

# Flavors of obligation: the syntax/semantics of deontic *deve* in Brazilian Portuguese<sup>1</sup>

*Matizes de obrigação: a sintaxe e a semântica do deôntico deve no português brasileiro*

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**Abstract:** In this paper we propose a theoretical description of the results of an experiment of interpretation. The experiment shows that the participants attribute different deontic interpretations – “ought to be” and “ought to do” – depending on the argument structure projected by the verb. This result adds another contrast between epistemic and deontic modals. Theoretically, although we assume Hacquard’s (2006, 2010) proposal, we show that it cannot account for the “ought to be” interpretation. We argue that the deontic reading is possible when a modal is relative to an event with an agentive participant provided by the ordering source. This activates in ModP an accessory projection for checking the +Ag feature. Hence the deontic is always interpreted as “ought to be” with unaccusatives, and with unergatives and transitives the deontic can be interpreted also as “ought to do” when their external argument is agentive, because it can check the +Ag feature.

**Keywords:** Syntax/Semantics interface; Deontics; Experiment; Modality; Brazilian Portuguese

**Resumo:** Neste artigo, propomos uma descrição teórica dos resultados de um experimento de interpretação. Este mostra que os participantes atribuem diferentes interpretações deônticas – “*ought to be*” e “*ought to do*” – dependendo da estrutura argumental projetada pelo verbo. Os resultados do experimento apontam mais um contraste entre epistêmicos e deônticos. Teoricamente, assumimos a proposta da Hacquard (2006, 2010), mas mostramos que ela não dá conta da interpretação “*ought to be*”. Argumentamos que a interpretação deôntica é possível quando um modal é relativo a um evento com um participante agentivo, fornecido pela fonte de ordenação. Então, será ativada em ModP uma projeção acessória para checar o traço +Ag. Por essa razão, o deôntico é sempre interpretado como “*ought to be*” com inacusativos; já com inergativos e transitivos, o deôntico pode ser interpretado também como “*ought to do*” quando o argumento externo for um agente, porque ele poderá checar o traço +Ag.

**Palavras-chave:** Interface sintaxe/semântica; Deônticos; Experimento; Modalidade; Português brasileiro

## Introduction

The aim of this paper is to explain the results found in an interpretation judgment task, the goal of which was to verify whether speakers were sensitive to the argument structure of the embedded verb when they attribute deontic interpretations. In the first section, we introduce the theoretical issue, and the description of the

two readings of deontic modal sentences (cf. BRENNAN, 1993): the “ought to do” and the “ought to be” readings. In the second section we present the experiment. It shows that the “ought to do” interpretation requires that the argument of the embedded verb has some sort of “agency”, a concept we will explore in the theoretical discussion, the theme of the third section. The participants always accepted an “ought to do” interpretation with unergative and transitive verbs, and rejected the “ought to do” interpretation with unaccusatives whenever it was not possible to attribute some agency to one of the participants

<sup>1</sup> We would like to express our gratitude to Danilo Mello for his help with the building of the experiment and with the organization of the data. We also want to thank our students and the participants of the experiment.

of the event described by the verb<sup>2</sup>. Thus, the data show a split into the unaccusative class of verbs: *chegar* (to arrive) allows for an “ought to do” reading, whereas *nascer* (to be born) only accepts an “ought to be” interpretation. In the last section, we first show that Hacquard’s (2006, 2010) proposal has to be modified in order to account for the “ought to be” reading. We then advance the hypothesis that the ModP is a system which can project some accessory projections, depending on the properties of the event variable (*e*) to which the modal is relative.

We assume, relying on Hacquard (2006, 2010), that the modal base is checked in two different positions in the derivation: at the VP level and at the speech act level. According to her, a modal that has a deontic reading is relative to the VP event, hence it is interpreted in a low position. We argue that a deontic modal can be interpreted both in the low position as well as in a high position. In the low position, the deontic will be “ought to do” since the grammatical subject denotes the individual who receives the order. This reading is possible only if the verb in VP level selects an agentive external argument – it can occur with unergative and transitive verbs. According to the data of our experiment, deontic modals with verbs without some sort of “agency” are always “ought to be”. We argue that this occurs because the +Ag feature cannot be checked at the VP level if the embedded verb does not select an external argument. Thus, deontic modals with unaccusatives are always “ought to be”.

