

Semantic and syntactic aspects of the modal verb ‘ameaçar’

Aspectos sintáticos e semânticos do verbo modal ‘ameaçar’

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ABSTRACT: The verb *ameaçar* (to threaten) originally means to intimidate, however, in Brazilian Portuguese, it has also developed a second meaning indicating possibilities which was not previously described in the literature. Thus, this paper’s goal is to provide a semantic and syntactic analysis of *ameaçar*’s modal use following formal semantics (see Kratzer, 2012; von Stechow, 2006; Hacquard, 2011; Condoravdi, 2002) and cartographic syntax (see Cinque, 1999; 2006; Rizzi; Cinque, 2008). We have gathered and analyzed one hundred (100) naturalistic data of *ameaçar*’s modal use from the Portuguese Corpus and also negative data using the introspective method. We assume that, semantically, *ameaçar* indicates that the actual world *w* is on the verge of becoming a possible world in which *p* is true and, syntactically, it is an unaccusative lexical verb.

KEYWORDS: *Ameaçar* verb; Modality; Formal Semantics; Syntactic Cartography.

RESUMO: O significado do verbo *ameaçar* está originalmente associado a um sentido de intimidação, contudo, no português brasileiro, ele também desenvolveu um segundo sentido, indicando possibilidades, que não está descrito na literatura. Dessa forma, o objetivo deste artigo é fornecer uma análise sintática e semântica do uso do modal *ameaçar*, seguindo a semântica formal (ver Kratzer, 2012; von Stechow, 2006; Hacquard, 2011; Condoravdi, 2002) e a cartografia sintática (ver Cinque, 1999; 2006; Rizzi; Cinque, 2008). Reunimos e analisamos cem (100) dados naturalísticos com o uso modal de *ameaçar* a partir do Corpus do Português e de dados negativos, utilizando o método introspectivo. Assumimos que, semanticamente, *ameaçar* indica que o mundo *w* está muito próximo de se tornar um mundo possível no qual a proposição *p* é verdadeira e, sintaticamente, é um verbo lexical inacusativo.

PALAVRAS-CHAVE: Verbo Ameaçar; Modalidade; Semântica Formal; Cartografia Sintática.

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1 Introduction

The verb *ameaçar* (to threaten) is ambiguous in Brazilian Portuguese (henceforth BP). It originally means that some sort of intimidation is or was made by a person as illustrated in (01). This intimidation meaning appears when: (i) *ameaçar* is a transitive verb that takes two determiner/noun phrases as arguments as illustrated in (01a), or (ii) *ameaçar* is a transitive verb that takes a determiner/noun phrase as an external argument and a CP as an internal argument as illustrated in (01b).

- (01) a. *Ana* *ameaçou* *Joana.*
 Ana *ameaç-ou* *Joana*
 Ana threaten-SG.PFV.PST *Joana*
 ‘Ana has threatened Joana.’
- b. *Ana* *ameaçou* *que desistiria.*
 Ana *ameaç-ou* *que desist-i-ria*
 Ana threaten-SG.PFV.PST *that leave-VT-FUT.PRET*
 ‘Ana has threatened to leave the game.’

However, this verb has gone through a grammaticalization process in which it developed a second meaning: indicating possibilities. For instance, the sentences in (02a-c) do not express an intimidation, but that the speaker thinks that, by the way the situation was unfolding, the event of Ana falling and the event of raining were very likely to happen.

- (02) a. *Ontem* *ameaçou* *chover.*
 ontem *ameaç-ou* *chov-e-r*
 yesterday *threaten-SG.PFV.PST* *rain-VT-INF*
 ‘It looks like it is about to rain.’

b. <i>Ana</i>	<i>ameaçou</i>	<i>cair.</i>
<i>Ana</i>	<i>ameaç-ou</i>	<i>ca-i-r</i>
<i>Ana</i>	threaten-SG.PFV.PST	fall-VT-INF
'Ana has almost fallen down.'		

c. <i>Tá</i>	<i>ameaçando</i>	<i>chuva.</i>
<i>(Es)tá</i>	<i>ameaç-a-ndo</i>	<i>chuva</i>
<i>cop-prs</i>	threaten-VT -prog	rain

There are also cases in which a sentence with *ameaçar* is ambiguous between the intimidation reading and the modal reading as illustrated in (03). This happens when *ameaçar* has a DP in the subject position and an InfP as its complement. In the intimidation reading, the subject DP is an external argument of *ameaçar* and receives the agentive thematic role. In the modal reading, the subject DP is the external argument of the predicate under the scope of the modal that has been raised to the subject position of *ameaçar*.

(03)	<i>Ana</i>	<i>ameaçou</i>	<i>desistir.</i>
	<i>Ana</i>	<i>ameaç-ou</i>	<i>desist-i-r</i>
	<i>Ana</i>	threaten-SG.PFV.PST	give.up-VT-INF
	'Ana has threatened to leave the game.' (intimidation reading)		
	'It was possible that Ana would leave the game.' (modal reading)		

For the literature review, the words *verbo* ('verb') and *ameaçar* were searched associated with *modalidade* ('modality') and *modal* ('modal') in different platforms such as *Scielo*, *Google Scholar* and *CAPES Thesis and Dissertation Catalog* and the search has returned no results with an analysis on the modal status of *ameaçar*. Therefore, the modal use of this verb seems to not have been described and, in the lack of descriptions, the goal of this paper is to provide a semantic and syntactic analysis of *ameaçar*'s use to indicate future possibility.

For the semantic analysis, we follow formal semantics, which assumes that modality is the category of meaning associated with the expression of possibilities

and necessities (see Kratzer, 2012; von Stechow, 2006; Hacquard, 2011; Condoravdi, 2002). Therefore, we will refer to the second meaning of *ameaçar* illustrated in (02) as its modal meaning. For the syntactic analysis, we follow cartographic syntax, which assumes that there is a universal hierarchy of functional heads and the position of a given functional item in this hierarchy determines its interpretation (see Cinque, 1999; 2006; Cinque; Rizzi, 2008).

This type of study is important since most investigations of modality on BP have focused on modal verbs *poder* (can/may), *dever* (must) and *ter que* (have to) (see Pires de Oliveira; Scarduelli, 2009; Pires de Oliveira; Pessotto, 2010; Pessotto, 2011; 2014; 2015; Rech, 2011; Rech; Giachin, 2014; Mendes, 2019; Ferreira, 2020 among many others). However, recent investigations have shown that, for a more realistic portray of BP's modal system, one should consider a vast array of verbs and verbal expressions which also seem to be used to convey modality such as *perigar* (danger), *vai que* (go that), *dar para* (give to), *com cara* (with face) (see Ferreira; Rech, 2024; 2025a; 2025b, *in press*). Therefore, focusing only on *poder* (can/may), *dever* (must) and *ter que* (have to) may oversimplify the intricate ways this language grammaticalize the expression of modality.

