

Article

Logical Spaces and Subjunctive Tenses

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Abstract: Apparently, Subjunctive tenses express temporal location, and, in some constructions, the past subjunctive can also express modal values. A long-standing debate exists over whether—even in the latter case—verbal tenses are temporal operators or whether in some constructions they convey temporal meaning, and in others they have a modal value, maybe derived from their basic temporal meaning. The assumption that the basic meaning of subjunctive tenses are of a temporal nature is challenged by the fact that the future subjunctive, which exists in Portuguese, has the same temporal interpretation as the present subjunctive, with which it is in complementary distribution. Moreover, no clear modal difference is observed between the future and present subjunctive tenses. In this paper, I present arguments against the separation of the temporal and modal values of the subjunctive tenses. I posit, instead, that a semantic analysis of subjunctive morphemes must consider ordered pairs of times and possible worlds; only in this way can we adequately capture the observed data and allow a comprehensive view of the system of subjunctive tenses in Portuguese (which will be extendable to Romance languages in general). If we accept this proposal, then the modal as temporal information associated with subjunctive tenses follows naturally, including the systematic futurate reading of subjunctive temporal clauses.

Keywords: subjunctive; tense; temporal clauses; possible worlds



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1. Introduction

A large amount of literature on formal semantics has been devoted to the distribution of the subjunctive and indicative moods, but less attention has been paid to a comprehensive view of the different Subjunctive tenses. While the literature on the indicative tenses is abundant, less attention has been paid to forming a comprehensive view of the different subjunctive tenses. At the same time, there are many studies concerning the temporal and modal interpretations of different verbal tenses and how we might account for this variation in meaning. For example, there is a lot of debate concerning the future (of the indicative) tense and its temporal vs. modal interpretations (the so-called epistemic future) in different languages (see, for example, [Giannakidou and Mari 2016](#); [Mari 2015](#); [Cunha 2023](#), and references therein), the temporal and non-temporal interpretations of the imperfect (see, for example, [Ippolito 2004](#); [Paula 2020](#)), and—both in linguistics as in philosophy of language—the (at least apparently) non-temporal interpretation of past tenses in conditional clauses, an example of which is as follows.

- (1) If you **were** in India now, you would be suffering from the heat.

In this example, past morphology does not convey past reference. As shown by [Iatridou 2000](#), numerous languages use past morphology in constructions equivalent to (1). This is also the case in Portuguese, where, in (2), the verb of the antecedent clause inflects in the past subjunctive, and the verb of the main clause is in the imperfect or the conditional¹:

- (2) Se estivessem na Índia agora estavam / estariam a
 if were 3PL_PAST-SUBJ in-the India now be 3PL_IMP / be 3SG_COND to
 sofrer com o calor.
 suffer with the heat
 ‘If {you/they} were in India now, {you/they} would be suffering from the heat.’

By contrast, in examples such as (3a)–(3c), the same verbal forms have temporal interpretations:

- (3) a. Talvez estivessem na Índia nessa altura.
 maybe were 3PL_PAST-SUBJ in-the India at-that time
 ‘Maybe {you/they} were in India at that time.’
 b. nessa altura estavam na Índia.
 at-that time were 3PL_IMP in-the India
 ‘At the time {you/they} were in India.’
 c. Estava combinado que estariam na Índia no dia seguinte.
 was agreed that were 3PL_IMP in-the India in-the day next
 ‘It was agreed that {you/they} would be in India the next day’

The ways in which we can account for the divergence in interpretations of the same tenses in constructions such as (2) vs. (3) (or their equivalents in other languages) have been the subject of much debate. Two lines have been explored in the literature: the “past-as-past” view, followed by [Ippolito \(2003, 2013\)](#); [Arregui \(2005, 2007\)](#); [Romero \(2014\)](#); and [Khoo \(2015, 2022\)](#), among others, and the “past-as-modal” view, advocated by [Iatridou \(2000\)](#); [Schulz \(2014\)](#); and [Mackay \(2019\)](#), among others. As synthesized by [von Stechow and Iatridou \(2023\)](#), in the first view, the past tense in (1) is a past operator with scope over the conditional; in the second view, “the “past” morpheme has an underspecified meaning which yields different meanings depending on whether it is “fed” times or worlds” ([von Stechow and Iatridou 2023](#), p. 15). As observed by these authors, the debate thus far has largely focused on the analysis of conditionals, and both views run into trouble when we turn our attention to other constructions from which the same morphology and meaning emerge.

Put simply, the debate has focused on whether verbal tenses such as the one in the antecedent of the conditional in (1) are always temporal operators or whether in some constructions they are temporal devices and modal operators in others. In this paper, I will consider this question on the basis of data from Portuguese, but I will focus only on the subjunctive tenses. That is, I will not detail the tenses occurring in (3b) and (3c), or in the main clause of example (2). Given that in Portuguese, unlike most other Romance languages, the subjunctive mood has a future tense (in addition to the tenses that also exist in other Romance languages), Portuguese is an interesting language through which to study the meaning of subjunctive tenses. In doing so, we can understand their semantic contribution, or what semantic value does each of them signal, even if the tenses themselves do not convey meaning but are instead marks of temporal concordance (see [Iatridou 2000](#)).

Two widespread ideas about subjunctive tenses are that subjunctive clauses are temporally dependent and that the distinction between the different subjunctive tenses is of a temporal nature. The first idea, which has been explored particularly within the framework of generative syntax (see, for example, [Picallo 1984](#); [Raposo 1987](#); and [Ambar 1992](#)), is contradicted by empirical evidence (see, for example, [Vogel 1997](#); [Laca 2010](#); and [Marques et al. 2015](#), among others) and will not be considered here. As for the second idea, the assumption that subjunctive tenses convey temporal information is not usually subject to questioning outside the literature devoted to conditionals and counterfactuality. However, exactly what is the temporal difference between different subjunctive tenses and what is the meaning of each subjunctive tense is a matter that requires attention and form the basis of this paper’s enquiry.