## 1 The syntax-semantics dilemma of modals

The literature on the syntax and on the semantics of modal auxiliaries has pointed out several contrasts between the two main “types” of modality: epistemic and root modals. A deontic-epistemic interpretation of sentence (1) is ungrammatical cross-linguistically (as far as we know), in contrast with (2) which is grammatical because the epistemic scopes over the deontic interpretation:

- (1) \* João deve<sub>deontic</sub> poder<sub>epistemic</sub> sair.<sup>3</sup>  
 João must can to leave
- (2) João deve<sub>epistemic</sub> poder<sub>deontic</sub> sair.  
 João must can to leave

Other evidences have been described in the literature and they give support to Cinque’s (1999, 2006) hierarchy

according to which epistemic modality is higher up in the derivation. Cinque proposes that functional heads are universally organized along a rigid hierarchy, in which epistemic modals are higher than root modals, as partially shown below:

Mod<sub>epis</sub> > Tense > Aspect > ... > Mod<sub>deontic necessity</sub> > Mod<sub>ability/deontic possibility</sub>.

Among the evidences is the interaction with the subject. A traditional distinction between epistemics and roots is that the former is speaker-oriented and the latter, subject-oriented. Brennan (1993) argues that while epistemics are able to take scope over a quantificational subject, roots, cannot; below is one of her examples:

- (3) a. Every radio may get Chicago stations and no radio may get Chicago stations.  
 b. # Every radio can get Chicago stations and no radio can get Chicago stations.

With the epistemic *may* no contradiction arises, because every radio is interpreted below the modal: it may be that every radio gets Chicago stations and it may be that every radio does not get Chicago stations. (3b) which has the root *can*, however, is contradictory, because the universal quantifier is interpreted above it: for every radio it is possible that it gets and it does not get Chicago stations. One way of explaining this fact is to attribute different argument structure: roots are control predicates, thus they enter into thematic relation with the subject, whereas epistemics are raising predicates, with no particular relation to the subject. However, as many authors have shown (BHATT, 1998; HACKL, 1998; WURMBRAND, 2001; among others), the contrast cannot be due to a control configuration; root verbs are raising predicates. Deontics do not seem to select an external argument, and they allow expletive subjects:

- (4) There have to be fifty chairs in this room. (BHATT, 1998)

Notice, however, that (4) is interpreted as an order to someone who is responsible for making sure that there are fifty chairs in the room. This is the interpretation which Brennan (1993) calls “ought to be”. She argues that deontics split into two categories: the “ought to be” and the “ought to do” deontics, exemplified by the two readings of the modal sentence below:

- (5) João deve dormir às 5.  
 João must to sleep at 5.

Sentence (5) may be interpreted as: (i) the speaker gives an order to João concerning João himself: it is João

<sup>2</sup> The data shows that the participants accepted the “ought to do” interpretation with some unaccusative verbs, like *chegar* (to arrive), *sair* (to leave), *entrar* (to get into), *surgir* (to appear), *(des-)aparecer* (to disappear)..., but not with others, like *morrer* (to die), *nascer* (to be born), *crescer* (to grow), *viver* (to live), *sobreviver* (to survive)... We will discuss this issue in the second and third sections.

<sup>3</sup> We will only gloss the examples.

who must fulfill the order (ought to do); or (ii) the speaker orders someone else, the baby sitter, that she should make sure that João is sleeping at 5 (ought to be). The goal of the experiment, presented in the next section, was to verify the role of the embedded verb in targeting one of these interpretations. The results show that the “ought to do” interpretation requires that the argument of the embedded verb has some sort of “agency”, a concept we will explore in the theoretical discussion, the theme of the third section. The participants of the experiment always accepted an “ought to do” interpretation with unergative and transitive verbs, and rejected the “ought to do” interpretation with unaccusatives whenever it was not possible to attribute some agency to one of the participants of the event described by the verb. Thus, an “ought to do” reading was accepted for (6a), but not for (6b):

- (6) a. O palestrante deve falar às 7. (ought to do <sup>OK</sup>)  
 The speaker must to talk at 7  
 b. O bebê deve nascer às 7. (ought to do \*)  
 The baby must to be born at 7

The results of our experiment give support to a contrast between epistemics and deontics: only deontics seem to require “agency”, a fact that we must explain.