For this investigation, we have gathered one hundred (100) naturalistic data of *ameaçar*'s modal use from the Portuguese Corpus.³ Then, the data was classified according to its morphological, syntactic and semantic behavior. After this classification, the syntactic and semantic analysis was refined using the introspective method that provided negative data showing the type of construction in which the use of modal *ameaçar* was not grammatical and also the modal meanings it could not convey.

In our semantic analysis, *ameaçar* indicates that the actual world *w* is on the verge of becoming a possible world in which *p* is true. In our syntactic analysis, fundamentally based on the results of precedence and transitivity tests (Cinque 1999, 2006), we argue that, when the verb conveys the modal meaning, it is an unaccusative lexical verb that can take as its internal argument either an InfP as illustrated in (02a-b) or a DP as illustrated in (02c) and does not select an external argument. In the cases in which it has a subject as (02b), it has been raised from

³ <https://www.corpusdoportugues.org/>

its complement (InfP). Since there are cases in which the verb can receive either interpretation such as in (03), an important feature that allows distinguishing between the intimidation meaning and the modal meaning is the thematic role attribution. For the intimidation reading of the verb *ameaçar* in (03), it selects an external argument bearing a [+control] feature and attribute an agentive thematic role to it whereas the modal reading of the verb *ameaçar* in (03) does not select for an external argument.

This paper is organized in five sections from which this introduction was the first. The second section introduces how modality is treated in formal semantics and cartographic syntax. The third section goes over our methodology in more detail. The fourth section discusses the semantic and syntactic behavior of *ameaçar* analyzing it according to our theoretical background. Lastly, the fifth brings the final remarks of the paper.

2 Theoretical background

This section presents the theoretical background assumed in our analysis and it is divided into two subsections. We first present how modality is treated in formal semantics discussing the difference of modal force, modal flavor and represent the semantics of different types of verbs that express modality. Then we discuss modality in the syntactic cartography paradigm presenting how the universal hierarchy (Cinque 1999) makes it possible to explain strict ordering restrictions, in which only functional verbs (of mood, modality, tense, and aspect) are subject.

2.1 Formal Semantics

Formal semantics assumes that modality is the category of meaning associated with the expression of possibilities and necessities (see Kratzer, 2012; von Stechow, 2006; Hacquard, 2011). For instance, since the verb ‘must’ in (04a) conveys necessity and the verb ‘might’ in (04b) conveys possibility, ‘must’ and ‘might’ are considered modals.

- (04) a. There must have been a power outage overnight.
b. There might have been a power outage overnight.

(von Fintel; Gillies, 2007, p. 36)

This dimension of modality is called modal force. Modals are called weak when they convey possibilities and strong when they convey necessities. von Fintel & Heim (2011, p. 31) show how weak modals may be used to coordinate incompatible propositions without generating a contradiction as illustrated in (05a) whereas strong modals generate a contradiction if used to coordinate incompatible propositions as illustrated in (05b).

- (05) a. You may stay, but also, you may leave.

CONSISTENT

- b. You must stay, and/but also, you must leave. (leave = not stay)

CONTRADICTION

(see von Fintel & Heim, 2011, p. 31)

Kratzer (2012, p. 4-5) shows that the meaning of modals is vague since they can be related to different things and receive different interpretations. For instance, the modal verb 'must' in (06a) is classified as deontic since it invokes a duty; the modal verb 'must' in (06b) is classified as epistemic since it relates to a piece of knowledge or evidence; the modal verb 'must' in (06c) is classified as dispositional/teleologic since it is used to talk about dispositions people have and; the modal verb 'must' in (06d) is classified as preferential/bouletic/desiderative since it relates to preferences and wishes.

- (06) a. All Maori children must learn the names of their ancestors.
b. The ancestors of the Maoris must have arrived from Tahiti.
c. If you must sneeze, at least use your handkerchief.

d. When Kahukura-nui died, the people of Kahungunu said:
Rakaipaka must be our chief.

(Kratzer, 2012, p. 4-5)

Therefore, the different interpretations a modal receives emerge from if we restrict these possibilities/necessities according to duties, knowledge, dispositions or desires. Kratzer (2012) discusses these restrictions may be provided by the context of utterance or they may be represented overtly as illustrated by the relative clauses in (07).

(07) a. **In view of what their tribal duties are**, the Maori children must learn the names of their ancestors.

b. **In view of what is known**, the ancestors of the Maoris must have arrived from Tahiti.

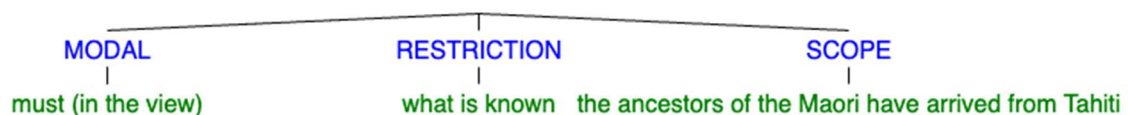
c. If — **in view of what your dispositions are** — you must sneeze, at least use your handkerchief.

d. When Kahukura-nui died, the people of Kahungunu said: **in view of what is good for us**, Rakaipaka must be our chief.

(Kratzer, 2012, p. 6)

Based on this behavior, Kratzer (2012) characterizes modals as elements that relate two things: (i) a modal restriction and (ii) a modal scope as illustrated in figure 1.

Figure 1: Relational aspect of modal expressions



Source: Kratzer (2012, p. 7)

The author assumes that different interpretations a modal displays can be accounted if we consider the restriction and a scope as arguments to the modal:

[...] I have argued for a unified analysis of modals like **must** and **can** where the observed variety of uses is due to their relational nature. Modals require two arguments to be complete: a proposition (their scope) and a function from worlds to premise sets (their restrictions). Such functions are often called “Conversational Backgrounds”. (Kratzer, 2012, p. 20)

Therefore, the different readings of ‘must’ in (o7) are due to different restrictions. In her analysis, restrictions are functions that take a possible world w and return a set of propositions representing duties, knowledge, dispositions or desires (Kratzer, 2012, p. 11) as illustrated in (o8).

