

AGAINST HOMONYMY AND POLYSEMY: FOR DEFENDING A MODAL CATEGORY TO MODAL VERBS¹

EN CONTRA DE LA HOMONÍMIA Y DE LA POLISEMIA: EN DEFENSA DE UNA CATEGORÍA
MODAL PARA LOS VERBOS MODALES

AGAINST HOMONYMY AND POLYSEMY: FOR DEFENDING A MODAL CATEGORY TO
MODAL VERBS

Maurício Resende*
University of São Paulo

ABSTRACT: This paper discusses morphological, syntactic, and semantic properties of Portuguese modal verbs. Following the assumptions from Generative Grammar, this case-study approaches two very important issues for the characterization of modal verbs, having to do with which concern their both either homonymic or polysemic status. By reanalyzing the “lexical” counterpart of these verbs as well as their “auxiliary” side, the present work claims that there is only a lexical entry for *dever* and *poder* and that the properties of their structure and interpretation depend on the syntax, not on the lexicon. Hence, this paper argues for a MODAL category, not as a descriptive label, but as a grammar prime, and shows the both empirical and theoretical consequences of this proposal.

KEYWORDS: Modal verbs. Auxiliary verb. Homonymy. Polysemy.

RESUMO: Este trabalho discute propriedades morfológicas, sintáticas e semânticas dos verbos modais do português. Seguindo os pressupostos da Gramática Gerativo-Transformacional, este artigo discorre sobre dois problemas bastante caros à caracterização dos verbos modais, que têm a ver com seu estatuto de homônimos ou polissêmicos. Reanalizando o caráter “lexical” desses verbos bem como seu caráter “auxiliar”, este estudo defende que há apenas uma única entrada para *dever* e *poder* e que suas propriedades

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* PhD in Linguistics by UNICAMP and currently a postdoctoral researcher in Linguistics at University of São Paulo (USP). E-mail: mauri_cio_resende@hotmail.com.

estruturais e interpretativas dependem da sintaxe e não do léxico. Para tanto, este trabalho advoga em favor de uma categoria MODAL, não como rótulo descritivo, mas como primitivo da gramática, e mostra quais as consequências teóricas e empíricas dessa proposta.

PALAVRAS-CHAVE: Verbos modais. Verbo auxiliar. Homonímia. Polissemia.

RESUMEN: Este trabajo discute acerca de las propiedades morfológicas, sintácticas y semánticas de los verbos modales del Portugués. Siguiendo las premisas de la Gramática Generativo-Transformacional, este artículo discurre sobre dos problemas muypreciados en la caracterización de los verbos modales, que están relacionados con su condición de homónimos o polisémicos. Reanalizando el carácter “lexical” de esos verbos así como su carácter “auxiliar”, este estudio sostiene que hay solamente una entrada para deber y poder y sus propiedades estructurales y interpretativas dependen de la sintaxis y no del léxico. Para ello, en este se aboga por una categoría MODAL en esta, categoría no como término descriptivo, sino como primitivo de la gramática, además de presentar cuáles son las consecuencias teóricas y empíricas de esta propuesta.

PALABRAS- CLAVE: Verbos modales. Verbos auxiliares. HomonímiaHomonimia y. Polisemia.

1 INTRODUCTION

The proper characterization of morphological, semantic, and (mostly) syntactic properties of modal verbs has been on the agenda of linguists' interest ever since the first versions of the Generative Grammar, with work focused on English. Regarding Brazilian Portuguese (BP), pioneering work on (formal) Linguistics, such as Pontes (1973) and Lobato (1975), also provided a detailed examination of modal verbs, especially *poder* ('can/may') and *dever* ('must').²

Part of the interest for these verbs comes from their multiplicity of – modal and non-modal – readings, cross-linguistically attested. As regards BP, there is some agreement on *dever* present a behavior associated to (i) full (or lexical) verb, as in (1a), whose meaning relates to the idea of debt; (ii) epistemic modal verb, as in (1b), triggering a probability-reading; (iii) root-modal (or non-epistemic modal) verb, which conveys a deontic obligation-reading in the case of *dever*, as in (1c) – more examples in (10).

- (1) (a) O João deve dinheiro para o Mário.
'John owes Money to Mario'
(b) Deve chover no Natal.
'it might rain on Christmas'
(c) Todo empresário deve declarar seu imposto de renda.
'every businessman must file his income tax return'

As regards *poder*, there is no common ground in the literature whether or not this verb has a lexical counterpart, as *dever* in (1a). In any case, linguists seem to agree on the recognizing that *poder* has, at least, three modal readings, namely, epistemic with a possibility-reading, in (2a); deontic with a permission-reading, in (2b); circumstantial with an ability-reading, in (2c). In such cases, both permission- and ability-readings are instances of root-modality – see (11) for more examples.

- (2) (a) Pode chover no Natal.
'it may rain on Christmas'
(b) Todo jovem com 18 anos pode tirar carteira de motorista no Brasil.
'every 18thed young person may have his driver's license in Brazil'
(c) O Pedro pode quebrar essa mesa com um só soco se quiser.
'Peter can break this table with a single punch if he likes it'

² Later “*ter que/de*” also was analyzed as a prototypical modal verb in BP.