Traditionally, the contrasts between epistemic and root verbs are explained via ambiguity. Thus deontic *deve* (must) for instance would have an agent argument, whereas epistemic *deve* (must) would not have such an argument. However, this explanation does not find empirical support since there is no language, as far as we know, where epistemic and deontic interpretations are expressed by two different lexical items. One of the most appealing insights in Kratzer’s (1981, 2001, 2012) proposal is that there is just one lexical item, and modality is given by the modal base, which may be established by the context.<sup>4</sup> This is the syntax-semantics dilemma: syntax shows that there are contrasts between epistemic and root, semantics tells us that there is just one lexical item. How to conciliate these views? Hacquard (2006, 2010) proposes that modals are relative to an event of evaluation, rather than to a world of evaluation as in the Kratzerian semantics, and the fact that the event is checked in different positions in the derivation explains the different interpretations. For instance:

- (7) a. John may have seen the murderer.  
 b. John had to flee the scene.

<sup>4</sup> Kratzer (2012) is a revised publication of her most important papers for modality. We come back to her proposal on the last section of this paper.

In (7a) the modal checks the event of the speech act, thus we have an epistemic interpretation, because we have access to the speaker’s beliefs and given what he/she knows we conclude that John is the murderer. In (7b) the checking happens at the VP level where the only event variable available is that supplied by the verb. Thus, the modal base is constituted by events that have the subject as the agent, and we arrive at a root interpretation, since we do not have access to the speaker’s knowledge or beliefs. In the last section of this paper we explore this model to explain the results of our experiment.

If it is the case that checking the modal at a lower level the interpreter has only access to the VP information, we expect that the embedded verb plays an important role; more precisely, the event denoted by the verb and its participants should constrain the interpretation. This is clearly shown by the results of our experiment. Nonetheless, they also pose a challenge to Hacquard’s proposal. Although the two deontic readings seem to parallel her description of the example in (7b), the “ought to be” is not expected in her proposal since it accesses the speech act. According to her theory, only epistemics can access the speech act. We shall argue that the deontic “ought to be” also accesses the speech act. The difference with respect to epistemics is that the deontic “ought to be” asks for a circumstantial modal base which gives the individuals involved in the speech act, but not their beliefs or knowledge. The circumstantial modal base is ordered then by a set of laws or rules which require agency from those who receive them. Thus, it is the ordering source that introduces agency. If there is no way to attribute agency to one of the participants of the event described by the embedded verb, the feature of agency will be checked at the speech event level. Thus, in our proposal: the modal checks for agency. The argument selected by the embedded verb in the VP domain – that is, the “ought to do” reading – checks this feature. The default interpretation is then that the grammatical subject fulfills the order. We shall develop our proposal in the last section.

## 2 The experiment

The aim of the experiment was double: (i) to verify whether participants were sensitive to the “ought to be” and “ought to do” interpretation of deontics, and (ii) to verify whether the argument structure of the verb played any role in their decision concerning one or the other interpretation. Our hypothesis was that if Hacquard’s proposal is in the right direction, then the argument structure of the embedded verb plays an important role in the interpretation of the modal. We run a judgement task. The target sentences were distributed into 2 lists. Each one was composed of 6 target sentences, and 17

distractors, of which 2 were control sentences, used to exclude outliers. The participants were asked to choose the best interpretation for the sentence. They could select among three alternatives: (i) the subject of the sentence has to fulfill the order; (ii) an external individual, given in the speech act, has to fulfill the order; (iii) both interpretations are possible. Since we do not assume that the participants understand metalinguistic terms as “the subject of the sentence”, we used definite descriptions determiner phrases in the responses that were either synonymous of the grammatical subject or which were pragmatically linked to the event denoted by the verb (see the example (9) below).