(o8) a. DEONTIC

(The set of propositions representing duties)

{*Maori's tribal laws*}

b. EPISTEMIC

(The set of propositions representing knowledge)

{*Maori's tribal history, Polynesian mitology*}

Modals make use of different conversation backgrounds (Kratzer, 2012) such as: (i) realistic conversational backgrounds; (ii) totally realistic conversation backgrounds; (iii) empty conversational backgrounds; (iv) informational conversational backgrounds; (v) stereotypical conversational backgrounds; (vi) deontic conversational backgrounds; (vi) teleologic conversational backgrounds; (vii) bouletic conversational backgrounds; (viii) circumstantial conversational backgrounds and so forth.⁴ The realistic background is a function f takes a world of evaluation w and returns particular bodies of facts in the world of evaluation as represented in (o9):

⁴ Due to space restrictions, we will not go over all the different kinds of conversational backgrounds. For a more in depth presentation of different modal flavors and their conversational backgrounds, we recommend Kratzer (2012), von Stechow (2006) and Hacquard (2012).

(09) REALISTIC CONVERSATIONAL BACKGROUND

A realistic conversational background is a function f such that for any world w , $w \in \cap f(w)$. That is, f assigns to every possible world a set of propositions that are true in it. (Kratzer, 2012, p. 32)

For epistemic modals, the bodies of facts correspond to evidence of things for asserting a given proposition p (see Kratzer, 2012, p. 33). For example, the sentence ‘it must rain soon’ has a realistic conversation background since its premise set is composed of bodies of facts that serve as evidence to assert that it must rain soon as illustrated in (10).

(10) REALISTIC CONVERSATIONAL BACKGROUNDS

Epistemic premise set

{there are dark clouds in the sky, it is windy, there is thunder, there is lightning}

It must rain soon.

In order to account for certain modals, it is necessary to have more than one conversation background. For instance, one may consider a world in which it snows in Brazil far-fetched because, considering the normal course of events, it does not snow in Brazil. Therefore, for modals to differentiate between different grades of possibility, they need a secondary conversational background to rank the worlds. The likelihood of a situation can be assessed with a stereotypical conversational background illustrated in (11) which represents the normal course of events in the world of evaluation play w and can be used to rank worlds according to how close they come to the normal course of events in the world of evaluation, given a suitable normalcy standard (see Kratzer, 2012, p. 39). She calls the first conversational background the modal base and the second conversational background the modals ordering source.

(11) STEREOTYPICAL CONVERSATIONAL BACKGROUNDS

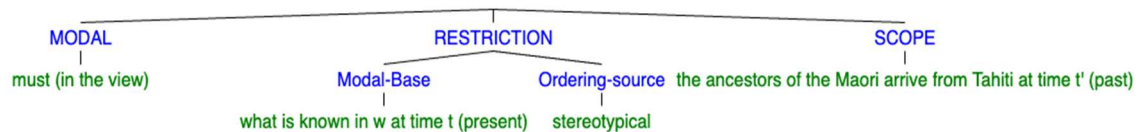
A stereotypical conversational background is a function f such that for any world w , $f(w)$ represents what is normal in w according to some suitable normalcy standard for w . (Kratzer, 2012, p. 37)

One interesting fact about modals is that both the restriction and the scope may be specified for time. The time in the restriction is the time in which the knowledge/rules/circumstances/desires hold which is called in the literature temporal perspective whereas the time in the scope is the time of evaluation of the proposition p in the scope of the modal which is called in the literature temporal orientation (see Condoravdi, 2002). For example, the sentence (12) has a present perspective since the p is being asserted based on knowledge/circumstances in the present, but the temporal orientation is future since the consideration is that the event of winning may or might occur some time in the future.⁵

(12) He may/might win the game. (Condoravdi, 2002, p. 62)

Considering all the ingredients discussed so far, a sentence such as (07b) could be represented as illustrated in figure 2.

Figure 2: A more complete overview of modal expressions



Source: the authors

This subsection has discussed how modal items are treated in formal semantics. We have discussed how modals are inherently relational elements,

⁵ Temporal perspective can be implemented assuming that the accessibility relation which provides the modal base also takes as an argument a time t . This kind of assumption is present in authors such as Ippolito (2002; 2003) and Ferreira (2020). Since this does not play a major role in our analysis, we will not delve into detail.

composing two arguments - the restriction and the scope - and that different interpretations of modals can be explained by different conversational backgrounds that specify a set of propositions that is used in the restriction. Then, we discussed how there may be even more than one conversational background operating in the restriction differentiating modal bases and ordering sources and how it is necessary to distinguish between the time specification of the restriction and of the scope. The next subsection presents the cartographic syntax's approach to modals.

2.2 Cartographic Syntax

A cartographic model for syntax which assumes that there is a universal hierarchy of functional heads illustrated in (13) (see Cinque, 1999; 2006; Rizzi; Cinque, 2008).

- (13) Moodspeech act > Moodevaluative > Moodevidential > **Modepistemic** > TP(Past) > T(Future) > Moodirrealis > Asphabitual > AspPrepetitive > T(Anterior) > Aspperfect > Aspretrospective > Aspdurative > Aspprogressive > Aspprospective / **Modroot** > Voice Aspcelerative > Aspcompletive > Asp(semel)repetitive > Aspiterative [...]

(Cinque, 1999, p. 76, our emphasis)

In this model, functional modal verbs with different conversational backgrounds would be located in different syntactic projections. An epistemic modal with a realistic conversational background would be located in Modepistemic above projections such as TP(Past) and Aspprogressive whereas a modal with other types of conversational backgrounds such as deontic or teleological conversational backgrounds would be located in Modroot below TP(Past) and Aspprogressive.

The time of evaluation of a modal is called temporal perspective whereas the time of evaluation of the event under the scope of the modal is called temporal

orientation. This hierarchy shows the different behavior epistemic and root modals display. For instance, when inflected for past perfective, teleologic modals can only display a past > modteleologic reading as illustrated in (14a) whereas epistemic modals can only display a modepis > past reading as illustrated in (14b) (see Hacquard, 2010, p. 14).

(14) a. Mary had to take the train to go to Paris.

* modteleologic > past: It is necessary, given her circumstances **now**, for Mary to take the train **then**.

✓ past > modteleologic: It was necessary, given her circumstances **then**, for Mary to take the train **then**.

b. Mary had to be home (at the time of the crime).

✓ modepis > past: It is possible, given what is known now, that Mary was home then.

* past > modepis: It was possible, given what was known then, that Mary was home.

(Hacquard, 2010, p. 14)

For some languages, this restriction is morphologically transparent, since modals under the scope of tense cannot have an epistemic interpretation. This is the case of Italian as illustrated in (15) below. In this respect, Brazilian Portuguese can be considered a morphologically transparent language since modals inflected for past perfective tense cannot have epistemic interpretation as illustrated in (16). Cinque's hierarchy in (13) provides a good explanation for this restriction since epistemic modal verbs are above TP(Past) whereas root modal verbs are below it.