Apart from the work primarily focused on the syntax of modal verbs – such as Lunguinho (2005, 2006), Rech (2010), and Resende & Araújo-Adriano (2019) –, there is work targeting their formal semantic behavior – see Pires de Oliveira & Scardueli (2008), Pessotto (2014), Resende (2015, 2021), Pires de Oliveira & Rech (2016) and Ferreira (2020), to mention a few. The question posed by this meaning-multiplicity is how to determine which the grammar's formal element is responsible to derive or license their different readings.

Syntactically, as already mentioned, the problem underlying the characterization of *dever* and *poder* is not new. There has been a lot of discussion on the subcategorization properties of these verbs and also on the formation of a “syntactic unit” out of the modal verb and its infinitive complement, in terms of a complex predicate. In the light of morphological properties, modal verbs also exhibit an interesting behavior, as already pointed out in the literature, as for (i) the lack of a full paradigm of verbal forms (Lunguinho, 2006), (ii) the special (i.e., non-compositional) morph-semantic effect concerning the occurrence of past-imperfective forms – *devia* (‘should’)/*podia* (‘could’) –, but mostly, (iii) the lack of consensus on the *nature* of modal verbs, that is, which verbal class *dever* and *poder* – and *ter que/de* (‘have to’) – belong to.

Specifically, “modal (auxiliary)” is a descriptive label that has been employed in the literature to refer to *dever*, *poder*, and *ter que/de* devoid of a formal (or explicit) characterization of whether or not the *modal* tag has some theoretical status in the formal characterization of these verbs in the lexicon. Of course, it is quite reasonable to presume that “auxiliary” is a verbal category and also that *ter* (‘have’) gets that tag in the lexicon – since this tag “morphologically” distinguishes it from its lexical counterpart. Moreover, recent work on this topic – such as Lunguinho (2005, 2006) and Rech (2010) – analyzes *dever*, *poder*, and *ter que/de* as “modal auxiliary verbs”, that is, a subset from BP auxiliary verbs – an idea that traces back to pioneering work, such as Pontes (1973) and Lobato (1975).

Thus, based on the literature, by assuming that these three verbs “syntactically” compose the group of auxiliary verbs – which amounts to the analysis that they occupy an Aux position in some proposals –, this paper aims at discussing if “modal” is only a descriptive label or if it has a theoretical status concerning the identification of a verbal subclass in the lexicon. Ultimately, recognizing a “new” verbal class in the lexicon (jointly with auxiliary, lexical, etc.) follows from recognizing a certain set of special properties, particular to such a class, in addition to the fact that it implicates a stand on the debate of whether these verbs are homonymic, polysemic, etc.

Methodologically, the present work focuses on the core structural properties and on their basic semantic readings of *dever* and *poder* with present tense morphology, assuming that the generalizations made here can be extended to other verbal tenses (past imperfective, for instance) and also to other (modal) readings these verbs can convey, as well as to *ter que/de*. Because of scope, other cases are mentioned only when convenient.

As this paper primarily targets the discussion of a modal category in the lexicon, the assumption is that everything descriptively characterized as modal (verb) lies in the extension of what can be under the scope of such a category. For this purpose, this paper discusses morphological, syntactic, and semantic properties of these verbs in order to show that they do compose a special class. Specifically, this work argues that “modal” is a morphological tag to *dever*, *poder*, and *ter que/de* recovering their modal, lexical and auxiliary employs, although it does not depend on them.

That been said, the present work is divided as follows: in § 1, we discuss properties of *dever* and *poder* supporting the analysis that they have a lexical counterpart. In § 2, we approach the core semantic properties of the modal counterpart of these verbs and show why these properties are usually associated with the syntax of auxiliary verbs. In § 3, we show that *dever* and *poder* behave differently from verbs belonging to other classes. In § 4, we discuss the issue of homonymy vs. polysemy as well as the possibility of there being a modal category as grammar prime (beyond a descriptive label). Lastly, in § 5, we make some remarks on how Generative Grammar technology could run on this prime.

2 THE LEXICAL COUNTERPART

As mentioned, part of the controversy targeting the characterization of modal verbs in BP has to do with recognizing a morphological category (that is, a type of verb), which *dever* and *poder* belong to, mostly regarding if these verbs are homonymous or polysemic in what concerns both to the different modal readings and the identification of a lexical counterpart. Most of scholars studying BP acknowledges the existence of a lexical *dever* (aside from a modal *dever*). As shown in (3), this is because the lexical *dever* does not semantically select its (three) arguments, neither does categorically select a DP (i.e., a non-verbal element) as an internal argument, as we can see in (4) – (1a) rewritten in (3a).

- (3) (a) O João deve dinheiro para o Mário.
 ‘John owes money to Mario’
 (b) *O João deve dinheiro para a água.
 ‘John owes money to the water’
 (c) *A água deve dinheiro para o Mário.
 ‘the water owes money to Mario’
- (4) (a) O Hugo deve uma explicação para o Raul.
 ‘Hugo owes an explanation to Raul’
 (b) O Hugo deu uma explicação para o Raul.
 ‘Hugo gave an explanation to Raul’

As regards *poder*, as mentioned, not all scholars treat *poder* as having a lexical counterpart aside from the modal one. However, the data in (5) suggest it presents the same properties as *dever*, taking into account the semantic selection of arguments and the subcategorization of a non-verbal element.

