Assmann, Muriel

Contrastive topics and foci in Brazilian Portuguese : ordering effects and interpretation

Muriel Assmann

CONTRASTIVE TOPICS AND FOCI IN BRAZILIAN PORTUGUESE: ORDERING EFFECTS AND INTERPRETATION

ABSTRACT

This paper discusses the ordering effects of contrastive topics and foci in Brazilian Portuguese. I will show that the distribution of CT and F in BP strikingly parallels that observed for Dutch in NEELEMAN – VAN DE KOOT (2008):1) it is possible for a focus to precede a contrastive topic, as long as this configuration respects the canonical word order of the syntactic constituents, and 2) it is impossible for a focus to move across a contrastive topic. I propose to interpret sentences with a contrastive topic using the Topic Abstraction account (CONSTANT 2014), in which a contrastive topic is simply an F-marked phrase in a specific configuration (more precisely, an F phrase that has raised to the CT-λ position). Building on the Topic Abstraction account, I propose a simple additional condition that captures NEELEMAN – VAN DE KOOT's (2008) generalization for Dutch as well as the BP data: a focus interpretation of the moved F is blocked by the CT-λ, and that's why F>CT is impossible in configurations where one of the Fs has moved.

1 Introduction

In this paper I discuss contrastive topic constructions in Brazilian Portuguese, their position in the sentence in relation to the focus and a semantic model that takes the ordering restrictions into account. It is still a matter of debate whether contrastive topics (CT) and foci (F) can be freely distributed with respect to each other in a sentence. For instance, BÜRING (1997) has observed that a contrastive topic must always precede a focus in German. More recently, WAGNER (2012) reinforced this observation

for German, and argued that the same holds for Italian. English, on the other hand, allows for a focus to precede a contrastive topic, as already noted in Jackendoff (1972).

Brazilian Portuguese (BP) marks focus prosodically and does not seem to resort to syntactic focus marking as often as other Romance languages, which has led some linguists to point out that focusing in BP is similar to English (e.g., Brazilian Portuguese clearly shows post-focal pitch range compression, which has the same function as deaccenting in English; see Kato – Martins 2016). Thus, we might ask whether the distribution of the possible orders of CTs and Fs in BP is similar to the one in English too.

I will show that the distribution of CT and F in Brazilian Portuguese (BP) strikingly parallels that observed for Dutch in Neeleman – Van de Koot (2008). The two main data points that are made in Section 3 are the following: 1) It is possible for a focus to precede a contrastive topic in BP, as long as this configuration respects canonical word order, and 2) It is impossible for a focus to move across a contrastive topic. In Section 4 we present Constant's (2014) Topic Abstraction account, where a contrastive topic is taken to be an F-marked phrase in a specific configuration. Building on the Topic Abstraction account, I propose a simple additional condition that captures Neeleman – Van de Koot's (2008) generalization for Dutch as well as the BP data: A focus interpretation of the moved F is blocked by the CT-λ, which requires that its complement be background. Section 5 develops this idea and proposes a first derivation for the data.

2 The basics

A contrastive topic occurs in a sentence along with a focus. The focus is generally characterized as the new information in response to a question:[1]

(1)   (What did the king buy?)
      The king bought a **HEADDRESS**$_\text{F}$.

In (1) *headdress* answers the *wh*-element in the previous discourse, and bears the nuclear pitch accent of the sentence. Following Rooth (1992), I assume that an F-marked expression *E* introduces f-alternatives, a set of meanings containing all the expressions of the same semantic type as *E* ($[\![E]\!]_\text{F}$). Below is the focus semantic value of (1), a set where the object *headdress* is F-marked and therefore introduces f-alternatives:

(2) $[\![$*The king bought a* **HEADDRESS**$_\text{F}]\!]_f$ = {the king bought a knife, the king bought a headdress, the king bought a sword, ...}

---

[1]   Throughout this paper, **FOCUS**$_\text{F}$ will be indicated by boldfaced small caps, and contrastive topic$_\text{CT}$ will be underlined.

Rooth's system allows us to calculate the f-alternatives compositionally. An F-marked terminal node introduces focus alternatives, which is the set of all the meanings of its semantic type (all individuals if the F-marked expression denotes an individual, all propositions if the clause is F-marked, etc.). If a terminal node is not F-marked, it will not introduce focus alternatives, but it's still considered to have a set of f-alternatives: the singleton set of its ordinary meaning ($[\![E]\!]_o$). That non F-marked nodes also introduce such *trivial* alternatives is necessary in Rooth's theory in order to compositionally calculate the f-value of a sentence: the f-alternatives of each terminal node are combined, resulting in a set that will be the f-value of the mother, and so forth. The f-alternatives of each node are propagated, outputting at the sentence node the f-value for the entire sentence. The details of Rooth's theory involve other machinery, but for our purposes now it suffices to know that the alternatives of a sentence can be calculated compositionally by the accumulation of the alternatives of each of its nodes.

Turning to (3), we have a slightly different configuration: Here, the contrastive topic *Fred* precedes the focus (original example from JACKENDOFF (1972, 261), subscripts added by me):

(3) Q: *What about FRED? What did HE eat?*
    A: <u>*Fred*</u>$_{CT}$ *ate the* **BEANS**$_F$.

Contrastive topics occur in specific contexts: they are used in an answer to a question within a larger strategy of questions (BÜRING 1997; 2003). In the case of (3), for instance, the complex strategy is formed by the sub-questions "What did Fred eat?", "What did Mark eat?", and so on. In this sense, CTs also relate to alternatives, but they are in fact *sets of* sets of meanings. So, while contrastive topics introduce alternatives (as foci do), the ct-alternatives are one "level-up" when compared to f-alternatives. In the specific case of the two examples above, the f-alternatives are sets of propositions, while the ct-alternatives are sets of sets of propositions. Besides the context in which they occur, contrastive topics are also characterized by a specific prosodic contour in English (JACKENDOFF 1972, 259): the "B-accent" realized as a fall-rise (or L+H* L- H\% in ToBI notation; see, e.g., WAGNER 2012). Crucially, this contour differs from that of focus, called the "A-accent", realized as a high pitch accent followed by a low tone (or H* L-L\% in ToBI).

