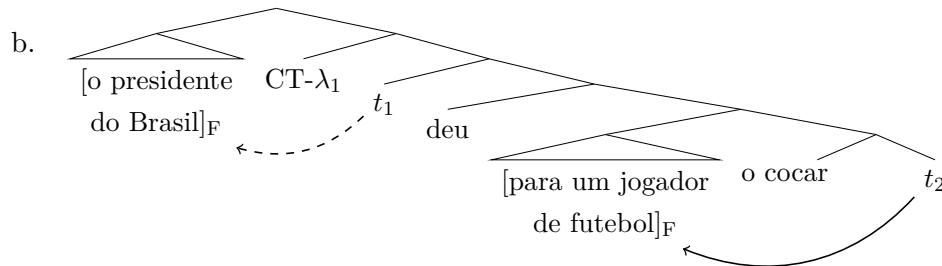
Once we consider the specific derivation of example (39-b), however, we realize that there is more to this structure than can be accounted for by GeFMoP. The structure at hand is illustrated below:



In (40), the phrase  $[\text{pro João}]_F$  ‘to João’ has covertly moved to a position c-commanding the overtly moved phrase  $[\text{um beijo}]_F$  ‘a kiss’ in (40). Observe that nothing in our system so far blocks such a derivation, but the sentence it represents is infelicitous in the given context. The derivation in (40) is permitted by GeFMoP, since the phrase interpreted as contrastive topic raises to the CT- $\lambda$  position, making sure that its sister has a singleton F-alternative. Arguably, the problem is that an F-phrase that moved covertly is outscoping an F-phrase that moved overtly, outputting a structure that should be ruled out. How could this be ruled out? I will propose a possible answer in section §5.8.2. Before going through this in more detail, let me compare (40) with other structures where there is double movement of the two F-marked phrases, in order to demonstrate that this problem is only found in configurations like (40).

First of all, the fact that  $[\text{um beijo}]_F$  moves within the c-command domain the other F-phrase  $[\text{pro João}]_F$  should not be blocked *per se*, as we have seen that F-phrases can move lower than the higher F-phrase. Consider (41), repeated from section §5.7.3:

- (41) a.  $[\text{O presidente do BRASIL}]_{CT}$  deu  $[\text{para um jogador de FUTEBOL}]_F$  o  
 the president of Brazil gave to a player of football the  
 cocar  $t_F$ .  
 headdress  
 ‘I saw that Brazil’s president gave the headdress to a football player’.

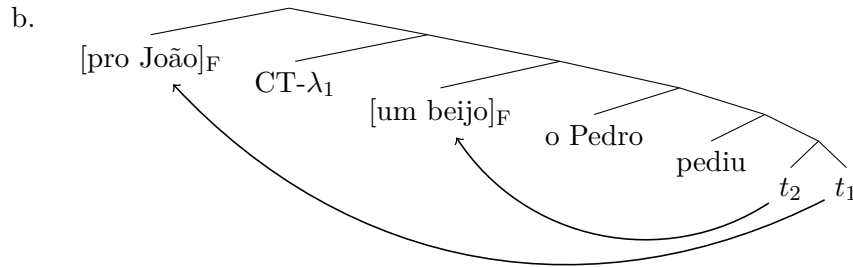


The derivations in (40) and (41-b) are different in two things: 1) In the former, an

F-marked phrase moves covertly *across* the other, while in the latter each F-phrase moves within its c-command domain; and 2) In base position, the phrase interpreted as contrastive topic follows the phrase interpreted as focus in (40) – indirect object *pro João* follows direct object *um beijo* in base position – but in (41-b), on the contrary, the subject *o presidente do Brasil* precedes the indirect object *pra um jogador de futebol* in base position.

Moreover, if the two F-phrases move overtly, as long as the F-phrase interpreted as contrastive topic precedes the one interpreted as focus, the structure is grammatical. Compare (40) with a configuration where both F-phrases overtly move, repeated below from section §5.7.3:

- (42) a. Eu vi que [pro JOÃO]<sub>CT</sub> [um BEIJO]<sub>F</sub> o Pedro pediu  $t_{CT}$   $t_F$   
 I saw that to J. a kiss the P. asked  
 ‘I saw that Pedro asked João for a kiss’.



Comparing (40), (41-b) and (42-b), what makes (40) different is that there is covert movement of the F-phrase interpreted as contrastive topic to a position above the F-phrase interpreted as focus, which in turn has moved overtly. This suggests that a configuration in which an F-phrase *covertly* moves above the other *overtly* moved F-phrase is not felicitous. The problem is that GeFMoP does not rule it out, since it does not differentiate between covert and overt movement. In sum, the factors at play here are more complex than what we have discussed so far in this dissertation, because it involves the interaction of different types of movement – an issue I have not really addressed. We will need to broaden our theoretical spectrum in order to contemplate the disputable problematic in (40). A possible solution will be discussed in section §5.8.2 below, building on an account which calls for a LF-PF isomorphism, proposed by Bobaljik and Wurmbrand (2012).

### 5.8.1 Precedents from the literature

To begin with, both works on which I build my proposal – Constant (2014) and Neeleman and van de Koot (2008) – have, in a way or another, addressed a similar problem to the one discussed here. This indicates that this is a more general issue once one assumes that both LF and overt movement can take place in a given structure.

#### LF movement cannot “unmark” what has been marked by overt movement

Neeleman and van de Koot (2008) assume, as I do, that a focus can be interpreted *in situ*. They discuss in a footnote, however, which consequences an LF movement account of focus would have to their proposal (see Neeleman and van de Koot 2008, fn. 16, p. 152).<sup>13</sup> A variant of their proposal that assumes LF movement of focus would, they argue, work, as long as two additional assumptions are made; one of them is relevant also in addressing my problematic structure: “marking relations established in overt syntax cannot be undone at LF”.<sup>14</sup>

If such a restriction is not stipulated, LF movement would repair configurations that have been ruled out by N&vdK’s proposal. For instance, LF movement of the contrastive topic [Wim]<sub>CT</sub> would repair the sentence below, in which overt focus movement has marked its background as containing a contrastive topic:

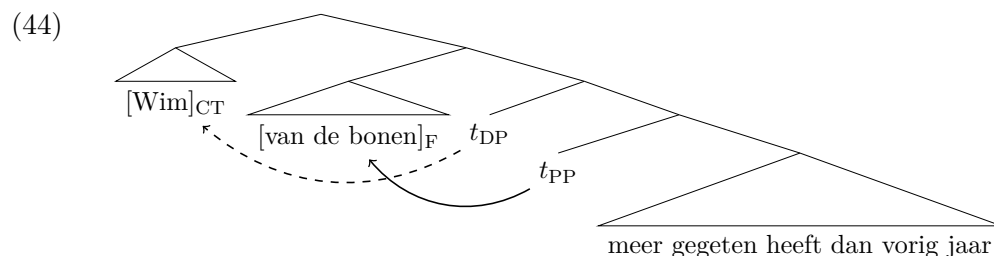
- (43) #ik geloof dat [<sub>PP</sub> van de bonen]<sub>F</sub> [Wim]<sub>T</sub> *t*<sub>PP</sub> meer gegeten heeft dan vorig  
       I believe that from the beans Bill more eaten has than last  
       jaar.  
       year

Recall that the proposal in Neeleman and van de Koot (2008) is that focus movement marks its sister as background and, according to the well- and ill-formed information structures they assume, a background cannot contain a contrastive topic. This is the authors’ explanation for why (43) is impossible with the information structures indicated.

13 There is an ongoing debate in the literature as to whether focus phrases should generally undergo LF movement, in a similar fashion to *wh*-phrases (see Chomsky 1976; Krifka 2006; Rooth 1985; Wagner 2006, for discussion). I will not go into the details here (please refer to the literature just cited, and works discussed there), but just to give an idea, part of the discussion addressed island sensitivity: it appears that focus phrases are immune to islands, which poses a problem to an account that invariably assumes movement. The issue remains debatable, and, in general, one will have to make a decision as to which account they assume; as it must be clear by now, I assume, with Rooth (1992) that focus phrases are interpreted *in situ*.

14 The second assumption is that LF movement must be generally available when no focus overt movement takes place. In a sentence where the focus LF moves, the CT will also have to LF moves, so it precedes the focus.

If LF movement can take place in addition to overt movement, one could assume that the contrastive topic *Wim* in (44) LF-moves across the overtly moved focus, thus “unmarking” a background that has been marked. This may be easier to visualize with the structure below:



Specifically, the background *Wim meer gegeten heeft dan vorig jaar* (literally *Bill has eaten more than last year*) is established once *van de bonen* ‘from the beans’ moves. If, in addition to the overt movement of the focus *van de bonen*, we allow for covert movement to take place, *Wim* could move out of the constituent marked as background, and “unmark” it. Intuitively, it seems to be a timing issue: if a domain (as the authors call the marked background and comment in their work of 2009) has been established by the movement of a constituent, another constituent cannot change it afterwards.

Note that (44) has much in common with (40): a phrase covertly moves to a position c-commanding a phrase that has overtly moved. Furthermore, Neeleman and van de Koot (2008) note that the restriction that LF movement cannot unmark relations that have been established by overt movement has a precedent in the literature on multiple *wh*-questions (cf. discussion in Van Riemsdijk 1978). “If overt movement is used to mark the scope of a WH-operator, its scope cannot be extended through subsequent LF-procedures. Consequently, *Who wonders what John bought?* cannot be interpreted as a multiple WH-question, whereas *Who said that John bought what?* does allow such a reading” (Neeleman and van de Koot 2008, p. 152).

### Multiple CTs and topic abstraction

With a similar consequence in mind, Constant (2014) hypothesizes that in sentences involving both overt and covert CT raising, the CT raised overtly must take scope above a CT raised covertly (Constant 2014, p. 129). This issue emerges when Constant discusses sentences with multiple CTs – which I did not address in this dissertation. While I will not dispute the existence of such constructions in English, they do not seem possible in BP. In any case, I am not interested in multiple CTs *per se*, but in the consequences

of LF and overt movement to foci and contrastive topic. For this reason, I will briefly discuss below multiple CT sentences from Constant (2014), but for a more elaborated discussion of the data, the reader is referred to Constant (2014).

Consider (45), an example of a sentence with more than one CT; each CT-phrase is realized with a full L+H\* L-H% accent, and Constant annotates the focus as "Exh":

- (45) (On my new diet, every day I eat one avocado, one burrito and one cheesecake.)
- a. [On Sundays]<sub>CT</sub> [the burrito]<sub>CT</sub> I have for [lunch]<sub>Exh</sub>.
  - b. [The burrito]<sub>CT</sub> [on Sundays]<sub>CT</sub> I have for [lunch]<sub>Exh</sub>. (Constant 2014, p. 123)

The author argues that topic abstraction can occur more than once per clause, and that multiple CT- $\lambda$  landing sites are available; in the case in which it is applied twice, such a configuration marks congruence to a "doubly-nested strategy", namely a set of sets of questions. Moreover, the phrase that has been abstracted by the higher CT- $\lambda$  will be "sorted" first in the sentence. So, for instance, the LF of (45-a) above is as follows:

- (46) [on [Sundays]<sub>F</sub>] CT- $\lambda_1$  [the burrito]<sub>F</sub> CT- $\lambda_2$  I have  $t_2$  for [lunch]<sub>F</sub>  $t_1$

Multiple CTs make very specific predictions about the discourse they shape. In addition to the "traditional" requirement of CT sentences – that there are other sub-questions that have not been resolved – they also require that the speaker addresses the first CT-related issues as a group, and only then move to the next group. For instance, in (45-a), the speaker addresses the Sunday-related issues as a group (all the foods that he has on each time of the day on Sundays), before moving on to Monday (Constant 2014, p. 125). This will be crucial to the continuation data addressed below.

Now, note that *both* CTs in (45) are overtly moved to a sentence-initial position. The question is: What happens if one of them stays *in situ* – or, more precisely, is pronounced *in situ* – and the other one overtly moves? Consider (47):

- (47) [The burrito]<sub>CT</sub> I have [for lunch]<sub>CT</sub> [on Sundays]<sub>Exh</sub>.

In (47), *the burrito* appears in a position preceding *lunch* on the surface, but the topic abstraction requires that *lunch* also raise to a CT- $\lambda$  position. There is nothing in the topic abstraction model that stipulates that one phrase take scope over the other, as long as they both move to their respective CT- $\lambda$ . The two possible LFs are as follows:

- (48) a. [the burrito]<sub>F</sub> CT- $\lambda_1$  [for [lunch]<sub>F</sub>] CT- $\lambda_2$  I have  $t_1$   $t_2$  [on [Sundays]<sub>F</sub>]

- b. [for [lunch]<sub>F</sub> ] CT- $\lambda_1$  [the burrito]<sub>F</sub> CT- $\lambda_2$  I have  $t_2$   $t_1$  [on [Sundays]<sub>F</sub> ]

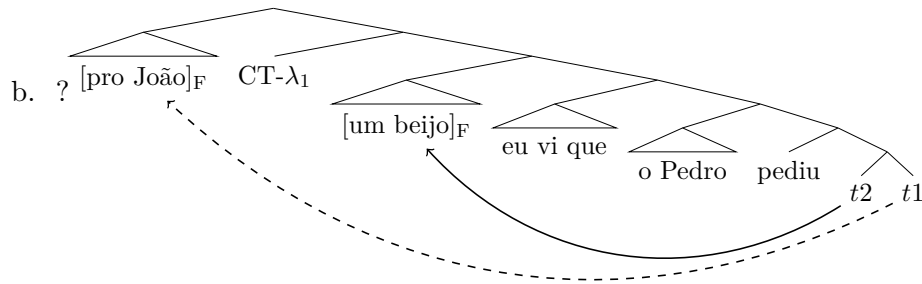
As Constant puts it, without further stipulation, the predictions of the topic abstraction model would be that (47) is LF-ambiguous between the two structures in (48). He observes, however, that the continuation data discussed below seems to favor one of the LFs (cf. Constant 2014, p. 129). In the two continuations in (49), (49-a) is favored over (49-b); this suggests, according to Constant, that the food-related issues are clustered in a group and addressed first, whereas the time of the day will be “scattered”. In other words, the speaker addresses first all *the burrito* issues, which indicated that it takes scope over the other CTs.

