

# PROPERTIES OF *OUGHT-TO-BE* DEONTIC MODAL

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- **ABSTRACT:** In this article, we discuss different concepts of obligation based on the distinction originally established by Feldman (1986): (i) ought-to-be interpretation, which involves a property that a certain state of affairs must occur; and (ii) ought-to-do interpretation, which relates an agent to a state of affairs. We assume this conceptual distinction results from structural differences. In this line of argumentation, we follow authors like Brennan (1993) and Hacquard (2006, 2010). Since there is not yet a proposal of structural representation in the literature that contemplates the ought-to-be interpretation, we searched for evidence in Brazilian Portuguese to ascertain more precisely the position at which this deontic is structurally merged in order to generate its interpretation. We scrutinized factors such as the deontic's orientation, its relation to other modal heads and also to tense and aspect categories. Our tests confirmed the existence of a high deontic (ought-to-be). This modal displays the properties of a directive speech act, being oriented towards an agent in the speech situation (usually the addressee), and it does not bear aspect or tense markers. Even though ought-to-be deontics do not share all these properties with the epistemics, there is evidence that they occupy the same position in the structure. Lastly, we also suggested that ought-to-be, ought-to-do deontics and epistemics can be distinguished based on two features: agentivity [Ag] and assertion [Assert].
- **KEYWORDS:** Deontic Modality. Ought-to-be Deontics. Cinque's hierarchy. Feature checking.

## Introduction

A striking characteristic of modality indicators cross-linguistically is that they are systematically polysemous. This point, which has been acknowledged by various linguistic approaches (JACKENDOFF, 1972; SWEETSTER, 1990; PALMER, 2001; CINQUE, 2006; KRATZER, 2012), is a challenge to any proposal that has explanatory pretensions, as it unveils the implausibility of easy solutions that claim a simple lexical ambiguity. When a descriptive regularity is verified in many typologically diverse languages it is generally a sign that some deeper principle of grammar is at stake. In the generative and, more specifically, cartographic perspective we adopt, the bet is that this

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regularity arises from syntactic properties of languages (CINQUE; RIZZI, 2008). The overall idea is that syntax can play a relevant role – alongside semantics – in defining the type of modality.

In this paper we focus on a small yet relevant aspect of this general problem. Our goal here is to discuss, from the point of view of Brazilian Portuguese, the different types of deontic modals from a conceptual distinction discussed by Feldman (1986): the distinction between the (i) *ought-to-be* interpretation, which involves a property of a state of affairs that must take place; and (ii) the *ought-to-do* interpretation, which relates an agent to a state of affairs. We will try to show that this conceptual distinction results from structural differences. Along the same line, we follow authors like Brennan (1993) and Hacquard (2006, 2010), who associate the *ought-to-be* interpretation with a high position in the structure of the sentence; and the *ought-to-do* one, to a low position.

As far as we know, there is not in the literature a proposal for structural representation that suffices for the *ought-to-be* interpretation. We seek to take the first steps in this direction, looking for evidence in Brazilian Portuguese to better and more precisely understand the position in which the *ought-to-be* deontic is attached to the structure. In order to do so, we analyze factors like deontic orientation, their relationship with other modal heads as well as their relationship with tense and aspect (AspP<sub>Progressive</sub>) categories. Our analysis is based on the ordering of the functional heads proposed in Cinque's hierarchy (CINQUE, 1999, 2006; RIZZI; CINQUE, 2016).

In the first section, we present the different concepts associated to the two types of obligation: *ought-to-be* and *ought-to-do*. In the second, we offer an initial mapping of the position in which the *ought-to-do* deontic modals seem to occupy in the syntactic structure of the sentences. Then, on the third section, we aim to motivate the distinction between the two types of deontic modals – as well as their differences regarding epistemic ones – in terms of syntactic features like agentivity [Ag] and assertion [Assert], considering that modals correspond to one only lexical item (KRATZER, 1981, 2001, 2012) and that these different readings derive from the position in which the checking of these features takes place.

### **Different concepts of obligation: *ought-to-be* and *ought-to-do***

Feldman (1986) distinguishes two types of obligation: one that refers to a set of rules regarding how a certain state of affairs must be, which is related to his concept of moral obligation (*ought-to-be*); and another that lies on a specific individual (*ought-to-do*). This concerns a distinction between an abstract moral rule and an obligation that is particularized to a potential agent. To illustrate the latter, Feldman presents a situation in which someone, bothered by the noise made by motorcycles, utters:

(1) *There ought to be a law against such things.*

Another example given by the author for cases of *ought-to-be* interpretation is:

(2) *There ought to be a more equal distribution of wealth in the world.*

This case differs from those that involve a relationship between an agent and a state of affairs. The author observes that, in a situation like the one where the motorcycle noise is bothering someone, it is also possible to use the notion of obligation associated to the *ought-to-do* type, as in:

(3) *The legislature ought to prohibit loud motorcycles.*

This statement establishes a connection between an agent (the group that represents the legislators) and a possible action (in this case, the prohibition of noisy motorcycles). While the *ought-to-be* interpretation involves a property of a state of affairs that must take place, the *ought-to-do* interpretation involves the relationship between a particular agent and a state of affairs. In this last case, the obligation linked to a sentential overt subject is asserted.

Brennan (1993), based on the conceptual distinction presented in Feldman (1986), associates only the *ought-to-do* deontic modals to the event described by the VP. This is due to the fact that such deontic modals are oriented to one of the participants of this event – normally the subject of the sentence, on whom the obligation/permission of doing something lies (*ought/allowed-to-do*), resulting in a state of affairs. The *ought-to-be* interpretation, according to Feldman, refers to the way a state of affairs should be: *ought/allowed-to-be*, relating a property not to a specific agent but to a state of affairs.