- (5) (a) Sendo a filha do patrão, a Ana pode o que quiser / qualquer coisa.
 ‘by being the boss’ daughter, Anne can (do) whatever she likes / anything’
 (b) Pode uma coisa dessas?
 ‘can (be possible) something like this?’
 (c) O Carlos não pode comigo / comigo ninguém pode.
 ‘Carl cannot (handle) me / nobody can (stop) me’
 (d) Eu não posso com altura.
 ‘I cannot (stand) heights’
 (e) Onde não haja quem possa com a nossa felicidade.³
 ‘where there is no one who can (take) our happiness’
 (f) Deus pode tudo.
 ‘God can (do) everything’

Rech (2010), by taking a stand on this issue, claims that *poder* has no lexical counterpart. For this author, the example in (5f) – taken from Rech (2010, p. 40) – is a case of ellipsis, where the lexical verb *fazer* (‘do/make’) licensing the DP *tudo* (‘everything’) is elided, thus making only the modal auxiliary surface. According to Rech, the fact that *poder* cannot be passivized, as in (6b), is borne out by the analysis of elision.

- (6) (a) Deus pode [_Δfazer] tudo.
 ‘God can [_Δdo] everything’
 (b) *Tudo é podido por Deus.
 ‘everything is could by God’

³ Verse from *Ai ai ai ai (banho de chuva)* by Vanessa da Mata.

- (c) Tudo pode ser feito por Deus.
 ‘everything can be done by God’

However, a deeper examination of these facts shows that it is not that simple. Firstly, it is not immediately obvious that *Deus pode tudo* is synonymous with *tudo pode ser feito por Deus* in (6c), which is expected in an active/passive correspondence. The interpretation of (5f) seems a little bit less constrained than (6a), that is, God seems to be able to do more things than that under the semantic scope of *fazer* – “Deus pode tudo” can mean that God can *be* invisible, *be* in several places at the same time, *be* immortal, etc. In any case, this analysis struggles the syntactic behavior, in addition to the semantic/lexical problem of the lack of synonymy.

The first of them has to do with the fact that BP does not seem to allow for elided verbal complements in other contexts, as we can see in the ill-formedness of (7). Furthermore, the very impossibility of building a passive sentence as (6b) is not the outcome from the elision of the main verb, but a constraint on building passive sentences out of state-verbs. In this case, if *poder* is a lexical verb, with an ability-reading, then we have a state-verb. There also exists the same kind of constraint on verbs, such as *querer* (‘want’) and *saber* (‘know’), as in (8).

- (7) (a) *O Pedro vai tudo / o Pedro vai fazer tudo.
 ‘Peter is going everything’ / ‘Peter is going to do everything’
 (b) *O João tem que tudo / o João tem que fazer tudo.
 ‘John has to everything’ / ‘John has to do everything’
 (8) (a) *Tudo é sabido por Deus / Deus sabe [_Δ fazer] tudo.
 ‘everything is known by God’ / God knows (how to) [_Δ do] everything’
 (b) *Tudo é querido pelo João / O João quer [_Δ fazer] tudo.
 ‘everything is wanted by John’ / John wants to [_Δ do] everything’

That been said, Rech’s arguments do not argue against the analysis of *poder* as also having a lexical counterpart, subcategorizing a non-verbal complement. In any case, even if this analysis could be sustained, it would be still needed to explain why *poder* is a modal auxiliary subcategorizing a lexical verb in (5f), but *dever* in (4a) is the lexical verb itself, although it was possible to propose that in (4a) there is an elided verb *dar* (‘give’) – as *o João deve [_Δ dar] uma explicação para o Raul* (‘John owes [_Δ to give] an explanation to Raul’) – relating to (4b).

Additionally, Resende (2020) argues that only lexical verbs – but not auxiliary verbs – undergo nominalization. Hence *dever*’s lexical counterpart can be nominalized as *dívida* (‘debt’) in (9a) in the same way the lexical counterpart of *poder* can be nominalized as *poder* (‘power’) in (9b) or *potência* (‘force’) in (9c), following the analysis that if the lexical counterpart of *poder* were a state-verb, as suggested, its meaning would be close to “have the ability to”, “be able to”, “have the power to”, as claimed.

- (9) (a) A dívida de Carlos com o Banco já passa de R\$ 50 mil.
 ‘Carl’s debt to the bank has reached over R\$ 50 thousand’
 (b) O Brasil tem três poderes: o executivo, o legislativo e o judiciário.
 ‘Brazil has three government branches: executive, legislative and judicial’
 (c) A potência desse motor é muito baixa.
 ‘the force of this engine is quite low’

That been said, we can conclude that, as *dever*, *poder* also has a lexical counterpart, which subcategorizes a non-verbal complement, what sets them aside from their modal counterparts, following Pontes (1973), Lobato (1975), Miranda (1975), and others, in that they are usually taken as auxiliary verbs subcategorizing verbal complements. Thus, aiming at making the right distinctions, it is worth making some remarks on the modal counterpart of the (descriptively) called “modal verbs”.

3 THE MODAL COUNTERPART

Apart from having a lexical counterpart, it is true that the debate in the literature has mostly targeted their modal character, namely, the discussion of the properties of *dever* and *poder* as being modal verbs. Descriptively, *dever* has strictly three modal readings, as we can see in the following: epistemic in (10a), deontic in (10b), teleological in (10c) – in addition to the examples in (1). Similarly, as shown in (2), *poder* also has three modal readings: epistemic in (11a), deontic in (11b), and circumstantial in (11c).