3 Ordering effects

The data put forward in this section show that it is possible for a focus to precede a contrastive topic in Brazilian Portuguese, as long as F>CT order also corresponds to canonical word order. Furthermore, I show that if movement takes place, the

moved element can only be a contrastive topic, and moved foci cannot precede a contrastive topic.[2] Neeleman – Van de Koot (2008; henceforth NVdK) make these same observations for A-bar scrambling constructions in Dutch, arguing that the movement of an element does not turn it into a CT or an F, but that it rather marks its complement as either a background or a comment (or "Domain of Contrast" in the more recent version of the same model in Neeleman – Titov – van de Koot – Vermeulen (2009); Neeleman – van de Koot (2012).

According to NVdK, a focus-background structure can be embedded in a comment (4a), but a topic-comment structure cannot be embedded in the background of a focus, as the ill-formed (4b) illustrates. These two information structure configurations are represented below:[3]

(4)   a.   <u>topic</u> [$_{\text{COMMENT}}$ ... FOCUS [$_{\text{BACKGROUND}}$ ...]]
      b.   *FOCUS [$_{\text{BACKGROUND}}$ ... <u>topic</u> [$_{\text{COMMENT}}$ ...]]

In other words, a topic can contain a focus in its comment, but a focus cannot contain a topic in its background.

The authors then propose the mapping rules in (5) that will apply when movement takes place (Neeleman – Van de Koot 2008, 144):

(5) N_1 a.   *Comment mapping rule*
                  If XP is interpreted as topic, then interpret N_2 as comment.
   XP N_2 b.   *Background mapping rule*
                  If XP is interpreted as focus, then interpret N_2 as background.

The effects of (5) are only observed when movement takes place. If a constituent is marked as background, it cannot contain a topic, according to the ill-formed (4b). Thus, a focus cannot move out of a structure containing a topic. Note that for Neeleman and Van de Koot *in-situ* sentences are not affected by the mapping rules in (5). This is how F>CT is possible if (and only if) corresponding to canonical word order, but infelicitous when movement of a focus across a topic has taken place. In the remainder of this section, I explore in detail the (im)possible configurations where contrastive topics and foci can occur in Brazilian Portuguese, taking the proposal made for Dutch in Neeleman – Van de Koot (2008) as a point of departure.

---

2   Note that this does not mean that foci cannot move: there are cases where foci are fronted, but crucially they cannot have a contrastive topic in their background. I will come back to this observation in Section 4.

3   Neeleman – Van de Koot (2008) usually refer to contrastive topics simply as *topic*. Also, the structures in 4 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 – Titov – van de Koot – Vermeulen (2009) in later work. I also added "..." between the embedded focus and <u>topic</u> to make clear that they do not have to be adjacent to their background or comment.

3.1 A focus can only precede a contrastive topic if it is in base position

Brazilian Portuguese is an SVO language, and in ditransitive sentences the direct object precedes the indirect object. There is little literature on contrastive topics in Brazilian Portuguese. The most prominent work is Menuzzi – Roisenberg (2010), where the authors present a general discussion about information structure, using Brazilian Portuguese sentences. Although to this date no systematic study of the prosody of CTs in BP has been carried out, Menuzzi – Roisenberg (2010), observe that the prosodic contours of CTs and foci in BP are similar to English: a rising-fall intonation for CTs and a falling one for foci.[4]

In the following examples, the contexts are set up in a way that the focus constituent corresponds to the answer to the *wh*-element in the question, and a 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 context, the most "prototypical" instances of CTs and Fs were used. For example, our CTs are definite expressions (see Brunetti 2009 for more on the prototypical characteristics of topics) and bear a rising contour, whereas Fs are often indefinite expressions and bear a falling accent.

Brazilian Portuguese is not different from Germanic and other Romance languages as it always allows for a contrastive topic to precede a focus, regardless of which syntactic constituent they correspond to. In (6) the direct object *feijão* 'bean' is the contrastive topic, which has moved across the focused subject *Eduardo*:[5]

(6) A: *E de sopa, quem é que se serviu?*
         'And the soup? Who has put that on their plate?'
     B: *Bom, eu não sei, mas...*
         'Well, I don't know, but...'
         eu   vi   que   de   [feijão$_{CT}$]$_i$ *o*   **EDUARDO**$_F$ *se   serviu*   t$_i$.
         I   saw   that of   bean   the Eduardo   REFL served
         'I saw that Eduardo put beans on his plate.'

Let us now look at an example of *in-situ* focus preceding an *in-situ* topic, where the order of the focus and the contrastive topic corresponds exactly to their canonical word order in the sentence. In (7), the subject is focused and the object is the contrastive topic, illustrating that an *in-situ* focus can precede a CT in BP:

(7) CONTEXT: 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: What about this samurai sword, who gave it to you?
     B: Well, I don't really remember, but ...

---

4   More on the intonation of CTs and foci in Brazilian Portuguese in Assmann (in prep.)
5   The Brazilian Portuguese data discussed in this paper are from my native speaker intuition, which were mainly elaborated following an oral production experiment with native BP speakers. All the examples have been tested with a second native speaker and there was no conflict in the judgements. Moreover, some of the data are inspired in the examples proposed in Neeleman – Van de Koot (2008).

...	*eu*	*acho*	*que*	**UM PERUANO**$_F$	*me*	*deu*	*esse cocar*	*de índio*$_{CT}$
	I	think	that	a Peruvian	to-me	gave	this headdress	of Indian

'... I think that a Peruvian gave me this Indian headdress.'