- (49) [The burrito]<sub>CT</sub> I have [for lunch]<sub>CT</sub> [on Sundays]<sub>Exh</sub>.  
 a. And (I have it) for DINNER on MONDAYS.  
 b. ??And (I have) the AVOCADO (for lunch) on MONDAYS.

In Constant’s words, such data suggests that in “sentences involving both overt and covert CT raising, the overtly CT(s) must take scope above those raising covertly” (Constant 2014, p. 129). This statement is remarkably similar to the one suggested by Neeleman and van de Koot (2008), which proposed that LF movement cannot unmark relations that had been marked by overt movement.

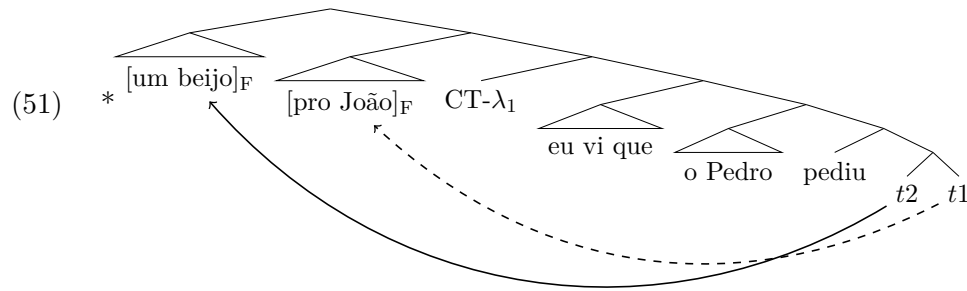
I could, at this point, assume the same thing as the two works just discussed; that is, covert movement cannot undo what overt movement has done. This assumption would be sufficient to explain the puzzling structure from my data. Let me repeat it here so we can see how such an assumption could capture why this structure should be ruled out:

- (50) a. #eu vi que [um BEIJO]<sub>F</sub> o Pedro pediu  $t_F$  [pro JOÃO]<sub>CT</sub>.  
 I saw that a kiss the P. asked to J.



Recall that the problem is that we want to rule out sentence (50-a) – since it is judged

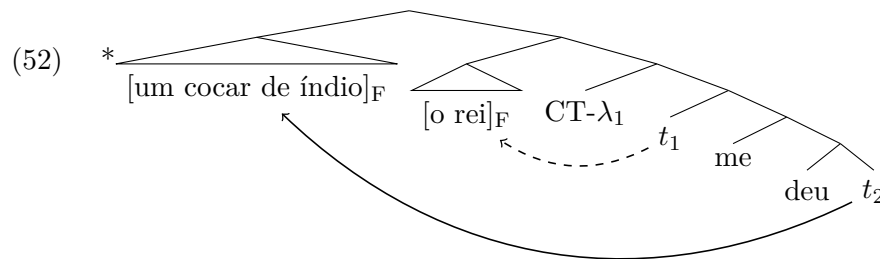
infelicitous – but the structure that seems to account for it (cf. (50-b)) is not ruled out by GeFMoP; on the contrary, according to GeFMoP, (50-b) should be fine, as the sister of the moved  $[\text{pro João}]_F$  has a singleton F-alternative due to the CT- $\lambda$ . Given the discussion we just had concerning the relation of overt and covert movement and information structure, the necessary stipulation would be to say that  $[\text{pro João}]_F$ , in fact, *cannot* outscope the overtly moved  $[\text{um beijo}]_F$ . This would leave us with the following structure:



(51) in turn will be correctly ruled out by GeFMoP: there is movement of an F-phrase –  $[\text{um beijo}]_F$  – but its sister does not have the singleton F-alternative, as there is an F-phrase interpreted as contrastive topic –  $[\text{pro João}]_F$  – within the sister.

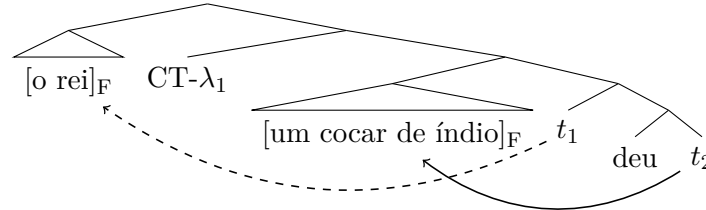
At this point, however, the issue of in which position the CT- $\lambda$  is inserted in the structure becomes important. As I just discussed, without further stipulation, there is nothing preventing us from representing sentence (50-a) as in (50-b). Nothing in Constant’s (2014) model designated a precise position for the CT- $\lambda$ , which, in the majority of the cases, is an advantage (e.g. CTs can land in different positions in the left periphery, see discussion in section §4.2.2).

Moreover, a similar possibility in fact may also pop up in the (by now) much-discussed case of a focus that moves across a contrastive topic. In section §4.2.3, I have proposed the following structure for such sentences:



But an alternative representation would be as in (53), where  $[o\ rei]_F$  ‘the king’ outscopes the overtly moved  $[um\ cocar\ de\ índio]_F$  ‘an indigenous headdress’. The representation in (53) is compatible with GeFMoP, as the sister of the moved  $[o\ rei]_F$  has a singleton F-alternative due to CT- $\lambda$  insertion; this outcome, however, is not desired, since a sentence in which a moved focus surfaces before a contrastive topic is judged infelicitous by native speakers of Brazilian Portuguese.

(53) ?



The discussion we had so far concerning the problematic structure has shown us that, in general terms, there is a precedent in the literature for assuming that a covertly moved phrase should not outscope an overtly moved phrase, at least in what concerns information structure categories such as focus and contrastive topic. While this precedent remains an assumption – that is, it does not provide a formal analysis for the data, but simply a means to make the data “fit” to the proposal – it has been discussed in the two works that serve as base for my own proposal. Overall, my proposal is still strong enough to capture the overwhelming majority of the data of the ordering restrictions of contrastive topic and focus in Brazilian Portuguese, even if I have to stipulate that LF movement cannot unmark what overt movement has marked.

The LF-movement vs. overt movement stipulation seems to be limited, however, to information structure data, since one would think at first glance that it is too strong a stipulation to apply generally in the grammar. In the next section, I will discuss the work of Bobaljik and Wurmbrand (2012), who, in effect, propose that there is a more general economy condition in the languages of the world which requires that the relative scope of two elements at LF is isomorphic to their scope at PF.

### 5.8.2 Scope Transparency

Bobaljik and Wurmbrand (2012) propose a condition that favors the correspondence between scope interpretation and word order, called Scope Transparency (ScoT):

(54) ScoT:

If the order of two elements at LF is  $A \gg B$ , the order at PF is  $A \gg B$ . (Bobaljik and Wurmbrand 2012, p. 373).

The symbol  $A \gg B$  represents “the canonical manifestation of hierarchical order”, namely scope at LF and linear precedence at PF.

The authors argue that ScoT is a *soft* constraint, in the sense that it is not universally surface-true. Such soft constraints are economy conditions, that are universal, but violable (such constraints have been argued elsewhere, e.g. Bobaljik 1995; Diesing 1992). ScoT always interacts with some other economy condition of the language; it is respected when LF and PF match, and violated otherwise. However, a violation is allowed when it is not otherwise possible for word order to respect a particular scope relation, as we will see momentarily regarding movement structures. The interaction of ScoT with another economy constraint of the language gives rise to what the authors dub the  $\frac{3}{4}$  Signature: In a wide array of phenomena discussed by Bobaljik and Wurmbrand (2012), given two LF choices and two PF choices, three of the four logical combinations are judged acceptable (Bobaljik and Wurmbrand 2012, p. 384).

Figure 5.1 summarizes the  $\frac{3}{4}$  Signature effect. The first column represents the actual judgments; ; the second and third column represent the LF and PF orders respectively, where the base order is always A before B. In the fourth column we see whether ScoT has been respected or not: if LF and PF “match”, it is respected, if they do not, it is violated. As Bobaljik and Wurmbrand (2012) point out, it is interesting to describe this paradigm by looking at the LF column. One LF  $B \gg A$  can be represented by two PFs, but the other LF  $A \gg B$ , can only be represented by one PF (line (a)). Next, note that if syntax allows for overt movement of B across A, then ScoT alone should allow for two LF-PF pairings to be possible (see ScoT’s column).

*The  $\frac{3}{4}$  signature*

|    |   | LF        | PF        | ScoT |
|----|---|-----------|-----------|------|
| a. | ✓ | $A \gg B$ | $A \gg B$ | ✓    |
| b. | * | $A \gg B$ | $B \gg A$ | *    |
| c. | ✓ | $B \gg A$ | $B \gg A$ | ✓    |
| d. | ✓ | $B \gg A$ | $A \gg B$ | *    |

**Figure 5.1:** Schematic example of the  $\frac{3}{4}$  Signature effect (Bobaljik and Wurmbrand 2012, p. 385).

How does the  $\frac{3}{4}$  Signature arise then specifically? Bobaljik and Wurmbrand (2012)

discuss different phenomena where we can observe it. One of them is the Dutch  $\bar{A}$ -scrambling data from Neeleman and van de Koot (2008) (see a comprehensive discussion of this data in section §4.1.2). The basic paradigm from Neeleman and van de Koot (2008) is repeated below (the first line of the example makes reference to the example's number in Bobaljik and Wurmbrand 2012, as referred to in Figure 5.2):

(55) [(29) in Bobaljik and Wurmbrand (2012)]

A: Hoe zit het met FRED? Wat heeft HIJ gegeten?

What about Fred? What did he eat?

B: Nou, dat weet ik niet, maar...

'Well, I don't know, but...'

a. ik geloof dat [Wim]<sub>T</sub> [van de bonen]<sub>F</sub> meer gegeten heeft dan vorig  
I believe that Bill from the beans more eaten has than last  
jaar.  
year

'I believe that Bill has eaten more from the beans than last year.'

b. #ik geloof dat [<sub>PP</sub> van de bonen]<sub>F</sub> [Wim]<sub>T</sub> *t*<sub>PP</sub> meer gegeten heeft dan  
I believe that from the beans Bill more eaten has than  
vorig jaar.  
last year

(N&vdK 2008, p. 147)

(56) [(30) in Bobaljik and Wurmbrand (2012)]

A: Hoe zit het met de SOEP? Wie heeft DIE gegeten?

What about the soup? Who ate that?

B: Nou, dat weet ik niet, maar...

'Well, I don't know, but...'

a. ik geloof dat [Wim]<sub>F</sub> [van de bonen]<sub>T</sub> meer gegeten heeft dan vorig  
I believe that Bill from the beans more eaten has than last  
jaar.  
year

b. ik geloof dat [<sub>PP</sub> van de bonen]<sub>T</sub> [Wim]<sub>F</sub> *t*<sub>PP</sub> meer gegeten heeft dan  
I believe that from the beans Bill more eaten has than  
vorig jaar.  
last year

'I believe that Bill has eaten more from the beans than last year.'

(N&vdK 2008, p. 148)

Consider the table proposed in Bobaljik and Wurmbrand (2012) for the  $\bar{A}$ -scrambling data in Dutch in Figure 5.2. Example (29) in the Figure corresponds to the configuration where the contrastive topic precedes the focus in the canonical order (e.g.

CT is the subject and focus is the object, cf. (55)), and example (30) is the one where the focus precedes the contrastive topic in the canonical order (e.g. focus is the subject and contrastive topic is the object, cf. our (56)).

| <i>Dutch</i>                            |                  |                   |                   |      |     |
|-----------------------------------------|------------------|-------------------|-------------------|------|-----|
|                                         |                  | I.F <sub>IS</sub> | PF                | ScoT | CCO |
| a. LF <sub>IS</sub> = A [TOP] » B [FOC] |                  |                   |                   |      |     |
| (29a)                                   | ✓                | A [TOP] » B [FOC] | A [TOP] » B [FOC] | ✓    | ✓   |
| (29b)                                   | * (Ā-scrambling) | A [TOP] » B [FOC] | B [FOC] » A [TOP] | *    | *   |
| b. LF <sub>IS</sub> = B [TOP] » A [FOC] |                  |                   |                   |      |     |
| (30a)                                   | ✓                | B [TOP] » A [FOC] | A [FOC] » B [TOP] | *    | ✓   |
| (30b)                                   | ✓ (Ā-scrambling) | B [TOP] » A [FOC] | B [TOP] » A [FOC] | ✓    | *   |

**Figure 5.2:** Dutch Ā-scrambling paradigm according to Bobaljik and Wurmbrand (2012, p. 394)

Bobaljik and Wurmbrand (2012) propose that besides ScoT, the other constraint acting on those structures is one they call Canonical Complement Order (CCO). CCO basically requires that canonical word order is respected, and therefore movement is a last resort operation (Chomsky 1995). Furthermore, the authors argue that the scoping TOP » FOC is the universal LF configuration of (contrastive) topics and foci, and hence the one crucial for ScoT. When TOP » FOC scope at LF and canonical order at PF do not match, there is misalignment; in this case, a non-canonical structure derived by movement will provide a more transparent reflection of the topic-focus order, according to ScoT.<sup>15</sup>

In the first part (the a-part) of Figure 5.2, the LF A [TOP] » B [FOC] is considered with two PFs: A [TOP] » B [FOC] or B [FOC] » A [TOP]. Both ScoT and CCO are violated by the option (29b), in which the PF does not match the desired LF. In the second part of the Figure (the b-part), the scope relation is B [TOP] » A [FOC], and there are two competing PFs: A [FOC] » B [TOP], which satisfies CCO, since the canonical order of the arguments A » B is respected; and the PF B [TOP] » A [FOC], which matches exactly the scope relation between the two elements at LF. The two PFs in the second part of the Figure are possible (30a and 30b), as each of them satisfies a different

<sup>15</sup> Note that Bobaljik and Wurmbrand (2012) use Neeleman and Van de Koot's (2008) terminology, and call simply *topic* what I refer to as *contrastive topic* in this dissertation.

economy condition – CCO for 30a and ScoT for 30b. Thus, both options in row two of Figure 5.2 are judged acceptable.<sup>16</sup>

In general terms, CCO is satisfied in 30a (our (56-a)) because the canonical order of A and B is preserved (A=subject, B=object), regardless of which A or B corresponds to TOP or FOC. On the other hand, ScoT is satisfied in 30b (our (56-b)) because the relative scope of B and A at LF (B=TOP, A=FOC) is reflected by the PF order. Notice that sentence 30b involves (overt) movement of a topic across a focus; this is allowed, even if costly for the economy principles of the language, because it results in scope at LF = scope at PF. CCO, of course, is not satisfied in such a movement configuration, because it does not correspond to the canonical order of the constituents.