Our main hypothesis was that the “ought to be” is only activated when there is no way of attributing agency to one of the participants of the event project by the embedded verb. Thus, our prediction was that participants would accept both readings for (8a), but only the “ought to be” reading for (8b):

- (8) a. O atleta deve guardar o equipamento.  
The athlete must to store the equipment  
b. A criança deve nascer por volta das seis horas.  
The child must to be born for around of+the 6 hours.

Before running the task, a pilot with 18 participants was applied and the results were used to improve the task by correcting some deviances from our expectations. The task was posted at the facebook.

## 2.1 Participants

86 participants answered the task<sup>5</sup>. Since the lists were posted at the facebook, the task was anonymous, and the participants were not accompanied when performing the task. When the participant opened the link for the task, he/she had to answer a questionnaire about age, sex, education, variables we have not taken into account. After that he/she read a consent form, and had to agree with it. Finally, he/she had to choose one out of the two lists.

## 2.2 Materials and Methods

The participants were asked to reply to an interpretation task. They had to choose among three interpretations of a sentence: (i) the person to fulfill the order is the subject of the sentence; (ii) the person to fulfill the order is someone that is not a participant of the event described by the embedded verb; (iii) both possibilities. As already said, since participants might not be acquaintance

with metalinguistic terms, the interpretations were always with definite descriptions that either were synonymous of the grammatical subject or denoted an external individual who was pragmatically linked to the event. Below is an example:

- (9) A criança deve nascer por volta das seis horas.  
The child must to be born for around of+the 6 hours.  
(a) O médico recebeu essa ordem.  
The doctor received this order  
(b) O bebê recebeu essa ordem.  
The baby received this order  
(c) As duas possibilidades.  
Both possibilities.

Since in (9) the verb is unaccusative, our prediction was that participants would choose the first interpretation where a doctor receives the order to perform the action. The experiment forced a deontic interpretation of the sentence, since our aim was to evaluate whether there were grammatical constraints to the “ought to be” versus “ought to do” deontics. After each sentence, there was a space for free commentaries. Some of the participants reported that for them the best interpretation would be an epistemic reading. This was the case with example (9) above. As we show in the last section, our proposal predicts that sentences as (9) are more naturally interpreted epistemically.

The experiment had one independent variable, type of verb, with three levels: (i) unergative and transitive verbs, both select for an external argument; (ii) unaccusative verbs, where the individual denoted by the internal argument of which might act on preparatory phases of the event described by the verb, and (iii) unaccusatives, where the individual denoted by the internal argument of which does not play any role in preparatory phases. As is well known in the literature, unaccusatives only project an internal argument, which is considered to be the theme or the patient of the event. However, there seems to be a difference with respect to the role that the individual denoted by the argument of some unaccusatives may play on the preparatory phases of the event that these verbs describe.

Some unaccusatives are achievement predicates which are described in the literature as being composed of a preparatory phase which leads to the culmination of the event denoted by the verb. Consider, for instance, *chegar* (to arrive), the one who arrives can be responsible for his/her arrival; in these case he/she may perform acts that help to achieve the event denoted by the verb. For instance, in (10a) below, the lecturer can act in such a way that he is responsible for arriving early. Compare with *nascer* (to be born) in (10b), one cannot play any role in order

<sup>5</sup> The experiment was not submitted to the Ethical committee because it was posted in a site. Nonetheless before starting the task, the participant read a consent form and had to agree with it.

to be born, we are just born. Thus, we hypothesized that there would be a difference between these two, informally speaking, types of unaccusatives, as exemplified below:

- (10) a. O conferencista deve chegar cedo.  
The speaker must arrive early
- b. A criança deve nascer por volta das seis horas.  
The child must to be born for around of+the 6 hours

It is important to note that in (10a) not only ‘o conferencista’ (The lecturer) can be responsible for fulfilling the order, but also somebody else, like the driver.