The text is organized as follows. Section 2 provides a view of the distribution of each subjunctive tense in Portuguese and their temporal interpretations, showing that an analysis of the subjunctive tenses based solely on the temporal information associated with them (i.e., the assumption that subjunctive tenses are temporal operators) cannot provide a clear understanding of the system of subjunctive tenses in Portuguese. In Section 3, a proposal is made concerning the interpretation of these tenses. In Section 4, I consider the

particularity of the temporal reading of subjunctive temporal clauses, which is different from the one observed in other subjunctive clauses and in indicative temporal clauses, showing that this particularity follows naturally from the proposal made in Section 3 alongside an analysis of the subjunctive mood. In Section 5, the conclusions are presented.

2. Subjunctive Tenses in Portuguese and Temporal Information

In Portuguese, the subjunctive mood has three simple tenses and three compound ones. Their official designations are given in Table 1, where an example of the verbal form of *ter* (“to have”) 3SG is also provided, in italic, for each tense.

Table 1. Subjunctive tenses in Portuguese.

Simple Tenses	Compound Tenses
Pretérito Imperfeito (“Past Imperfect”) <i>tivesse</i>	Pretérito Mais-Que-Perfeito (lit. “Past more-than-Perfect”) <i>tivesse tido</i>
Presente (“Present”) <i>tenha</i>	Pretérito Perfeito (“Past Perfect”) <i>tenha tido</i>
Futuro Imperfeito (“Imperfect Future”) <i>tiver</i>	Futuro Composto (“Perfect Future”) <i>tiver tido</i>

Both the futuro imperfeito (lit. “imperfect future”) and the futuro perfeito (lit. “perfect future”) exist in Portuguese but not in other Romance languages. Concerning the compound tenses, two options are available. The first is to assume that each compound form is indeed a particular tense, which differs from all the others. The other one is to assume, following [Kamp and Reyle \(1993\)](#) and [Peres \(1993\)](#), that the compound forms have the same interpretation as their correspondent simple tenses, except that what is considered in the case of the compound forms is the result (or consequent) state of the basic situation. Consider the following example:

- (4) Conheces alguma pessoa que *tenha tido* um acidente de mota?
 know any person who have_3SG_SUBJ had an accident of motorcycle
 ‘Do you know anyone who has had a motorcycle accident?’

According to the first option, the situation described by the embedded clause—to have a motorcycle accident—is located in the past; that is, the verbal tense expresses the information that the time of the situation precedes utterance time (t_0). Equivalently, and according to the second option, one can say that the resultant state of having a motorcycle accident is located in the present (i.e., the resultant state overlaps t_0).

I will adopt this second option and assume that the verbal tense in (4) is the same as in (5):

- (5) Conheces alguma pessoa que *tenha* uma casa em Londres?
 know any person who have_3SG_SUBJ a house in London
 ‘Do you know anyone who has a house in London?’

Thus, the subjunctive mood will have three tenses in Portuguese—past, present and future. Other Romance languages do not have the future subjunctive, the opposition being between past and non-past subjunctive tenses.

The designations of the subjunctive tenses—*pretérito*, *presente* and *futuro* (lit. “past”, “present” and “future”)—suggest that their meaning is of a temporal nature; that is, the function of the verbal tenses is to indicate whether the situation is located in the past, in the present, or in the future. This assumption is usually taken for granted and unquestioned in Portuguese grammars. Indeed, the following examples show an association between subjunctive tenses and the information that the situation is located in the past, the present, or the future:

- (6) a. É pena que naquela altura estivesse a chover.
 be_3SG_IND_PRES pity that at-that time be_3SG_SUBJ_PAST to rain
 'It's a pity that it was raining at that time.'
- b. É pena que ainda esteja a chover.
 be_3SG_IND_PRES pity that still be_3SG_SUBJ_PRES to rain
 'It's a pity that it still rains.'
- c. Saímos quando acabar de chover.
 leave_1PL_IND_PRES when finish_3SG_SUBJ_FUT of rain
 'We leave when it stops raining.'

In the first example, the situation described by the subjunctive clause temporally precedes t_0 (i.e., the situation is located in the past); in the second example, its temporal location overlaps t_0 (i.e., the situation is located in the present); and in the last example, t_0 precedes the location of the situation described by the subjunctive clause (i.e., the situation is located in the future).

However, this association between past, present, and future tenses and the temporal location of the situation described by the subjunctive clause as preceding, overlapping or following utterance time, respectively, is not always observed. Consider the following examples:

- (7) a. Se hoje fosse domingo, a Ana estaria em casa.
 if today be_3SG_SUBJ_PAST Sunday the Ana be_3SG_COND at home
 'If today were Sunday, Ana would be home.'
- b. Com este caos as pessoas que estiverem no trânsito
 with this chaos the persons that be_3PL_SUBJ_FUT in-the traffic
 devem estar furiosas.
 must be furious
 'With this chaos, people in the traffic will be furious!'
- c. Aviso-te logo que tenha notícias.
 notice-you soon that have_1SG_SUBJ_PRES news
 'I will let you know as soon as I have news.'
- d. Daqui a cem anos, se ele ainda fosse vivo,
 From-here to hundred years if he still be_3SG_SUBJ_PAST alive
 seria testemunha de muitas mudanças.
 be_3SG_COND witness of many changes
 'A hundred years from now, if he were still alive, he would be witness to many changes'