Thus, we have just seen how the  $\frac{3}{4}$  Signature arises in the Dutch  $\bar{A}$ -scrambling paradigm: out of the four choices of LF and PF correspondence, only three are possible. I would like to emphasize that, while the discussion above of the work by Bobaljik and Wurmbrand (2012) presented how ScoT accounts for the paradigm of the ordering restrictions of CT and focus in Dutch, their account is broader than information structure categories. The authors discuss a wide range of phenomena involving scope relations of two elements, such as quantifier raising in German and Japanese, *there*-insertion in English, English Focus and Heavy NP Shift, among others. The clear advantage of such a proposal is, in this sense, that it is a comprehensive account of scope relations, which also includes information structure phenomena, but it is not restricted to it (as were the two hypotheses raised by Neeleman and van de Koot 2008 and Constant 2014 that I presented in section §??).

I will now attempt to apply the underlying idea of Bobaljik and Wurmbrand (2012) to the ordering effects of contrastive topic and focus in Brazilian Portuguese, with special attention to the problematic structure presented in the beginning of this section. Particularly, I assume with Bobaljik and Wurmbrand (2012) that there must be a correspondence between the scope of elements at LF and precedence of elements at PF, cf. ScoT in (54). Moreover, overt movement is allowed as a last resort operation, namely when the order of A and B at LF do not correspond to the order of A and B at PF.

The first constraint that I propose is LF-d(omain) = PF-d(omain): the LF-domain and the PF-domain of F-marked phrases must match in a given structure. For concreteness, I define the domain of a node in a structure as the set of all overt terminals c-commanded

<sup>16</sup> It is important to point out that Bobaljik and Wurmbrand (2012) do not commit to a particular framework – e.g. Optimality Theory, which employs very similar tables where constraints are compared. This is important to understand that total amount of violations *between* two constraints is decisive in Bobaljik and Wurmbrand’s tables – and not that only the higher constraints counts, as is generally the case in OT.

by that node in that tree. The PF domain is simply the domain at PF (i.e. the sister of the F-marked phrase); the LF domain of relevance here is that domain which is “marked as background” or “marked as comment” (in the sense of Neeleman and van de Koot 2008) by movement of an F-marked phrase (or generally the “Domain of contrast” in Neeleman et al. 2009). Thus, I implement here the LF-PF correspondence not by relative order – as do Bobaljik and Wurmbrand (2012) – but by identity of (c-command) domain. I talk here about “domains” because this is a concept important to our discussion of the ordering restrictions; on different occasions, I talked about the c-command domain of a moved F-phrase, the domain of a focus, etc.

The second constraint is overt movement; as I have already mentioned, overt movement is considered a costly operation, and will incur a violation to the structure whenever it takes place. So, I replace CCO by a more general constraint against overt movement; obviously, any violation of CCO also involves overt movement, but the other way around is not necessarily true: there are overt movements that won’t result in a non-canonical order *for the F-marked constituents involved*.

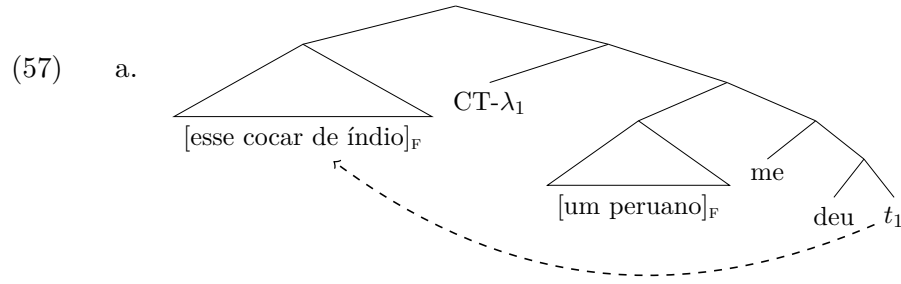
Consider Table 5.1, where in addition to the two conditions just discussed, the third column makes reference to the example’s number in the dissertation. The basic idea is that the LF-d of an F-marked constituent should be the same as its PF-d. First, note that I write CT in Table 5.1 to mean an F-phrase that has been topic abstracted, i.e. which has raised to CT- $\lambda$ . This trivially means that every *in situ* CT will LF-move and has, therefore, an LF-domain. Additionally,  $CT\ t_{CT}\ F$ , for instance, means that the contrastive topic has overtly moved, and its canonical position is indicated by its trace. Moreover, the structures in rows h.–k. are ungrammatical – and were grayed out to help visualizing.

|                        | LF-d=PF-d |   | move overtly | Cf. example    |
|------------------------|-----------|---|--------------|----------------|
|                        | CT        | F |              |                |
| a. CT - F              | *         | * |              | (11-a), §4.2.1 |
| b. F- CT               | *         | * |              | (12-a), §4.2.1 |
| c. CT $t_{CT}$ F       |           | * | *            | (14), §4.2.1   |
| d. CT F $t_F$          | *         |   | *            | (33-b), §4.5.2 |
| e. CT F $t_{CT}$       |           | * | *            | (12-b), §4.2.1 |
| f. CT F $t_{CT}$ $t_F$ |           |   | **           | (38), §5.7.3   |
| g. CT F $t_F$ $t_{CT}$ |           |   | **           | (34), §5.7.3   |
| h. F $t_F$ CT          | *         | * | *            | (39-b)         |
| i. F CT $t_F$          | *         | * | *            | (11-b), §4.2.1 |
| j. F CT $t_{CT}$ $t_F$ | *         | * | **           | (36), §5.7.3   |
| k. F CT $t_F$ $t_{CT}$ | *         | * | **           |                |

**Table 5.1:** Scope transparency in BP's CT and F ordering structures.

Consider now the first column of Table 5.1. A CT pronounced *in situ* always violates LF-d=PF-d, because it invariably moves at LF (to the CT- $\lambda$ ), but its LF domain does not correspond to its PF domain. An *in situ* focus does not move at LF, so it trivially does not have an LF domain; but it still has a PF domain – its sister. Therefore, LF-d and PF-d of an *in situ* F do not correspond, and incur a star. Column two is self-explanatory: if a constituent moves overtly, it incurs a violation. Note that none of the structures in Table 5.1 can be realized with fewer than two stars (violations), so all structures with two stars are grammatical; hence, every structure with more than two stars is ruled out.

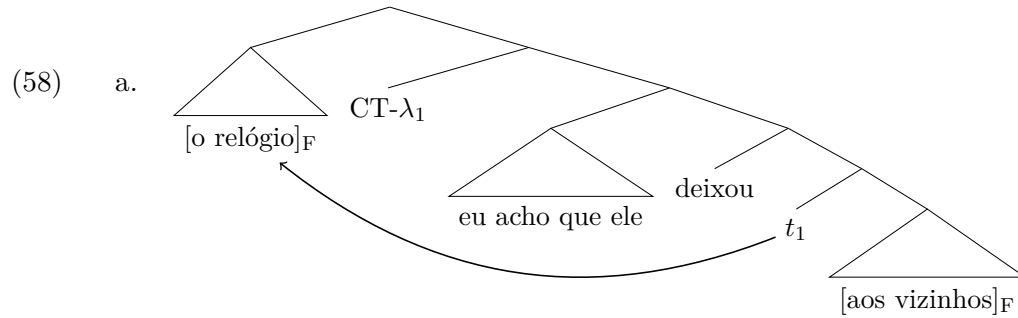
In lines a. and b, we have the two basic configurations in which a focus follows a CT, or precedes a CT, respectively. In the first case (CT - F), LF-d and PF-d of the contrastive topic do not correspond, since CT moves at LF but not at surface structure; LF-d and PF-d of F do not correspond either, because F has a PF-d, but it does not have an LF-d. In the case of F - CT, the CT LF-moves across the focus, but it is pronounced *in situ*: LF-d and PF-d clearly do not correspond. The case for the *in situ* F is the same as already explained. Consider the LF of an F - CT structure in (57-a), and its surface realization in (57-b):



- b. [Um PERUANO]<sub>F</sub> me deu [esse cocar de índio]<sub>CT</sub>.  
 a Peruvian to.me gave this headdress of indigenous  
 ‘A Peruvian gave me this indigenous headdress’.

In (57), we can clearly see that the LF-domain is not the same as the PF-domain for neither CT or F. The CT *esse cocar de índio* ‘this indigenous headdress’ has *um peruano* ‘a Peruvian’ in its LF-domain, but this is not the case at PF – nothing follows *esse cocar de índio* ‘this indigenous headdress’ at PF. The F *um peruano* does not have an LF-domain (it has not moved), but it has a PF-domain, its sister *me deu esse cocar de índio* ‘gave me this indigenous headdress’. In general, if a CT does not move overtly, it will incur a star in the LF-d=PF-d column, since it has a domain at LF, but not at PF. *In situ* Fs invariably incur a star in LF-d=PF-d, because they trivially do not have an LF-domain.

Consider now a structure in which there is overt movement of one of the F-marked phrases. (58) is an example of a CT  $t_{CT}$  F sentence (line c.), in which the phrase interpreted as contrastive topic overtly moves to a position c-commanding the focus:

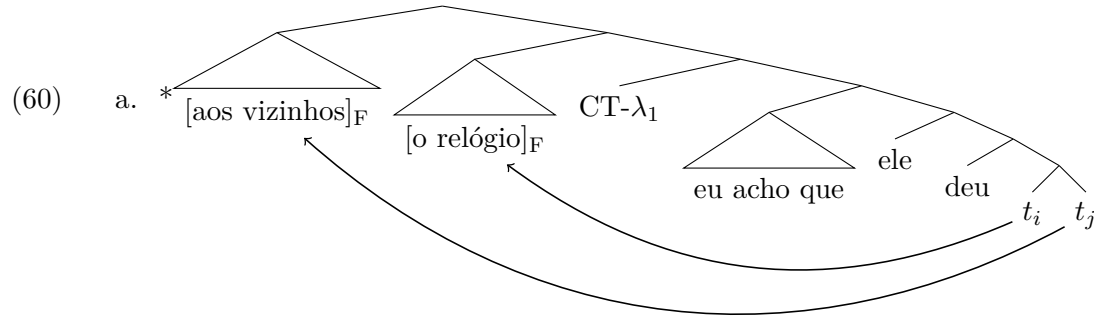


- b. [O RELÓGIO]<sub>CT</sub> eu acho que o vovô deixou  $t_i$  [aos VIZINHOS]<sub>F</sub>.  
 the clock I think that the grandpa left to.the neighbors  
 ‘I think that grandpa left the clock to the neighbors’.

The LF-d and PF-d of CT coincide, since its c-command domain at LF is the same as



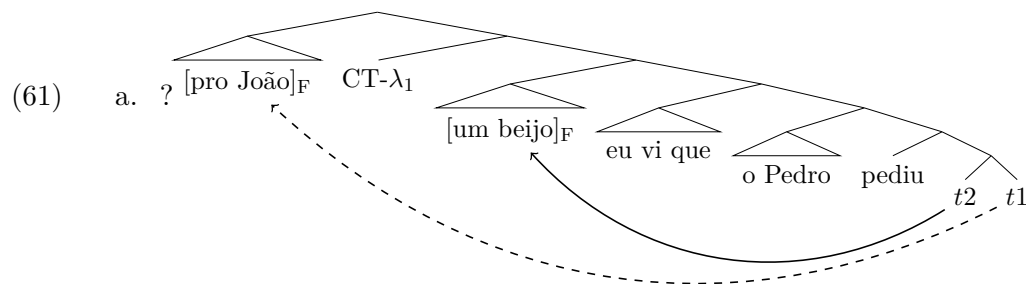
indicated PF (one in which F precedes CT). As already discussed at length in chapter §4, all structures in which a moved focus precedes a CT (moved or not, it does not matter here), are ungrammatical. The LF-d=PF-d for neither CT nor F is the same, so both incur a violation, as well as two violations for two overt movements.