Focus movement across a CT, however, results in an infelicitous sentence. (8b) 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 Indian headdress'.

(8) CONTEXT: A knows that B has a good relationship with the king and queen of Morocco, whom B visited a few weeks ago.
   A: What about the queen, what did she give you?
   B: Well, I don't remember, but...

   a.
o	*rei*$_{CT}$	*me*	*deu*	**UM**	**COCAR**	**DE**	**ÍNDIO**$_F$.
the	king	to-me	gave	one	headdress	of	Indian

   b.
#[**UM**	**COCAR**	**DE**	**ÍNDIO**$_F$]$_i$	*o*	*rei*$_{CT}$	*me*	*deu*	t_i.
one	headdress	of	Indian	the	king	to-me	gave	

   '... the king gave me an Indian headdress.'

In other words, it is possible to have an *in-situ* focus preceding a topic, like in (7), but crucially a focus cannot move across a contrastive topic, as illustrated by the infelicitous sentence (8b).

The mapping rules in (5) combined with the information structures in (4) from NEELEMAN – VAN DE KOOT (2008) actually make a stronger prediction than only a ban on movement of a focus across a topic: Movement of a focus makes the interpretation of an element as contrastive topic in its background impossible, regardless of whether the focus originates below or above the CT. This is shown in (9b), where the focus still precedes the contrastive topic after movement has taken place, but the indirect object *pra Maria* 'to Maria' cannot be interpreted as a contrastive topic in the background of the fronted direct object *um beijo* 'a kiss'.

(9) A: And what about João, what did Pedro ask from him?
   B: Well, I don't know, but...

   a.
eu	*vi*	*que*	*o*	*Pedro*	*pediu*	**UM**	**BEIJO**$_F$	*pra*	*Maria*$_{CT}$.
I	saw	that	the	Pedro	*asked*	a	kiss	to-the	Maria

   b.
#*eu*	*vi*	*que*	[**UM**	**BEIJO**$_F$]$_i$	*o*	*Pedro*	*pediu*	t_i	*pra*	*Maria*$_{CT}$.
I	saw	that	a	kiss	the	Pedro	asked		to-the	Maria

   '...I saw that Pedro asked Maria for a kiss.'

Examples like (9b), where the focus moves to a position C-commanding the contrastive topic, show there cannot be a contrastive topic interpretation of a C-commanded element in the background of the moved focus. This was already shown in the case where a focus originates below the CT and moves across it (8b). Moreover,

even if the focus originates above the CT as in (9), and moves to a position higher than its base position, the CT interpretation in its background remains impossible.

Thus, the BP data is in line with the observation made for Dutch in Neeleman – Van de Koot (2008), in which the background of a moved focus cannot contain another element that introduces alternatives. A similar observation has been made for other Romance languages, particularly Italian (see, e.g., Frascarelli – Hinterhölzl 2007, who claim that only familiar-not contrastive-topics can follow foci). It is important to observe, however, that this restriction seems to apply only when the background of the focus is marked (i.e., when the focus has moved), and that *in-situ* foci can still precede contrastive topics (at least in Brazilian Portuguese and Dutch).

3.2 *Contrastive topics can go higher*

In the previous section, we saw that a focus can only precede the contrastive CT if the focus is in its base position, and that movement of a focus across a CT renders the sentence infelicitous. In this section, I show that movement of contrastive topics, on the other hand, does not display the same restrictions. (10) is an example of movement of a CT across an *in-situ* focus:

(10) Context: 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: What about this samurai sword, who gave it to you?
B: Well, I don't remember, but…
eu acho que [*esse cocar de índio*CT]i **UM PERUANO**F
I think that this headdress of Indian a Peruvian
me deu ti.
to-me gave
'…I think that a Peruvian gave me this Indian headdress.'

The answer in (10) is felicitous, unlike (8b) in the previous section, where the focus moved across the contrastive topic. So, a contrastive topic can move across a focus, but not the other way around.

We also saw in the previous section that there cannot be a CT interpretation in the background of a moved focus, even if this focus was originally already higher in the structure than the CT. A contrastive topic, on the other hand, can move to higher positions without yielding infelicity: The contrastive topic direct object *o relógio* 'the clock' can move to the left of the embedded subject (11b), and also to the left of the matrix clause (11c).

(11) A: What about the old cupboard, to whom did grandpa want to leave it?
B: Well, I don't remember, but…

a. *eu acredito que o vovô queria dar o relógio*CT **A UNS VIZINHOS**F.
I believe that the grandpa wanted give the clock to some neighbours

b. *eu acredito que* [*o relógio*$_{CT}$]$_i$ *o vovô queria dar* t$_i$ **A UNS VIZINHOS**$_F$.
   I believe that the clock the grandpa wanted give to some neighbours

c. [*o relógio*$_{CT}$]$_i$ *eu acredito que o vovô queria dar* t$_i$ **A UNS VIZINHOS**$_F$.
   the clock I believe that the grandpa wanted give to some neighbours
   '...I believe that grandpa wanted to give the clock to some neighbours.'

Compare (11c) with (12), repeated from the last section: In the former, the contrastive topic can move to any position across the focus. In the latter, on the other hand, the focus cannot move from its base position without resulting in an infelicitous answer to the context question, even if the general F>CT order is respected.

(12) #*eu vi que* [**UM BEIJO**$_F$]$_i$ *o Pedro pediu* t$_i$ *pra Maria*$_{CT}$.
     I saw that a kiss the Pedro asked to-the Maria
     '...I saw that Pedro asked Maria for a kiss.'

Moreover, examples (10) and (11) show that, at the very least, there is no problem with the interpretation of the sentences where the CT has moved, regardless of the CT's base position and of what is in its comment. As NEELEMAN – VAN DE KOOT (2008, 115) observe, it is harder to show that topic movement marks a comment, simply because there are no restrictions in which elements can be part of a comment (as opposed to backgrounds of moved foci, which cannot contain other elements that introduce alternatives).