In (7a) and (7b), the situation described by the subjunctive clause temporally overlaps the time of utterance. However, the verb in the subjunctive clause does not inflect in the present but instead in the past subjunctive (in (7a)) or in the future subjunctive (in (7b)). Examples (7c) and (7d) are cases in which the present subjunctive and the past subjunctive have futurate reference. Thus, as these examples show, it is not the case that the past subjunctive has always past reference, the present subjunctive present reference, and the future subjunctive futurate reference. In fact, the past subjunctive can occur in sentences that describe a situation that temporally precedes t_0 (see (6a)) as well as sentences that describe a situation overlapping (see (7a)) or following t_0 (see (7d)). Moreover, the present as the future subjunctive can occur in sentences that describe a situation overlapping t_0 (see (6b) and (7b)) or following t_0 (see (6c) and (7c)). In other words, if the situation described by the subjunctive clause overlaps t_0 or follows t_0 , any of the subjunctive tenses can occur. Thus, concerning the temporal location of the situation described by the subjunctive clause and the subjunctive tenses, the only generalization that can be made is that past reference cannot be signaled by the present or the future subjunctive, and only by the past subjunctive:

- (8) a. Há trezentos anos, um navio que *apanhasse*
 is three-hundred years, a ship that catch_3SG_SUBJ_PAST
 uma tempestade destas naufragava logo!
 a storm of-these sink_3SG_IND_PAST immediately
 ‘Three hundred years ago, a ship that caught a storm like this one would soon sink!’
- b. *Há trezentos anos, um navio que
 is three-hundred years, a ship that
 {*apanhe* / *apanhar*} uma tempestade destas ...
 catch_3SG_SUBJ_PRES / catch_3SG_SUBJ_FUT a storm of-these ...
 ‘*Three hundred years ago, a ship that catches a storm like this ...’

This being so, the assumption that subjunctive tenses are simply temporal locators is questionable.

3. What Subjunctive Tenses Signal

3.1. Past Subjunctive vs. Present/Future Subjunctive

The fact that the past subjunctive does not signal past temporal reference has been commonly observed in connection with counterfactual conditionals, as in the following example:

- (9) Se os dinossauros não se tivessem extinguido,
 if the dinosaurs not them had_3PL_SUBJ_PAST extinct,
 não haveria tantas espécies de Mamíferos.
 not be_3SG_COND so-many species of mammals
 ‘if dinosaurs had not become extinct, there would not be so many species of mammals.’

With present subjunctive, as in (10a), or future subjunctive, as in (10b), the construction is necessarily a hypothetical conditional:

- (10) a. O que devo dizer caso alguém *pergunte* por ti?
 the what must say case someone ask_3SG_SUBJ_PRES for you?
 ‘What should I say in case someone asks for you?’
- b. Não sei como está o tempo;
 not know_1SG_IND_PRES how is the weather;
 se *estiver* a chover, não saio.
 if is_3SG_SUBJ_FUT to rain not leave.
 ‘I do not know how the weather is; if it is raining, I will not go out.’

The past subjunctive might also occur on the antecedent of hypothetical conditionals, if the antecedent refers to a possibility that is unlikely, as in (11), or one that is new in discourse, as in (12a)², in a context in which a medical diagnosis is sought, and in (12b):

- (11) Se a Lista A ganhou as eleições (o que é
 if the List A win_3SG_SUBJ_PAST the elections (the which is
 extremamente improvável), a Ana seria a próxima
 extremely improbable) the Ana be-COND the next
 Presidente da Associação de Estudantes.
 President of-the Association of Students
 ‘If List A won the elections (which is extremely unlikely), Ana would be the next President of the Student Association’
- (12) a. Se ela fosse alérgica à penicilina,
 if she be_3SG_SUBJ_PAST allergic to-the penicillin,
 teria os sintomas que apresenta.
 have_3SG_COND the symptoms that presents
 ‘If she were allergic to penicillin, she would have the symptoms she has’
- b. E se almoçássemos aqui?
 and if lunch_1PL_SUBJ_PAST here?
 ‘What if we had lunch here?’

The observation that the past subjunctive is associated with modal values, and not expressing past reference, is valid not only for conditionals (as commonly observed³) but also for various syntactic constructions. In all of the following examples, the sentences with the past subjunctive have counterfactual interpretation or refer to unlikely possibilities; meanwhile, those with the present or future subjunctive refer to possibilities that are reasonable and available at the context of utterance:

- (13) a. Oxalá chovesse brevemente!
 God-wishes rain_3SG_SUBJ_PAST soon
 'I wish it would rain soon!'
- b. Oxalá chova brevemente!
 God-wishes rain_3SG_SUBJ_PRES soon
 'I wish it rains soon!'
- (14) a. Duvido que alguém consiga desatar este nó.
 doubt_1SG_IND_PRES that anyone can_3SG_SUBJ_PRES untie this knot
 'I doubt anyone will be able to untie this knot.'
- b. Duvido que alguém conseguisse desatar este nó.
 doubt_1SG_IND_PRES that anyone can_3SG_SUBJ_PAST untie this knot
 'I doubt anyone would be able to untie this knot.'
- (15) a. Com este temporal os automobilistas que estiverem
 with this storm the car drivers who be_3SG_SUBJ_PRES
 na ponte estão aflitos!
 at-the bridge be_3PL_IND_PRES afflicted
 'With this storm, the drivers that are at the bridge are in trouble.'
- b. Com este temporal os automobilistas que estivessem
 with this storm the car drivers who be_3SG_SUBJ_PAST
 na ponte estariam aflitos!
 at-the bridge be_3PL_COND afflicted
 'With this storm, the drivers that were at the bridge would be in trouble.'
- (16) a. Com este barulho, mesmo que grites
 with this noise even that shout_2SG_SUBJ_PRES
 ninguém ouve!
 nobody hear_3SG_IND_PRES
 'With this noise, even if you shout noone will hear you!'
- b. Com este barulho, mesmo que gritasses
 with this noise even that shout_2SG_SUBJ_PAST
 ninguém ouviria!
 nobody hear_3SG_COND
 'With this noise, even if you'd shout noone would hear you!'
- (17) a. Com este buraco na telha, assim que chover
 with this hole in-the tile soon that rain_3SG_SUBJ_FUT
 a cozinha fica inundada!
 the kitchen get_3SG_IND_PRES flooded
 'With this hole in the roof tile, the kitchen will get flooded as soon as it rains!'
- b. Com este buraco na telha, assim que chovesse
 with this hole in-the tile soon that rain_3SG_SUBJ_PAST
 a cozinha ficava inundada!
 the kitchen get_3SG_IND_IMP flooded
 'With this hole in the roof tile, the kitchen would get flooded as soon as it rained!'