- (10) (a) A Terra deve ser redonda.
 ‘the Earth must be round’
 (b) Todo homem com 18 anos no Brasil deve se alistar às forças armadas.
 ‘every 18thed man in Brazil must join the armed forces’
 (c) Você deve higienizar bem as mãos para se proteger do novo Coronavírus.
 ‘you must wash your hands very well to be protected from Coronavirus’
- (11) (a) A Terra pode ser o único planeta habitável do Sistema Solar.
 ‘the Earth can be the only livable planet in the Solar System’
 (b) Toda mulher com 18 anos no Brasil pode se alistar às forças armadas.
 ‘every 18thed woman in Brazil may join the armed forces’
 (c) Essa cafeteira pode fazer até 10 cafezinhos em apenas 1 minuto.
 ‘this coffee-machine can produce 10 cups of coffee in just one minute’

As regards the syntax of these verbs, the literature on BP has several proposals that go from treating *dever* and *poder* as intransitive verbs – see Pontes (1973) and Miranda (1975) – or as control verbs – ultimately, transitive verbs (Figueiredo Silva, 1996) – until treating them as auxiliary verbs or particularly as a subset from BP auxiliary verbs. The later one is the stand taken by Lunguinho (2005, 2006), Rech (2010) and Resende & Araújo-Adriano (2019).

Specifically, Rech (2010) claims that modal verbs are unaccusative and subcategorize their internal argument, which is a verbal complement, as for being an auxiliary, and in this case, it is the infinitive form that heads the phrase complementing the modal verbal. Other properties often associated with auxiliary verbs are: non-selection of external argument, formation of a single syntactic unit with its complement, what has as consequence the existence of a single temporal domain and the active/passive correspondence – see also Burckhardt (1977) and Lunguinho (2005) for analyses taking the same stand.

Furthermore, characterizing modal verbs as auxiliary verbs leads to the analysis that they are part of the grammatical (or functional) resources of the language. Because of it, Rech (2010) treats them as functional heads obeying a certain hierarchy (Cinque, 1999) establishing the kind of interpretation that such heads can convey in relation to the position of the other phrases.

Moreover, by being functional items, the prediction is they head a more strict structural relation inside a syntactic domain, where they appear since, according to Cinque, the functional heads can be realized not only by verbs, but also by morphemes, adverbs, and so on. Another consequence is that they do not semantically select the (kind of) complement they appear with, although it is possible to exist a morph-semantic dependence – in the sense of Lunguinho (2006).

In any case, it is worth noticing that *dever* and *poder* do not uniformly behave concerning an one-to-one relation between “being modal” and “having auxiliary syntax”, since *dever* and *poder* with a deontic reading display different syntactic properties, differently from when they convey an epistemic reading, as we can see in (12) and (13) concerning the external argument selection and the licensing of the verbal type – see Lobato (1979, 1984) for related ideas.

- (12) (a) A Terra deve / pode ser o único planeta habitável. (✓epistemic / *deontic)
 ‘the Earth must / may be the only livable planet’
 (b) Todo cachorro deve / pode sonhar com seu dono. (✓epistemic / *deontic)

- ‘every dog must / may dream of its owner’
 (13) (a) Deve / pode haver ciclones nesta região. (✓epistemic / *deontic)
 ‘there must / can be cyclones in this area’
 (b) Deve / pode chover ainda hoje. (✓epistemic / *deontic)
 ‘it might / may rain today’

What the data in (12) suggest is that only the epistemic reading is compatible with a sentence with non-human subjects (*the Earth* and *every dog*). Similarly, the data in (13) show that only the epistemic reading is possible with existential verbs (*be*) and with meteorological predicates (*rain*). Of course, one could suggest that the epistemic reading is coded in a higher position in the hierarchy of functional heads and that it accounts for the higher level of grammaticalization for this kind of modality, that is, the fact that the epistemic reading seems to be “more auxiliary” than the deontic reading can be accounted for by the level of structural “crystallization” of one reading over another, even for the same item. However, in Generative Grammar, which endorses a certain kind of lexicon and grammar, the different flavors in the spectrum of grammaticalization cannot be settled. Hence, given a lexicon listing verbal forms, they get either the “auxiliary verb” tag or the “lexical verb” tag (or even the “modal verb” tag – see § 3). However, it cannot be the case of exiting labels as “almost auxiliary”, “a bit auxiliary” or “advanced in grammaticalization”; hence the controversy surrounding the characterization of modals.

Therefore, the data in (12) and (13) suggest that deontic *dever* and *poder* are closer to their lexical counterpart rather than to their auxiliary counterpart – associated with the epistemic reading, for instance. Additional evidence for this conclusion is provided by nominalization. As assumed in § 1, auxiliary verbs do not undergo nominalization; however, the examples in (14) show that, jointly with the nominalizations in (9), the deontic reading can also be conveyed by nominals, as *dever* (‘duty’) and *poder* (‘power’).

- (14) (a) O dever de servir o país de todo soldado. (*epistemic)
 ‘every soldier’s duty of serving his country’
 (b) O poder de fazer com que os casais façam as pazes daquele terapeuta. (*epistemic)
 ‘that therapist’s power of making the couples reconcile’

In (14a), *dever* only admits a non-epistemic reading (deontic, in this case) just as *poder*, in (14b), conveying only a non-epistemic reading (circumstantial, in this case). In this scenario, the proper characterization of modal *dever* and *poder* as a subset of the auxiliary verbs gets compromised, since their morphological and syntactic behavior seems to change depending upon the triggered reading. Moreover, as shown in § 1, there is good empirical evidence to sustain the idea that *dever* and *poder* are also lexical in some contexts, which makes their characterization as homonymous or polysemic even more controversial.