(15) *Italian*

a. Gianni può aver parlato a Maria. (✓ epistemic, *deontic/ability)

Gianni can have talked to Maria

'Gianni may have talked to Maria.'

b. Giani ha potuto parlare a Maria. (✓ deontic/ability, *epistemic)

Gianni has could talk to Maria

‘Gianni was able to talk to Maria.’

(Hacquard, 2010, p. 16)

(16) *Brazilian Portuguese*

a. *João pode ter estado em casa.*

João pod-e ter estado em casa

João may-SG.PRS have.INF COP.PTCP at home

‘João could have been at home.’ (✓ epistemic, *deontic/ability)

b. *João pôde estar em casa.*

João pôde estar em casa

João may.SG.PST.PFV COP.INF at home

‘João might have been at home.’ (✓ deontic/ability, *epistemic)

The interaction of epistemic and root modals with aspect is also different. The use of the perfective aspect with root modals yields an entailment that the event has actually taken place, which is called actuality entailment as illustrated in (17a) and (17c). The actuality entailment does not arise with epistemic modals as illustrated in (17b).

(17) *French*

a. Mary put soulever cette table, #mais elle ne la souleva pas.

Mary could-PFV lift this table, #but she NE it lifted not

‘Mary was able to lift this table, #but she didn’t lift it.’

b. John put prendre le train, bien qu’il soit

John can-PST-PFV take the train, even though it is-SBJV

possible qu’il ne l’ait pas pris.

possible he didn’t

‘John may have taken the train, even though it’s possible he didn’t.’

(Hacquard, 2010, p. 17-18)

c. Brazilian Portuguese

João pôde	votar,	#mas	não	votou.
João pôde	vot-a-r	mas	não	vot-ou.
João can.SG.PST.PFV	vote-VT-INF	but	NEG	vote-PST.PFV
‘João could vote, but he didn’t.’				

Hacquard (2010, p. 17-18) observes that, for French, epistemic modal can bear tense and aspect morphology (cf. 17b), however, she points out that they are interpreted below the modal as predicted by Cinque’s hierarchy (ModEpist > TP(Past) > ... > AspPerfect). In Brazilian Portuguese, as well as in English and Italian, the presence of past tense morphology and perfective aspect will restrict its interpretation to a root reading and it will also generate the actuality entailment (cf. 17c).

Another aspectual restriction discussed in the literature that differentiates epistemic and root modals is the fact that, in the progressive form, modals cannot receive an epistemic interpretation, just root interpretation (see Rech; Varaschin, 2018, p. 371). This restriction results from the position that the modal occupy in the hierarchy: modal items that follow AspProgressive may bear aspectual morphology in its functional V; whereas the ones that antecede this aspectual head may not bear this inflection, as illustrated in (18).

(18) *Brazilian Portuguese*

a. #João	está	podendo	estar	em casa. ⁶	[epistemic]
João	est-á	pod-e-ndo	est-a-r	em casa	
João	COP-SG.PRS	may-VT-prog	COP-VT-INF	at home	

⁶ We are adopting # in this paper to indicate grammatical sentences syntactically wise, but which are not well-formed semantically wise.

‘It is being possible for João to be at home.’

b. João está	podendo	votar.	[deontic]
João est-á	pod-e-ndo	vot-ar	
João COP-SG.PRS	may-VT-VT-prog	vote-VT-INF	
‘João is being allowed to vote.’			

One last important distinction between epistemic and root modals is that epistemic modals cannot occur under the scope of negation whereas root modals can as illustrated in (19).

(19) *Brazilian Portuguese*

a. João	pode	não	votar.	(✓epistemic, *deontic)
João	pode	não	vot-a-r	
João	may-SG.PRS	NEG	vote-VT-INF	
‘João could not vote.’				

b. João	não	pode	votar.	(*epistemic, ✓deontic)
João	não	pode	vot-a-r	
João	NEG	may-SG.PRS	vote-VT-INF	
‘João could not vote.’				

All those restrictions can be explained by the fact that functional epistemic modal verbs are high in the hierarchy, above functional heads such as TP(Past) and AspProgressive whereas root modal verbs are low in the hierarchy, below those functional heads. This shows that the distinction between different conversational backgrounds is not purely semantic since it also reflects on the morphology and syntax.

3 Methodology

Our methodological procedure can be divided into four steps: (i) literature review; (ii) gathering spontaneous data; (iii) classification of spontaneous data; (iv) use of the introspection method. The first step of this research was doing a literature review in different platforms to look for previous descriptions of *ameaçar*. We have searched for different combinations of the words ‘verb’, ‘ameaçar’, ‘modality’ and ‘modal’ in three platforms: (i) *Scielo*, (ii) *Google Scholar* and (iii) *CAPES Thesis and Dissertation Catalog*. We have found no results about *ameaçar*. Thus, it seems that the modal interpretation of ‘ameaçar’ has not been described.

Then, the second step of this investigation was gathering 100 (one hundred) naturalistic data of *ameaçar*’s modal use from the Portuguese Corpus. We have only included in our *corpus* modal occurrences of *ameaçar*, thus, data with the intimidation reading is not being considered.

The third step was classifying the data according to the morphological, syntactic and semantic behavior displayed by *ameaçar*. In this classification, we considered: (i) tense inflection; (ii) its temporal perspective; (iii) its temporal orientation; (iv) its external argument; (v) if there was raising to the subject position; (vi) the type of complement under its scope; (vii) the type of modality (modal flavor); (viii) the modal force and (ix) if the speaker considers the situation described by the proposition under its scope as a bad outcome (negative feeling), good outcome (positive feeling) or neutral. The data was glossed using the Leipzig Glossing Rules (Comrie; Haspelmath; Bickel, 2015). This classification is illustrated in Table 1 below.

Table 1 – Example of data’s classification

Só ameaça [chov-er]. Ai todo caiu 5 gotas Só <i>pro</i> ameaça [chov-er]. Ai todo caiu 5 gotas only <i>pro</i> threaten-PRS [rain-INF]. Then all fall.PST.PFV 5 drops ‘We just get the possibility of raining, and then all that falls are 5 drops.’					
Tense	Indicative present	Temporal Perspective	present	Temporal Orientation	future

External Argument	<i>pro</i>	Raising	no	Complement	InfP
Modality	Epistemic	Modal force	weak	Feeling	Negative

Source: created by the authors.