On the face of examples of the same kind as (11) and (13) in Spanish, Laca 2010, after describing as temporal locators the two subjunctive tenses of Spanish (present and past⁴), posits that the ones above “can be assimilated to the numerous instances of past tenses used for signaling counterfactuality or non-realistic modal bases (see Iatridou 2000)” (Laca 2010, p. 5).

In addition to Spanish, other Romance languages have two subjunctive tenses (‘Present’ and ‘Past’), the semantic opposition between them either concerning temporal location or being of the same kind as the contrast observed in English between the so-called subjunctive and indicative conditionals⁵, as also shown in examples (13)–(17).

As observed above, and largely concerning English, two lines have been pursued in the literature to account for the modal readings of subjunctive conditionals. One of the lines—that is usually referred to as the “past-as-past” hypothesis—is that even in these constructions, the verbal tense is a temporal operator. The other one, known as ‘past-as-modal’, is that in some cases, the verbal tense is a temporal operator, and in others, it is a modal operator. In the first case, time points (or intervals) are considered in the interpretation of the construction; in the second case, the interpretation involves the consideration of possible worlds. This line of reasoning is based on Stalnaker’s proposal that the role of the morphology of Subjunctive conditionals is to signal an enlargement of the

context set (see [Stalnaker 1968, 1975, 2014](#)). More precisely, Stalnaker proposes that “I take it that the subjunctive mood in English and some other languages is a conventional device for indicating that presuppositions are being suspended” ([Stalnaker 1975](#), p. 276). That is, when interpreting an indicative conditional, one considers the set of worlds defined by what is being presupposed in a conversation, i.e., the context set. Subjunctive conditionals signal that possible worlds outside the context set are taken into consideration.

There are different analyses that try to capture both the counterfactual reading as other modal values of subjunctive conditionals (see [von Stechow 1998](#); [Iatridou 2000](#); [Schulz 2014](#); and [Mackay 2019](#), among others). All of them have in common the assumption that modal and temporal values of the verbal tense that occurs in subjunctive conditionals are mutually exclusive. That is, the morphology has either a modal value or (in other constructions) a temporal value. I question this assumption on the basis of the following arguments:

(i) Modal and temporal values might coexist. Consider the following examples:

- (18) a. Naquela altura, se ele fosse mais velho teria
 at-that time if he be_3SG_SUBJ_PAST more old have_3SG_COND
 tomado uma atitude diferente da que tomou
 taken an attitude different of-the what took
 ‘At that time, were he older, he would have taken a different attitude.’
- b. Durante o confinamento, se alguém estivesse
 during the lockdown if someone be_3SG_SUBJ_PAST
 na rua, podia ter problemas
 in-the street can_3SG_IMPERF have problems,
 ‘During the lockdown, if someone [was/were] on the street, he could have problems.’

Example (18a) is a counterfactual conditional; (18b) might also be counterfactual (as shown by the possibility of continuing the sentence by saying, for example, *but no one took the risk and went out*) or not (as shown by the possibility of continuing the sentence by saying, for example, *I don’t know if anyone took the risk and went out*). In either case, the temporal location of the situation is in the past. That is, in these examples, the verbal tense is associated with the expression of both past reference and a modal value. Thus, it is not the case that temporal and modal values are always apart. If one assumes that the verbal tense that occurs in the antecedent of these conditionals either expresses past reference or expresses a modal value, one could say that in (18a) it has a modal value, signaling counterfactuality, the temporal information being conveyed by the temporal adjunct *at that time*. However, this would lead to the prediction that (18b), which has the same morphology as (18a), would be interpreted as counterfactual as well. However, out of context, both the counterfactual and the non-counterfactual interpretations of (18b) are available.

- (ii) In Portuguese, as in many other languages, there is not one morpheme of tense separated from one of mood. Instead, the same morpheme is a tense and mood morpheme. Assuming that mood is related to modality, and that tense is related to temporal location, it is only natural that the same morpheme would be associated with the expression of both temporal location and modality, as seen in (18a,b).
- (iii) In most Romance languages, there are two subjunctive tenses (the “present” and the “past”), but in Portuguese, there is an additional tense: the future subjunctive. If the semantic opposition between past and present subjunctive is either of temporal or modal nature, as assumed in the literature, one would expect a temporal or a modal difference between the future tense and the other subjunctive tenses in Portuguese. However, this does not seem to be the case.

Notably, these counter arguments are valid both from the ‘past-as-modal’ perspective on subjunctive conditionals and from the ‘past-as-past’ perspective. Any analysis that separates the modal from the temporal values of the subjunctive tenses faces the problems stated above. Analyses that assume only a temporal interpretation of verbal tenses lead to the prediction that differences of temporal nature can be observed between the future and other subjunctive tenses. However, such a prediction is not validated. The temporal information conveyed by (or associated with) the future subjunctive is no different from the one conveyed by the present subjunctive. As seen above, neither of these tenses may

have past reference, but both of them may express temporal location in the present or in the future. Likewise, no difference of modal values is observed between present and future subjunctive tenses.