Neeleman and Van de Koot's observation that focus movement marks its sister as background is a crucial point of the derivation that we will pursue in Section 5. But what exactly does it mean to "mark its complement as background"? We submit that, once focus movement has applied, its complement cannot contain alternatives anymore, i.e., this complement cannot have any element that introduces non-trivial focus alternatives.

To sum up, in this section we saw that an *in-situ* focus can precede a CT in Brazilian Portuguese. When focus movement takes place, however, the interpretation of an element in its background as a contrastive topic is impossible. Additionally, I showed that movement of contrastive topics is not as restricted as focus movement is, and that they are free to move to higher positions than their base position and still be interpreted as CT. In the next section will explore the interpretation of the constructions we have seen so far.

4 CT-interpretation

In this section I explore how the generalizations stated in the previous section about the ordering restrictions of contrastive topics and foci can be interpreted. For this, I propose to use CONSTANT's (2014) Topic Abstraction account.

4.1 The topic abstraction account (Constant 2014)

As briefly discussed in Section 2, contrastive topics are often taken to make reference to a complex discourse strategy, and the CT-value of a sentence consists of a set of sets of meanings (cf. Büring 1997, 2003, 2016). In this paper, however, I will use the Topic Abstraction account (Constant 2014) for the interpretation of contrastive topics, according to which a sentence with a CT is a sentence that refers anaphorically to a set of question meanings. A syntactic operation raises an F-marked phrase to a CT-operator position (short: CT-λ), adding a layer of nesting directly in the focus value (as opposed to Büring's model, which derives a CT- and an F-value). After the CT-λ abstraction has taken place, the focus value is nested, i.e. it contains sets as members. The nested alternatives are Constant's way of getting the focus semantic value to have question meanings as elements. See below the ordinary and focus value of a sentence with the CT-operator (Constant 2014, 95):

(13) a. $\llbracket \text{CT-}\lambda_i \, \phi \rrbracket^o_g = \lambda x.\llbracket \phi \rrbracket^o_{g\,[i \to x]}$ Ordinary Semantic Value

      b. $\llbracket \text{CT-}\lambda_i \, \phi \rrbracket^f_g = \{\lambda x.\llbracket \phi \rrbracket^f_{g[i \to x]}\}$ Focus Semantic Value

An important component of Constant's account is that contrastive topics are simply F-marked phrases that have moved to the CT-λ position. Since the nested alternatives structures are computed directly in the f-value dimension, Constant assumes that there is no need for syntactic CT-markers to feed the semantic interpretation. What is interpreted as the contrastive topic is simply the F-marked phrase that minimally C-commands the CT-λ, and the F constituent that stays *in-situ* is interpreted as the "real" focus. For this to come out right, we need a syntactic operation that raises F to the CT operator position, leaving a trace below. Take for example (14): the phrase *o rei* 'the king' has been raised to a position above the CT-operator, leaving a trace co-indexed with this operator.

(14)

[o rei]$_F$ CT-λ_7 t_1 me   deu   UM COCAR DE ÍNDIO$_F$
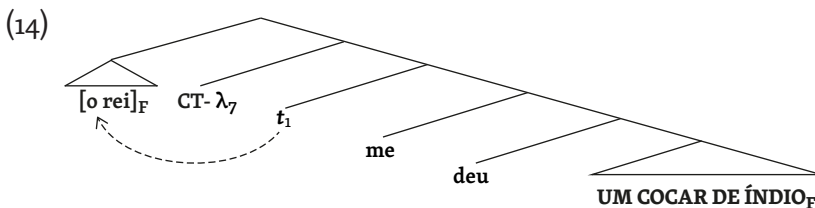
The f-value output of the topic abstraction in (14) is a singleton containing a function that takes an individual *x* and returns a set of propositions (i.e., a question) of the form 'What did *x* give you?'. This question is then point-wise combined with the focus alternatives to *o rei* 'the king' and returns the set of questions *What did the king give you?*, *What did the queen give you?*, and so on. The nested alternative structure (also called "Sorted question" in Constant's account) is thus of the form *For each person, what did they give you?*

Furthermore, in order to interpret F>CT surface orders, Constant assumes that the CT raises at LF, but is still pronounced *in-situ*. Consider (15), repeated from Section 3:

(15) ... *eu acho que* **UM PERUANO**$_F$ *me   deu   esse cocar   de índio*$_{CT}$
     I   think that a   Peruvian   to-me   gave   this headdress   of Indian
     '...I think that a Peruvian gave me this Indian headdress.'

Applying Constant's model to the Brazilian Portuguese example in (15), *esse cocar de índio* 'this Indian headdress' undergoes CT raising at LF, but is still pronounced *in-situ*. Covert movement is represented by a dashed arrow in both (14) and (16):

(16)
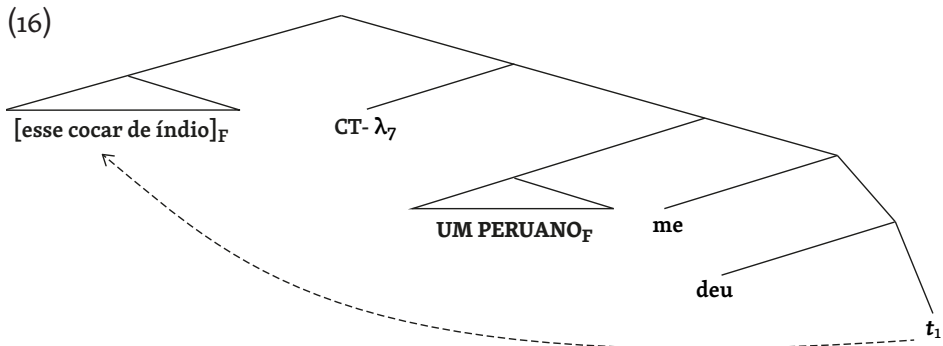
(16) is the derivation of the F>CT order in the only configuration that it is possible, i.e., when the focus precedes the contrastive topic in canonical word order. Note that CT-raising is an operation that takes place at LF, and is needed in order for the CT-λ to be effective.