- b. #[Aos VIZINHOS]<sub>F</sub> [o RELÓGIO]<sub>CT</sub> eu acho que ele deu  $t_F$   $t_{CT}$ .  
 to.the neighbors the clock I think that he gave

That a CT must precede an F at LF was a stipulation in Bobaljik and Wurmbrand (2012) (based on a general empirical observation that CTs generally precede foci, but still a stipulation), but it is naturally derived in my proposal. In my terms, an F-marked phrase interpreted as focus cannot precede an F-marked phrase interpreted as CT at LF, as I have extensively argued in chapter §4 and at the beginning of the present chapter. So what was a stipulation in Bobaljik and Wurmbrand's (2008) model, has been derived in my proposal.

We can now look at the structure in line h., which is the problematic structure that I introduced at the beginning of the present section. I repeat this LF one more time, with its corresponding sentence below:



- b. #eu vi que [um BEIJO]<sub>F</sub> o Pedro pediu t<sub>F</sub> [pro JOÃO]<sub>CT</sub>.  
 I saw that a kiss the P. asked to J.

In (61), the LF-domain of the CT *pro João* ‘to João’ has the F-phrase *um beijo* ‘a kiss’ in it, but this is not the case of its PF-domain, which does not contain any other material, since *pro João* is the last phrase in surface structure; CT thus incurs a violation in LF-d=PF-d. Similarly to F, which clearly does not have the same LF- and PF-domains: at LF, its domain does not include the CT *pro João*, but its PF-domain does include this phrase – F incurs thus a violation in the LF-d=PF-d column. Since F overtly moves, it incurs a star also in the *move overtly* column. The structure has incurred three stars, which makes it ungrammatical.

We have thus applied a similar constraint as ScoT from Bobaljik and Wurmbrand (2012) to the ordering effects of contrastive topic and focus in Brazilian Portuguese. Although my constraint was not strictly the same as ScoT, it has a lot in common with it, as it favors a correspondence between LF and PF. When first discussing the problematic structure at the beginning of this section, I mentioned that, intuitively, what seemed to be the problem is that covert movement was “unmarking” something that had already been marked by overt movement, and this was not desirable. I observed that this problem has been acknowledged before, which shows that it is not a shortcoming specific to my proposal. The stipulations proposed both by Neeleman and van de Koot (2008) and Constant (2014) for this timing issue between LF and overt movement go in the same direction as my final suggestion of correspondence between domains at LF and PF. The difference is that, by following the specific proposal from Bobaljik and Wurmbrand (2012), this correspondence is actually derived from a more general constraint in the grammar, and applies to a much broader range of phenomena than only information structure.

Before closing, I would like to point out that the proposal I just presented to deal with the covert vs. overt movement matter could still worked out in more detail. My goal here was to point towards a direction on how to solve such a puzzle, and especially call attention to the fact that there seems to be a general constraint in the grammar in which a LF-PF correspondence is preferred, although not strictly necessary – as thoroughly argued by Bobaljik and Wurmbrand (2012).

## 5.9 Summary of chapter 5

In this chapter I have introduced my proposal to account for the ordering effects of contrastive topic and focus that we observed in chapter §4. Specifically, I introduced a generalized version of the principle on moved F-phrases, repeated below:

(62) **The Generalized F-Movement Principle (GeFMoP):**

The sister of a moved F-marked phrase must have a singleton focus semantic value.

GeFMoP, as it stands in (62), gave semantic content to what had remained a generalization of the data until now – that focus movement marks its sister as background, from Neeleman and van de Koot (2008). Precisely, I proposed that “to be marked as background” is formally defined semantically as “has a singleton focus semantic value”.

I showed that GeFMoP is comprehensive enough to capture the (un)grammaticality of structures that have not been addressed in connection before: contrastive topic sentences, double focus sentences and focus fronting sentences. The formal definition provided in GeFMoP, together with the assumption from Constant (2014) that both contrastive topics and foci are F-marked phrases, allowed us to derive all Brazilian Portuguese configurations we have discussed all along this dissertation.

In section §5.8 I discussed the only structure that is not correctly captured by GeFMoP (it is allowed for whereas it should be ruled out). This structure involves the interaction of overt and covert movement (more precisely, covert movement seems to take place “after” overt movement). I argued that other works have encountered the same problem, and that a proposal from Bobaljik and Wurmbrand (2012) that favors a correspondence between LF and PF accounts for such structures.

## CHAPTER 6

### Focus movement in Romance

In chapters §4 and §5, I have discussed the ordering restrictions of contrastive topic and focus in Brazilian Portuguese, and proposed a formal account to capture the data. Particularly, I have proposed to integrate two proposals from the literature: the generalization from Neeleman and van de Koot (2008) that focus movement marks its background, and the topic abstraction model from Constant (2014), which assumes that contrastive topics are F-marked phrases moved to the CT operator. From this two generalizations, I have proposed the Generalized Principle on moved F-phrases (GeFMoP), which requires that the sister of a moved F-phrase have a singleton focus semantic value. Since GeFMoP applies when an F-marked phrase moves, one might think that this movement is a type of focus movement.

In this sense, in the present chapter I will look more closely at the literature on focus movement in Romance languages – particularly that of the Cartographic Project – and see whether this proposal could capture the BP data discussed so far. Does the view on focusing in this theoretical model predict that there cannot be a contrastive topic in the background of a moved focus? Or, more precisely, when a focused phrase moves to the left-periphery, what are the syntactic and semantic status of its sister?

In general, this chapter aims to discuss the main points of Cartography that are related to focus and topic movement and their interpretation. While in this dissertation I assume that the interpretation of contrastive topic and focus is derived using Alternative semantics (Rooth 1992) and the topic abstraction account (Constant 2014), this is not the most common theoretical background assumed in the literature in Romance languages in general. In the following, I will revise the main concepts involving the Cartographic Project, and briefly discuss whether any of this proposal could account for the BP data put forward in chapter §4.

## 6.1 Cartography

In section §4.5, we discussed examples of focus fronting in Romance languages, which illustrated that an F-marked phrase can move to the left-periphery of the clause and not be interpreted as a contrastive topic. The general consensus is that the moved constituent is interpreted as a narrow focus and its complement is backgrounded (cf. Cruschina and Remberger 2017).

Focus fronting in Romance is usually analysed in terms of the ‘Cartographic Project’ (Belletti 2004a,b; Benincà and Munaro 2010; Cinque 1999; Rizzi 1997, 2004b, 2006, *inter alia*). The Cartographic Project assumes that discourse-related properties are encoded in the syntax, through a hierarchy of functional projections at the left periphery of the clause (CP). Under this view, the semantic and prosodic properties of a lexical item are directly read off the syntactic structure, being in total compliance with the T-model of the grammar (which posits that there is no direct communication between LF and PF; cf. Chomsky 1995). There is, thus, an one-to-one mapping between a designated functional projection and its interpretation at LF.

Inspired by much work in the inflectional domain (Belletti 1990; Cinque 1999; Pollock 1989), for which it was proposed a richer articulation of projections (Agr, T, Asp, ...), Rizzi (1997) proposed that the CP should also be split into a hierarchy of functional projections.<sup>1</sup> The left periphery is assumed to be populated with functional heads: Heads bearing discourse-related features such as Top (for topics), Foc (for focus), Q (for questions), etc. Each head projects a phrase according to the X-bar schema, so there is a principle of “one feature, one head”; for instance, the head Top will project a Topic Phrase, the head Foc will project a Focus Phrase, etc. The functional heads (also called “criterial heads” in later work, see e.g. Rizzi 2013; Rizzi and Cinque 2016) are responsible for: 1) triggering movement of a phrase that bears the same feature to their specifier, and 2) guiding the interpretation of the “dependents” of the head at the interfaces (cf. Rizzi 2013; Rizzi and Cinque 2016).

In order to make the explanation a bit more concrete, let’s derive how a certain phrase XP is interpreted as focus under the cartographic approach. Consider (1), where the direct object *this book* is fronted and interpreted as focus:<sup>2</sup>

1 In what follows, I will present the main arguments put forward in Rizzi (1997), adding to it refinements that were presented in later work by the same author (Rizzi 2004a, 2006, 2013, 2014; Rizzi and Cinque 2016), or by other works under the cartographic approach such as Cruschina (2011, 2012).

2 In (1), the gap left by movement is expressed as a full unpronounced copy of the moved phrase (following the copy theory of traces, represented < >).

- (1) THIS BOOK you should read < this book > (, not that one) (Rizzi 2006, p. 101)

So there is a functional head [Foc] that triggers movement of an XP also endowed with the feature [Foc] (in the case of (1), [<sub>D</sub> *book*]) to the dedicated functional projection FocP. Rizzi (2006) assumes that [<sub>D</sub> *book*] must receive both the interpretive property “patient of the verb *read*”, called s-selectional property, associated with the argument and thematic structure of the clause; and “focus”, a criterial property. The idea behind such criterial properties is that, the same way the verb assigns the property “patient” to its object in (1), there is a similar mechanism in the left periphery of functional heads that assign to their dependents discourse-related properties such as focus, topic, etc. Under this view, the syntactic computation drives the movement, required by the Criteria. Moreover, by the end of the syntactic computation, a structure with “transparent” discourse-related properties is marked and handed over to the interfaces, where syntax-semantics mapping rules can apply.

More specifically, the Criteria require that a phrase bearing a feature F end up in a Spec-head configuration with a head that has the same feature F (cf. Rizzi 1997, 2004a, 2006). The format of the Criteria is stated as follows:<sup>3</sup>

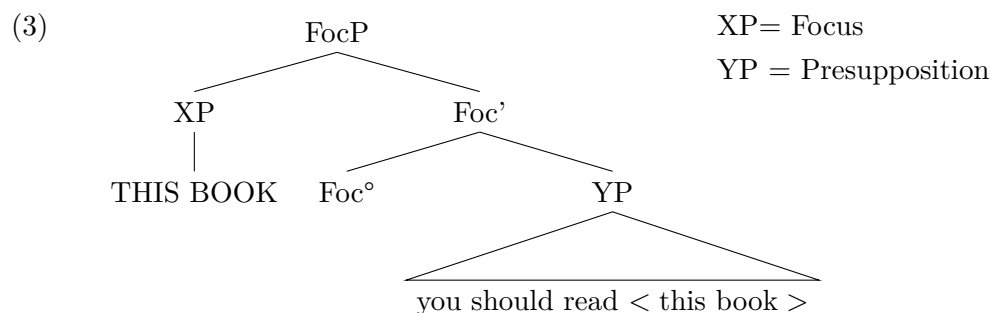
- (2) F-Criterion  
 XP<sub>F</sub> and X<sub>F</sub> must be in a Spec-head configuration, for F = Q, Top, Foc, ... (Rizzi 2006, p. 102)

The Criteria are thus a combination of feature checking and structural configuration. Both the head and the phrase have the same feature, which has to be checked, and the way of checking this feature is by establishing a Spec-head configuration between the moved phrase and its head. The structure below builds on the basic structure of the Focus Phrase proposed by Rizzi (1997, p. 296), to which I added the focus and presupposition from (1).<sup>4</sup>

3 The Criteria proposed by Rizzi (1997) have historically the same underlying principle as the Wh-Criterion (see Rizzi 1996), which in simple words stated that a wh-phrase (endowed with the feature [Wh]) must end up in a Spec-head configuration with C (which also has the feature [Wh]) in questions.

4 The term *presupposition* in Rizzi’s partition of the sentence into Focus-Presupposition alludes to the fact that what is not focused in a sentence is somehow presupposed, given information. We do not adopt this terminology in this dissertation, first because one has to assume that presupposition, givenness and old information are the same thing, and second for the simple reason that a sentence like (i) doesn’t presuppose that someone took Harry’s book (cf. discussion in Büring 2016b, p. 103).

(i) NObody took Harry’s book.



(3) is the derivation of the final structure that will transfer to the interfaces the information that  $[_D \text{ book}]$  is focus, and it's sister is the presupposition. There is the functional head  $\text{Foc}^\circ$  in the left periphery (the feature  $[\text{Foc}]$  is encoded as the head of the projection). At the same time,  $[_D \text{ book}]$  has been merged with the same  $[\text{Foc}]$  feature as the functional head. The head attracts the XP to its specifier, and once the required Spec-head configuration is achieved, the structure signals to the interfaces “interpret my specifier as (contrastive) focus and my complement as presupposition” (Rizzi 2013, p. 201).

Besides the dedicated discourse-related projections at the left periphery and the Criteria, another important concept in the Cartographic Project is that movement is considered to be a last resort operation. What is meant by “movement as last resort” is that no movement is really optional (Rizzi 2006, p. 99). Rizzi explicitly refutes adjunction to CP, positing that movement must produce a configuration useful for interpretation. Crucially, this movement is formally triggered by the functional heads which attract the phrases endowed with the same feature to their specifier.

The split of the left periphery into specific functional projections proposed by Rizzi (1997) is as follows:

(4)  $[\text{ForceP } [\text{TopP}^* [\text{FocP } [\text{TopP}^* [\text{FinP } [\text{IP} \dots$

In the structure in (4), the clause is upward delimited by Force, which expresses the clausal type (declarative, interrogative, etc.), and downward delimited by Finiteness, which differentiates whether the structure is finite or not.<sup>5</sup> The Topic Phrase (TopP) can

I will, however, stick to the term *presupposition* in this Section to keep the exposition faithful to the original.