There were 4 items of each one of the verb types, adding to 12 target sentences<sup>6</sup>, which were then distributed into the 02 lists. Each list had 6 target sentences, 15 distractors and 02 control sentences. The lists were semi-randomized according to the procedures in Gries (2013). The dependent variable was the answer. Both variables are categorical.

The task was posted at the facebook and the participant had to choose one of the lists. 86 participants answered the task, but 06 were excluded because they answered to both control sentences in an unexpected way. This was a strategy to homogenize the corpus. Thus, each list had 40 participants, who answered 6 target sentences; reaching the total of 480 target sentences.

### 2.3 Results

Below we present the results; where NU means non-unaccusative; U+A is unaccusative with agency; and U-A is unaccusative without agency:

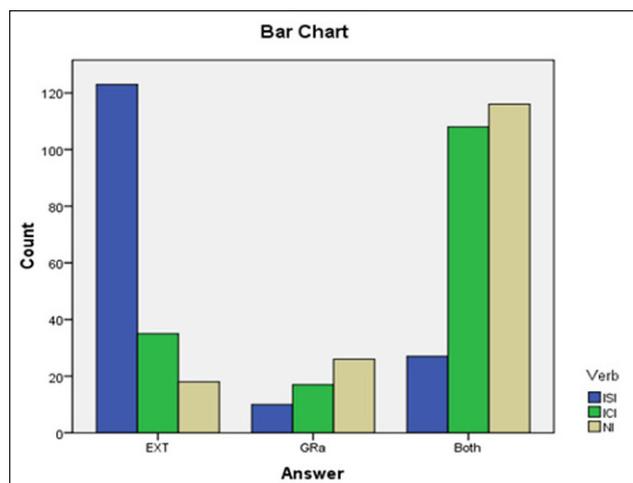
**Table 1.** Numerical Results

Type of verb	NU	U+A	U-A
External agent	18	35	123
Grammatical agent	26	17	10
Both	116	108	27
Total	160	160	160

These results are displayed in the chart below. It is easy to see that unaccusatives without agency, i.e. those the internal argument of which cannot be the agent of the preparatory phases, were almost always interpreted as an “ought to be” reading (123 times out of 160). Both the unaccusatives with agency and the non-unaccusatives allowed for both the “ought to be” and the “ought to do” readings.

In the bar chart below, the first column, the darkest one, represents the unaccusatives without agency; the

second column is the unaccusatives with agency, and the third the unergatives or transitives. The first block shows the interpretation where the order was given to an external individual; the second block is the result of attributing the order to the grammatical subject; finally, the last block shows the option for both interpretations.



Transitive/unergative verbs and unaccusatives with agency show the same behavior: participants are willing to attribute both interpretations to these verbs, in sharp contrast with the unaccusatives without agency, where the great majority of participants chose the external agent as the best interpretation.

We run a chi-square test in order to see whether this difference between the two groups was statistically significant. The results are presented below. The difference between these two groups is statistically significant:

**Table 2.** Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	173,519 <sup>a</sup>	4	,000
Likelihood Ratio	180,705	4	,000
Linear-by-Linear Association	135,658	1	,000
N of Valid Cases	480		

<sup>a</sup> 0 cells (.0%) have expected count less than 5. The minimum expected count is 17,67.

Speakers not only are aware of the distinction between “ought to be” and “ought to do”, but if it is not possible to attribute some sort of agency to argument projected by the verb, as it is the case with the unaccusatives without agency, they will systematically attribute an “ought to be” interpretation.

No doubts other aspects of this result can be explored, but for our purposes what matters is that our hypothesis found empirical support: (i) speakers distinguish between

<sup>6</sup> See the appendix for the target sentences.

2 flavors of deontic modality; (ii) the argument structure of the verb plays a significant role in directing the interpretation.