The fourth and last step of our methodological procedure was using the introspective method to do syntactic and semantic tests described in formal semantics and cartographic syntax for modal items in order to get negative data to support the analysis presented in this paper. The tests were:

- (i) coordinating incompatible propositions with *ameaçar* based on the contradiction test illustrated in (05) to determine its modal force;
- (ii) verifying if *ameaçar* could be used overtly with different conversational backgrounds as illustrated in (07) to determine its modal base;
- (iii) verifying *ameaçar*'s compatibility with different temporal perspective and temporal orientation as illustrated in (12) to determine if it displayed any relevant restriction;
- (iv) verifying if *ameaçar* gave rise to actuality entailment illustrated in (17) to determine whether it displayed any relevant restriction;
- (v) verifying if *ameaçar* had the inflection for past perfective restriction discussed in (15-16);
- (vi) verifying if *ameaçar* had the progressive inflection restriction discussed in (18);
- (vi) verifying if *ameaçar* had the scope under negation restriction discussed in (19);

Those tests were vital to provide negative data to support the analysis of the use of modal *ameaçar* presented in this paper.

4 Analysis

This section presents the syntactic and semantic analysis for *ameaçar* based on its behavior in the naturalistic data and on the syntactic and semantic tests introduced in the previous section.

4.1 Semantic analysis

The verb *ameaçar* conveyed epistemic modality in 100% of the naturalistic data in the *corpus*. For instance, the speakers of the sentences in (20) seem to assert the possibility of raining in (20a), having sun in (20b) and the sun getting hot in (20c), the speakers seem to consider some sort of evidence.

(20) a. `ameaç-a` `chover.`
 `ameaç-a` `chov-e-r`
 threaten-SG.PRS rain-VT-INF
 ‘It may rain.’

b. `está` `ameaçando` `sair` `sol.`
 `est-á` `ameaç-a-ndo` `sa-i-r` `sol`
 COP-SG.PRS threaten-VT-IPFV rain-VT-INF sun
 ‘The day is showing signs that there will be sun.’

c. O `sol preguiçoso`, `ameaça` `esquentar` `no` `verão`
 O `sol preguiços-o` `ameaç-a` `esquent-a-r` `n-o` `verão`
 the sun lazy-M threaten-SG.PRS heat-VT-INF in-the summer
 ‘The lazy sun will possibly get hot in the summer.’

Therefore, we assume *ameaçar* has a realistic conversational background which lexicalizes epistemic modality since its premise set is composed of bodies of facts that serve as evidence to assert *p*. For example, for the examples in (20), the premise set may be mostly propositions covering weather conditions such as illustrated in (21).

(21) REALISTIC CONVERSATIONAL BACKGROUND

Epistemic premise set

{The sun is behind some few clouds, the sky is getting clearer}

está ameaçando sair sol.

est-á ameaç-a-ndo sa-i-r sol

COP-SG.PRS threaten-VT-IPFV rain-VT-INF sun

‘The day is showing signs that there will be sun.’

We have discussed in section 2 how the restriction provided by the conversation background can also occur overtly. *Ameaçar* is compatible with realistic conversational background as illustrated in (22a), but incompatible with non-realistic conversational backgrounds such as deontic and teleologic as illustrated in (22b-c). This data corroborates that *ameaçar* lexicalizes epistemic modality.

- (22) a. Até onde *eu sei*, tá *ameaçando* *chover*.
até onde *eu sei*, tá ameaç-a-ndo chov-e-r
until where I know.1.SG.PRS COP.PRS threaten-VT-prog rain-VT-INF
‘According to what I know, it may rain’.

[epistemic reading]

- b. Com base nas leis do país,
com base n-a-s lei-s d-o país,
with base in-the.F-PL law - PL of-the country,

João ameaçou votar.

João ameaç-ou vot-a-r

João threaten-PST.PFV vote-VT-INF

‘Based on the country’s laws, João has threatened to vote.’

[*deontic reading]

c. Espera!	eu	estou	ameaçando	espirrar.
Espera	eu	est-ou	ameaç-a-ndo	espirr-a-r
Wait!	I	COP.PRS.1.SG	threaten-VT-prog	sneeze-VT-INF
'Wait, I am threatening to sneeze.'				[*teleologic reading]

At first glance, *ameaçar* seemed to be weak in 100% of the naturalistic data of our *corpus* since the speaker seems to convey something possible rather than something necessary. In case it were a strong modal, we would expect the speaker would commit to the truth of the proposition the modal scopes over (see Kratzer, 2012, p. 22). However, its behavior differs from weak modal verbs such as *poder* ('can'/'may'). While *poder* can be used in contexts with aleatory probability, as illustrated in (23a), *ameaçar* cannot as illustrated in (23b). The sentence in (23b) is only accepted in a context in which the speaker knows there is something weird going on with that specific coin. The same behavior occurs with *perigar* analyzed by Ferreira; Rech (2025a) as illustrated in (23c).⁷

- (23) a. *Se eu jogar uma moeda, pode cair cara.*
 Se eu jog-a-r uma moeda pod-e ca-i-r cara
 if I throw-VT-INF a coin may-3.SG.PRS fall-VT-INF heads
 'If I throw a coin, it may be heads'.

- b. *Se eu jogar uma moeda, ameaça cair cara.*
 Se eu jog-a-r uma moeda ameaç-a ca-i-r cara
 if I throw-VT-INF a coin threaten-3.SG.PRS fall-VT-INF heads
 'If I throw a coin, it may be heads'. (epistemic/*root)

- c. *Se eu jogar uma moeda, periga cair cara.*
 Se eu jog-a-r uma moeda perig-a ca-i-r cara
 if I throw-VT-INF a coin danger-3.SG.PRS fall-VT-INF heads
 'If I throw a coin, it might be heads'. (epistemic/*root)

⁷ We thank professor Marcelo Ferreira for pointing this out to us.

However, aleatory probability does not constitute a proper counter example to the analysis of *ameaçar* as a weak modal since this type of probability is not epistemic in nature. Kratzer (2012) argues that aleatory probability contexts have a circumstantial modal base and stereotypical ordering source:

It seems that for root modals, the interaction between stereotypical ordering sources and modal bases projected from the current circumstances of individuals and spatio-temporal locations produces comparative and quantitative notions of propensity — sometimes referred to as “aleatory probability.” To illustrate, a fair coin has the propensity to land heads 50% of times when it is tossed in a fair setting. (Kratzer, 2012, p. 61)

Therefore, modals used in an aleatory probability such as *poder* in (23a) are not considered epistemic modals, but root modals. *Perigar* was analyzed in Ferreira; Rech (2025a) as a modal that conveys only epistemic modality and the same analysis is being adopted here for *ameaçar*. Therefore, the incompatibility of *ameaçar* and *perigar* illustrated in (23b-c) is to be expected since we are assuming they can only occur with a realistic conversational background as illustrated in (22). The sentences in (22b-c) would be accepted in contexts where we have evidence that something is odd with the coin, but those contexts would trigger an epistemic reading.