4.2 The Principle

How can Constant's Topic Abstraction, which only deals with F-marked phrases ("contrastive topic is the F that has moved to the CT-operator position") fit into Neeleman – Van de Koot's (2008) generalization that a focus cannot move across a contrastive topic? I assume that, by the presence of the CT-operator, an F that has moved to a position c-commanding another F cannot be interpreted as a focus. It can (and *will*, as I argue below), however, be interpreted as a contrastive topic.

As pointed out by Constant (2014, 100), topicalizations are direct evidence that the phrase moved to the CT-operator position receives a contrastive topic interpretation. These constructions are widely attested cross-linguistically, and are used to overtly mark the (contrastive) topic of a sentence. In other words, topicalization is the overt realization of the CT-raising operation necessary for the contrastive topic interpretation in Constant's model. (17) is an example of a topicalization in Brazilian Portuguese:

(17) CONTEXT: Speaker A and B are talking about B's work related trips.[6]
    A: So, where have you been traveling to?
    B: *Estive no Ceará semana passada. Na semana que vem vou pra Manaus, e na outra Bahia.* [Pro Pará$_{CT}$]$_i$ *não fui escalada t$_i$, mas conheci um colega de lá.*
       'I was in Ceará last week. Next week I'm going to Manaus, and the following week, to Bahia. I was not scheduled to go to Pará, but I met a colleague from there.'

In (17), the PP *pro Pará* 'to Pará' is topicalized (i.e., moved to the left-periphery of the clause), it receives a rising contour, and it is unambiguously interpreted as a contrastive topic.

   I propose that the reason why a focus cannot move across a contrastive topic (using NEELEMAN – VAN DE KOOT's (2008) terminology) is exactly because movement of an F-marked phrase to that c-commanding position sets off the CT-λ operation, and consequently the only interpretation available to the moved constituent is that of a contrastive topic. This is summarized in the principle below:

(18) *Principle on movement of F across F*
    In a configuration with two Fs, iff one F has moved to a position C-commanding the other F, the moved F is interpreted as a contrastive topic.

Note that (18) has two necessary ingredients: 1) The presence of two Fs in the structure, and 2) movement of one F across the other. I will now walk the reader through these two conditions, and argue that they must *both* apply. If taken independently, however, neither of them forces a contrastive topic interpretation.

   First off, there must be two Fs in the structure to begin with. Note, however, that it is possible for two foci to co-occur in the same sentence without this resulting in a contrastive topic interpretation of the first one. One example of such a configuration is Second Occurrence Focus, where the domain of a focus is contained in the background of another focus (see BÜRING 2003; 2015 for discussion). Another example are double focus configurations, illustrated in (19) (inspired by an example from BÜRING 2016, 68):

(19) Bill Gates invented the iPhone in 2008.
    a. *Não,* **O**   **STEVE JOBS**$_F$ *inventou* (*o*   *iPhone*) **EM** **2007**$_F$.
       no   the Steve Jobs   invented   the   iPhone   in   2007
       'No, Steve Jobs invented it in 2007.'
    b. # *Não,* **EM** **2007**$_F$ *o* **STEVE** **JOBS**$_F$ *inventou* (*o*   *iPhone*).
       no   in   2007   the Steve   Jobs   invented   the   iPhone

Both *Steve Jobs* and *em 2007* 'in 2007' are interpreted as foci in (19a): there cannot be other questions like *Who invented the iPhone in 2009?* (or *When did Bill Gates invent it?*),

---

6   *Ceará, Manaus* and *Pará* are states in Brazil.

because things are only invented once. Crucially, if we move one F across the other as in (19b), the sentence is infelicitous. We submit that (19b) is infelicitous exactly because it indicates a complex discourse strategy, where the fronted F is interpreted as contrastive topic. Note however, that a CT interpretation is impossible here, for the pragmatic reasons just explained. Crucially, an F-F interpretation is no longer possible in the moved configuration (19b), which is not expected given the felicity of (19a).[7]

So, we have seen in (19a) that it is perfectly possible for two F-marked phrases to co-occur in the same sentence without resulting in a contrastive topic interpretation of the (linearly) first one. If one of the Fs moves, however, it triggers a contrastive topic interpretation of the moved F, which is not possible in a sentence where the two Fs have to be interpreted as two foci (19b). Thus, the sentences in (19) confirm the Principle in (18), illustrating that if F moves above F, the moved F is interpreted as a contrastive topic.

The second condition of (18) is that the moved F has to c-command another F. We now discuss some examples of focus movement, in order to show that foci can move to a higher position in the structure and still not be interpreted as a contrastive topic. Focus fronting is widely attested across languages, Romance being particularly known for that (see, among others, Rizzi 1997; Leonetti – Escandell – Vidal 2009; Cruschina – Remberger 2017). This operation consists of the movement of the focal constituent to the beginning of the clause, and results in a (narrow) focus interpretation of the moved phrase. (20) is an example of focus movement in Brazilian Portuguese, where the direct object *aquele carro* 'that car' is moved to the left-periphery of the sentence, and is unambiguously interpreted as focus:

(20) *Aquele carro$_i$ o João comprou* t$_i$ (*e não aquele avião*).
    that car the João bought and not that plane
    'John bought that car (and not that plane).'   (adapted from Mioto 2003, 176)

---

7 A reviewer points out that the generalization involving two F constructions does not apply if one of the foci (crucially: the F in the background of the moved F) is not a free focus, but a focus associated to a focus sensitive particle (e.g., *só* 'only'). The reviewer gives the following example:

(i) em 2007$_F$ só o Steve Jobs$_F$ inventou o iPhone.
    in 2007 only the Steve Jobs invented the iPhone
    'In 2009 only Steve Jobs invented the iPhone.'