The sentences in the following example, taken from Brennan (1993, p. 77), illustrate the two readings that can be associated to deontic modals:

(4) a. You must register or else you'll get kicked out. (*ought-to-do*)  
b. Thesis paper must be acid-free. (*ought-to-be*)

The author affirms that the sentence initiated by 'or else' in (4a) works as a pragmatic trigger to the *ought-to-do* interpretation for the modal. In (4b), the inanimacy of the subject forces the assumption that there is a covert constituent in the sentence over which the obligation to guarantee that the thesis paper is acid-free falls on, licensing, thus, the *ought-to-be* interpretation. This "hidden agent" in (4b) does not need to be, however, a specific individual, but can be any individual (or even a set of individuals, like "the PhD candidates"), as long as it is salient in the speech situation. The two readings available to the deontic modal – *ought-to-do* and *ought-to-be* – can be associated to a single sentence, depending on the individuals on whom the obligation falls, as example (5) shows:

(5) John must have dinner at 7pm.

The sentence in (5) may be interpreted as an obligation that falls on John himself – the subject of the sentence (*ought-to-do* reading); or as an order directed at any other person – in general, the interlocutor, who can be John’s babysitter, for example, the person who should guarantee that John performs the event of having dinner at 7pm (*ought-to-be* reading). In this case, as so in other instances of *ought-to-be* deontic modals, the abstract moral rule is mentioned in the course of performing a directive speech act, in which the speaker imposes on a listener (or, in less prototypical cases, on another contextually-salient individual) an obligation, based on his/her desire that such rule be followed in a particular situation – cf. the discussion on this class of speech acts in Searle (1979).

Hacquard (2006, 2010) also assumes the existence of two types of deontic modals. As Brennan (1993), the author associates each of the readings (*ought-to-do* and *ought-to-be*) to different syntactic positions: one that is low, right above the VP, in which the modal is oriented to the grammatical subject; and one that is high (higher than the Tense heads), in which the modal is oriented to a participant who is salient in the speech event, the addressee (the interlocutor). The low position is associated to root modals; and the high position is associated to the *ought-to-be* deontic modals, along with the *epistemic* ones. Hacquard establishes, thus, a relevant structural distinction between the different types of modality. According to the author’s proposal, different *events* are provided in each one of these positions, to which the modal operators are relative: in a low position, modals are relative to the event described by the VP; in high position, modals are relative to the speech event.

The author’s proposal, however, does not offer a structural differentiation between epistemic modals and deontic *ought-to-be* modals, considering that both are high modals that access the speech event. Below, we demonstrate that the only contrast the author establishes in the structure is the one regarding the *ought-to-do* deontic reading and the epistemic one (HACQUARD, 2010, p. 7):

- (6) a. [<sub>CP</sub> Speech e<sub>0</sub> λe<sub>0</sub> [<sub>TP</sub> T Asp<sub>1</sub> λe<sub>1</sub> Mod f(e<sub>1</sub>) [<sub>VP</sub> V e<sub>1</sub>]]] (Deontic)
- b. [<sub>CP</sub> Speech e<sub>0</sub> λe<sub>0</sub> Mod f(e<sub>0</sub>) [<sub>TP</sub> T Asp<sub>1</sub> λe<sub>1</sub> [<sub>VP</sub> V e<sub>1</sub>]]] (Epistemic)

The representation that Hacquard proposes for the deontic modals in (6a) is only compatible with the interpretation in which the obligation/permission falls on the subject of the sentence, that is, the *ought-to-do* reading, in which the event variable in the modal’s accessibility relation (f) is bound by the event described by the VP (e<sub>1</sub>). This variable always needs to be locally bound by the closest operator – in the case of (6a), Asp<sub>1</sub>; and in (6b), an illocutionary Speech marker (ROSS, 1970; SPEAS, 2004). The author acknowledges the existence of a high deontic modal that accesses the speech event and is oriented towards the addressee, but does not precisely specify the position in which it is interpreted, nor does she delimit its differences in relation to the – also high – epistemic modal.

To Hacquard, modals correspond to a single lexical item – resembling what is proposed by Kratzer (1981, 2001, 2012) – whose reading is specified according to the

event variable to which the modal is bound. Assuming that the specification of the modal reading is also related to a certain position in the structure, Hacquard moves closer to Cinque’s proposal, which foresees a fixed position for each modal interpretation, according to the hierarchy of functional heads transcribed in (7):

- (7) [Mood<sub>speech</sub>  
 [Mood<sub>evaluative</sub>  
 [Mood<sub>evidential</sub>  
 [Mod<sub>epistemic</sub>  
 [Tense<sub>past/future</sub>  
 [Mod<sub>necessity</sub>  
 [Mod<sub>possibility</sub>  
 [Aspect<sub>habitual</sub>  
 [Aspect<sub>predispositional</sub>  
 [Aspect<sub>repetitive</sub>  
 [Aspect<sub>frequentative</sub>  
 [Mod<sub>volition</sub>  
 [Aspect<sub>celerative</sub>  
 [Tense<sub>anterior</sub>  
 [Aspect<sub>terminative</sub>  
 [Aspect<sub>continuative</sub>  
 [Aspect<sub>continuos</sub>  
 [Aspect<sub>retrospective</sub>  
 [Aspect<sub>proximative</sub>  
 [Aspect<sub>durative</sub>  
 [Aspect<sub>prospective</sub>  
 [Mod<sub>obligation</sub>  
 [Aspect<sub>frustrative</sub>  
 [Aspect<sub>completive</sub>  
 [Voice<sub>passive</sub>  
 [Verb

(RIZZI; CINQUE, 2016, p. 149, our emphasis).

Epistemic modality occupies one of the first positions in the hierarchy also figuring above the functional heads of tense and aspect. On the other hand, deontic modality occupies a low position in the hierarchy, very close to the head of VoiceP.

Cartographic studies, as the ones by Rizzi and Cinque (2016), aim to establish detailed maps of the syntactic structure in order to offer clear instructions to the interface system. It is important to notice here that the hierarchy in (7) does not capture the different deontic interpretations: *ought-to-do* and *ought-to-be*. At first, this would count as a semantic distinction without parallels in the syntax, which is anomalous in this perspective, especially for functional predicates. As far as we know, there is not in the literature a proposal for a syntactic representation that acknowledges the *ought-to-be* type of deontic interpretation. According to the hierarchy of functional

heads transcribed in (7), not even a high position is foreseen for a deontic modal. This way, we consider it a pressing issue to understand the structural differences between the *ought-to-do* and the *ought-to-be* deontic readings that are determined, at least partially, by syntactic factors, as discussed in Oliveira and Rech (2016) and Rech and Varaschin (2017, 2018). We suppose that the conceptual distinction of both types of deontic modals (FELDMAN, 1986) results from structural differences. Our research has sought to map the position in which the modal operator checks features that derive the properties of an *ought-to-be* deontic modal. To do so, we have analyzed factors like the orientation of deontic modals (the participant on whom the order/obligation or permission falls), its relationship with other modal heads as well as its relationship with tense and aspect categories (AspP<sub>Progressive</sub>), with which we deal in the next section.