Rech (2010) analyzes the behavior of *dever* and *poder* as regards their kind of reading in the light of the Cartographic Syntax model (CINQUE, 1999) and argues that the different semantic readings are coded in different syntactic positions. Even if there is empirical evidence – and theoretical background – for supporting this conclusion, the question of which is the best way to characterize *dever* and *poder* in the lexicon remains open.

4 NEITHER (MUCH) LEXICAL NOR (MUCH) AUXILIARY

In § 1, we showed that *dever* and *poder* can exhibit a behavior prototypically associated with lexical verbs. In § 2, we showed that, although modal *dever* and *poder* can be related to auxiliary verbs, as they display some of their properties (Lobato, 1975), both morphological and syntactic behavior of these verbs seem to be different depending on the modal reading conveyed. In this point-of-view, the treatment of these verbs as polysemic would be unworkable, since there is a range of structural constraints on their systematic licensing in different syntactic environments. In other words, it is not the “wide” meaning of a modal verb that determines its syntax, but it is the syntactic environment that constraints the reading the verb can convey.

Alternatively, it would be possible to claim that one is dealing with homonymous verbs. However, apart from faring very poorly, this analysis struggles with psychological plausibility, since it would require increasing the mental lexicon with several *dever* and *poder*. Moreover, it would have no cross-linguistic support, because this is a phenomenon found in a lot of languages for the same items. Furthermore, the lack of correspondence between an “auxiliary syntax” and an “auxiliary semantics” and also between a “lexical verb syntax” and a “lexical verb semantics” knocks out the treatment of *dever* and *poder* in terms of homonymy.

In addition to the observations in § 1 and § 2 – when we showed where *dever* and *poder* pattern with both lexical verbs and auxiliary verbs –, it is worth pointing out where they differ from these two subclasses, starting with the examples in (15).

- (15) (a) A Maria deve / pode sair. (✓epistemic / ✓deontic)
 ‘Mary must / can leave’
 (b) O copo deve / pode quebrar. (✓epistemic / *deontic)
 ‘the glass must / can break’

What the data in (15) show is that, differently from other auxiliary verbs, *dever* and *poder* can convey “less functional” meanings – in the sense of Cinque (1999) – than the other ones. The semantic compatibility of *o copo* (‘a glass’) with *quebrar* (‘break’) in (15b) indicates that the constraint comes from the modality rather than the full verb. On the other hand, *dever* and *poder* do not semantically behave like other lexical verbs, in the sense that their meaning can be less transparent in some cases, as in (16) – see Lobato (1984) for a similar conclusion.

- (16) (a) Pode tirar o cavaleiro da chuva.
 ‘you can take the little horse out of the rain’
 = “give up”
 (b) Pode deixar comigo.
 ‘you can let (it) with me’
 = “I got this”
 (c) Pode crer.
 ‘you can believe (it)’
 = “oh right”

The examples in (16) show that the lack of semantic clearness in certain occurrences of *poder* argues against a prototypically lexical nature – the same reasoning would apply to an analysis treating *poder* in (16) as an auxiliary verb. It is worth mentioning that it doesn’t take place due to the idiomatic feature of these expressions, since in (16a) and (16b) *poder* does not belong to these expressions – see *vai tirando o cavaleiro da chuva*, with the auxiliary *vai* (‘go’) and *deixa comigo* without the modal. Additionally, we should notice that differently from other lexical verbs and also from other auxiliary verbs, *dever* and *poder* – as well as *ter que/de* – can change their meaning depending on their syntactic position – see Lunquinho (2005) for a detailed discussion.

- (17) (a) Ana deve poder viajar. (*epistemic / ✓non-epistemic)
 ‘Anne must be able / allowed to travel’
 (b) Ana pode viajar. (✓epistemic / ✓non epistemic)
 ‘Anne can travel’
 (18) (a) Ivo não deve comprar a moto. (✓epistemic / ✓non-epistemic)
 ‘Ivo may not buy the motorcycle’
 (b) Ivo deve não comprar a moto. (✓epistemic / *non-epistemic)
 ‘Ivo must not buy the motorcycle’

- (19) (a) O Brasil tem que ser hexa na próxima Copa. (✓deontic / ✓non-deontic)
 'Brazil has to be hex champion in the next World Cup'
 (b) O Brasil pode ter que pedir um empréstimo ao FMI. (✓deontic / * non-deontic)
 'Brazil may have to ask for a loan to FMI'
- (20) (a) Ana quer ir para Paris.
 'Anne wants to go to Paris'
 (b) Ana vai querer ir para Paris depois dessa notícia.
 'Anne is going to want to go to Paris after this news'
- (21) (a) O Pedro vai viajar amanhã.
 'Peter is going to travel tomorrow'
 (b) O Pedro deve ir viajar amanhã.
 'Peter must go on a trip tomorrow'

What the examples (17)-(21) show is that, differently from what happens to other lexical verbs – as in (20) – and to other auxiliary verbs – as in (21) –, modal verbs present constraints on the interpretation depending on the syntactic position they occupy. Moreover, another property that has been pointed out in the literature on BP as a modal verb syntactic particularity – see, for instance, Burckhardt (1977) and Lunguinho (2005) – is the possibility of interposing between the negation and the infinitive verb complementing it, which not only distinguishes modal verbs from other auxiliary verbs (Lobato, 1995), but also determines a certain kind of reading, namely: in a sentence having an intervening negation, the (finite) modal verb only admits an epistemic reading (Lunguinho, 2005), as the examples in (22) indicate.