The reviewer argues that the sentence above is interpreted as Steve Jobs having invented the iPhone alone, without any other collaborators. Although I am not sure about the interpretation of the English version of this sentence, in BP this sentence simply sounds odd, and according to my intuition this is because of the interpretation that arises with the verb to *invent* (as discussed in the main text). If the context was something like *Steve Jobs and collaborators invented the iPhone in 2007,* it does not seem that (i) could be used to correct it-at least not in BP. Nevertheless, the reviewer's point is a valid one, that is: a particle like *only* retrieves the focus and "resets" its focus value to a singleton set (i.e., a background). I will leave this interesting issue to be discussed in further research.

As already briefly discussed in Section 3.1, the background of a moved focus cannot have other elements introducing alternatives in it. This is exactly the case in (20), where the post-focal material must be backgrounded.

The discussed example of focus fronting in Brazilian Portuguese has illustrated that it is possible for a focus to move to a higher position in the clause without being interpreted as a contrastive topic. The main point here is that not all movement of F to a position in the left periphery will give rise to the CT-λ operation. Focus fronting is a clear example of movement of an F-marked phrase where the moved constituent is still interpreted as focus. Therefore, the presence of two Fs in a sentence and movement of focus are independently attested and perfectly felicitous configurations. When taken together, however, they will lead to the principle in (18).

Summing up, in this section I presented a semantic interpretation of contrastive topics using Constant's (2014) Topic Abstraction account. This account proposes that the contrastive topic is an F-marked phrase that has moved and now C-commands another F. Using Constant's CT-λ, we were able to capture the *in-situ* CT>F and F>CT orders. Furthermore, I proposed that, in a configuration with two Fs, iff one F moves to a position C-commanding the other F, the moved F is interpreted as a contrastive topic. I argue that the Principle is an advanced description of the ban on movement of a focus across a topic from Neeleman – Van de Koot (2008), since the CT-operation blocks a focus interpretation of the moved F. This predicts that movement of F across F cannot be interpreted without the CT-operator, which will be exploited further in the next section.

5 Towards a derivation

In this section we are going to explore how the Principle introduced in Section 4 can be derived. The general idea to be pursued here is that the semantics of the CT-operator is enough to capture that the complement of the moved F must not contain *real* f-alternatives. Recall the two main generalizations drawn from Sections 3 and 4: 1) The Principle states that the CT-λ will be inserted in every configuration where an F has moved to a position c-commanding another F; 2) Following the data of focus movement in Romance languages, and the Dutch data put forward in Neeleman – Van de Koot (2008), the complement of moved foci must be backgrounded.

It seems that the two generalizations are incompatible: one states that there is an F in the complement of a moved F (CT-F configuration), whereas focus movement requires precisely that there are no other F-marked elements in its background. I will show that the insertion of the CT-λ accounts for having f-alternatives in the background of a moved F, because the CT-λ turns its complement into a singleton set (which is the semantic counterpart of "being background").

I propose to restate the Principle in the last section in more precise terms, that will be developed in the present section.

(21) The background of a moved F must be a singleton f-alternative.

Before going on, I would like to make clear two terminological choices that will be useful in this section.

(22) a. Real f-alternatives: a set of alternatives such that the cardinality of the set is bigger than 1.
      b. Singleton f-alternative: a set of alternatives such that the cardinality of the set is equal to 1.[8]

I use the term *real f-alternatives* to mean the focus semantic value of an F-marked phrase (Rooth 1992). Second, the term *singleton f-alternative* refer to the set of alternatives of a not F-marked phrase, thus with only one element in it (its ordinary semantic meaning). As we go further in the discussion, we will see that the term singleton f-alternatives covers two slightly different cases: 1) the focus semantic value of a non F-marked expression, which introduces only its ordinary meaning, namely a background; 2) the focus semantic value of the output of the CT-operator, which is a singleton containing a function from individuals to alternative sets.

Note 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 F-marked phrase (real f-alternatives) and not F-marked phrases (singleton f-alternatives).

5.1 In-situ *Fs do not impose restrictions on their background*

Let us first concentrate on *in-situ* foci and their sister. The main idea here is that the complement of an *in-situ* focus *can* be background, but it does not *have* to. In other words, it is possible that the complement of an *in-situ* has real f-alternatives or singleton f-alternatives. The latter case, by far the most common instance of focusing, is where the f-alternatives of an expression are combined with an "unchangeable" background in order to output the f-value of the sentence. The former are cases where there are f-alternatives in the sister of a focus, cases that we will discuss later in this section.

This "unchangeable" background is an informal way of referring to the form of its focus alternatives: a singleton containing only the literal meaning of the non-focused expressions. Basically, everything that is not focused is in the background, and introduces only its literal meaning. I have discussed such a case in Section 2,

---

8   I thank an anonymous reviewer for the suggestion of making the cardinality of the set explicit in the definitions.

when I introduced the formal machinery of Alternative Semantics. The f-value of the sentence *The king bought a* HEADDRESS$_F$ is the following:

(23) [[*The king bought a* HEADDRESS$_F$]]$_f$ = {the king bought a knife, the king bought a headdress, the king bought a sword, …}

(23) above is an example where the background of the focus contains no F-marking. Let us now turn to a case where there *are* f-alternatives in the background of another focus: double focus.