### Looking at the syntactic structure with emphasis on *ought-to-be* deontic

In this study we have analyzed deontic modals from Hacquard's (2006, 2010) theoretical approach, according to which modal operators are evaluated relatively to events and not to worlds. That is, the accessibility relation of a modal – that delimitates the set of worlds over which it quantifies – is determined by the event to which it is attached in the syntactic structure of the sentence. To Hacquard the position of the modal in the structure is directly associated to the type of event variable it accesses: modals that operate over the speech event ( $e_0$ ) take a high position, whereas modals that operate over the main event, described by the VP (VP event -  $e_1$ ) take a low position. Each one of these events becomes available in positions that are defined in the structure. According to this proposal, it is expected that the position to which a modal attaches itself to an event variable has repercussions not only on the individual on whom the modal orientation lies, but also in their interaction with tense (TP<sub>Past/Future</sub>) and aspectual heads, like the progressive (AspP<sub>Progressive</sub>). Modals that locally access the speech act take a position that is above TP and AspP<sub>Progressive</sub> in Cinque's hierarchy – with which Hacquard's proposal interacts; they would not take, thus, inflection markings of tense or of progressive aspect. In (8), the relevant part of Cinque's hierarchy to the investigation of the relationships between the modal heads – epistemic (ModP<sub>Epistemic</sub>) and deontic (ModP<sub>Obligation</sub> e ModP<sub>Permission</sub>) — and tense (TP<sub>Past/Future</sub>) and aspect (AspP<sub>Progressive</sub>) categories are transcribed:

#### (8) Functional Projections Hierarchy:

MoodP<sub>speech act</sub> > MoodP<sub>evaluative</sub> > MoodP<sub>evidential</sub> > **ModP<sub>epistemic</sub>** > TP(Past) > TP(Future) > ... > AspP<sub>habitual</sub> > AspP<sub>repetitive(I)</sub> > ... > AspP<sub>proximative</sub> > AspP<sub>durative</sub> > **AspP<sub>progressive</sub>** > AspP<sub>prospective</sub> > AspP<sub>inceptive</sub> > **ModP<sub>obligation</sub>** > ModP<sub>ability</sub> > AspP<sub>frustrative/success</sub> > **ModP<sub>permission</sub>** > AspP<sub>conative</sub> > AspP<sub>completive (I)</sub> > VoiceP . . .

(CINQUE, 2006, p. 12, 93, our emphasis).

In Cinque’s hierarchy, two positions are predicted for the interpretation of a deontic modal head ( $\text{ModP}_{\text{Obligation}}$  e  $\text{ModP}_{\text{Permission}}$ ) – it is important to notice, however, that both are located in a low position in the structure, after the  $\text{AspP}_{\text{Progressive}}$  head and close to the VoiceP head. These deontic modals correspond, therefore, to root modals and, due to that, are expected to be oriented only towards the participants of the event described by the VP – preferably the subject of the sentence, since that, due to their position in the structure they could not access participants of the speech act, like the addressee. The ordering of the functional heads that compose Cinque’s hierarchy was inferred from transitivity tests that reveal the impossibility of alternating the order when more than one functional head co-occurs in the sentence. Example (9) illustrates this ordering in modal constructions:

(9) a. João pode ter que morar em Paris.

( $*\text{Mod}_{\text{Permission}} > \text{Mod}_{\text{Obligation}}$ )  
 ‘John may have to live in Paris.’

b. João tem que poder morar em Paris.

( $\sqrt{\text{Mod}_{\text{Obligation}} > \text{Mod}_{\text{Permission}}}$ )  
 ‘John has to be allowed to live in Paris’.

In (9a-b) there is alternation in the order of the modals *poder* and *ter que*. Both sentences are well-formed, however, the deontic interpretation is available for both modals only when the modal corresponding to the head  $\text{Mod}_{\text{Obligation}}$  antecedes the one corresponding to the head  $\text{Mod}_{\text{Permission}}$ , in (9b). Thus, this example ratifies the ordering proposed by Cinque in the hierarchy:  $\text{ModP}_{\text{Obligation}} > \dots > \text{ModP}_{\text{Permission}}$ . Nevertheless, besides that, it shows that when two deontic modals occur in the same construction, the first is necessarily oriented towards the subject of the sentence. In this case, the sentence in (9b) is used in contexts in which the speaker places on someone not mentioned (usually the interlocutor, but may also be John’s boss, the company directors, etc.) the obligation to ensure that John receives permission to *live in Paris*. This reveals one of the striking characteristics of high deontic modals, as we will see in the next section: the fact they figure in the realization of a directive speech act directed to a potential agent (typically the listener)<sup>1</sup> in the speech situation. Note that it is not possible to interpret (9b) in a way that the idea of obligation and permission fall both on the same participant: the subject of the sentence (*Peter*). This would mean something like *Peter* being obligated to receive permission to *live in Paris*. Therefore, it seems that there

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<sup>1</sup> “I believe that there is a fundamental distinction between these two types of deontics. *Ought-to-do* deontics are the kind captured in Kratzer’s system via a circumstantial modal base (which picks out facts of the base world) and a *deontic* ordering source. *Ought-to-be* deontics, on the other hand, seem to double a modal statement with a performative act, namely, that of putting an obligation on the addressee.” (HACQUARD, 2006, p. 41). The individual on whom the ought-to-be obligation lies is typically the listener because the listener is, along with the speaker, the individual who is invariably present in *all* speech situations.

is indeed a rigid ordering between  $\text{ModP}_{\text{Obligation}} > \dots > \text{ModP}_{\text{Permission}}$ , as predicted by Cinque's hierarchy. But the different modal orientations in these cases – the individual in the speech situation, for the obligation modal, and the subject for the permission modal – suggest that the deontic of obligation (*ter que*) is not only higher than the one of permission (*poder*), but is also much higher than the position predicted by Cinque for the  $\text{ModP}_{\text{Obligation}}$  head, since it accesses potential agents who are available in the speech event, directing to one of them a directive illocutionary act. (9b) constitutes, therefore, evidence in favor of postulating a high deontic modal<sup>2</sup>.