<sup>5</sup> This distinction was based on an empirical observation made in Rizzi (1997) involving complementizers and left dislocated topic sentences in Italian. The main point is that different complementizers in Italian, *che* ‘that’ and *di* ‘of’ occur in different positions regarding a dislocated topic. Specifically, *che*, which introduces finite complements, must precede a topic; whereas *di*, which introduces infinitives, must follow dislocated topics. This creates the articulation Force - Top - Finite (see the relevant examples in Rizzi 1997, p. 288).

iterate (indicated by a Kleene star), because according to the author a sentence can have more than one topic (see discussion in Section 6.1.1). The Focus Phrase (FocP), on the other hand, is unique, and cannot occur more than once per clause. Rizzi argues that there cannot be more than one focus in a clause because once a constituent has moved to FocP, a clear split between the focus and (what Rizzi calls) the presuppositional content of the clause is achieved. In other words, the complement of FocP is of presuppositional nature (background, in our terms), given information, and therefore cannot contain a focus in it. Following this view, Rizzi argues that a FocP is unique and cannot be recursive (this is referred to in the literature as the “Focus uniqueness condition”, as already briefly mentioned in section §4.4).

The intuition behind the Cartographic Project is particularly clear when one considers word order and its relation to information structure in Romance languages. As already discussed in chapter §3, it is well known that these languages have a great deal of word order combinations that match certain information structure interpretations. For instance, the fact that topics and foci often occur to the left of the sentence in Romance (in the form of syntactic operations like topicalization and focus fronting) jibes well with a theory that posits a strict correspondence between syntactic position and semantic interpretation. Moreover, several works in the Cartographic tradition also point out that, while the realization of the Focus head in Romance is silent, it is visible in other languages, like certain West African languages.

Gungbe, a language from the Atlantic-Congo family, is an example. According to Aboh (1999, 2004), this language displays a topic and a focus morpheme, which are the visible representation of the Rizzian Topic and Focus heads. Consider (5):

- (5) ...dɛ̀ dān ló yà Kòfí wè hò- \* (i).  
       that snake DET TOP K. FOC kill.PERF it  
       ‘...that the snake, Kofi killed it’. (Aboh 2004, p. 51)

In the sentence above, both the topic *dān* ‘snake’ and the focus *Kofi* are fronted; the topic dislocation also leaves a resumptive pronoun *-i* inside the IP, very much like the clitic left dislocation of topics in Romance. The two elements glossed as TOP and FOC in (5) are analyzed as the overt realization of the topic and focus functional heads of the Cartographic Project (cf. Aboh 2004; Cruschina 2012; Rizzi 1997, 2006, 2013, among many others). It is important to point out that a tenet of the Cartographic Project is that all functional projections are universally structured across languages (see discussion in Cruschina 2012, p. 29). So the hierarchy proposed in (4) is considered to be universal, and the (apparent) differences that languages show regarding the expression of the functional

projections (e.g. a morpheme in the case of Gungbe, but a silent element in Italian) is actually due to the way the language lexicalizes the functional head. The parametric variation is not due to the existence (or not) of the functional projection, but to the way the relevant functional head is realized in the language.

Before we move onto more specific predictions of the Cartographic Project involving topic and focus, I would like to take a moment to discuss the underlying machinery of the interpretation of a focused phrase in Cartography and whether this could be made to work with the Alternative Semantics framework that we adopt in this dissertation. In Cartography, the relevant information at the interfaces (LF and PF) are read off the functional projections. This is because the functional head endowed with the relevant feature projects its own X-bar schema, and then this structure, formed by the functional head and its specifier (thus meeting the Criteria), passes on the information to the interfaces. But it is not enough to say that the feature, say, [Foc] is responsible for triggering the interpretation of a phrase as focus. The feature is responsible for triggering the *movement* to the specifier of the head [Foc] in order to meet a syntactic requirement, namely the Spec-head configuration; the interpretation will be read off the resulting structure. It is not enough either to say that the position alone is responsible for the interpretation (this is usually stated in works that give a summary of Cartography as “a phrase moves to FocP in order to be interpreted”), because the position must be created from a feature checking requirement. Thus, both feature and position are relevant for the interpretation, and cannot really be separated when it comes to their contribution to the interpretation.<sup>6</sup>

Now, the Alternative Semantics framework posits that an F-marked phrase introduces focus alternatives. Is there a way to fit the Alternative Semantics view with the Cartographic Project, which postulates a head endowed with a [Foc] feature?<sup>7</sup> It seems that the only way these two frameworks could be reconciled is by assuming that Rooth’s F-feature and Rizzi’s [Foc] feature are the same, and therefore it is possible to calculate focus alternatives from a Rizzian Focus Phrase. In this case, however, the movement of XP to Spec,FocP is not directly related to the interpretation, since the feature is enough for the interpretation (movement would be more like a “side effect”, necessary for a syntactic requirement of feature checking). Nothing would prevent the phrase from being interpreted *in-situ*, without movement. As the reader might have already guessed, this goes against the most basic tenet of the Cartographic Project: movement is not

<sup>6</sup> Thank you to Silvio Cruschina (p.c.) for helping me clarifying this point.

<sup>7</sup> In Rizzi’s (1997) original work, the feature is officially [Foc], but it has also been called differently in other works of the Cartographic Project, e.g. [+F] in Frascarelli (2000) and [ $\pm$ Focus] in Cruschina (2012).

optional, the phrase has to be in the spec-head configuration required by the criteria so the interfaces can read off the syntactic structures the relevant interface properties.

On the other hand, if the cartographic [Foc] is not the same as the Alternative Semantics' F-mark, the feature could not contribute to the interpretation. In this case, [Foc] is only responsible for triggering the movement of XP to Spec,XP, but not to the introduction of focus alternatives. It is thus the specific structural configuration of the moved XP and the head endowed with the feature that gives the instruction to the semantics, along the lines of "my specifier has alternatives, my complement doesn't". This option is clearly in line with what has been proposed by the Cartographic Project, since the feature is responsible for triggering the movement and the result is interpreted via syntax-semantics mapping.

Note, however, that this second option (where the feature is only responsible for the movement, and doesn't match the F-mark necessary for the introduction of focus alternatives) is not suited to the theory we are proposing in this dissertation. This is because one of the basic assumptions that we make with Rooth (1992) is that focus is (or at least can be) interpreted in-situ, otherwise there doesn't seem to be a way of explaining the double focus cases that we discussed in sections §4.4 and 4.6.

Another thing that doesn't seem to really fit the movement approach is how to derive clausal focus (where the whole sentence is focused; also sometimes referred to "all-new sentences"). A general minimalist assumption is that a feature can only be assigned to a lexical item (Chomsky's 1995 "Inclusiveness Condition"), and not to a whole constituent (as pointed out in Brunetti 2004b, p. 55). One can assume that the item bearing the feature is the most embedded constituent of the clause (say, the object in an SVO sentence), and that the feature can percolate up to IP (or your preferred label for the sentence level). But it would be necessary that the whole IP somehow end up in the specifier of FocP so the necessary syntax-semantics mapping can apply, otherwise only the object would be interpreted as the focus, while the rest of the sentence would be the presupposition. In general terms, it is not clear from the literature how a focus bigger than a head is interpreted, be it phrasal or clausal focus. For instance, it is not stated anywhere (at least to the best of my knowledge) whether there is any mechanism in Cartography that would make the whole IP move to Spec,FocP in the case of clausal focus, since only one lexical item is merged with the feature [Foc] in the numeration.

### 6.1.1 Multiple TopPs

Going back to Rizzi's (1997) split of the left periphery outlined in the last Section, we saw that Topic Phrases can iterate and that there is a TopP above and another one below FocP. Would the lower TopicP following the focus be the landing site for contrastive topics in the F+CT order discussed in Chapter 4? We'll see that this doesn't seem to be accurate, since recent work in the Cartographic Project has argued that the low TopP can only be filled by *Referential* or *Familiar* topics (the term will be defined below).

First, there is a general intuition that topics can be recursive because it is possible to have several left-dislocated constituents in Romance. Consider the Italian examples from Rizzi (1997, pp. 295–296)

- (6) a. Credo che a Gianni, QUESTO<sub>F</sub>, domani gli dovremmo dire.  
 I-believe that to G. this tomorrow to.him.CL we.should say  
 'I believe that we should say this to Gianni tomorrow'.  
 b. Credo che domani, a Gianni, QUESTO<sub>F</sub> gli dovremmo dire.  
 c. Credo che QUESTO<sub>F</sub>, a Gianni, domani, gli dovremmo dire.

Rizzi (1997) argues that, in the examples above, both *domani* 'tomorrow' and *a Gianni* 'to Gianni' are topics, which can sandwich the focus (a; Top-Foc-Top), can both precede the focus (b; -Top-Top-Foc) or both follow the focus (c; Foc-Top-Top).<sup>8</sup> Examples like these lead to the generalization that topics can be recursive in Italian, but also generally in Romance (see Casielles-Suárez 2004 for Spanish, Vallduví 1990 for Catalan).

Note that the idea that a topic can iterate and that a focus cannot is also present in the interpretive effects that the criterial [Top] and [Foc] heads communicate to the interfaces. This is because a [Foc] head gives rise to a partition of the sentence between focus and presupposition (XP on Spec,XP is the focus and its sister is the presupposition), and presuppositions cannot contain a focus because they can only "specify given information" (Rizzi 1997, p. 297) – therefore cannot contain a focus in it. A [Top] head will divide the sentence into a topic and a comment; a comment, according to Rizzi, is "an open sentence predicated of the topic and introducing new information" (Rizzi 1997, p. 285). Another topic-comment can occur inside a comment because the information in the comment can be further sub-specified (cf. Rizzi 2014, p. 37).

So, according to Rizzi's initial proposal, it is possible for a topic to follow a focus in Italian. The author, however, does not discuss any differences between the two topics,

<sup>8</sup> In Rizzi's original examples *domani* and *a Gianni* were also interchanged on each of the examples (e.g. in (6-b), *a Gianni* could precede *domani*). We think that having one example of each of the combinations is enough for our discussion here.

nor does he give a context which would help to clarify their precise discourse status. Several authors have subsequently given some attention to this matter (see Benincà 2001; Benincà and Poletto 2004; Frascarelli 2000; Frascarelli and Hinterhölzl 2007 for works in the Cartographic Project; see Brunetti 2004b, 2006 for a more pragmatic approach). The general consensus is that the two topic positions host different types of topics. In general terms, the topic that *follows* the focus must be given (old information; also called “familiar” in Frascarelli and Hinterhölzl 2007) – in any case, it cannot be a contrastive topic.<sup>9</sup>

As I mentioned in the chapter on Brazilian Portuguese (see particularly section §3.5), the interpretive properties of topics is still a controversial subject, especially when considering topics other than contrastive. Still, several studies in Romance languages have taken up the endeavor of proposing a more fine grained characterization of their discourse roles, usually having as a point of departure configurations with left and/or right dislocations. Frascarelli and Hinterhölzl (2007, henceforth F&H 2007), based on data from an Italian corpus, argue that three types of topics can be differentiated according to their discourse roles and the prosodic contours. Below are the characteristics of the three types of topics put forward by the authors:

- a. A *shifting topic* is “what the sentence is about” (cf. Reinhart 1982), and therefore has a [+aboutness] feature; they are also defined as “newly introduced, newly changed or newly returned to” by the authors, based on a definition proposed by Givón (1993). They are realized by a L\*+H contour.
- b. A *contrastive topic* introduces alternatives (without impact in the focus value), and create oppositional pairs to other topics; realized by a H\* tone.
- c. *Familiar topics* are a given or accessible constituent, typically destressed and pronominal; furthermore, familiar topics can iterate, in which case are called *continuing topics*. Also, they are always realized by a L\* tone.

Furthermore, the authors observe that, in sentences with multiple topics, they systematically appear in a specific order. So sentences can host multiple topics, but crucially it is not the case that any topic type can occupy any position. Let’s take a look at some of the data discussed in the paper. In (7), the speaker has been talking about English courses in general; she utters the sentence below at the end of the conversation, and talks about her relation to English in particular (topics are underlined in the examples

9 But see Benincà and Poletto (2004) for an alternative view, which argues that the post-focal topic is part of the focus.

below). F&H argue that this a sequence of shifting topic (*io*, ‘I’) > familiar topic (*inglese* ‘English’):

- (7) Io, inglese non l’ avevo mai fatto.  
 I English not ACC.CL have never done  
 I never studied English before? (F&H 2007, p. 94)

Moreover, when a shifting topic and a contrastive topic co-occur, the order is shifting > contrastive topic (no context was given for this example):

- (8) Io, una cosa che ho trovato positiva, è stata la comprensione.  
 I one thing that have found positive be been the comprehension  
 ‘As for me, something that I considered as positive was the comprehension part’.  
 (F&H 2007, p. 96)

Finally, there is only one example in the paper where it is explicitly indicated that a a topic follows a (contrastive) focus. *Il discorso* ‘the discourse’ below is analyzed as a familiar topic, and also clitic right dislocated (no context was given for this example):

- (9) L’ ha sempre tirato fuori LUI<sub>F</sub>, il discorso.  
 ACC.CL has always taken out he the discourse  
 ‘It is him who always took this topic’. (F&H 2007, p. 97)

With data like the above in mind, Frascarelli and Hinterhölzl (2007, p. 97) propose then a new split-CP, which puts forward a hierarchy between the topic types:

- (10) [ShiftP [+aboutness] [ContrP [FocP [FamP\* [IP

Shifting topics occupy the highest topic position in the left periphery, while familiar topics are the only ones that can follow a focus. Moreover, shifting and contrastive topics are not recursive. Familiar topics can occur multiple times in the clause, in both pre- and postverbal positions, via Clitic Left Dislocation (CLLD) and Clitic Right Dislocation (CLRD).

Turning to Rizzi’s examples that motivated the postulation of more than one topic projection in the left periphery (see (6)), F&H confirm that it is indeed possible to have a topic both preceding and following a focus in Italian. However, crucial for F&H is that the topic that follows the focus can only be interpreted as *familiar*. Consider the examples below, repeated from F&H (2007, p. 102):<sup>10</sup>

<sup>10</sup> Frascarelli and Hinterhölzl (2007) don’t indicate focus in the examples. Based on their analysis, I suppose that the focus is (11) is *questo* ‘this’, as in Rizzi’s original examples.