However, this is not the only distinction of *ameaçar* and weak verbs. The modal verbs *dever* (‘must’) and *poder* (‘can’/‘may’) are respectively strong and weak in Brazilian Portuguese and behave as expected in the contradiction text. *Dever* is a strong modal and generates a contradiction if used to coordinate incompatible propositions, as illustrated in (24):

- (24) a. *O Santos deve ganhar o Campeonato,*
 O Santos dev-e ganh-a-r o Campeonato,
 the Santos must-3.SG.PRS win-VT-INF the Championship

 mas o Vasco deve ganhar também.

mas o Vasco dev-e ganh-a-r também
 but the Vasco must-3.SG.PRS win-VT-INF too
 ‘Santos must win the Championship, but Vasco must win it too.’

[CONTRADICTION]

b. O Santos deve ganhar este jogo,
 O Santos dev-e ganh-a-r este jogo,
 the Santos must-3.SG.PRS win-VT-INF this game

mas o Vasco deve ganhar também.
 mas o Vasco dev-e ganh-a-r também
 but the Vasco must-3.SG.PRS win-VT-INF too

‘Santos must win this game, but Vasco must win it too.’

[CONTRADICTION]

Poder, as a weak modal, does not generate a contradiction when used to coordinate incompatible propositions as illustrated in (25):

(25) a. O Santos pode ganhar o Campeonato,
 O Santos pod-e ganh-a-r o Campeonato,
 the Santos can-3.SG.PRS win-VT-INF the Championship

mas o Vasco pode ganhar também.
 mas o Vasco pod-e ganh-a-r também
 but the Vasco can-3.SG.PRS win-VT-INF too

‘Santos can win the Championship, but Vasco can win it too.’

[CONSISTENT]

b. O Santos pode ganhar este jogo,
 O Santos pod-e ganh-a-r este jogo,
 the Santos can-3.SG.PRS win-VT-INF this game

mas o Vasco pode ganhar também.

mas o	Vasco	pod-e	ganh-a-r	também
but	the Vasco	must-3.SG.PRS	win-VT-INF	too

‘Santos can win this game, but Vasco can win it too’

[CONSISTENT]

However, when we apply the contradiction test to *ameaçar*, it displays a mixed behavior being consistent in (26a), but generating a contradiction in (26b).

(26) a. O Santos ameaça ganhar o Campeonato,
 O Santos ameaça ganh-a-r o Campeonato,
 the Santos threaten-3.SG.PRS win-VT-INF the Championship

mas o	Vasco ameaça	ganhar	também.
mas o	Vasco ameaça-a	ganh-ar	também
but	the Vasco threaten-3.SG.PRS	win-VT-INF	too

‘Santos may win the Championship, but Vasco may win it too.’

[CONSISTENT]

b. O Santos ameaça ganhar o jogo,
 O Santos ameaça ganh-a-r o jogo,
 the Santos threaten-3.SG.PRS win-VT-INF the game

mas o	Vasco ameaça	ganhar	também.
mas o	Vasco ameaça-a	ganh-ar	também
but	the Vasco threaten-3.SG.PRS	win-VT-INF	too

‘Santos may win the game, but Vasco may win it too.’

[CONTRADICTION]

We assume that the difference between *poder* and *ameaçar* can be explained in the way their modal restriction works. Although for both modals there is no commitment from the speaker to the truth of the proposition *p* they scopes over, *ameaçar* seems to require a context with stronger evidence in order to be felicitous. For instance, (27) introduces a context in which João is in second place,

but very far behind the person in the first place. Although there is no strong evidence that he will win, he can still win since many unfortunate things might happen to the person in the first place such as tripping and falling or having a heart attack. However, *ameaçar* does not seem to be true in such a context as illustrated in (27b).

(27) Context: João is participating in a race. He is now in second place, although it is a good position, he fell very behind the first place who is already approaching the finish line.

a. O João ainda pode ganhar esta corrida.
 O João ainda pod-e ganh-a-r this corrida
 the João still can-3.SG.PRS ganh-VT-INF this race
 ‘João can still win this race.’

b. #O João ainda ameaça ganhar a corrida.
 O João ainda ameaç-a ganh-a-r a corrida.
 the João still threaten-3.SG.PRS ganh-VT-INF this race
 ‘João can still win this race.’

The sentence in (27b) would be felicitous if a context in which João is very close to the person in the first place. This shows how *ameaçar* modal restriction requires a stronger premise set. In order to account for this, we assume *ameaçar* requires the possible worlds w' in which the proposition p is true to be very similar to the actual world w considering the normal course of events. For instance, considering (27b) again, in order to the actual world be most similar to possible worlds w' in which the proposition *João's winning the race* is true according to the normal course of events, João needs to be ideally in first or at most very close to the first place. Therefore, we are assuming that the modal restriction for *ameaçar* has a stereotypical ordering source on top of the realistic modal base. These ingredients are illustrated in (28) below:

(28) a. MODAL BASE

{João is participating of the race, João is in second place, João is very far behind}

b. ORDERING SOURCE

{People at the first place normally win the race; People at the second place, but very close to the first place normally win the race}

Therefore, the use of *ameaçar* in (27a) will use the modal base and ordering source illustrated in (28). The epistemic words accessed by the modal base will be the ones in which the set of premises illustrated in (28a) are true. However, *ameaçar* also requires these possible worlds *w* to be very similar to possible worlds in which João wins the race is true according to the normal course of events. Therefore, the ordering source will be the one illustrated in (29b). After ranking them, the possible worlds in which the set of premises from the modal base are true end up being far fetched resulting in the utterance of (27b) being false in that context.

In 94% of the naturalistic data, the verb *ameaçar* was used with present temporal perspective. Thus, for most contexts, the evidence considered to assert the truth of the proposition is in the present. For instance, in (29a-c), the evidence for the speaker asserts that the business and the social security system may go bankrupt and that the scenario will get worse seem to be evidence available in the present.

(29) a. *agora é* *a regra de um negócio que*
 agora é *a regra de um negócio que*
 NOW COP.3.SG.PRS the rule of a business that

ameaça *falir.*
ameaç-a *fal-i-r.*
threaten-3.SG.PRS bankrupt-VT-INF

‘The rule now is of a business that is on the verge of bankruptcy.’