(23) (She called him a Republican, and then) HE *insulted* HER.
      (LAKOFF 1968, via BÜRING 2016, 128)

Very much like in the *Steve Jobs* example in Section 4, there are two foci in (23) *he* and *her*. Such a sentence shows that there can be another F-marked phrase in their background of an *in-situ* foci (*her* is in the background of *he*). In other words, the real f-alternatives of one F combines with the real f-alternatives of the other F. Perhaps an easy way of visualizing such combination is as follows:

(24) 2 Fs + no-movement: f-alternatives + f-alternatives

$$
\begin{Bmatrix} a \\ b \\ c \\ d \\ … \end{Bmatrix} + \begin{Bmatrix} 1 \\ 2 \\ 3 \\ 4 \\ … \end{Bmatrix}
$$

The f-alternatives of one F {a, b, c, d, …} combine with the f-alternatives of the other F {1, 2, 3, 4, …}. Note that the background of neither of the Fs above will be a singleton f-alternative, since this background will itself contain F-marked phrases, resulting thus in a real f-alternatives set.

Furthermore, note that the Principle does not apply in either of the two configurations we just discussed (real f-alternatives + singleton, and real f-alternatives + real f-alternatives). I argue that this is a feature of the Principle, precisely because it does not block real f-alternatives in the sister of *any* focus, but only in the background of *moved* foci. I will discuss these cases in the next section.

5.2 Moved Fs require that their complement be background

We saw in Section 4.2 that movement of foci is possible in Romance languages, focus fronting being the most studied case. The fronted phrase gets interpreted as a narrow focus, which in turn requires that the background does not contain any other expression introducing alternatives. At an intuitive level, the calculation of the f-alternatives of a sentence with focus fronting can be represented as below:

(25) 1 F + movement: f-alternatives + background

$$\begin{Bmatrix} a \\ b \\ c \\ d \\ ... \end{Bmatrix} + \{1\}$$

In (26), the real f-alternatives of the first set {a, b, c, d, ...} combine with its sister's alternatives, a set containing only one element {1}. Importantly, this configuration differs from *in-situ* foci, which, as we have seen in the last section, can have another F-marked phrase in their background (and hence have real f-alternatives).

Now, if the background of a moved F must be a singleton, how could such requirement be met in a CT-F configuration? Recall that in the account I am assuming here, a contrastive topic is an F-phrase that has moved to the CT-λ, and its background contains another F. Thus, to a first approximation, CT-F is a structure with a moved F with real f-alternatives in its background. We propose that inserting the CT-operator is precisely the only way of meeting the requirement that the background of the moved F be a singleton. This is because the CT-λ outputs a singleton set, which contains a function from individuals to sets of propositions.

Let us look at the derivation outlined in CONSTANT (2014, 97):

(26)
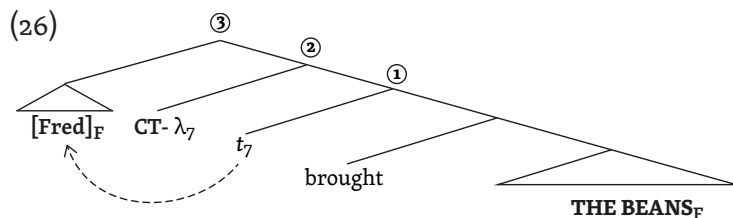
a. $[[①]]_g^f = \{g(7) \text{ brought the beans}, g(7) \text{ brought the pasta}, ...\}$

b. $[[②]]^f = \{\lambda x.\{x \text{ brought the beans}, x \text{ brought the pasta}, ...\}\}$

c. $[[③]]^f = \begin{Bmatrix} \{\text{Mary brought the beans, Fred brought the pasta, ...}\}, \\ \{\text{Mary brought the beans, Mary brought the pasta, ...}\}, \\ ... \end{Bmatrix}$

= For each person, what did they bring?

Up to 1, the f-alternatives to *beans* are still active (i.e., are real f-alternatives). Once the F-phrase *Fred* moves, it imposes the requirement that its background does not contain another F-marked phrase (introducing real f-alternatives), and therefore be a singleton f-alternative. It is at node 2 that the background of the moved F becomes

a *singleton* containing a function from individuals to sets of propositions. From here up, the f-value of the lower F will be "fixed", translated into the *wh*-part of the f-value of the sentence. Finally, at node 3, the function to alternative sets is point-wise combined with the alternatives of *Fred*, outputting the complex question *For each person, what did they bring?* Such configuration can be represented as below:

(29)   2 Fs + movement: f-alternatives + background

$$
\left\{ \begin{matrix} a \\ b \\ c \\ d \end{matrix} \right\} + \left\{ \lambda x. \left\{ \begin{matrix} 1 \\ 2 \\ 3 \\ 4 \end{matrix} \right\} \right\}
$$

We can see that (29) is similar to the narrow focus configuration in (26), since real f/alternatives are also combined with a singleton f-alternative. However, this singleton set is a different one: Instead of containing only the literal meaning of an expression, the singleton f-alternative in (29) contains the function output by the CT-λ. As I just discussed, this singleton corresponds to the F c-commanded by the CT-operator, which will ultimately be translated into the "fixed" *wh*-part of the focus semantic value of the sentence. Notice that (29) is a way of visualizing what the Principle proposes: if there is movement of F to a position c-commanding another F, combine the real f-alternatives of the moved F with the singleton output by the CT-operator (which contains a function in it, but is still a singleton).

   It is important to point out that the representations in (25), (26), and (29) are only a way I found to better visualize the difference in the structures that I am discussing in this paper. Those are obviously approximations of the more complex machinery working behind the intuitions that I am putting forward. For instance, in the representation in (29), the first set of real f-alternatives corresponds to a contrastive topic, which does not have the same meaning as a "real" focus. As I already discussed in Sections 2 and 4, contrastive topics are one level-up alternatives when compared to foci: the latter are sets of meanings, while the former are sets of sets of meanings. This difference is not readily read off the first set of alternatives in (29), but is of course present in the formal definition of the calculation of contrastive topic alternatives in the Topic Abstraction account.