- (22) (a) Ivo não deve (não) comprar a moto.
 'Ivo may not buy the motorcycle'
 (b) Ivo deve não comprar a moto.
 'Ivo must not buy the motorcycle'
 (c) Ivo não pode (não) comprar a moto.
 'Ivo cannot buy the motorcycle'
 (d) Ivo pode não comprar a moto.
 'It is possible for Ivo not buying the motorcycle'

As we can see in (22), modal verbs not only do accept an intervening negation, but also allow it for two of them. This behavior shows that *dever* and *poder* must be kept apart from the other auxiliary verbs, since they do allow double negation, as we observe in (23) for the auxiliary verbs *ter* and *ir* ('going to'). Furthermore, this property keeps them apart from the other lexical verbs, in that their reading is depending on the position of the negation, as we can see in the contrast to *querer* and *tentar* ('try') in (24).

- (23) (a) *O Ivo vai não comprar a moto (mas alugar).
 'Ivo is not going to buy the motorcycle (but rent)'
 (b) *O Ivo tem não comprado motos (mas alugado).
 'Ivo has not bought motorcycles (but rented)'
- (24) (a) O Ivo quer não comprar a moto (mas alugar).
 'Ivo does not want to buy the motorcycle (but rent)'
 (b) O Ivo tentou não comprar a moto (mas acabou cedendo ao seu desejo).
 'Ivo tried not to buy the motorcycle (but he ended up surrendering to his desire)'

Additionally, the very possibility of double negation has fed another type of debate in the literature on this topic, namely, the status of the two negations. Ever since Lobato (1975), there has been questioning on whether or not the intervening negation indeed

challenges the status of syntactic unit (or complex predicate) of the modal verb plus its infinitive complement, which would have as result a range of questions having to do with the single temporal domain, the presence of other intervening adverbs and so on – see Resende & Araújo-Adriano (2019) for an overview of the properties supporting the “syntactic unit” hypothesis.

Although our analysis does not crucially depend on this discussion, we would like to chase the hypothesis that the double negation occurring with *dever* and *poder* does not argue against the syntactic unit built out of the modal verb and its infinitive complement. Such a statement is borne out by two pieces of evidence. The first one comes from morph-phonetics. Strictly speaking, the negation *não* (‘not’) has two different realizations in BP: the unstressed form [nu^m] and the stressed form [‘nâw]. However, Miotto, Figueiredo Silva e Lopes (2013) argue that these two forms are not in free variation: whereas the stressed form is the default realization for *não*, the unstressed variant is restricted to a small set of contexts, such as the verbal negation.

Therefore, it is possible to say both *o João* [‘nâw] *vem* and *o João* [nu^m] *vem* (‘John is not coming’). On the other hand, when *não* is employed in non-verbal contexts (such as in a phrase-negation or as a prefix), only the stressed form is possible, as we can observe in *o João não vem*, [‘nâw]/*[nu^m] and also in *esse é um metal* [‘nâw]/*[nu^m] *ferroso* (‘this is a non-ferrous metal’). According to Miotto, Figueiredo Silva e Lopes (2013), the unstressed realization of *não* states it as a clitic, as in its surface structure, it will move to T and merge with the inflected verb just as the clitic pronouns like *me* (‘me’) and *te* (‘you_{ACC/DAT}’). Therefore, the representation of these structures should be something like [_T me viu] (‘saw me’) and/or [_T não viu] (‘(he/she/it) did not see’) – with the [nu^m] pronunciation.

Thus, built on these observations, by looking at the examples in (25), it is possible to argue that the two occurrences of *não* do not have the same status, that is, although the presence of an intervening negation constraints the modal verb (in its finite form) to a certain kind of reading, (in this case, the epistemic reading), it does not seem to be a *verbal* (or a TP-) negation, in the sense that it occupies a syntactic position fragmenting the syntactic unit built out of the modal verb and its infinitive complement.

- (25) (a) *O João não pode/deve ir à reunião.* [‘nâw] and [nu^m]
 ‘John cannot / must not go to the meeting’
 (b) *O João pode/deve não chegar a tempo.* [‘nâw], but *[nu^m]
 ‘John might not / may not to get on time’
 (c) *O João não₁ pode/deve não₂ ir à reunião.* [‘nâw]₁/[nu^m]₁, but [‘nâw]₂/*[nu^m]₂
 ‘it is not possible / allowed for John not to go the meeting’

What the data in (25) show is that there are morph-phonetic reasons to argue that the intervening negation, in the case of modals, is not a TP-negation. Thus, the hypothesis of a single temporal domain can be maintained in light of this criterion. In the spirit of this analysis, Teixeira de Sousa (2012)⁴ claims that the negation preceding *deve* (finite ‘must’) and *pode* (finite ‘can’) is not genuinely verbal, since the negation appearing after the finite verb – which presents a prosodic preeminence – is another type of negation, with a wider scope.

It is fair to highlight that Teixeira de Sousa’s work does not deal with the (intervening) negation that appears in the examples in (25). However, it is possible to extend some of the generalizations of this author in order to sustain that the two negations do not belong to the same type and do not have the same properties. Hence, there is no reason to suppose that they should occupy the same slot in the syntax, mainly because a sentence requiring a focus-marking position (which is attested by the prosodic preeminence) does not match an unstressed element.