Examples (10) and (11) show deontic sequences that characterize the phenomenon of modal agreement, according to Lunguinho (2010, p. 130-131):

(10) **P:** Professores da rede pública ganham benefícios como vale alimentação etc?  
'Public school teachers have benefits like food vouchers, etc.?'  
**R:** (...) Um dos benefícios que nós temos é plano de saúde médica onde todos os meses eles descontam 5% do nosso salário bruto. Ou seja, se quiser ser professor de algo você *deve ter que* adorar o seu conteúdo e ter muita, mas muita vontade de dar aulas...

(...) One of the benefits we have is medical assistance in which every month they discount 5% of our gross salary. That is, if you want to be a teacher of something you must have to love your subject and have a lot, but a lot of desire to teach...'

(11) **P:** Queria ser piloto de helicóptero, que devo fazer? Gostaria de saber que grau de escolaridade precisa pra fazer um curso de piloto, preço do curso, carga horária e se é fácil conseguir um serviço de piloto, uma vez que tenha terminado o curso. Muito obrigado.

'I would like to be a helicopter pilot. What should I do? I would like to know what degree of schooling one needs to have to attend a pilot course, the price of the course, workload and if it is easy to get a job as a pilot, once one finishes the course. Thank you very much.'

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<sup>2</sup> It is important to notice, however, that a high deontic modal may also be associated to the notion of permission, like in *O Pedro pode atuar no setor de vendas* (*Peter may act in the sales area*). This sentence, besides being able to be used in contexts in which one reports a permission given to Peter (ought-to-do deontic), can also be interpreted as a directive speech act in which the speaker addresses someone like the addressee, giving them permission to relocate Peter in the company (ought-to-be deontic). The possibility of associating the ought-to-be interpretation to the notion of permission, as in this example, should generate the order  $\text{ModP}_{\text{Permission}} > \text{ModP}_{\text{Obligation}}$ , as long as the first modal would be an ought-to-be deontic. This ordering seems, however, not to occur in the Portuguese language, as in the following example:

- (i) O pai pode ter que visitar os filhos quinzenalmente.  
'The father may have to visit his children every two weeks.'

The sentence in (i) contrasts to the one in (9b) in the way that it blocks the deontic interpretation for the first modal in the sequence. One can observe, thus, a restriction to the ought-to-be deontic interpretation in contexts in which the permission modal antecedes the one of obligation. The reason for this restriction evades us now, since a modal oriented to the addressee occupies a higher position than the one oriented to the subject of the sentence, be it of obligation or permission. Moreover, there does not seem to be a pragmatic restriction to this ordering, as it is possible to imagine a context in which the speaker concedes a permission to the addressee so that he guarantees the fulfillment of an order.



**R:** *Deve ter que* ter um grau de escolaridade avançado. No Campo de Marte na cidade de São Paulo, eles dão esse curso. Você pode se informar lá, se morar em SP.

‘You must have to have an advanced degree of schooling. In *Campo de Marte* in the city of Sao Paulo, they teach this course. You can get information there, if you live in SP.’

This phenomenon is characterized by making two modal items that are realized in the syntax to be interpreted as only one. So that modal agreement occurs, two conditions need to be met: (i) at least one of the modal elements has to be an auxiliary verb, the other element can equally be an auxiliary verb or an adverb; and (ii) the modal elements must share the same modal force and the same type of modality. In the examples (10) and (11), the elements involved share the same modal force (universal) and the same type of modality (deontic); they are, thus, cases of modal agreement. Notice that these examples contrast with (9b) that does not manifest modal agreement effects even when exhibiting a sequence of deontics. According to the analysis by Lunguinho, data like (9b) do not generate modal agreement because, even though the modal items agree as to the type of modality – both are deontic -, they do not share the same modal force: *ter que* is a universal quantifier, and *poder* is existential. The example in (12) illustrates another case of modal head sequence:

- (12) O contribuinte *deve ter que* pagar por mais este serviço.  
‘The tax payer may have to pay for this service.’

Modal agreement effects are also not manifested in (12). That is because *deve* and *ter que* modals, even when sharing the same quantificational force (universal), express a different type of modality: *deve* is interpreted as epistemic; and *ter que* as deontic<sup>3</sup>.

From examples like the ones from (9) to (12), it is possible to infer a generalization: besides cases of modal agreement, the occurrence of two deontics in the same structure is possible only with the following ordering: *Ought-to-be* > *Ought-to-do*. The first deontic connects to the speech event, in a high position; thus, the order/obligation lies on a salient individual in the utterance context, normally the addressee. The second deontic connects to the event described by the VP, in a low position; in this case, the modal orientation lies on one of the event participants, normally the subject of the sentence.

With that in mind, we move on to investigate the behavior of ought-to-be deontics in relation to time and progressive inflection. The sentence in (13), alike the example in (5), shows that a modal auxiliary with deontic interpretation may be oriented both to the subject of the sentence (ought-to-do deontic) and to a probable addressee (ought-to-be deontic):

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<sup>3</sup> Concerning the dual character of the auxiliary *deve* in Brazilian Portuguese, see Santos (2015). According to this author, while *pode* and *ter que* form the dual pairing of possibility-necessity, *deve* is a degree modal of variable force, oscillating in an interval that covers both, possibility and necessity.

- (13) Os clientes do banco têm que passar pela porta giratória.  
'The bank clients must go through the revolving door.'