- b. o *sistema de Segurança Social ainda ameaça*
 o sistema de Segurança Social ainda ameaç-a
 the system of security social still threaten-3.SG.PRS

falir

falir

bankrupt-VT-INF

‘The social security system may still go bankrupt.’

- c. *Um cenário que ameaça piorar*
 Um cenário que ameaç-a piorar
 A scenario that threaten-3.SG.PRS worsen-VT-INF
 ‘A scenario that may get worse.’

However, it is not necessary for *ameaçar* to take a present temporal perspective. In 6% of the naturalistic data in our *corpus*, this verb received a past temporal perspective in which the base for the speaker to assert the possibility was evidence in the past. For instance, in (30a-b) are contexts in which mothers are describing how the birth of their children was and the evidence for assuming that their children could be born is in the past. The sentence (30c) was used in a context to describe a match and the evidence for the speaker asserting that Brazil could get better was the signs in that moment.

- (30) a. *Você ameaçou nascer às 4h da manhã.*
 Você ameaç-ou nasc-e-r às 4h d-a manhã
 you threaten-PST.PFV born-VT-INF at.the 4h of-the morning
 ‘You gave signs that would be born at 4am.’

- b. *Você apressadinho ameaçou nascer.*
 você apressad-inho ameaç-ou nasc-e-r
 you hurry-little threaten-PST.PFV born-VT-INF

‘You in a hurry gave signs that would be born.’

- c. O Brasil ameaçou melhorar.
 O Brasil ameaçou melhor-a-r
 The Brazil threaten-PST.PFV better-VT-INF
 ‘Brazil gave signs that would get better.’

Although future perspective did not occur in our corpus. This paper assumes it is possible in an adequate context as illustrated in (31). Therefore, based on those examples, we can assume that the role of tense morphology in the verb is to change the temporal perspective. When *ameaçar* bears present tense as in (29), it triggers present temporal perspective. When it bears past tense or future tense as illustrated in (30) and (31), the temporal perspective is shifted for past and future respectively.

- (31) CONTEXT: You are talking with an engineer and he is trying to convince you that you should reinforce the structure.

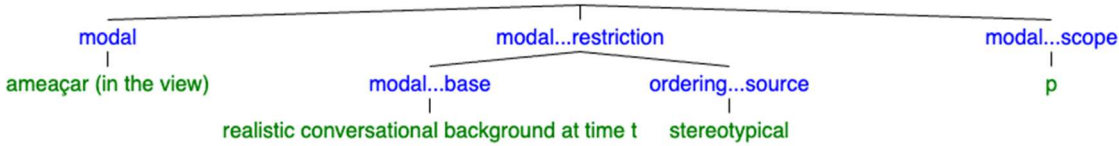
- a. *Se não reforçar, em 3 dias vai ameaçar cair.*
 Se não reforç-a-r, em 3 dias vai ameaç-a-r ca-i-r.
 if not reinforce-VT-INF, in 3 days fut threaten-VT-INF fall-VT-INF
 ‘If you do not reinforce this, in 3 days it will show signs of falling.’

Therefore, *ameaçar* does not display the same behavior as epistemic modal verbs (functional category) since they cannot be used to discuss past temporal perspective, even when they bear past tense morphology as illustrated in (14b). In our analysis, *ameaçar* does not have the same restrictions as modal verbs such as *poder* (‘can’/‘may’) and *dever* (‘must’) in their epistemic readings because it is not a functional verb, but a lexical verb.

This subsection has presented the semantic analysis for *ameaçar*. We have assumed that, for its modal use, it is epistemic and weak having a realistic conversational background. Although it is used to convey possibilities, it is

asserted in contexts with stronger evidence compared to auxiliary modals that convey possibilities such as *poder* ('may'/'can'). We have assumed that it needs a stereotypical ordering source since the world of utterance needs to be very similar to worlds in which the proposition is true considering the normal course of events. Tense morphology of *ameaçar* is interpreted in the modal base specifying the time the evidence is, was or will be assessed. This analysis is represented in figure 3. The next subsection presents our syntactic analysis for this verb.

Figure 3: *Ameaçar*'s semantic structure



Source: the authors

4.2 Syntactic analysis

In the naturalistic data of our corpus, *ameaçar* appeared inflected for: (i) present tense as illustrated in (32a); (ii) progressive aspect as illustrated in (32b) and (iii) past perfective as illustrated in (32c).

- (32) a. Só ameaça [chov-er].
 Só *pro* ameaç-a [chov-e-r]
 only *pro* threaten-3.SG.PRS [rain-VT-INF]
 ‘We just get the possibility of raining.’

- b. está ameaçando sair sol.
 est-á ameaç-a-ndo sa-i-r sol
 COP-SG.PRS threaten-VT-prog rain-VT-INF sun
 ‘The day is showing signs that there will be sun.’

c. <i>Você apressadinho</i>	<i>ameaçou</i>	<i>nascer.</i>
você apressad-inho	ameaç-ou	nasc-e-r
you hurry-little	threaten-PST.PFV	born-VT-INF
‘You in a hurry gave signs that would be born.’		

As discussed in the previous section, functional epistemic modals have restrictions with past and progressive inflection, due to the high position they occupy in the structure, above the TP(Past) and AspProgressive heads (see Cinque’s hierarchy in (13)). Thus, the fact that *ameaçar* appears inflected for past perfective (TP(Past)) and imperfective progressive aspect (AspProgressive) in the naturalist data corroborates that this verb is under the scope of these categories since there is only upwards movement in the structure, in order to move to those positions, it needs to be below them. Thus, the analysis of *ameaçar* as a functional epistemic is not possible since it is not subject to these restrictions.

In the naturalistic data, there were instances in which there is a nominal phrase in the subject position of *ameaçar* as illustrated in (33).

- (33) a. Gosto de tudo que ameaça morrer e
 Gost-o de tudo que ameaç-a morr-e-r e
 like-1.SG.PRS of everything that threaten-3.SG.PRS die-VT-INF and
- de repente se levanta [...]
 de repente se levant-a [...]
 of sudden REFL raise-3.SG.PRS
- ‘I like everything that is on the verge of dying and all of a sudden recovers.’
 (Caio Fernando Abreu)
- b. Quando o sol ameaça nascer [...]
 quando o sol ameaç-a nasc-e-r
 when the sun threaten-3.SG.PRS born-VT-INF
- ‘When the sun is about to rise [...]

c. Árvore ameaça	cair	sobre avenida em
árvore ameaça-a	ca-i-r	sobre avenida em
tree	threaten-3.SG.PRS	fall-VT-INF over avenue in

Porto Alegre.