3.2. Present vs. Future Subjunctive

The present and future subjunctive are in complementary distribution. Future subjunctive occurs only in *if*-clauses, temporal clauses, and relative clauses, as shown by the following examples:

- (19) a. Se {chover/*chova}, não saio.
if rain_3SG_SUBJ_FUT/_*PRES not leave_1SG_IND_PRES
'If it rains, I will not go out.'
- b. Quando {começar/*comece} a chover, fecha a janela.
when start_3SG_SUBJ_FUT/_*PRES to rain, close_2SG_IMPER the window
'When it starts raining, close the window.'
- c. Todas as pessoas que {estiverem/?estejam} doentes
all the persons that be_3PL_SUBJ_FUT/?PRES ill
devem ficar em casa.
must_3SG_IND_PRES stay at home
'All people that are ill must stay home.'

In other kinds of construction, such as, for example, complement clauses, concessives or *without*-clauses, Present Subjunctive is allowed, but the Future Subjunctive is ruled out:

- (20) a. Espero que {*estiver/esteja} em casa.
hope that be_3SG_SUBJ_*FUT/_PRES at home
'I hope (s)he is home.'
- b. Embora {*for/seja} tarde, ainda podes tentar.
although be_3SG_SUBJ_*FUT/_PRES late still can_2SG_IND_PRES try
'Although it is late, you can still try.'
- c. Sai sem que ninguém te {*vir/veja}
leave_2SG_IMPER without that no one you see_3PL_SUBJ_*FUT/PRES
'Leave without anyone seeing you.'

Even in conditional, temporal, and relative clauses, the occurrence of the future subjunctive is restricted. It occurs in conditionals introduced by *se* ("if") but not in those introduced by *caso* ("in case"):

- (21) Aconselho-te a ver este filme, caso {*gostares/gostes}
Advise-you to see this movie case like_2SG_SUBJ_*FUT/_PRES
do gênero.
of-the gender
'I advise you to watch this film if you like the genre.'

In temporal clauses, the future subjunctive may occur in those introduced by some temporal connections, as *quando* ("when") (see 15b), *enquanto* ("while"), *sempre que* ("always"), or *assim que* ("as soon as"), but it is ruled out of other temporal clauses, such as those introduced by *até* ("until"):

- (22) a. Chama-me sempre que {precisares/*precises}.
Call_2SG_IMPER -me always that need_2SG_SUBJ_FUT/_*PRES
'Call me whenever you need.'
- b. Espera até que te {*chamarem/chamem}.
wait_2SG_IMPER until that you call_2PL_SUBJ_*FUT/_PRES
'Wait until you're called.'

In relative clauses, the future subjunctive is allowed only in those under the scope of some determiners or quantifiers. In particular, the distinction between cardinal and proportional quantifiers (see, for example, [Kamp and Reyle 1993](#)), or quantifiers of absolute quantification and quantifiers of relative quantification (see [Peres 2013](#)), is relevant. The first class contains quantifiers as, for example, *five*, *none*, or *some*. They express a quantity that is independent of the size of the domain of quantification (for instance, five penguins is the same quantity as five Siberian tigers, regardless of the fact that there are more penguins than Siberian tigers). The second class contains quantifiers as, for example, *every*, *most*, or *less than half*. They express a quantity that is relative to the size of the domain of quantification

(for instance, half of the penguins is not the same quantity as half of the Siberian tigers). The future subjunctive is allowed in relative clauses under the scope of proportional quantifiers, but not under the scope of cardinal quantifiers:

- (23) a. Preciso de {dez/algumas} bicicletas que
 need_1SG_IND_PRES of {ten/some} bicycles that
 {*estiverem/estejam} em bom estado
 be_3PL_SUBJ_*FUT/_PRES in good state
 'I need {ten/some} bicycles that are in good condition.'
- b. Preciso de {todas / metade de} as bicicletas que
 need_1SG_IND_PRES of {all / half of} the bicycles that
 {estiverem/?estejam} em bom estado
 be_3PL_SUBJ_FUT/_PRES in good state
 'I need {all/half of} the bicycles that are in good condition.'

Unlike cardinal quantifiers, in the case of proportional quantifiers, the whole domain of quantification has to be taken into consideration. That is, given that nominal quantifiers denote relations between sets of entities, as stated by Generalized Quantifiers Theory (Barwise and Cooper 1981), the truth conditions of [QAB] depend solely on $\#(A \cap B)$ in the case of cardinal quantifiers and on $\#(A \cap B)$ plus $(A - B)$ in the case of proportional quantifiers.

Relative clauses, *if*-clauses, and temporal clauses are also restrictors of quantifier domains (see, for example, von Stechow 1994), as synthesized on Table 2:

Table 2. Tripartite structures of quantification.

Operator	Restrictor	Nuclear Scope
All	Relative clause	Noun
Always	Temporal clause	Main clause
Must	Conditional clause	Main clause

To summarize, the future subjunctive occurs only in the clauses that are restrictors of quantifier domains and, as shown by the examples in (23), in those cases where the whole domain of quantification is considered.

3.3. Proposal

The data considered thus far allow us to observe the following observations:

- The past subjunctive can express past reference, counterfactuality, or unlikelihood; it is also used in propositions that describe (likely) possibilities new in discourse;
- The present subjunctive expresses present or futurate reference and occurs in propositions that describe possibilities available in discourse;
- The future subjunctive is identical to the present subjunctive, except that it occurs only in restrictors of quantifier domains, being in complementary distribution with the present subjunctive.