In a usual context, the sentence in (13) could be interpreted as: (i) according to the norms of the bank, the obligation to go through the revolving door lies on the clients – ought-to-do deontic; or (ii) this obligation lies on the security officer responsible for controlling client entry in the bank, who must guarantee that they go through the revolving door – ought-to-be deontic. In the first case the obligation lies on a participant of the event described by the VP (*Os clientes do banco* / 'The bank clients'), that is the subject of the sentence; yet in the second case, the order/obligation lies on a participant of the speech event (in this particular case, the addressee)<sup>4</sup>. The participant to whom the modal is oriented is, therefore, important in distinguishing between ought-to-do and ought-to-be deontics.

Both types of deontics also differ in terms of their evaluation times. The sentence in (13) is in the present tense. This allows it to be interpreted as a report of an order (ought-to-do deontic) or as the realization of a direct speech act (ought-to-be deontic). This duality of interpretation is licensed because to the modal inflection coincides, in this case, with the time of speech. If the modal were marked with past inflection, for example, the ought-to-be reading is blocked. This is a foreseen result, as one does not give an order for someone to perform an event in the past. The sentence in (14) illustrates this restriction:

- (14) Os clientes do banco tiveram que passar pela porta giratória.  
'The bank clients had to go through the revolving door.'

We assume that the restriction to the ought-to-be interpretation takes place in cases like the one illustrated by (14) because the high deontic is not under the scope of tense ( $TP_{\text{Past/Future}}$ ) categories, and this prevents its movement (downwards movement is not assumed in the theory) to join inflection T, whereas the ought-to-do deontic occupies a position below tense categories (CINQUE, 1999, 2006; STOWELL, 2004; HACQUARD, 2006, 2010; RIZZI; CINQUE, 2016), thus being able to undergo movement to these positions.

Another indicative that ought-to-be deontics occupy a position above tense categories is illustrated in the ill-formed sentence (15b):

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<sup>4</sup> The ought-to-be interpretation refers to the way a state of affairs must be, not directly relating a property to a defined agent (FELDMAN, 1986). With this meaning, (13) determines that, according to the bank regulations, it is obligatory for clients to go through the revolving door. This obligation lies generically on any given person that is accessible in the speech situation. As it is generally the job of the security officer of the bank to control client entry, in the most usual context for (13) the obligation would lie with them.

- (15) a. As crianças têm que poder fazer as refeições na escola.  
 ‘Children have to be allowed to have their meals at school.’  
 b. \*As crianças tiveram que poder fazer as refeições na escola.  
 ‘Children had to be allowed to have their meals at school.’

As aforementioned, in the cases of deontic sequences in which the phenomenon of modal agreement does not operate, the only possible ordering is *Ought-to-be* > *Ought-to-do*. If, as we have been arguing, the first deontic is necessarily associated to the ought-to-be reading, the ill-formation of (15b), in which the modal auxiliary displays past tense marking, is expected, confirming the hypothesis that the ought-to-be deontic occupies a position that is above the tense categories.

Progressive aspect inflection is also an evidence of the position a modal auxiliary occupies in the structure. Verbs that can receive progressive aspect marking are only those c-commanded by AspP<sub>Progressive</sub> (see the ordering of functional heads in (8)). All projections below this head will admit that their functional V appears in the progressive form. Functional verbs that are above AspP<sub>Progressive</sub>, in turn, have no way to receive this marking. Thus, it is expected for the modal not to incorporate progressive markers when it corresponds to an ought-to-be deontic. Examples (16b) and (17b) below illustrate this restriction:

- (16) a. O candidato ao intercâmbio está tendo que morar em Berlim.  
 ‘The exchange program candidate is having to live in Berlin.’  
 b. \*O candidato ao intercâmbio está tendo que ter origem germânica.  
 ‘The exchange program candidate is having to have Germanic origin.’
- (17) a. A protagonista da série está podendo ser inconveniente com os outros atores.  
 ‘The series protagonist is being allowed to be inconvenient with the other actors.’  
 b. \*A protagonista da série está podendo ter menos de vinte e cinco anos.  
 ‘The series protagonist is being allowed to be less than twenty-five years old.’

Sentences (16a) and (17a) are well-formed with obligation deontics (*ter que*) and permission (*poder*) inflected in the progressive aspect. This result is expected, considering that these verbs correspond to deontics of ought-to-do type, which occupy a low position in the structure and, consequently, are oriented to the subject of the sentence. This reading is possible, according to Rech and Varaschin (2018), because the states under the scope of the modal (*to live in Berlin* and *to be inconvenient with the other actors*) are controllable<sup>5</sup>. According to our hypothesis, the progressive

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<sup>5</sup> A stage-level predicate does not license, necessarily, the low deontic interpretation (ought-to-do), as one could assume simply by looking at the good formation of examples (16a) and (17a). Some stage-level predicates are not controllable – as *stay* or *be sick/feverish* – and, as such, they offer restrictions to the ought-to-do reading, as evidenced by the

aspect restriction must act only over ought-to-be deontics, because they occupy a position above AspP<sub>Progressive</sub>. The sentences in (16b) and (17b) show this restriction, once they illustrate a context in which only the ought-to-be deontic interpretation is possible, that is: deontics forming sequence with non-controllable states with attributive DPs (RECH; VARASCHIN, 2018). As in this case deontics can only be legitimately interpreted as ought-to-be, the result of attaching progressive inflection to the modal would demand an impossible descending movement: hence the anomaly of the sentence.

Another syntactic context in which the only licensed interpretation to the deontic corresponds to the ought-to-be type is, as seen above, the one of co-occurrence of two deontic modals in the structure, as seen in (15) repeated below as (19a):

- (18) a. As crianças têm que fazer as refeições na escola.

(Mod<sub>Obligation</sub>)

‘Children have to have their meals at school.’

- b. As crianças estão tendo que fazer as refeições na escola.

‘Children are having to have their meals at school.’

- (19) a. As crianças têm que poder fazer as refeições na escola.

(Mod<sub>Obligation</sub> > Mod<sub>Permission</sub>)

‘Children have to be allowed to have their meals at school.’

- b. \*As crianças estão tendo que poder fazer as refeições na escola.

‘Children are being allowed to have their meals at school.’