Additionally, another piece of evidence for an analysis claiming the negation between *dever/poder* and its infinitive complement is not a TP-negation (descriptively, a verbal negation) relating to a certain syntactic behavior, which is expected if there is a sentence with two negations. With two negative items in (25c), two outcomes would be expected, namely, a double negation, where the two negative items would override each other, yielding an affirmative (not a negative) reading or, alternatively, a negative agreement,

⁴ I thank to Paulo Ângelo de Araújo-Adriano for this suggestion and for helpful discussion on this argument.

where there is a single negation, as in *João não viu nada* ('John saw nothing') and/or *ne... pas* from French. None of those seems to be the case underlying (25).

In short, descriptively *dever* and *poder* present a lexical verb behavior in some syntactic environments and an auxiliary verb behavior in other structural contexts (depending on the kind of modality). If the lexicon has just two verbal categories, modal and auxiliary, it is not possible to account for the dynamic of such forms without appealing to either homonymy or polysemy. However, maybe it is alternatively needed for the system to have a category allowing for a single verb to transit through both Aux and VP slots: a modal category, not as a descriptive label, but as a prime of the (BP) grammar.

5 FOR A MODAL CATEGORY

As shown in § 1, *dever* and *poder* can exhibit a lexical verb behavior. Later, in § 2, these verbs are shown to present an auxiliary-like syntactic behavior. Such features have been used as a motivation to take (but not to argue for) stands treating modal verbs as either homonymous or polysemic. However, as shown in § 3, *dever* and *poder* share properties with both auxiliary and lexical verbs. From these, maybe the most dramatic case is that of deontic reading which semantically selects the subject and the verb and also undergoes nominalization (properties often associated with lexical verbs), although it is associated with a more functional meaning – in the terms of Cinque (1999).

Along the lines of Rech (2010), following the Functional Heads Hierarchy, one can state that a given modal reading is associated with its syntactic position (in relation, for instance, to the negation or to another modal). However, this does not explain why (or how) functional heads in lower slots in the structures present lexical verbs' prototypic behavior, such as the possibility of nominalization and the occurrence with non-verbal complements.

In spite of Rech (2010) convincingly shows – just as Lunguinho (2005) – that a certain modal reading is attached to a certain syntactic position, the issue gets more complicated, since Rech claims, following Pontes (1973), that the modal verbs are homonymous, which ultimately leads to a contradiction. For instance, if *poder* is homonymous and has several lexical entries *poder*₁, *poder*₂, *poder*₃, etc. – as claimed by Pontes (1973) and Rech (2010) – it is not the syntax that determines the verb properties; rather, it is the lexical entry with certain properties, which makes it (and not other lexical entry) occupy a given syntactic position, that is, in such analysis, the syntax does not *determine* the different properties or readings, the syntax just *licenses* certain properties that are already there, in the lexicon.

Alternatively, Lobato (1984) proposes that there is a single *dever* and *poder* in Portuguese with different readings, but not different senses, which implies a treatment in terms of polysemy. Yet, for Lobato, there is only one deep structure, which means that in her analysis, the syntax of modal verbs is the same independently from their interpretation – which clearly is not the case, as shown. Thus, given the unworkability and the inconsistency of assuming (or arguing) both a homonymous treatment and a polysemic analysis, this issue raises the following question: if there are a lexicon listing and lexical items, how many lexical entries are there for *dever* and *poder* and which are they? The answer that this paper provides is: there is only one lexical entry for each.

Maybe the great impasse underlying the characterization of *dever* and *poder* is not that a verb can trigger different modal readings, but it is the fact that these verbs have also a lexical counterpart. That is because the idea of homonymy sounds attractive since the literature has paid a lot of attention to the distinction between auxiliary and non-auxiliary verbs – and also between “auxiliating” verbs ('auxiliantes'), as in Lobato (1975). Under this view, it seems necessary to distinguish verbs that can occupy an Aux-position from those that can occupy a VP-position. Given the above, as mentioned, a possible way out to this matter would be to propose a (lexical or morphological) category allowing for the categorized item to occupy both positions in the syntax, that is, both auxiliary and lexical slots.

As regards BP modal verbs, we argue that such a treatment can be accomplished by a modal category. Specifically, if auxiliary verbs must occupy an Aux-position and the lexical verbs must occupy V, in the syntax, one could claim that modal verbs can occupy both

positions, which effectively accomplishes the analysis that their interpretation depends on the syntactic structure. To take a concrete example, let's assume that there is a single entry [DEVER]_{Mod} in the lexicon and also that its interpretation will depend on the syntactic environment it will appear, as illustrated in (26).

- (26) (a) A Maria ____ sair.
 'Mary ____ leave'
 (b) A Maria ____ não sair.
 'Mary ____ not leave'
 (c) A Maria ____ poder sair.
 'Mary ____ be able to leave'
 (d) A Maria ____ dinheiro para o banco.
 'Mary ____ money to the bank'
 (e) A Maria ____ pegar o trem para chegar à cidade vizinha.
 'Mary ____ take the train in order to arrive in the next city'

On the assumption that the form *deve* fills all of the gaps, only (26a) remains ambiguous. In this analysis, it is the syntax that effectively determines the modal reading. Something in the grammar must provide instructions for *dever* + [DP] to convey a debt-reading, but for *dever* + INFINITIVE + [PP] to have a teleological reading and also for *dever* + [NEG] to trigger an epistemic reading. As for (26a) remains ambiguous despite its environment, two observations should be made. Firstly, *dever* + INFINITIVE only remains ambiguous in some contexts, not with existential or meteorological verbs or even with non-human subjects. Therefore, there is a certain kind of syntactic restriction even in this case.