### 3 Theoretical discussion

According to Kratzer (1981, 2001, 2012), modals are relations between an ordered modal base, which may be contextually supplied or explicitly given by adverbial phrases such as according to the laws, and the proposition that is expressed by the so called prejacent sentence. Thus, the sentence John must be home has a tripartite structure, as represented below:

- (11) For all the worlds, in the ordered modal base,  
John is home  
Quantifier ordered modal base (restriction) proposition

In her last proposal, modal bases are always realists, i.e. the actual world is accessible and the accessibility relation is reflexive. They can be epistemic, if they access the speaker's knowledge or beliefs; or circumstantial, if it access the facts surrounding the speech act<sup>7</sup>. Circumstantial modal bases deal with the immediate facts that surround the speech act, whereas the epistemic base has to do with what the speaker or the community knows or believes (propositional attitudes). The modal base – epistemic or circumstantial – is ordered by a set of propositions that constituted the “ideal worlds”. An epistemic base can only be ordered by interpretation relies on a stereotypical ordering source that establishes as the ideal worlds those in which the events have their normal course. The deontic interpretation takes a circumstantial modal base ordered by different sources, among them the deontic source which orders the worlds according to their similarity with the ideal ones which are the most lawful worlds; i.e. the worlds where the laws are obeyed. Without getting into the formal descriptions, the sentence in (12a) has the logical form in (12b), whereas (13a) has (13b) as its logical form:

- (12) a. John must be home. (epistemic)  
b. In all the maximally ordered worlds that constitute the speaker's knowledge which are ordered by the normal course of events, John is home.
- (13) a. John must be home. (deontic)  
b. In all the worlds where the circumstances are as given in the actual world and which are organized according to the laws, John is home.

In none of the examples it is necessarily the case that John is at home in the actual world, but for different

reasons: in (12a) it is because the actual world might not a normal world – John had an accident and he is in hospital, for instance. In (13a), the actual world might be one where the laws do not hold. According to the rules or orders, John is home, but in the actual world, the rules were not followed. Thus, *must* has only one lexical entry: it is an universal quantifier over worlds that relates; it is a relation between an ordered base, a set of worlds, and a proposition, which is also a set of worlds. Roughly, it says that for all worlds that are maximally ordered with respect to the ideal worlds, the prejacent sentence is true<sup>8</sup>.

However, as Hacquard correctly points out, this proposal cannot explain the contrasts between epistemic and roots detected in the literature. She, then, proposes that modals take an event pronoun *e*, which needs to be bound locally. There are two binders: aspect, and a default speech event  $e_0$ . Modals can appear in either one of the two positions: above tense or right above VP. A modal located above tense is bounded by the speech event  $e_0$ ; a modal located below tense and aspect is bound by the aspect that quantifies over the VP event  $e_1$ . We show in (14) the contrast between the epistemic and deontic modals according to Hacquard's proposal. The epistemic reading says that for all we know the athlete will run the marathon, whereas the deontic interpretation says that according to the rules, he has the obligation to run the marathon:

- (14) a. The athlete must run the marathon. (Epistemic)  
a'. [<sub>CP</sub>  $e_0$  |  $e_0$  Mod f ( $e_0$ ) [<sub>TP</sub> T Asp<sub>1</sub> |  $e_1$  [<sub>VP</sub> V  $e_1$ ]]]  
Must pres The athlete runs  
the marathon
- b. The athlete must run the marathon.  
(Deontic/ “ought to do”)
- b'. [<sub>CP</sub>  $e_0$  |  $e_0$  [<sub>TP</sub> T Asp<sub>1</sub> |  $e_1$  Mod f ( $e_1$ ) [<sub>VP</sub> V  $e_1$ ]]]  
Pres must The athlete runs the  
marathon

There is no doubt that this is a promising approach to solve the dilemma between the syntax and the semantics of modals, but (14b') does not account for the difference between the “ought to be” and “ought to do” readings. (14b') represents the reading where the athlete John is the one to receive the order to run the marathon, the “ought to do” reading. However, the experiment shows that speakers are also aware of the “ought to be” interpretation, where someone else, the coach for instance, receives the order to make the athlete run the marathon. Moreover, the “ought to be” is the only interpretation available when there is no argument of the embedded verb to which

<sup>7</sup> It is not our aim to introduce the formal apparatus of ordering semantics.