In the occurrence of two deontic modals in the structure, as in (19a), the first one (*ter que*) will be oriented to a participant of the speech event (normally the addressee) whereas the second one (*poder*), to a participant who is externally-merged in the VP event (normally the subject of the sentence). Therefore, the *ter que* modal necessarily corresponds, in this context, to an ought-to-be deontic. This is the cause of the ill-formation of (19b), which shows a high deontic with progressive aspect marking. Observe that, in (18), the modal *ter que* corresponds to a low deontic, whose orientation lies on the subject of the sentence (*As crianças* / ‘Children’); in this case, because it occupies a lower position than the head of AspP<sub>Progressive</sub>, it can receive such marking as one can infer from the good formation of (18b).

Finally, we present examples that illustrate how - the also high - epistemic modals react to tense and to progressive aspect:

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impossibility of inflecting the modal in the progressive: \**O candidato ao intercâmbio está tendo que ficar doente/febril* (‘The exchange program candidate is having to be sick/feverish.’). This shows that the relevant distinction to the possibility of a low deontic reading is not the stage-level/individual-level contrast, but the one concerning the existence of controllable and non-controllable predicates.

- (20) a. João pode estar triste.  
 ‘John might be sad.’
- b. \*João pôde estar triste.  
 ‘It seemed possible that John was sad.’
- c. \*João está podendo estar triste.  
 ‘John is being allowed to be sad.’

In (20a) we face a syntactic context that offers restrictions to the deontic interpretation (RECH; VARASCHIN, 2018), both ought-to-do and ought-to-be types, since under the scope of the modal there is a stative predicate that is not liable to control with referential DP. Thus, the only available interpretation to *pode* in this sentence is epistemic. The ill-formation of (20b) and (20c) results precisely from the fact that tense and aspect markers are associated to an epistemic modal auxiliary. This corresponds to a high modal in the sentence structure, being located above TP and AspP<sub>Progressive</sub>, according to the hierarchy of functional heads transcribed in (8). Hence its impossibility of inflection, be it in the past or in the progressive, for both of these inflections can only attach themselves to heads that follow them in the hierarchy. This restriction was seen to have equal weight over ought-to-be deontics, showing similarities between these and epistemic modals in terms of the position (height) of the modal. Another relevant similarity between these two functional predicates concerns their circumstance of evaluation: both are evaluated relatively to the speech event (HACQUARD, 2006) and oriented to one of their participants: the ought-to-be deontic is oriented, preferably, to the addressee; and the epistemic one to the speaker.

In the next section we propose to distinguish, considering two features – agentivity [ $\pm$ Ag] and assertion [ $\pm$ Assert], ought-to-be deontics from epistemics, both mapped as high modals in the structure; and ought-to-be deontics from ought-to-do ones, both associated to the concept of obligation/permission.

### **Features associated to modal auxiliary interpretation: an initial proposal to distinguish deontic ought-to-be reading from the epistemic and deontic ought-to-do readings**

As seen in section 1, Hacquard (2006, 2010) does not distinguish structurally the ought-to-be deontic modal from epistemic modals. The representations proposed by the author (see (6a-b) in section 1) set apart only the ought-to-do deontic from the epistemic. This distinction is established by the position (height) occupied by the modal in the structure: ought-to-do deontics occupy low position, accessing the event variable  $e_i$ , corresponding to the event described by the VP, whereas the epistemic ones occupy a high position in the structure, accessing the event variable  $e_{\theta}$ , which corresponds to the speech event. It is important to observe, however, that the properties this author associates to the ought-to-be deontic suggest that it occupies a position in the structure that is as high as the one of the epistemic modal.

In section 2, the behavior of these heads in relation to modal orientation and tense and aspect inflection was shown. Epistemics are oriented to the speaker; ought-to-be deontics, typically to the addressee, both are participants in the speech event. This indicates that both epistemics and ought-to-be deontics take high position in the structure. Concerning tense and progressive aspect inflection, we have shown that epistemics and ought-to-be deontics suffer the same restrictions, confirming the hypothesis that they correspond, both, to high modals in the structure, occupying positions above tense (TP<sub>Past/Future</sub>) and aspect (AspP<sub>Progressive</sub>) categories.

It is not news in linguistic literature that epistemics exhibit these properties. These modals are treated as high functional heads by authors like Cinque (1999, 2006), Stowell (2004), Hacquard (2006, 2010), Zagona (2007), Rizzi and Cinque (2016), among others. The issue at hand here in particular is the position occupied by ought-to-be deontics, which are still recognized by few authors as a type of deontic distinct from low or root deontics. Considering the similarities in the behavior of epistemic and ought-to-be deontic heads as to the modal orientation and scope relations over tense and aspect categories, it is necessary to investigate if these heads occupy the same position in the structure of the sentence, differing from one another only by feature checking. If that is the case, it is expected for epistemics not to co-occur with ought-to-be deontics – which is what we will investigate below.

To do so, we will initially address contexts of deontic sequences in which modal agreement does not operate, as in (21a):

- (21) a. Carlos tem que poder cantar.  
       (Ought-to-be > Ought-to-do)  
       ‘Charles has to be allowed to sing.’
- b. \*Carlos pode ter que poder cantar.  
       ‘Charles might have to be allowed to sing.’
- c. \*Possivelmente, Carlos tem que poder cantar.  
       ‘Possibly, Charles has to be allowed to sing.’