Porto Alegre

Porto Alegre

‘Tree is showing signs of falling in an avenue in Porto Alegre.’

As illustrated in (33a-c), the DP that occurs in the subject position of *ameaçar* corresponds to the internal argument of unaccusative verbs under its scope (*morrer*, *nascer*, and *cair*). These arguments receive a non-agentive thematic role such as theme or patient, incompatible with the intimidation reading, which is also associated to *ameaçar* (see (1a-b)). Constructions such as (33) display an important property to distinguish between both uses of *ameaçar* — argumental selection: *ameaçar* with the intimidation reading selects internal and external arguments, attributing to the latter an agentive thematic role; *ameaçar* with the epistemic modality reading selects for just one internal argument, that can be an InfP as illustrated in (33a-c) or a DP as illustrated in (34a-b).

Another type of constituent that can occur in the subject position of *ameaçar* are phrases that make direct reference to the evidence the speaker has for modal evaluation, according (34a-b).

- | | | | | |
|------|--------------------|-----------|------------------|---------|
| (34) | a. Circulação do | Atlântico | ameaça | chuvas |
| | Circulação d-o | Atlântico | ameaç-a | chuva-s |
| | circulation of-the | Atlantic | threaten-3.SG.PR | rain-PL |
| | na | Amazônia | até | 2100. |
| | n-a | Amazônia | até | 2100. |
| | in-the | Amazon | until | 2100 |
- ‘Circulation in the Atlantic may (cause) rain in Amazônia until 2100.’

b. Essa	luta	ameaça	uma	vitória por nocaute.
Ess-a	luta	ameaça	um-a	vitória por nocaute
This-F	fight	threaten-3.SG.PR	a-F	victory by knockout
‘In this fight there may be a knockout victory.’				

Both sentences in (34a-b) have an evidential locative DP as their subject, which was not raised from the complement position of *ameaçar*. Cardinaletti (2014) and Quarezemin (2017) assume there to be different positions in the structure for different subjects: AgrSP and SubjP. This pre-verbal locative DP, that in our argumentation also occurs with *ameaçar*, enters in an agreement relation with the verb, occupying the final position of SubjP in cartographic syntax.

Nouns corresponding to verbs, such as the ones that can appear as complements of *ameaçar* in (34) exhibit the [+process] feature. The existence of corresponding infinitive verbal forms corroborates this analysis. Therefore, we assume that the modal verb *ameaçar* is an unaccusative lexical predicate that selects a complement with the [+process] feature. This complement can appear as an InfP, such as (33a-c), or a DP which corresponds to nominalized verb forms, such as (34a-b), and allow raising from the embedded domain to the subject position, such as (33a-c), which resembles *perigar*’s behavior (Ferreira; Rech, 2025a).

In our syntactic analysis, transitivity and precedence tests were used with constructions that had the epistemic reading of *ameaçar* co-occurring with past tense (TP(Past)), progressive aspect (AspProgressive) and negation (NegP). Thus, no restrictions were observed for this verb with these categories since it bears past tense and progressive aspect morphology and it also occurs under the scope of negation. Considering that an epistemic functional head (MoodEpistemic) is high in Cinque’s hierarchy (see (13)), we assume that *ameaçar* is not an epistemic functional verb, but an epistemic lexical verb. In relation to the selection of its arguments, the epistemic reading of *ameaçar* selects a complement with the [+process] feature, which can be spelled out as an InfP or a DP. In the constructions for which there is a DP in the subject position of *ameaçar*, this DP

was raised from the complement position or it is a locative DP that makes reference to the evidence for the modal evaluation.

Table 2 brings a brief summary of our analysis for the modal use of *ameaçar*.

Table 2: *Ameaçar*'s syntactic and semantic characteristics

SEMANTIC		
Modal Restriction	Modal base	Realistic
	Ordering source	Stereotypical
Modal force		Weak
Temporal perspective		Present, past or future
SYNTACTIC		
Class		Lexical unaccusative verb

Source: the authors

5 Final Remarks

This paper presented a syntactic and semantic analysis for the modal use of *ameaçar*. In our semantic analysis, we have assumed that it is a weak epistemic verb having a realistic conversational background as a modal base and stereotypical conversational background as an ordering source with tense morphology being used to specify the time in which the evidence is evaluated.

In our syntactic analysis, we have assumed that *ameaçar* selects a complement with a feature [+process] that can be spelled out as an InfP or a DP with a verb nominalization. Its subject position might be null or have a DP argument. This DP can be an argument of the predicate under the scope of *ameaçar* and be raised from the complement position — in a similar way that occurs with

perigar (see Ferreira; Rech, 2025a) or by a locative DP referring to the evidence supporting the modal base.

BP verbs has some intricate ways to develop the expression of modality. The verb *ameaçar* is one instance of this process and understanding it can provide important data to compare to the grammaticalization process of other elements, such as *perigar*, which in turn may shed light on patterns followed by lexical modal items in BP revealing interesting linguistic facts about how modal meanings develop in a language. For instance, our previous investigation of BP's modal system has identified a modal use for the verb *perigar* which is illustrated in (35) (Ferreira; Rech, 2025a). The authors demonstrated how the noun *perigo* ('danger') has gone through a process losing the semantics of danger to convey a future possibility according to the evidence available to the speaker.

- | | | | |
|------|----------------|-------------|-------------------------|
| (35) | Periga | chover. | |
| | Perig-a | chov-e-r | |
| | danger-PRS | rain-VT-INF | |
| | ‘It may rain.’ | | (Ferreira; Rech, 2025a) |

At first glance, the verbs *perigar* and *ameaçar* display striking similarities regarding the process in which modality started to be conveyed. The first similarity is the fact that both their original meanings were associated with undesirable situations. Whereas *ameaçar*'s (to threaten) original meaning was associated with intimidation as discussed above, *perigo* (danger) is a noun used to refer to a situation that can lead to a bad outcome. Thus, there seems to be a pattern of a noun or a verb associated with a future bad outcome to go through a process to convey some sort of modal meaning and, in this process, lose the semantics associated with the bad outcome. This semantic change of *ameaçar* has impacted its syntactic structure, since it went from a verb with external and internal arguments to a verb that selects just an internal argument. This shows that the grammaticalization process which may result in *ameaçar* going up in the hierarchy and assuming a functional role.

Therefore, understanding the path of the verb *ameaçar* provides important data to compare to other modal items such as *perigar* which, in turn, sheds light to patterns followed by modal items in BP.

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[Artigo recebido em 20 de fevereiro de 2026 e aceito em 22 de abril de 2026.]
DOI: 10.22456/2236-6385.153748