   Let us recap what has been discussed so far in this section. First, *in-situ* and moved focus have different requirements towards their background. *In-situ* foci simply do not impose any restrictions regarding the presence of having real f-alternatives in their background, whereas moved foci require their background have only singleton f-alternative (i.e., do not have real f-alternatives). Second, we saw that a CT-F configuration falls into the second category, because there is movement of F, which in turn requires that its complement be a singleton f-alternative.

Finally, I proposed that a CT-F configuration is still compatible with the generalization that the background of a moved F must be a singleton f-alternative because the complement of the CT-λ is a singleton set.

6 Final remarks

In this paper I discussed the ordering restrictions between contrastive topics and foci in Brazilian Portuguese. I observed that, as the Dutch data put forward in NEELEMAN – VAN DE KOOT (2008), a focus can precede a contrastive topic in BP if the F>CT order corresponds the canonical word order of the constituents. I used the Topic Abstraction (CONSTANT 2014) for the interpretation of contrastive topics, in which CTs are Fs that have moved to the CT-λ position. Building on the Topic Abstraction account, I proposed the Principle, which states that in a configuration with two Fs, iff one F has moved across the other, the moved F is interpreted as a contrastive topic. Finally, I proposed that the Principle can be derived by an additional condition that captures the ban on movement of a focus across a contrastive topic: a focus interpretation of the moved F is blocked by the CT-λ, which requires that its background have only the singleton focus semantic value.

REFERENCES

ASSMANN, Muriel. In preparation. *Contrastive topics and foci in Brazilian Portuguese: Ordering effects and interpretation*. Doctoral thesis, University of Vienna.

BRUNETTI, Lisa. 2009. On the semantic and contextual factors that determine topic selection in Italian and Spanish. *The Linguistic Review* 26(2/3), pp. 261–289.

BÜRING, Daniel. 1997. *The Meaning of Topic and Focus – The 59th Street Bridge Accent*. London: Routledge.

BÜRING, Daniel. 2003. On D-Trees, Beans, and B-Accents. *Linguistics & Philosophy* 26 (5), pp. 511–545.

BÜRING, Daniel. 2015. A Theory of Second Occurrence Focus. *Language as a Cognitive Process/ Language, Cognition and Neuroscience* 30(1-2), pp. 73–87.

BÜRING, Daniel. 2016. (Contrastive) Topic. In: FÉRY, Caroline – ISHIHARA Shin, eds. *The Handbook of Information Structure*. Oxford: Oxford University Press, pp. 64–85.

CONSTANT, Noah. 2014. *Contrastive Topic: Meanings and Realizations*. Doctoral thesis, University of Massachusetts Amherst.

CRUSCHINA, Silvio – REMBERGER, Eva-Maria. 2017. Focus Fronting. In: DURFTER, Andreas – STARK Elisabeth, eds. *Manual of Romance Morphosyntax and Syntax*. Berlin: Mouton De Gruyter, pp. 502–535.

FRASCARELLI, Mara – HINTERHÖLZL, Roland. 2007. Types of Topics in German and Italian. In: SCHWABE, Kerstin – WINKLER, Susanne, eds. *On Information Structure, Meaning and Form*. Amsterdam: John Benjamins, pp. 87–116.

JACKENDOFF, Ray. 1972. *Semantics in Generative Grammar*. Cambridge, MA: MIT Press.

KATO, Mary – MARTINS, Ana Maria. 2016. European Portuguese and Brazilian Portuguese: An overview on word order. In: WETZELS, Leo – MENUZZI, Sergio – COSTA, João, eds. *The handbook of Portuguese linguistics*. John Wiley & Sons, pp. 15–40.

LEONETTI, Manuel – ESCANDELL-VIDAL, Victoria. 2009. Fronting and verum focus in Spanish. In: DUFTER, Andreas – JACOB, Daniel, eds. *Focus and background in Romance languages*. Amsterdam: John Benjamins, pp. 155–204.

MENUZZI, Sergio – ROISENBERG, Gabriel. 2010. Tópicos Contrastivos e Contraste Temático: Um Estudo do Papel Discursivo da "Articulação Informacional". In: *Cadernos de Estudos Lingüísticos*. Campinas, Brazil: IEL/UNICAMP. pp. 233–253.

MIOTO, Carlos, 2003. FOCALIZAÇÃO E QUANTIFICAÇÃO. Foco e Pressuposição. *Revista Letras* 61, pp. 169–189.

NEELEMAN, Ad – TITOV, Elena – VAN DE KOOT, Hans – VERMEULEN, Reiko. 2009. A Syntactic Typology of Topic, Focus and Contrast. In: van CRAENENBROECK, Jeroen, ed. *Alternatives to Cartography*. Brussels: Mouton de Gruyter, pp. 15–51.

NEELEMAN, Ad – VAN DE KOOT, Hans. 2008. Dutch Scrambling and the Nature of Discourse Templates. *The Journal of Comparative Germanic Linguistics* 11(2), pp. 137–189.

NEELEMAN, Ad – VAN DE KOOT, Hans. 2012. Towards a Unified Encoding of Contrast and Scope. In: NEELEMAN, Ad – VERMEULEN, Reiko, eds. *The syntax of topic, focus, and contrast. An interface-based approach*. Berlin: De Gruyter Mouton, pp. 39–76.

RIZZI, Luigi. 1997. The Fine Structure of the Left Periphery. In: HAEGEMAN, Lilian, ed. *Elements of Grammar: Handbook of Generative Syntax*. Dordrecht: Kluwer. pp. 281–337.

ROOTH, Mats, 1992. A Theory of Focus Interpretation. *Natural Language Semantics* 1, pp. 75–116.

WAGNER, Michael. 2012. Contrastive Topics Decomposed. *Semantics and Pragmatics* 5(8), pp. 1–54.

Muriel Assmann
University of Vienna
Linguistics Department
Sensengasse, 3A
1090 – Vienna, Austria
muriel.assmann@univie.ac.at