The ungrammaticality of sentences (21b) and (21c) validates the hypothesis that epistemics and deontics occupy the same position in the structure, as they indicate the impossibility of co-occurrence of these items in the same sentence. In (21a) one of the licensed readings for *ter que* is the one corresponding to the ought-to-be deontic; in this case, *poder* is associated to a low deontic (ought-to-do), perhaps also being able to license an ability reading – which is not within the scope of this article. The ill-formation of sentences (21b) and (21c) allows us to infer that the epistemic head is not above the high deontic, since it is not possible to insert an epistemic modal auxiliary (*poder*), in (22b), nor an epistemic adverb, in (21c), above the first deontic auxiliary verb (*ter que*), which is oriented to an agent in the speech event (generally the addressee). From (21), we propose that the order of epistemic modal followed by ought-to-be deontic is not possible:

(22) \*Mod<sub>Epistemic</sub> > Mod<sub>Deo Ought-to-be</sub>

Note that, if we associate the *ter que* modal to an ought-to-be deontic in (21a), the epistemic reading is not licensed to the verb *poder*, only a root reading is: permission or ability. This result suggests that an inverse ordering to the one in (22), as in (23), is also not generated in the language:

(23) \*Mod<sub>Deo Ought-to-be</sub> > Mod<sub>Epistemic</sub>

Due to that, we have to consider the hypothesis that epistemics and ought-to-be deontics occupy the same position in the structure. Hacquard's proposal signals towards this, as, excluding the cases of embedded sentences, it predicts only two event variables to which modals may be relativized: one in high position ( $e_0$ ); and another in low position ( $e_1$ ). Besides that, the properties related to the ought-to-be deontic (see section 2) suggest that this nucleus accesses the speech event, similarly to epistemics. Thus, it seems to be the case that ought-to-be deontics and epistemics compete for the same variable and occupy the same position. This would explain the impossibility of them figuring together in a clause. This scenario posits another question: if epistemics and ought-to-be deontics occupy the same position in the structure and access the same event variable (HACQUARD, 2006), which are the properties that distinguish these modal heads and how are they derived?

Our proposal looks towards considering the modal as a single lexical item whose specificities are tied to the position in which it checks the features that determine its interpretation. An important aspect to consider in this discussion is that the positions predicted for each one of the functional modal heads in Cinque's hierarchy do not necessarily represent the position of modal interpretation, but in fact the position of external merge in which, in a perspective like Hacquard's, an event variable whose properties specify the modal reading is accessible.

According to Oliveira and Rech (2016) and Rech and Varaschin (2017, 2018), deontics – both ought-to-be and ought-to-do – need to check the agentivity feature [+Ag] with one of the participants of the event to which the modal is relativized. If the modal is merged in a low position in the structure, the event accessible to it will be the one described by the VP ( $e_1$ ). To check the feature [+Ag], it is necessary for an agent participant to be available in this event; thus, it is expected for ought-to-do deontics to form a sequence with unergative and transitive predicates (that select an agent) and to offer restrictions to unaccusative and stative ones (that select arguments without that feature)<sup>6</sup>. This requirement by the modal explains why the ought-to-do reading is not made available in (24b):

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<sup>6</sup> Oliveira and Rech (2016), in an experimental study, have determined that Brazilian Portuguese speakers accept ought-to-do deontic reading in contexts in which the modal forms a sequence with unaccusatives that describe physical displacement (*chegar/arrive*, *entrar/enter*, *sair/leave*, *surgir/arise*, *aparecer/appear*...), but reject this reading with the remaining unaccusatives (*nascer/to be born*, *morrer/die*, *murchar/wilt*, *florescer/bloom*...). Rech and Varaschin (2017, 2018) explain how the ought-to-do deontic interpretation is licensed with some unaccusative predicates and also with statives that are liable to control.

- (24) a. O Pedro deve viajar ainda este mês.  
 ‘Peter must travel still within this month.’
- b. O Pedro deve morrer ainda este mês.  
 ‘Peter must die still within this month.’

In (24a), the modal *deve* can receive both epistemic or deontic (ought-to-be or ought-to-do) readings. According to our hypothesis, the ought-to-do interpretation is licensed to the modal because there is an agent participant (*O Pedro*) in the event described by the VP. It is with this participant that the modal will check its feature [+Ag], necessary to derive the deontic reading. In (24b), the ought-to-do interpretation is not made available. Let us suppose that this restriction is due to the properties of the predicate under the scope of the modal, that is an unaccusative that does not describe displacement in physical space; thus, there is not, in the event described by the VP, any participant [+Ag] with which the deontic may check its feature. The ought-to-be interpretation is, nonetheless, available to the modal in (24b). This sentence may be interpreted, e.g., like an order to the addressee so that he guarantee that the event of *Pedro morrer ainda este mês* (‘Peter die within this month’) comes to pass. In this case, the deontic would check the feature [+Ag] with an agent participant in the speech event (the addressee), relativizing itself to the event  $e_0$  (HACQUARD, 2010).

The epistemic modal head does not require an agent participant, as one can infer from the sentences in the following example:

- (25) a. Pode chover.  
 ‘It might rain.’
- b. Essas flores podem murchar logo.  
 ‘These flowers might wilt soon.’
- c. O Pedro deve ser de origem germânica.  
 ‘Peter must be of Germanic origin.’

In the sentences of example (25), only the epistemic reading is available to the modals *poder* and *dever*. The predicate under the scope of the modal in each one of these sentences does not select an agent argument: in (25a), it concerns a verb that does not select arguments at all; in (25b), the predicate corresponds to an unaccusative that does not describe physical displacement; and, at last, in (25c), the embedded predicate is a stative one not liable to control, which offers restrictions to ought-to-do deontics (RECH; VARASCHIN, 2018). In these cases, there is not an agent participant in the event described by the VP that can check the feature [+Ag] of a deontic; thus, the restriction to the ought-to-do interpretation was already expected. It is interesting to observe here that, for these cases, the ought-to-be deontic interpretation is also



unavailable to the modal. In (25a), the restriction seems to result from the absence of an agent participant to whom the permission to guarantee the event of *chover* could be given. In (25b) and (25c), the predicates under the scope of the modal are not liable to control; in this case, the absence of an agent follows from the impossibility to give an order or permission to someone to control an event that cannot be controlled<sup>7</sup>. The feature [+Ag] seems, therefore, capable of distinguishing deontics (ought-to-be and ought-to-do) from epistemics, as only the former require an agent participant.

The feature [+Ag] does not allow us, however, to distinguish between the two deontic types. As aforementioned in sections 1 and 2, the ought-to-be deontic is typically employed in the case of a directive illocutionary act, once it is licensed in contexts in which the speaker gives an order/permission to a participant of the speech event, typically the addressee. On the other hand, the ought-to-do deontic figures in contexts in which one reports an order/permission that lies on one of the participants of the event described by the VP – normally the subject of the sentence. The sentences in (26) illustrate this difference:

- (26) a. Deve ter bem-casado na recepção.  
 ‘There must be *bem-casado* in the reception.’
- b. Os responsáveis pelo buffet tiveram que colocar bem-casado na recepção.  
 ‘The ones responsible for the buffet had to put *bem-casado* in the reception.’