These facts suggest that an analysis of the subjunctive tenses based solely on the temporal interpretation of the tenses can hardly allow for a comprehension of their semantics. The “past-as-modal” approaches to subjunctive conditionals, which separate the modal from the temporal interpretations, lead to predictions that are unconfirmed (among other problems, such a line of reasoning would not explain the absence of different modal or temporal values separating the present and future subjunctive). A better understanding of the semantic contribution of the subjunctive tenses might be achieved if ordered pairs of times and possible worlds $\langle w', t' \rangle$ are taken into consideration, as shown in Figure 1, below, instead of either only considering the time line in the interpretation of the tenses or treating the temporal and modal values of the same tenses as totally separate values:

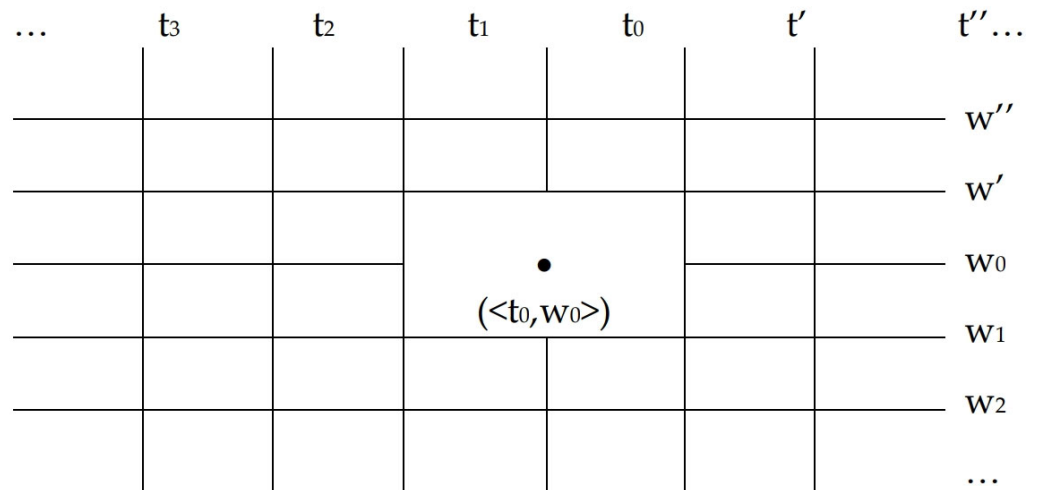


Figure 1. Pairs of possible worlds and times.

An utterance takes place at a time, t_0 , and within a possible world, that, by default, is the real world (w_0). Thus, the pair $\langle t_0, w_0 \rangle$ is available at the context of utterance. I propose that the non-past tenses—the present and future subjunctive—point to logical spaces that contain the pair $\langle t_0, w_0 \rangle$. They are deictic tenses. The future subjunctive also signals in addition that the wholly considered logical space is to be taken into account⁶. The past subjunctive, on its side, is the complementary tense; it signals that a logical space that does not contain t_0 or w_0 is taken into consideration.

Consider the following examples:

- (24) a. Preciso das bicicletas que estiverem em bom estado.
 need_1SG_IND_PRES of-the bicycles that be_3PL_SUBJ_FUT in good state
 'I need the bicycles that are in good condition.'
- b. Preciso de uma bicicleta que esteja em bom estado.
 need_1SG_IND_PRES of a bicycle that be_3SG_SUBJ_PRES in good state
 'I need a bicycle that is in good condition.'
- c. Nesta altura, precisarias de uma bicicleta que estivesse em bom estado.
 At-this time need_3SG_COND of a bicycle that be_3SG_SUBJ_PAST
 in good state
 'Right now, you would need a bicycle in good condition.'

In all these examples, the relative clause has non-past reference; that is, in these examples a timespan that includes or follows t_0 is considered. The truth conditions of (24a), which features the future subjunctive, can be stated as follows: the sentence is true iff every possible world doxastically accessible from the context of utterance in which there is a bicycle in good condition is a possible world in which the speaker needs that bicycle. Sentence (24b), which features the present subjunctive, has similar truth conditions, except that it does not involve universal quantification. The computation of the NP *uma bicicleta que esteja em bom estado* ("a bicycle in good condition") involves the consideration of one possible world (anyone) that is doxastically accessible from the context of utterance in which there is a bicycle in good condition, rather than every possible world that satisfies these conditions. Thus, the computation of both (24a) and (24b) requires the consideration of a set of possible worlds that includes w_0 . On the contrary, (24c) signals an enlargement of the context set⁷—the set of possible worlds compatible with what is assumed at the context of utterance. Thus, the past subjunctive triggers a displacement from the context of utterance, signaling the consideration of possible worlds other than w_0 .

In the following example, the past subjunctive also signals a displacement from the context of utterance, given that the meaning of the sentence does not involve the consideration of the pair $\langle t_0, w_0 \rangle$. The computation of the NP *uma bicicleta que estivesse em bom estado* ("a bicycle in good condition") involves the consideration of possible worlds doxastically accessible from a point in the past, identified by *naquela altura* ("at that time"):

- (25) Naquela altura, eu precisava de uma bicicleta que estivesse
 at-that time I need_1SG_IMP of a bicycle that be_3SG_SUBJ_PAST
 em bom estado.
 in good state
 ‘At that time, you would need a bicycle in good condition.’

Thus, the past subjunctive signals a displacement from the context of utterance, be it a displacement from the real world (w_0) or from utterance time (t_0).

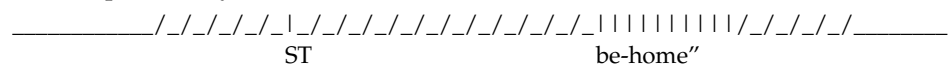
Apparently, futurate reference, as in the following examples, also implies displacement from the context of utterance:

- (26) a. Daqui a um mês, precisarei de uma bicicleta
 from-here to a month need_1SG_IND_FUT of a bicycle
 que esteja em bom estado.
 that be_3SG_SUBJ_PRES in good state
 ‘Next month, I will need a bicycle in good condition.’
 b. Daqui a um mês, precisarei das bicicletas que
 from-here to a month need_1SG_IND_FUT of-the bicycles that
 estiverem em bom estado.
 be_3PL_SUBJ_FUT in good state
 ‘Next month, I will need the bicycles that will be in good condition.’