<sup>8</sup> The prejacent sentence is included in the set of worlds denoted by the ordered base.

agency can be attributed. The issue is the following: a sentence such as (14b) can be interpreted as an “ought to be” or as an “ought to do”, but the logical form in (14b’) only gives us the “ought to do” reading.

We propose to further explore Hacquard’s proposal in order to solve this issue. The author claims that epistemic modal bases are those in which the worlds are compatible with the “content” of *e*. According to her, only “modals related to speech events can combine with an epistemic modal base because only those events have associated ‘propositional content’ (i.e. propositions that make up the attitude).” But then (14b) cannot have an “ought to be” reading, since it cannot be related to the speech act. However, it may be that the speech act contributes in a different way, depending on the modal bases to which it is related. Circumstantial modal bases describe worlds that are compatible with the circumstances of *e*. Our proposal to explain the ambiguity of (14b) – an “ought to do” and an “ought to be” readings – is to explore the idea that the circumstantial modal base gives access only to the context of the speech act, but not to the contents, the propositional attitudes. (14b’) gives us the “ought to do” reading, and (15) gives the “ought to be” reading. The difference with the epistemic interpretation is due to the fact that the modal base in (15) is circumstantial, thus, there is no access to the beliefs or propositional content, but to the participants of the event. Thus, (15) expresses the “ought to be” reading, which also access the speech act:

- (15)  $[_{CP} e_0 | e_0 \text{ Mod } f_{\text{circumstantial}}(e_0) [_{TP} T \text{ Asp}_1 | e_1 [_{VP} V e_1]]]$   
 Must pres The athlete  
 runs the marathon

However, even if we adopt our proposal, we still cannot explain our results. Why the “ought to do” reading is possible with some unaccusatives but not with others, as exemplified above in (10)? We argue that the ModP is a system composed by distinct functional heads. Parallel to what was proposed by Rizzi (1997, 2001) for the left peripheral CP, we assume that some of the heads of the Mod system are accessory, in the sense that are activated only when there are elements which bears some features compatible with that heads. More specifically, we propose that the Mod system can project distinct functional heads depending on the properties of the event variable *e* which the modal is related to.

According to Hacquard (2006, 2010), when a modal has a deontic reading, the modal is related to the VP event, hence it is interpreted in low position. As for Brazilian Portuguese data, we argue that a deontic modal can be interpreted both in the low position as well as in a high position. In the low position, the deontic will be “ought to do” and it is the subject who fulfill the order. This reading

is only possible if the verb in VP level selects an agentive external argument – it can occur with unergative and transitive verbs. In order to account for this restriction on the low position, we propose that the ModP system can project an accessory projection headed by a +Ag feature which will be checked against the +Ag feature assumed to be endowed by the external argument of the embedded verb. If there is not an agentive argument in the VP event – as it occurs with unaccusative verbs –, the modal still can be interpreted as a deontic, but only at a high position, where it can access the speech event. Then the feature is checked by a salient participant of the speech act who is responsible for fulfilling the order. Whenever the argument structure of the embedded verb does not project an agent, the only possibility to check the +Ag feature is the “ought to be” interpretation, i.e. the feature is checked at the speech act level. In this case, the modal will be relative to addressee or to another participant of the speech event. Thus, we explain the sentence (4). This proposal will be presented with details in another paper. Here our aim is to show that the deontic reading needs to check a +Ag feature that is provided by the ordering source. The checking can be done both in the low and high positions, depending on the argument structure of the embedded verb.

However, the results of our experiment show that unaccusatives seem to split into two classes: those that allow for a “ought to do” interpretation and those that don’t allow such an interpretation. According to our approach, this is not the right way to describe the results. Unaccusatives do not allow for an “ought to do” reading, the derivation crashes with unaccusatives because they do not project an external argument who might check the feature of agentivity. Thus, all unaccusatives only allow for the “ought to be” reading. The impression of an “ought to do” reading is derived by the possibility on an identity between that both the individual denoted by grammatical subject and the external individual who is pragmatically associated with the event denoted by the embedded verb may fulfill the order. Let’s be more explicit about this last point.