In (26a), the ought-to-be deontic interpretation is licensed to the modal *deve*. In this case, the sentence corresponds to a directive speech act addressed to someone in the utterance occasion and the modal is anchored to the time of the speech event (*Speech time*). In (26b), however, the ought-to-be reading is not available. The modal carries past inflection marking and corresponds to the report of an order, and not to a directive speech act, properties associated to the ought-to-do deontic. Consequently, a relevant property to distinguish between the two deontic types seems to be that only the ought-to-do deontic figures in merely assertive sentences. This way, the syntactic feature assertion [Assert], associated by Zagana (2007) to epistemics, may be extended to deontics of the type ought-to-do. So, with only two features – agentivity [Ag] and assertion [Assert] – it is possible to differentiate epistemics from ought-to-be deontics and these from ought-to-do deontics, as shown in Table 1:

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<sup>7</sup> It is important to highlight that we are not considering “scripted” contexts, in which even a proper name like *Pedro* in (25c) might assume an attributive reading, conveying a metalinguistic sense possibly paraphrasable by “the individual/character/man named ‘Pedro’”. This reading would be favored if (25c) would appear in the text of a screenplay. In these cases, if the subject DP were interpreted attributively, the ought-to-be reading would be possible. What interests us here, however, is the peculiar combination of a non-controllable state with a referential DP, since in these contexts (RECH; VARASCHIN, 2018), the listener would not have how to act (and, hence, be an agent): neither directly over the property (given that it concerns a non-controllable property) nor over the selection of a referent that satisfies the property (what might occur when the DP is attributive).

**Table 1** – Features associated to epistemic and deontic modal nuclei.

Modals Features	Epistemic	Deontic <i>Ought-to-be</i>	Deontic <i>Ought-to-do</i>
Agentivity [Ag]	[-Ag]	[+Ag]	[+Ag]
Assertion [Assert]	[+Assert]	[-Assert]	[+Assert]

**Source:** Author's elaboration.

As outlined in Table 1, the epistemic modal distinguishes itself from the two types of deontic modals by the agentivity feature. When it comes to differentiating between ought-to-be and ought-to-do deontics, we are proposing the [Assert] feature. This simplified feature matrix may be a way to explain how modals that occupy the same position in the structure license different readings, without having to posit that this difference is specified in the lexicon. Here it is considered to be given along the derivation.

## Final Remarks

We found that a refined conceptual distinction as the one proposed by Feldman (1986) between an ought-to-be and an ought-to-do obligation presents quite systematic and robust syntactic reflections. By means of tests – that explored independently motivated results regarding the position of other functional heads (CINQUE, 2006) and properties of lexical predicates (RECH; VARASCHIN, 2017, 2018) – we have sought to provide evidence for the existence of a high deontic (ought-to-be) in Brazilian Portuguese. We suppose that the main contribution of our article is to present syntactic properties that are associated only to the deontic interpretation of the ought-to-be type, giving support to analyses that locate this type of modality in a high position in the structure (BRENNAN, 1993; HACQUARD, 2006, 2010). Furthermore, we consider to have contributed to the advance of modal studies under a syntactic perspective, since we were able to show evidence that ought-to-be deontics and epistemics share properties that led us to suppose they are attached to the same position in the structure. We suggest that what specifies their interpretation is a difference in terms of feature checking: the ought-to-be deontic would be [+Ag] and [-Assert]; and epistemics would be [-Ag] e [+Assert]. By means of the assertion feature, we have shown that it is possible also to distinguish between the two deontic interpretations.

We are aware that the description here presented is a small contribution to modal studies in Brazilian Portuguese. Our attention was focused on how one of the modality types – deontic ought-to-be – is derived in the structure. Our research does not specify exactly this position, but aids its mapping by showing how this type of deontic relates with categories like tense and (progressive) aspect. We believe it is necessary to go

further in the description of these relations in order to evaluate if Hacquard's proposal – that modals are interpretable relatively to events accessible in certain positions in the structure – is indeed compatible with the mapping of functional categories described by Cinque. As we have seen, this cartographic model seems to apply to Brazilian Portuguese modals, except that it still does not recognize a high position for ought-to-be deontics, the object of this research.

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RECH, N.; VARASCHIN, G. Propriedades do Deôntico Modal OUGHT-TO-BE. *Alfa*, São Paulo, v.62, n.2, p.357-377, 2018.

- *RESUMO: Neste artigo, discutimos diferentes conceitos de obrigação a partir da distinção estabelecida por Feldman (1986): (i) interpretação ought-to-be, que envolve uma propriedade de um estado de coisas que deve ocorrer; e (ii) interpretação ought-to-do, que relaciona um agente a um estado de coisas. Supomos que tal distinção conceitual resulta de diferenças estruturais. Nessa linha, seguimos Brennan (1993) e Hacquard (2006, 2010). Como ainda não há na literatura uma proposta de representação estrutural que dê conta da interpretação ought-to-be, buscamos evidências no português brasileiro para depreender mais precisamente a posição em que o deôntico é concatenado na estrutura para gerar essa interpretação. Analisamos fatores como orientação dos deônticos, relação com outros núcleos modais e com categorias de tempo e aspecto. Nossos testes apontaram para a existência de um deôntico alto (ought-to-be). Este exibe propriedades de um ato de fala diretivo, é orientado para um agente na situação de fala (geralmente o addressee) e não carrega marcas de tempo ou aspecto. Embora o deôntico ought-to-be não compartilhe todas essas propriedades com o modal epistêmico, há evidências de que esses modais ocupam a mesma posição na estrutura. Por fim, propomos distinguir deônticos ought-to-be de epistêmicos e de deônticos ought-to-do a partir de dois traços: agentividade [Ag] e asserção [Assert].*
- *PALAVRAS-CHAVE: Modalidade Deôntica. Deônticos Ought-to-be. Hierarquia de Cinque. Checagem de traços.*

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