For the instances where the syntactic structure does not solve the ambiguity, there is a lot of work on Formal Semantics – see Pires de Oliveira e Scardueli (2008), Pessotto (2014) and references therein – showing that not all the ingredients needed for the modal interpretation must come from the grammar. Only the *modal force* is given by the lexicon. Such idea perfectly fits into the present analysis, in that there is a single *dever* and a single *poder*, that is, there is only one element needing to be coded in the lexicon, and it is invariable. This paper does not aim at formalizing the syntax or semantics of these verbs, but it is important to show that our analysis has an empirical motivation and theoretical plausibility.

Thus, by assuming that the modal force comes from the lexicon, there is a single lexical item *dever* and a single *poder* (and also a single *ter que/de*) coding that information. The syntactic structure will restrict the kind of possible readings and only modal-categorized items will be able to occupy positions of both auxiliary and lexical verb. Our view also restitutes the spirit of Cinque's (1999) hierarchy, in the sense that the position the modal verb occupies is indeed attached to a certain interpretation, that is, when *dever* and *poder* appear in an Aux-position, they will trigger an epistemic reading, but when they occupy a lower position (such as V), they will have a deontic reading if the following phrase is an infinitive-clause, but a lexical reading if the following phrase is a DP (or a PP).

Hence, the fact that deontic *dever* and *poder* present a full verb behavior in some cases can be captured by an analysis where these verbs indeed occupy a V-position, although they have an infinitive-clause as a complement. Further evidence to this proposal is provided by the multiple occurrences of modals in a sentence, as we can see in (27).

- (27) (a) A secretária pode ter que participar da reunião.
 'the secretary may have to participate in the meeting'
 (b) A secretária deve poder participar da reunião.
 'the secretary must be allowed to participate of the meeting'

- (28) (a) A secretária vai poder participar da reunião.
 ‘the secretary is going to be allowed to participate in the meeting’
 (b) *Vai poder nevar amanhã.
 ‘it is going to be allowed to snow tomorrow’
 (c) *Vai poder ter dois carros lá fora quando eu sair.
 ‘it is going to be allowed to there be two cars outside when I leave’

What the data in (27) show is that regardless of the double occurrence of modals in (27a) and (27b), just one of them behaves like an auxiliary verb and this is syntactically determined – what can be verified in (28a) with the auxiliary *ir*. The interpretation of *poder* in (27a) and *dever* in (27b) is only epistemic because the following modal – *ter que* in (27a) and *poder* in (27b) – behaves like a full verb. This syntactic distribution analysis is borne out by (28). If as shown in § 2, the appearance of modals with meteorological verbs in (28b) and existential verbs in (28c) forces the modal verb to an epistemic reading – what would set it in an auxiliary position –, the occurrence with the auxiliary *ir* is disallowed, because both would compete for the Aux-position.

Without the syntactic conditioning forcing the modal to occupy the same position as *ir*, we have a well-formed sentence, as in (28a). It is worth noting that the ill-formedness of (28b) and (28c) is not due to a semantic constraint, since it is perfectly possible to convey readings such as “tomorrow it will possibly snow” and “there will possibly be two cars outside when I leave”. Therefore, the constraint actually seems to be syntactic. Given these observations, the question lies on how grammar would handle the modal prime.

6 CONCLUDING REMARKS

The aim of this case study was to endorse a reanalysis of *dever* and *poder* behavior in BP in order to argue that the auxiliary vs. lexical verb dichotomy not only struggles with empirical issues, but also leads to undesired theoretical proposals, such as homonymy and polysemy for modals. Alternatively, we propose that “modal” is a prime category (not just a descriptive label) allowing for *dever* and *poder* (and *ter que/de*) to occupy positions of both auxiliary and lexical verbs, which will determine their structural properties and their possible semantic readings.

As mentioned, we do not propose in this paper a syntactic or semantic formal analysis for this hypothesis. Still, it is possible to show this is a manageable treatment inside Generative Grammar. Morphologically (or lexically), although our analysis has been built on a view of grammar where there is a lexicon containing [DEVER]_{Mod}, [PODER]_{Mod}, and [TER-QUE]_{Mod} and that the Mod(al) category allows for these verbs to display properties of both auxiliary and lexical verbs depending on the syntactic position they occupy (that is, Aux, V, etc.), such a hypothesis could be perfectly translated to a theory where words are built in the syntax, in the sense of Marantz (1997) – see also Chomsky (2019).

The empirical claims made in this paper could also be implemented in a model of grammar where, there are roots as $\sqrt{\text{DEV}}$ and $\sqrt{\text{POD}}$, etc., coding the modal force, rather than modal lexical entries. These roots would be categorized along with the syntactic derivation, by merging with v^0 , etc., and/or they would bear a Mod⁰ functional morpheme – see Resende & Rech (2020) for motivation of this syntactic head. Thus, the modals behavior would be ultimately syntactically determined as well. The comparison of these two theoretical alternatives awaits further research.

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