- (11) a. Credo que domani, a Gianni, questo gli dovremmo dire.  
 I.believe that tomorrow to G. this DAT.CL we.should say
- b. Credo que domani, questo, a Gianni gli dovremmo dire.  
 I.believe that tomorrow this to G. DAT.CL we.should say  
 ‘I believe that we should say this to Gianni tomorrow’.

For Frascarelli and Hinterhölzl (2007), *a Gianni* ‘to Gianni’ is a shifting topic in (11-a), but a familiar topic in (11-b). The discourse status of *domani* ‘tomorrow’ is not discussed, however. Following this analysis of *a Gianni*, and based on the hierarchy the authors proposed (10), *domani* could be either a contrastive or a shifting topic in (11-b). So the discourse role of *domani* in (11-a) cannot be clearly deducted based on the hierarchy they propose, since there doesn’t seem to be a higher topic position than ShiftP, which is already occupied by the (shifting) topic *a Gianni*.

That different interpretive categories pattern with positional differences jibes well with the Cartographic Project’s proposal, since different discourse-related features are taken to project their own phrase. One has, however, to agree with the pragmatic distinctions proposed by F&H, and we know from the literature that this is very hard when it comes to topics. Moreover, some authors have pointed out that the few syntactic distinctions that seem to exist between the topic types (e.g. only familiar topics can be right dislocated) are reflexes of their interpretation only – so purely based on contextual cues (Cruschina 2010a, p. 56). Furthermore, Cruschina also observes that the virtual unlimited number of familiar topic positions doesn’t seem to fit into the fixed hierarchy proposed by Frascarelli and Hinterhölzl (2007).

The question that emerges now is that if there are different syntactic positions based on a semantico-pragmatic distinction of topics, could the same thing be done for different types of focus (e.g. information vs. contrastive)? In the next Section we are going to look at Belletti’s (1999; 2001; 2004) proposal, which argues for two different syntactic positions for two different types of foci.

### 6.1.2 Two FocPs in Italian

#### Two foci, one position

A focus position in the left-periphery where foci move to seem plausible for fronted foci, but a simple question arises: How is an *in situ* focused object, for instance, analyzed in the literature of the Cartographic Project? Let’s first look at some data. It is widely acknowledged that the canonical word order in Italian (and Romance, in general) is SVO; so, in (12), the object is focused *in situ* (at least at the surface):

- (12) Ho letto [il tuo LIBRO]<sub>F</sub> (non il suo).  
 have read the your book not the his  
 ‘I read your book, not his’. (Rizzi 1997, p. 287)

Rizzi (1997, p. 287) (briefly) mentions that sentences like (12) should also be analyzed via movement of the object *il tuo libro* ‘your book’ to Spec,FocP, but at LF. So there could be covert movement at LF of all foci to FocP in the CP area. This analysis doesn’t go without problem, however. Frascarelli (2000, p. 86) notes that an LF account would run into problems at the interfaces, since a focused XP would covertly move to Spec,FocP in the left periphery, but would have to receive its phonological properties (i.e., main stress) *in-situ*. Consider (13), where *Luigi* is focused *in situ*:

- (13) I saw LUIGI<sub>F</sub> at the cinema (not Mario). (Frascarelli 2000, p. 85)

The question is: How can the main prominence be assigned to the focused phrase if the phrase will only be interpreted as focus at LF? Recall that in Cartography the T-model of grammar is assumed, where LF and PF don’t communicate. If the [Foc] feature is checked at LF, it cannot be visible at PF without the mediation of syntax.

### Two foci, two positions

The proposal that followed was one argued for in Belletti (1999, 2001, 2004a), which follows the one-to-one correspondence between position and interpretation. In a nut-shell, Belletti’s proposal is that there are, in fact, two focus positions in the clause, but they crucially host different types of focus (so something not so different from what has been proposed for topics by Frascarelli and Hinterhölzl 2007). The outline is that the low IP area (right above vP/VP) has discourse related projections parallel to the ones in the CP area. In this sense, a lower FocP is assumed, where *information* foci move to. This is (to my understanding) the position of postverbal (*in situ*) focused objects, although objects are rarely discussed in the works that assume a low focus position<sup>11</sup>. The structure bellow is the representation of the functional projections of the low IP area proposed in Belletti (2004a), exactly parallel to the ones assumed for the CP area (IP node added by me in order to indicate where are we in the structure if one don’t necessarily assume the functional projections X-bar schema):

- (14) IP ... [TopP [FocP [TopP [vP (Belletti 2004a, p. 25)

<sup>11</sup> But consider Brunetti’s 2004 dissertation, the first work since Rizzi (1997) to discuss and provide ample evidence that focus is interpreted *in situ* in Italian, the case of postverbal objects.

Belletti's main argument for such low focus position comes from subject inversion in Italian, where a focused subject surfaces postverbally:

- (15) a. Chi è partito/ ha parlato?  
           ‘Who left/spoke?’  
       b. E’ partito/ ha parlato GIANNI<sub>F</sub>.  
           has left       has spoken Gianni  
           ‘Gianni left/spoke’. (Belletti 2004a, p. 21)

The question-answer pair above illustrates that subjects surface in a lower position when they are interpreted as information focus, like *Gianni* is in (15-b)<sup>12</sup>. Belletti argues that postverbal subjects must be in a lower syntactic position, because they follow low adverbs like *completamente* ‘completely’, and they can also be followed by even lower elements, like PPs.

Another piece of data that motivated a low focus position for information focus comes from the interaction between focused postverbal subjects and objects. When the subject conveys information focus in a transitive sentence, the object has to be clitic right dislocated, indicated by the mandatory occurrence of the clitic in (16-a). Belletti assumes that the right dislocated *il giornale* ‘the newspaper’ fills the clause internal Topic Phrase.

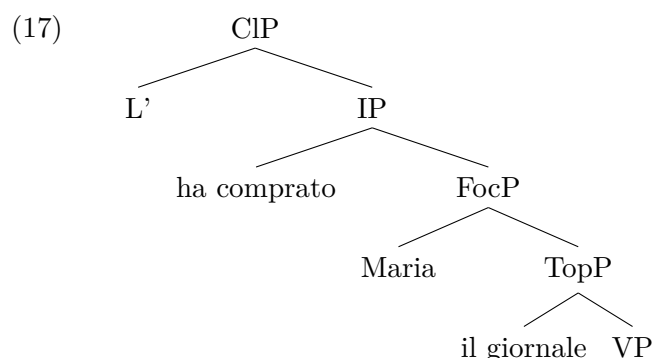
- (16) Q: Chi ha comprato il giornale?  
           ‘Who bought the newspaper?’  
       a. L’       ha   comprato MARIA<sub>F</sub>, il   giornale.  
           ACC.CL have bought   M.       the newspaper  
       b. #Ha   comprato MARIA<sub>F</sub>, il   giornale.  
           have bought   M.       the newspaper  
           ‘Maria bought the newspaper. (adapted from Belletti 2004a, p. 28)<sup>13</sup>

There are several points that need to be observed here. The first one is that *Maria* is interpreted as information focus in both (16-a) and (16-b) (a contrastive focus is available only for (16-b), we’ll return to this later). Second, sentence (16-a) is the only acceptable answer in this context exactly because the object *il giornale* ‘the newspaper’ is clitic

12 A postverbal subject can also be interpreted as a topic, with a specific “downgrading intonation” (always preceded by comma in Belletti’s examples). A second piece of evidence for such postverbal subject topics is that they occur in wh-questions in Italian (the wh-element being the focused element in the sentence).

13 I made two adaptations to the original examples in (16): I indicate that Maria is focused in (16-a), which Belletti reserves only to contrastive foci in her paper; and instead of a star for (16-b), I put a hashtag, since the sentence is acceptable with a contrastive interpretation of *Maria* (as I will discuss momentarily).

right dislocated, and the presence of the clitic fulfils Case requirements for this structure. The analysis proposed by Belletti for (16-a) goes as follows: the object moves to the clause internal TopP (below FocP), the clitic is raised to a position where it checks case, crucially a position “in the higher portion of the clause” (outside vP, in any case), and the subject *Maria* moves to the clause internal FocP above the VP. The fact that the clitic is “responsible” for checking case is what makes this structure acceptable, because then the object can move to the low TopP without the interference of the focused subject.<sup>14</sup> The structure below is based on the one proposed in Belletti (2004, p. 29; labels added):



Such an analysis cannot be extended to (16-b). Since the clitic is not there to check case, the object *il giornale* ‘the newspaper’ will have to fulfil the Case requirements. But in its way there, it cannot avoid the interference of the focused subject *Maria* that sits in the FocP. This structure is not possible with information focus interpretation of the subject exactly because the subject has moved to a clause-internal position and this prevents the object from raising to check its case.

So the data just discussed, together with the already mentioned syntactic properties of postverbal subjects in Italian (they surface after certain adverbs and PPs), are taken as evidence by Belletti to argue that, in fact, there is another focus position in the internal periphery of the clause. Since in Cartography there must always be a syntactic position dedicated to a discourse-related function, a lower Focus Phrase which hosts a specific type of focus (information focus) is motivated. Belletti’s proposal is thus that there are two focus projections in the clause: a high one, at the CP layer, and a low one, at the low IP layer. Crucial to her account is that the high and low FocPs host “different”

<sup>14</sup> Brunetti (2004b, p. 135) points out, however, that there is an alternative analysis to this, following Chomsky (2001), where the object doesn’t have to move to check Case. The point is that Belletti’s argumentation seems to work only if one also assumes a certain syntactic analysis for Case checking. I refer the reader to the discussion in Brunetti (2004b, pp. 134–135) for more detail.

foci: the low FocP hosts informational focus, as the postverbal subject in (15-b), while the higher FocP hosts contrastive focus, like the fronted object in (19).

So in Belletti's proposal, the main argument for two different landing sites for foci is based on an interpretive effect. Several authors have already observed that preverbal subjects are not felicitous in answers to wh-questions (cf. Antinucci and Cinque 1977; Belletti 1999; Calabrese 1992; Cardinaletti 2001):

- (18) a. Chi è partito/ ha parlato?  
           'Who left/spoke?' (Belletti 2004a, p. 24)  
       b. #GIANNI<sub>F</sub> è partito/ ha parlato.  
           Gianni has left has spoken

The preverbal subject *Gianni* is infelicitous in this context exactly because such context requires an information focus, and preverbal subjects in Italian never bear such interpretation.

As an argument in favor of Belletti's proposal, it has been extensively observed that fronted foci are often interpreted contrastively in Romance (Belletti 2001, 2004a; Benincà and Poletto 2004; Rizzi 1997, for Italian; López 2009; Zubizarreta 1998, for Spanish; Kato and Raposo 1996; Miotto 2003, for Brazilian Portuguese). This has been particularly claimed for Italian, as (19) illustrates:

- (19) A: La felpa, l'ha vinto Gianni.  
           the sweatshirt it has won G.  
           'Gianni won the sweatshirt'.  
       B: No, [la MAGLIETTA]<sub>F</sub> ha vinto Gianni.  
           No the T-shirt has won G.  
           'No, Gianni won the T-shirt'. (Brunetti 2004a, p. 99)

The focused object is fronted to the left-periphery of the clause in (19), bearing a contrastive/corrective focus interpretation.

It is also important to point out that focused preverbal subjects are felicitous if they convey contrast:

- (20) Q: Secondo te, Maria sarà stata brava a parlare alla cena di beneficenza?  
           'According to you, did Maria speak well at the charity banquet?'  
       A: VERONICA<sub>F</sub> ha parlato.  
           V. has spoken  
           'Veronica spoke.' (Bocci 2013, p. 32, fn. 26)

Several scholars have pointed out, however, that contrastive foci *may* move to the left-periphery of the clause in Italian, but are certainly *not required* to (Brunetti 2004a; Cruschina 2012; Rizzi 1997; Samek-Lodovici 2006, 2015, e.g.). Brunetti (2004a) discusses several examples where a contrastive focus occurs in a low/postverbal position, like the object *la maglietta* ‘the T-shirt’ below:<sup>15</sup>

- (21) a. La felpa, l’ha vinta Gianni.  
           ‘Gianni won the sweatshirt’  
       b. No, Gianni ha vinto [la MAGLIETTA]<sub>F</sub>.  
           No G.       has won   the T-shirt  
           ‘Gianni won the T-shirt’. (Brunetti 2004a, p. 58)

Importantly, this applies regardless of the syntactic category of the focused element: Not only objects can surface in a low position when interpreted contrastively, but also subjects. A contrastive interpretation of a postverbal focus is also available for (16-b), repeated for convenience:

- (22) Ha comprato MARIA<sub>F</sub>, il giornale.  
       has bought M.       the newspaper  
       ‘Maria bought the newspaper’. (Belletti 2004a, p. 28)

So the contrastive postverbal subject *Maria* above poses a problem to the assumption that contrastive foci always move to the FocP in the CP left periphery, since, at least in surface structure, they are not in the left periphery.

Recall that (22) was part of Belletti’s argument for positing a Focus Phrase in the periphery of vP, because since such a sentence did not have a clitic, the object would have to check Case, and this was blocked by the subject in the low FocP. If *Maria* is interpreted contrastively, though, the sentence is felicitous.