The situation described by the subjunctive clause does not necessarily overlap with t_0 , only with reference time (*next month*), a $t' > t_0$. Thus, the meaning of these constructions seems also to not involve the consideration of the pair $\langle t_0, w_0 \rangle$. Nevertheless, the present subjunctive (in (26a)) or the future subjunctive (in (26b)) occurs, rather than the past subjunctive. Thus, even though Portuguese has a future subjunctive tense, unlike other Romance languages, it does not have a specific subjunctive tense that signals futurate reference; both the present and future subjunctive may occur in sentences with present reference and in sentences with futurate reference. Hence, subjunctive tenses are another example of asymmetry (as often observed in the literature) between past and future reference.

If, as proposed in this paper, non-past subjunctive tenses indicate that the logical space considered in the interpretation of the sentence includes the pair $\langle t_0, w_0 \rangle$, the logical space taken into account in the interpretation of sentences with futurate reference, as in (26a) and (26b), will also include t_0 . This seems problematic. The truth conditions of (26a) and (26b) do not require the situation described by the subjunctive clause to overlap with t_0 . However, the consideration of an interval that includes t_0 does not imply that the situation covers the entire interval. Following Dowty (1986), Gennari (1999, 2002) defends the existence of a pragmatic implication that leads to consider superintervals in the interpretation of stative sentences. Concerning the sentence *Juan estará en casa ahora* (“Juan will be at home now”), Gennari (2002) rejects the standard account according to which the sentence “is true iff there is a future interval i later than the ST at which Juan will be at home” (p. 8) and proposes that

“given the implication associated with states, i.e., that there is a superinterval i' that contains i at which Juan is home, it follows that both the ST [Speech Time] and the interval of being home can [but do not have to] overlap. This is exemplified below where the slashes represent the superinterval inferred around the future interval specified by the tense:



(Gennari 2002, pp. 8–9)

Adopting Gennari’s proposal would account for cases as (26a) and (26b); given that a stative predicate occurs in the subjunctive clause, it follows from the Gennari’s pragmatic implication that a superinterval containing both t_0 and the interval at which the bicycle is in good condition can be taken into account. However, that pragmatic implication only occurs with stative predicates. With eventive predicates, the problem would remain. Consider the following examples:

- (27) a. Amanhã, qualquer carro que estacione aqui
 tomorrow any car that park_3SG_SUBJ_PRESENT here
 será rebocado
 be_3SG_IND_FUT towed
 ‘Tomorrow, any car that parks here will be towed.’
- b. Amanhã, os carros que estacionarem aqui
 tomorrow the cars that park_3PL_SUBJ_FUT here
 serão rebocados
 be_3PL_IND_FUT towed
 ‘Tomorrow, the cars that park here will be towed.’

These sentences make reference to future events that might take place. Why, then, is t_0 (more precisely, a set of pairs that includes $\langle w_0, t_0 \rangle$) taken into account? The reason why in the cases of futurate reference an interval that includes t_0 is considered would not follow from Aktionsart matters, affecting equally stative and eventive predicates.

To summarize, the interpretation of subjunctive sentences with past reference would lead to consider an interval that might exclude t_0 (more precisely, a set of pairs of times and worlds that might exclude $\langle t_0, w_0 \rangle$), thus implying a displacement from the context of utterance, marked by the past subjunctive; meanwhile, the interpretation of subjunctive sentences with future reference would lead to consider an interval that includes t_0 . The reason for this asymmetry between past and futurate reference can be this: the future is a development of the present (it does not exist without the present), unlike the past, which is not dependent on the present; i.e., whatever happens in the future may not have happened if the present were different, but the past is unaffected by the present (that is, current events do not change the past). Thus, the consideration of a set of pairs $\langle t', w_0 \rangle$ such that $[t' > t_0]$ requires this set to include $\langle t_0, w_0 \rangle$, while the consideration of a set of pairs $\langle t', w_0 \rangle$ such that $[t' < t_0]$ does not have this requirement. In other words, a logical space that contains a situation located in the past and that includes w_0 does not have to include t_0 (as the past exists without the present), but a logical space that contains a situation located in the future and that includes w_0 has to include t_0 (as the future does not exist without the present).

4. If and When

As seen above, the present subjunctive and future subjunctive cannot be associated with past reference, but the past subjunctive may have both past reference and present or futurate reference. In other words, the present subjunctive and future subjunctive take as Temporal Perspective point (TPP), or Reference Time, either t_0 or a t' that follows t_0 , while past subjunctive accepts as TPP t_0 both as a time t' that precedes t_0 and one that follows t_0 . In most kinds of clauses, the interval occupied by the situation overlaps the TPP in the case of stative predicates and follows it in the case of eventive predicates, as illustrated by the following examples of conditional clauses.

Stative predicates:

- (28) a. Se hoje fosse domingo, ...
 if today be_3SG_SUBJ_PAST Sunday, ...
 ‘If today were Sunday, ...’ [TPP \circ s]
- b. Se estiver alguém em casa, ...
 if be_3SG_SUBJ_FUT someone at home, ...
 ‘If someone is home, ...’ [TPP \circ s]
- c. Caso alguém esteja doente, ...
 case someone be_3SG_SUBJ_PRESENT ill, ...
 ‘In case someone is ill, ...’ [TPP \circ s]

Eventive predicates:

- (29) a. Se hoje *chovesse*, ...
if today rain_3SG_SUBJ_PAST, ...
'If it would rain today, ...' [TPP < s]
- b. Se hoje *chover*, ...
if today rain_3SG_SUBJ_FUT, ...
'If it rains today, ...' [TPP < s]
- c. Caso alguém *bata* à porta, ...
case someone knock_3SG_SUBJ_PRES at-the door, ...
'In case someone knocks at the door, ...' [TPP < s]

The same temporal relations between TPP and the temporal location of the situation can be observed in most other constructions but not in temporal subjunctive clauses, in which the temporal location of the situation always follows the TPP, regardless of whether the predicate is eventive or stative.