9 participants evaluated that the order conveyed by sentence in (16) was directed towards one of the organizers of the event, that is, an external individual that is pragmatically associated with conferences, and lectures. 5 participants indicated that the order was to be performed by the lecturer himself, and 28 thought that both interpretations were possible. In our description in the previous section, we informally characterized this situation as one where both readings – the “ought to be” and the “ought to do” – were available:

- (16) O conferencista deve chegar cedo.  
 The lecturer must to arrive early.

However, this description is misleading. Sentence (16) is not ambiguous between an “ought to be” and an “ought to do” reading; it only allows for an “ought to be” reading, because the embedded verb does not project an external argument that may check for the +Ag feature. Unaccusatives project for a theme or a patient argument that cannot perform the order. What happens in (16) is that the event argument must be checked at the speech act level. At this level we have access to the participants of the speech event, in particular the addressee, but the order may be executed by any other participant, who is pragmatically accessible. The sentence in (16) may be felicitously uttered in a situation where the speaker orders the addressee, who is the driver for instance, that the lecturer must arrive early at the conference. But it is also felicitous if the order is directed to the lecturer himself. As we already said, the reading where the grammatical subject denotes the one who receives the order is only possible if this individual can somehow interfere with the culmination of the event. The lecturer can act in such a way that interferes in the culmination of the event: he may wake up early, pick up the train so that he will arrive early at the conference, and so on. Thus, it makes sense to give him an order as (16). The coincidence of the grammatical subject with one of the participants of the speech event gives the feeling that (16) has a “ought to do” reading. In our approach, (16) is an “ought to be” which is performed by the individual denoted by the grammatical subject. There is no “ought to do” reading, since it is grammatically blocked by the verb.

Compare with the results of sentence (17):

- (17) O acusado deve morrer.  
The accused must to die.

None of the participants attributed the interpretation that the accused himself was responsible for his death. This is due to pragmatic reasoning. Normally, the accused does not perform acts that help the culmination of the event; normally we don't fulfill the order of dying. Thus, the accused cannot be one of the participants of the speech act, one to which the order is aimed. The only possibility is to imagine that the addressee of the order is somebody else; precisely the result we found in the experiment.

#### 4 Since there must be a conclusion

It goes without saying that many issues were just suggested in this paper. However, our proposal captures an important generalization: when the modal is interpreted in a low position, the order can be given the individual denoted by the grammatical subject, because

the +Ag feature is checked locally; however, when the modal is interpreted at a higher position the order falls into some individual pragmatically associated with the speech event. We have also proposed a way to improve Hacquard's fruitful proposal so that it may account for the “ought to be” interpretation, while keeping the distinction with the epistemic modal: deontics “ought to be” require a circumstantial modal base which gives access to the participants of the speech event but not to their beliefs; epistemics require an epistemic modal base which allows for the access to propositional content.

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**APPENDIX****List of target sentences**

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|---|--|
| (1) O refém deve sobreviver. U-A<br>The host must survive                             | (7) A criança deve nascer por volta das 6. U-A<br>The child must be born around 6                        |
| (2) O atleta deve correr a maratona. NU<br>The athlete must run the marathon          | (8) O atleta deve guardar o equipamento. NU<br>The athlete must store the equipment.                     |
| (3) O aluno deve sair da sala às 10. U+A<br>The student must leave the room at 10.    | (9) O conferencista deve chegar cedo. U+A<br>The lecturer must arrive early                              |
| (4) O acusado deve morrer. U-A<br>The accused must die.                               | (10) O menino deve crescer saudável. U-A<br>The boy must grow healthy.                                   |
| (5) O pedreiro deve trabalhar às 8. NU<br>The mason must be at work at 8.             | (11) O funcionário deve lavar as escadas do prédio. NU<br>The clerk must wash the stairs of the building |
| (6) O jornalista deve entrar no prédio. U+A<br>The journalist must enter the building | (12) O fotógrafo deve aparecer amanhã. U+A<br>The photographer must show up tomorrow.                    |
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