This apparent problem is in fact taken as another piece of evidence that there is indeed a FocP at the periphery of vP. The gist of the analysis is that contrastive foci always move to a high FocP, so they don’t sit in an intermediate FocP that blocks the object from checking its Case. Thus, Belletti assumes that the contrastive foci in (22) moves to the high FocP (the only possible landing site for contrastive focus), the object *il giornale*

15 The analysis of *la maglietta* as contrastive focus in (21-b) has also been challenged. López (2009, p. 56) claims that all contrastive foci are in the left periphery in Romance (he mainly looked at Catalan, Spanish and Italian data). He argues that, in cases like (21-b), the presence of a contrastive particle like *no* (or any other “contrast inducing particles”, such as *but*, *on the contrary*, etc.) is obligatory, and is actually what creates the contrastive effect and “introduces several possible variables”. *La maglietta* in (21-b) is in fact analyzed as information focus by López, and the contrastive import of such sentence is created by the presence of *no*.

is topicalized to the TopP below FocP, and finally there is remnant movement of IP to the TopP in the left periphery. The final structure proposed by Belletti (2004, p. 29) is the following:

- (23) ... [[IP<sub>k</sub> e<sub>i</sub> ha comprato e<sub>j</sub>]Top [[ MARIA] Foc] [[il giornale] Top] ... IP<sub>k</sub>

As Brunetti (2004b, p. 133) observes, it is not clear what is the trigger for remnant movement of IP to the topic position. She also raised the question of what prevents non-focused IPs from generally moving to (one of the) Topic Phrases. Specifically, why the IP following a contrastive focus in the high FocP is not also “topicalized” (i.e. raised to a topic position below the focus position), since its pragmatic status is the same as the one in (22)? There is no reason why an analysis that posits that the remnant movement of IP targets a Topic position because it is “not focused” shouldn’t apply to all sentences in which a focus that has moved to the left periphery and its sister is backgrounded.<sup>16</sup>

One last point that Belletti (2004a) discussed is whether the low Focus Phrase violates the uniqueness of focus proposed by Rizzi (1997), since there would be a FocP in the CP and another FocP in the IP. Belletti concludes that it is not possible to have two foci in the same clause in Italian (Belletti 2001, p. 39). (24) is not felicitous if we try to assign a contrastive focus interpretation to *A Gianni* ‘to Gianni’ and information focus to *un libro* ‘a book’:

- (24) \*<sub>F</sub>[A GIANNI]<sub>F</sub> ho regalato [un LIBRO]<sub>F</sub>.  
to G. have given a book (Belletti 2004a, p. 40)

That two focus phrases are available therefore does not mean that they can both be active at the same time in the clause. Belletti argues that the focus uniqueness condition is a more general constraint of grammar, and that the distinction between contrastive and information focus doesn’t affect it. An additional piece of evidence for this is that left peripheral focalization is incompatible with an *wh*-interrogatives in Italian – *wh*-elements

16 Note that Belletti doesn’t explicitly say that movement of IP to the topic position is because it is not focused, but this is implied in her analysis. Brunetti specifically says that the IP in sentences like (22) is background, and it is plausible that it thus moves to a Topic phrase (cf. discussion in Brunetti 2004b, p. 33). I would just like to point out at this point that in this dissertation we don’t subscribe to an analysis that considers that background and topics are the same thing. There are a few reasons for that: One, there is not consensus on what a topic really is, but it is very clear what a background is – the non-focused part of the sentence; Second, even if one agrees that a topic is “what the sentence is about”, in a sentence like (i) topic and background don’t coincide:

(i) (As for) John, I LIKE<sub>F</sub> him.

*John* is the topic, but the background is composed not only by *John*, but also by *I* and *him*.

are considered to behave like foci in many regards, and taken to move to the specifier of the FocP in cartography.

### Open ends

Let's recap our discussion so far of the Italian data. Contrastive foci can surface both in the left periphery of the clause (cf. (18-b), (19)) or postverbally (cf. (12), (13), (21-b), (22)). Information foci, on the other hand, seem to only surface postverbally (cf. (15-b), (16-a)). Note that, at a first glance, this seems incompatible with the “one position, one interpretation” idea of the Cartographic Project, because one type of interpretation, namely contrastive focus, can surface in two different positions. One solution that has been proposed by Rizzi (1997) was that in fact all foci could move to the FocP in the left periphery of the clause, and the ones that are pronounced *in situ* would actually have raised there at LF, but could still be pronounced *in situ*. This proposal was apparently not so popular in the following works in Cartography (see the discussion of the problems with this account at the beginning of this Section). What was then proposed, and followed by much subsequent work (with the exception, to the best of my knowledge, of Benincà and Poletto 2004; Bocci 2013) was the analysis of Belletti (1999, 2001, 2004a), which postulated a second Focus Phrase (along with all the other functional projections of CP) at the left periphery of vP.

Belletti's proposal then follows the one-to-one correspondence between syntactic position and interpretation. But notice that the low Focus Phrase postulated in Belletti (1999, 2001, 2004a) is derived very differently depending on whether the focus is interpreted as contrastive or not. Table 6.1 presents a summary of the four relevant data points that we discussed in this Section, with the interpretation that they can receive and to which Focus Phrase they would move to following their interpretation. I would like to point out two things still regarding the different positions (fronted or not)<sup>17</sup> for different focus interpretations (information vs. contrast). The general question is that, if there are so different derivations for the same surface order, there should be some syntactic difference that would tease the two positions/interpretations apart.

Let's concentrate first on the case of (a), an *in situ* focused object. *La maglietta* ‘the T-shirt’ can have both contrastive and information interpretation in this surface order,

17 It is difficult to choose a term that applies both to a fronted object and a preverbal subject at the same time, since the object has clearly moved to a higher position in the clause, whereas with the subject it is not so clear. Whether a preverbal subject really moves to a specific Focus Position higher than its canonical position (Spec,TP) is still a matter of debate; nothing hinges on the specific analysis of preverbal subjects here, as long as they surface preverbally. Also, the term *in situ* is usually not used in Cartography (to my knowledge, exceptions are Cruschina 2012 and Bocci 2013).

| Example                                           | Interpretation | Position (cf. Belletti 2004) |
|---------------------------------------------------|----------------|------------------------------|
| (a) Gianni ha vinto [la MAGLIETTA] <sub>F</sub> . | contrastive    | high FocP                    |
|                                                   | information    | low FocP                     |
| (b) [La MAGLIETTA] <sub>F</sub> ha vinto Gianni.  | contrastive    | high FocP                    |
| (c) MARIA <sub>F</sub> ha telefonato.             | contrastive    | high FocP                    |
| (d) Ha telefonato MARIA <sub>F</sub> .            | contrastive    | high FocP                    |
|                                                   | information    | low FocP                     |

**Table 6.1:** Recap of discussed Italian sentences, their possible interpretation and analysis.

but it will move to different a different FocP according to the interpretation it receives. In the case that it is interpreted contrastively, particularly, it will move to the high FocP, and will be followed by remnant IP movement. This is also the case for (d), in the case it receives a contrastive interpretation. Note, however, that these two sentences don't actually have the same surface order: In (a) there is canonical order, i.e. SVO, while (d) presents VS order, with the subject at the end. Still, both are derived the same way. To my knowledge, there is no syntactic evidence that could tease these two derivations apart.

Examples (b) and (c) can only have a contrastive interpretation in Italian, and are thus analyzed as *la maglietta* and *Maria* have moved to the Focus Phrase at the left periphery of the clause. Again, (b) and (c) have very different surface structures, since (b) is a sentence with a fronted object, while (c) follows the canonical order of the constituents in Italian SV(O). So, while the focused constituents in (a) and (d) on Table 6.1 are analyzed similarly in the sense that they both allow two interpretations and that, according to the interpretation, they move to different focus projections, still both sentences are very different at the surface. Moreover, and perhaps even more remarkable, is that there is not a clear syntactic difference that would allow us to really test and tease apart the two derivations (high vs. low FocP) for the same surface order (e.g. *in situ* object, (a)).

The last thing I would like to mention is that it is not the case that fronted foci cannot be interpreted as information focus in all Romance languages. This is clearly the case in Standard Italian (as we have extensively discussed) and Standard European Spanish (see e.g. Zubizarreta 1998), but it doesn't apply to French (which mostly employs a cleft strategy to mark focus), European Portuguese (which very rarely employs focus dislocation, cf. Costa 2001), Brazilian Portuguese (cf. Kato and Martins 2016, we'll see more in the next Section) and other varieties of Spanish. For instance, a series of recent experimental studies has showed that non-Standard varieties of Spanish largely accept

an information focus interpretation with fronted foci (see Jiménez-Fernández 2015; Leal et al. 2018; Vanrell and Fernández-Soriano 2013, 2018).

Through an acceptability judgement experiment, Jiménez-Fernández (2015) investigated the differences between Standard Spanish (SS) and Southern Peninsular Spanish (SPS; Andalusian and Extremaduran) regarding the position of information focus. The results showed that, while there is a preference for having postverbal information subjects in both varieties, the preverbal option was not considered ungrammatical (rated ‘OK’ by 48% of SPS, and 53% of SS). In the case of fronted objects, there was a clear difference between SS and SPS: SS rated fronted objects relatively low (18% rated it ‘OK’), but SPS rated it ‘OK’ in 74% of the cases (see Jiménez-Fernández 2015, pp. 128–129). A clear-cut difference between the realization of contrastive and information focus doesn’t seem to be so strong in all Romance languages.

## 6.2 Focus Movement in Brazilian Portuguese

In the last Section we saw that focus fronting is possible in Italian, and that fronted foci always receive a contrastive interpretation in this language. We briefly mentioned that this is also the case for standard Spanish (cf. López 2009; Zubizarreta 1998). Turning to other Romance languages, it is widely acknowledged that European Portuguese and French don’t allow for focus fronting (see Costa 2000 for European Portuguese, and Belletti 2005 for French). What is the picture in Brazilian Portuguese?

We already saw in section §3.2 that BP mainly marks focus *in situ*, very similar to English (cf. Kato and Martins 2016), but a fronting strategy is also possible. Miotto (2003) is the most prominent work in the BP literature that proposed that focus in BP can be analyzed in light of the Cartographic Project. Following Belletti (2001, 2004a), he assumes that Brazilian Portuguese also has two projections for focus. One is the clause internal FocP, to which an information focus interpretation is assigned:

- (25) Q: O que o João comprou?  
           ‘What did João buy?’  
       A: O João comprou [um CARRO]<sub>F</sub>.  
           the J. bought a car  
           ‘João bought a car’. (Miotto 2003, p. 172)

Miotto observes that, as in Italian, this low focus can not only receive an information focus interpretation, but also a contrastive one, as in (26). Moreover, he also claims that

*in situ* foci can have an exhaustive interpretation, following the definition in É. Kiss (1998). An exhaustive focus has a reading [*x* and only *x*] (cf. Miotto 2003, p. 174).

- (26) O João comprou [um CARRO]<sub>F</sub>, e não um avião.  
 the J. bought a car and not a plane  
 ‘João bought a car, and not a plane’. (Miotto 2003, p. 173)

Fronted foci, on the other hand, can only be associated with a specific semantico-pragmatic effect, like contrast or exhaustivity.<sup>18</sup> As we briefly discussed in section §4.5.2 *aquele carro* ‘that car’ is unambiguously interpreted as focused in (26), and receives a contrastive interpretation:

- (27) [Aquele CARRO]<sub>F</sub> o João comprou *t<sub>i</sub>* (e não aquele avião).  
 that car the J. bought and not that plane  
 ‘John bought that car (and not that plane)’. (adapted from Miotto 2003, p. 176)

Miotto (2003) extends to Brazilian Portuguese the same analysis that was proposed for the Italian data in Belletti (2004a). He argues that, since different interpretations are associated to *in situ* and fronted foci, this is evidence that the BP data can also be analyzed as having two FocPs, one in the left periphery of CP and another one in the left periphery of vP. Although he uses the term *in situ* in a descriptive way (i.e., it only indicates that one cannot see that the focus has moved in the surface structure), he ends up concluding that there is no *in situ* focus: A focused constituent is invariably moved to Spec,FocP (Miotto 2003, p. 187).

However, recall from our discussion in section §3.2.2 that Brazilian Portuguese only marginally allows for subject inversion (postverbal subjects), which was the point of departure of Belletti’s (2004) proposal. Postverbal subjects are only allowed with unaccusative verbs (examples from Kato and Martins 2016, p. 26):

- (28) Q: Quem caiu?  
 ‘Who fell?’

18 Mirative fronting is also possible in BP, as already pointed out in footnote 16. While we do not address this type of fronting in this dissertation, it is interesting to point out that these examples are also possible (example from Cruschina and Remberger 2017, p. 519).

(i) Imagina só! **Por essa bestinha da Júlia** ele foi se apaixonar!  
 Imagine only for this stupid of.the J. he went REFL fall.in.love  
 ‘Just imagine! He fell in love with that idiot of Júlia!’

- A: Caiu [uma CRIANÇA]<sub>F</sub>.  
 fell a child  
 ‘A child fell’.
- (29) Q: Quem foi que viu um gato?  
 ‘Who saw a cat’?
- A: #Viu [uma CRIANÇA]<sub>F</sub>.  
 Saw a child

In the paradigm above, subject-verb inversion is possible with the unaccusative verb *cair* ‘to fall’, but not with the transitive verb *ver* ‘to see’. So moving the subject to the right periphery of the clause is not a common strategy to mark focus in Brazilian Portuguese, even in the case of information focus.

Also the interaction between these low subjects and objects and clitic placement was taken as piece of evidence by Belletti to posit a FocP in the left periphery of vP. Such generalization doesn’t extend to Brazilian Portuguese. First, subjects cannot surface postverbally with transitive verbs, so it is impossible to test the interaction between focused postverbal subjects and right dislocated objects. Second, as we already discussed in section §3.1.2 Brazilian Portuguese doesn’t display a rich paradigm of clitics, so objects are dislocated but not resumed by clitic pronouns. A sentence like the one below, where the subject is postverbal and the object is right clitic dislocated is ungrammatical in BP:<sup>19</sup>

- (30) \*Comprou- o MARIA<sub>F</sub>, o jornal.  
 bought it.CL M. the newspaper

So, even if one ignores some inherent problem of the analysis of two Focus Phrases (e.g. how different derivations can be assigned to the same interpretation, see discussion in subsection §6.1.2), there is very little (if none) evidence for a low focus position in Brazilian Portuguese.

Kato and Raposo (1996) observed that it is possible to have focus fronting in Brazilian Portuguese where an information focus reading is expected, like in answers to wh-questions:

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19 In Italian, the clitic precedes the verb (see example (16-a) in section §6.1.2). In Brazilian Portuguese, in the few cases where clitics are used, they cannot appear at the beginning of a sentence, that’s why I placed it after the verb (which still doesn’t improve the acceptability of the sentence). This sentence is probably grammatical in European Portuguese, which still has a rich clitic system similar to the Italian and Spanish ones. It is somehow a sensitive matter to which extend the sentences of the European Portuguese grammar can be considered grammatical in BP. As a native speaker of BP, I judge the sentence (30) ungrammatical and thus mark it as such.

- (31) Q: Quanto custou seu carro?  
 ‘How much did your car cost?’  
 a. \$5.000<sub>F</sub> me custou o carro.  
 \$5.000 to-me.CL cost the car  
 ‘The car cost \$5.000’.

The authors note, however, that such fronted NPs act like *affective operators*, which are associated to “negative words or phrases, exclamative or emphatic phrases and phrases marked by overt specifiers such as *só* ‘only’” (Kato and Raposo 1996, footnote. iv). Affective constructions (or “evaluative constructions” cf. Ambar 1999, or “evaluative exclamatives” according to Costa and Martins 2011) are a special kind of focus fronting, that have an extra import of surprise or unexpectedness.<sup>20</sup>

Overall, we saw in this section that focus movement can be used to mark focus in Brazilian Portuguese (contrary to its sister European Portuguese). In discussing the motivation for having two focus positions in BP, as argued Belletti (2004) for Italian, I observed that the syntactic evidence for a low focus position is not present in Brazilian Portuguese. For instance, accusative clitics and postverbal focused subjects are very marginal in BP, and were in the heart of the analysis proposed for Italian. It seems at this points that most of the proposals accounting for information structure phenomena in Romance languages are very well suited for explaining Italian and Spanish facts. When one looks outside of these two languages, the arguments don’t seem to be so tenable anymore.

### 6.3 Cartography vs. the Generalized F-Movement Principle

I would like to begin by emphasizing that my main concern in this dissertation is not to draw a thorough comparison between my proposal and that of Cartography. In order to do that, a more in-depth investigation of Cartography would be needed on my part, and I preferred to concentrate on my proposal itself, and not on the possible consequences it could have to an account that assumes specific functional projections in the left periphery. I would like, nevertheless, to take a moment to point out some of differences between

20 Cruschina and Remberger (2017) note that exclamative fronting is similar, but not exactly the same as mirative fronting. The main differences are: exclamative FF is restricted to scalar elements, the propositional content of exclamatives is presupposed, while it is asserted in mirative FF. See the discussion in Cruschina and Remberger (2017, p. 526) for more detail.

Cartography and my proposal, and the cases in which GeFMoP seems preferable to account for the data.

The point of departure of the present chapter was to discuss whether the interpretation restrictions that we saw in chapter §4 could be explained by the syntax of focus movement in Romance. More specifically, does the analyses put forward in Cartography predict that there cannot be a contrastive topic in the background of a moved focus? The answer at this point, considering both Rizzi's (1997) and Belletti's (2004) proposals, is not that simple.

First, Rizzi's (1997) proposal that once a phrase endowed with the [Foc] moves to the focus position there is a clear split of the clause into a focus and a presupposition is not so far from what we have observed earlier, namely that focus movement marks its sister as background. Rizzi specifically claims that there cannot be another focus within the presupposition of a focus, so that could also be considered similar to my proposal involving structures with two F-marked phrases. So, at least up to this point, the impossibility of having another element introducing alternatives in the background of a moved focus could be adapted and be explained by a cartographic focus position, probably in terms of the focus uniqueness condition.

However, as pointed out already by Neeleman and van de Koot (2008), the biggest problem in assuming that focusing is about (active) positions, is that one cannot capture the fact that a moved focus cannot precede a contrastive topic. First, the BP data I discussed in section §4.2.2 showed that contrastive topics don't have a specific position in the clause, but rather can sit in many different positions, both "in-situ" (or "lower" in the clause if one prefers) and at different positions at the left periphery. Furthermore, even if one assumes that there is a specific position for foci and for topics in the structure, how does one decide which one is higher? That is, I extensively argued that foci *can* in fact precede contrastive topics in BP, as long as this corresponds to canonical word order. The structure which needs to be excluded is one where a moved focus has a contrastive topic in its c-commanding domain. I don't see a straight forward way in achieving this by fixed projections in the left periphery.

One second important difference is that it is unclear how – if not impossible, as proposed by Rizzi (1997), and reinforced by Bocci (2013) concerning Italian – double focus sentences can be captured under Cartography. As I have discussed in sections §4.6.2 and §5.3, double focus sentences are grammatical in Brazilian Portuguese, and they provide some important evidence that GeFMoP is on the right track. For instance, if GeFMoP makes clear predictions about *moved* F-marked phrases, it is important that we compare such structures with *in situ* F-marked phrases, and particularly if there can

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be real F-alternatives in the sister of an *in situ* F-phrase or not. If a model does not provides us a way to derive such *in situ* double focus structures, it is not clear how a principle on moved F-phrases could be evaluated.

## CHAPTER 7

### Conclusion

This thesis proposed a semantic account for the ordering restrictions between contrastive topic and focus in Brazilian Portuguese. By connecting two proposals from the literature – that focus movement marks its background (Neeleman and van de Koot 2008), and that contrastive topics are interpreted via topic abstraction (Constant 2014) – my account provided a formal analysis for all the (im)possible configurations between CTs and Fs in Brazilian Portuguese.

In order to conclude, I will first provide a summary of the discussion we had throughout the dissertation; second, I'll point out some of the remaining work.

#### 7.1 Summary

After a brief presentation of the basic theoretical assumptions of this dissertation in chapter §2, and an introduction to Brazilian Portuguese morphosyntax in chapter §3, I turned to the subject at the heart of this dissertation: the ordering restrictions of contrastive topic and focus in BP. Chapter §4 first introduced the basic paradigm of the ordering restrictions. I showed that: 1) Both CT+F and F+CT configurations are *in situ*; 2) a contrastive topic can move to a position c-commanding a focus; 3) a focus cannot move to a position c-commanding the contrastive topic. I noted that this paradigm is remarkably parallel to the one observed for Dutch by Neeleman and van de Koot (2008), even though Brazilian Portuguese and Dutch are from different sub-groups of the Indo-European family – which are known to mark (contrastive) topic and focus by different means (pitch accenting in Germanic, syntactic reordering in Romance).

The novel data of contrastive topic and focus in Brazilian Portuguese that I put forward in the dissertation included the basic paradigm of the four (im)possible orderings, but not only that. I further showed that, whenever a phrase interpreted as focus moves, a

contrastive topic cannot follow it. Crucially, this is also observed in sentences in which the focus already precedes the contrastive topic. This kind of example gave us further argument to corroborate a generalization from Neeleman and van de Koot (2008) that I assumed in the dissertation: movement of a constituent interpreted as focus does not mark the discourse function of the moved phrase itself, but rather its sister as background.

One crucial theoretical assumption of this dissertation is that contrastive topics are interpreted following the topic abstraction account from Constant (2014), according to which contrastive topics are F-marked phrases which have moved to a position next to the CT operator position. Once both contrastive topic and focus are treated as F-marked phrases, we can explain the ordering restrictions observed earlier in a logical way. My specific proposal is to impose a more general requirement on movement of F-marked phrases: The sister of a moved F-marked phrase must have a singleton focus semantic value. Because of its general nature, this “Principle” (as I called in the dissertation) correctly derives the interpretation of both *in situ* and moved F-marked phrases, involving contrastive topic, narrow focus and double focus interpretations.

Neither the Generalized F-Movement Principle nor anything else in the present account requires that a phrase *must* move to a position in order to be interpreted as focus (note, however, that this is the assumption for phrases interpreted as contrastive topic, which always have to move to the CT operator position). F-marked phrases can be interpreted *in situ* (cf. Rooth 1992); in such cases, the Generalized F-Movement Principle is trivially met. This gives us a natural account for double focus sentences, which pose a problem for analyses where a constituent *has* to move in order to be interpreted as focus. The singleton focus value requirement only applies in structures where there has been movement of an F-marked phrase; if that is not the case, an F-marked phrase can be in the c-command domain of another F-marked phrase, and both of them can be interpreted as focus, giving rise to a double focus sentence.

The strong prediction of the Generalized F-Movement Principle involves structures where an F-marked phrase has moved. The only interpretation possible for a F-phrase c-commanding another F-phrase is that of a contrastive topic. In this case, the requirement of the singleton focus semantic value in a sentence with a CT is met thanks to the semantics of the CT operator, which outputs a singleton set as its focus semantic value. Thus, by imposing one simple condition on the interpretation of moved F-marked phrases in general, I provided a semantic account for why “a focus cannot move across a contrastive topic”: otherwise the sister of the moved F-marked phrase would not have a singleton semantic value. On the other hand, an F-marked phrase may move, and thereby mark its sister as having a singleton F-alternative. The exact same reasoning

applies regardless of whether there is a CT- $\lambda$  next to the lower F-phrase or not. In the latter case, the Generalized F-Movement Principle derives that the higher focus in a double focus construction may not have been moved, a prediction corroborated by the facts presented in chapter §4.

Given that my proposal makes specific predictions regarding sentences in which there has been movement of an F-marked phrase, one could hypothesize that the data could be explained under a theory of focus or topic movement. Since the most prominent works on focus/topic movement are couched in terms of the Cartographic Project (Rizzi 1997), I presented an overview of this theoretical framework in the last chapter of the dissertation. I pointed out that many of the empirical facts in BP would likely remain unaccounted for under the Cartographic model to information structure, as it does not appear that there is a dedicated position for focus phrases in Brazilian Portuguese; double focus sentences, which are perfectly grammatical in BP too, are additionally hard to explained within the cartographic approach. My aim with this chapter – and with this dissertation in general – was not, however, to investigate every conceivable way in which the empirical facts of the ordering restrictions of contrastive topics and foci could be accounted for in Cartography, or all the (dis)advantages this framework presents, but rather to point to the problems such an analysis would have to address. Above all, I hope to have shown in this dissertation that an approach of focus and contrastive topic constructions in BP (as well as similar constructions in other languages) based on focus semantics is possible and promising.

## 7.2 Outlook

I would like to point out what I believe to be the two principal areas connected to, but only marginally addressed in this dissertation, which may lead the way for future research.

First, the Brazilian Portuguese data I analyzed in the dissertation was not corroborated by experimental methods (and most of the English data discussed has not been either). The sentences were checked with at least one other Brazilian Portuguese speaker; clear experimental results, however, could be use to corroborate or, at least, to point the right direction to the theoretician. It could be investigated, for instance, if speakers have a preference for having a contrastive topic before the focus and, whether they would prefer to front the contrastive topic (i.e. topicalize) in F+CT sentences – as it has been argued to be the only possibility in German. It would be, in general, interesting to test the ordering restrictions in an experiment but – I say this from personal experience – it is

very difficult to control for which phrase will be interpreted as CT and which will be interpreted as focus, as speakers tend to accommodate a lot when they are exchanging information. This definitely remains work for future research.

There is a general lack of literature on contrastive topics in Brazilian Portuguese, thus any research that investigates the precise realization of these categories is a niche for future work. Although I presented an inspection of the intonation of CTs in BP, that work was limited to dislocated phrases. A systematic study of the prosody of CTs and foci in Brazilian Portuguese is still missing. Even if there is a general agreement among scholars that contrastive topics are realized by a rising contour, the exact phonetic cues of this contour have not been defined. Likewise when it comes to sentences with F+CT order: what are the prosodic realizations of CT and F? Does it change from a CT+F sentence? All these questions remain open and can be the starting point of a project that aims at filling the gaps on the study of contrastive topics in Brazilian Portuguese.

## Appendix: Notational Conventions

Constituents marked as contrastive topic and focus are surrounded by square brackets, followed by a ‘CT’-subscript – [ . ]<sub>CT</sub> – and an ‘F’-subscript – [ . ]<sub>F</sub> – respectively. The word bearing the nuclear pitch accent is written in SMALL CAPS.

When data from a different language than English and Brazilian Portuguese are used, the language name is written to the right of the example. These are: Catalan (CAT), European Portuguese (EP), French (FR) and Spanish (SP).

The abbreviations used in glossing examples from non-English languages are given in the table below, following the Leipzig Glossing Rules:

|         |                             |
|---------|-----------------------------|
| 1, 2, 3 | first, second, third person |
| ACC     | accusative                  |
| CL      | clitic pronoun              |
| DET     | determiner                  |
| F       | feminine                    |
| FOC     | focus marker                |
| GER     | gerund                      |
| IMP     | imperative                  |
| INF     | infinitive                  |
| M       | masculine                   |
| PST     | past                        |
| PERF    | perfective                  |
| PL      | plural                      |
| SG      | singular                    |
| TOC     | topic marker                |

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