Stative predicates:

- (30) a. {Quando / enquanto / sempre que /...} *estivesse*
{when / while / always that /...} be_3SG_SUBJ_PAST
a *chover*, ...
to rain, ...
'{When/while/anytime/...} it would be raining, ...' [TPP < s]
- b. {Quando / enquanto / sempre que /...} *estiver* a *chover*, ...
{when / while / always that /...} be_3SG_SUBJ_FUT to rain, ...
'{When/while/anytime/...} it will be raining, ...' [TPP < s]
- c. Logo que *esteja* a *chover*, ...
soon that be_3SG_SUBJ_PRES to rain, ...
'As soon as it is raining, ...' [TPP < s]

Eventive predicates:

- (31) a. {Quando / enquanto / sempre que /...} *chovesse*, ...
{when / while / always that /...} rain_3SG_SUBJ_PAST, ...
'{When/while/anytime/...} it would rain, ...' [TPP < s]
- b. {Quando / enquanto / sempre que /...} *chover*, ...
{when / while / always that /...} rain_3SG_SUBJ_FUT, ...
'{When/while/anytime/...} it rains, ...' [TPP < s]
- c. Logo que *chova*, ...
soon that rain_3SG_SUBJ_PRES, ...
'As soon as it rains, ...' [TPP < s]

In other words, temporal subjunctive clauses always express futurity, while in the other kinds of clauses, Aktionsart plays a role. Stative predicates lead to an overlapping reading, unlike eventive predicates.

A systematic reading of futurity is observed in temporal subjunctive clauses but not in indicative temporal clauses:

- (32) a. {Quando / enquanto / sempre que /...} {*choveu/chovera*}, ...
{when / while / always that /...} rain_3SG_IND_PAST, ...
'{When/while/anytime/...} it rained/had rain, ...' [TPP > s]
- b. {Quando / enquanto / sempre que /...} *estava* a *chover*, ...
{when / while / always that /...} be_3SG_IND_PAST to rain, ...
'{When/while/anytime/...} it was raining, ...' [TPP ○ s]
- c. Não se sabia quando *choveria* novamente.
not one know_3SG_IND_IMPERF when rain_3SG_IND_FUT again
'Nobody knew when it would rain again' [TPP < s]

The necessary futurity reading in temporal subjunctive clauses follows naturally from the combination of two issues: first, temporal connectors are triggers of presupposition (see, for example, Levinson 1983); they trigger the presupposition that the clause they introduce is true. Second, subjunctive mood signals the consideration of non-*p* worlds⁸ (i.e., possible worlds in which the proposition *p* is false). Thus, one piece of the construction—the temporal connector—indicates that the proposition is true in the real world ($w_0 \subseteq [[p]]$), and another piece—the subjunctive mood—leads to consider the possibility that *p* is false (i.e., it indicates that the considered logical space includes non-*p* worlds). That is,

the interpretation of a temporal subjunctive clause has to include a Modal Base (a set of possible worlds) that contains w_0 , plus the information that $w_0 \subseteq [[p]]$, and non- p worlds. The only way to make these pieces of information compatible is to consider developments of the real world into different futures, as shown in Figure 2:

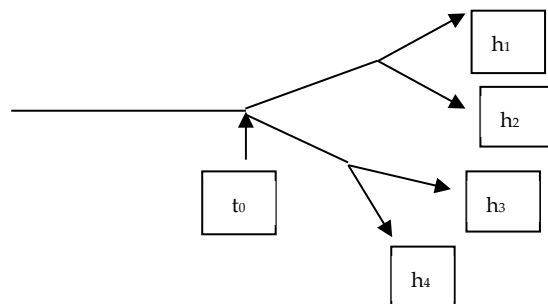


Figure 2. Branched future.

In some of the developments of the real world from a given point onward, the state of affairs described by a given proposition p holds, while in other developments, it does not. Hence, in at least one of the ramifications of the real world, p is true; thus, the presupposition introduced by the temporal connector is satisfied, and in other ramifications p is false, thus the possibility that the sentence is false being also considered. In other words, the fact that subjunctive temporal clauses always have a futurity reading follows straightforwardly if the assumption is made that a temporal connector will select a historical Modal Base, as defined in Werner (2006):

- (33) For any world w and time t , $\cap f(w,t)$ = the set of worlds which are identical to w up through time t . (Werner 2006)

The aforementioned presupposition does not exist in other subjunctive clauses, such as restrictive relatives or *if*-clauses. Consider the following examples:

- (34) a. Aqui, uma pessoa que goste de cerejas está
Here a person that like_3SG_SUBJ_PRESENT of cherries be_3SG_IND_PRESENT no paraíso.
in-the paradise
'Here, anyone who likes cherries is in paradise.'
- b. Aqui, se uma pessoa gostar de cerejas está
Here if a person like_3SG_SUBJ_FUTURE of cherries be_3SG_IND_PRESENT
no paraíso.
in-the paradise
'Here, if one likes cherries, one is in paradise.'

Both the relative clause in (34a) and the conditional clause in (34b) denote a set of possible worlds in which someone likes cherries. The subjunctive indicates that non- p worlds (i.e., worlds in which no one likes cherries) are also taken into consideration. Moreover, the present and the future subjunctive indicate that the pair $\langle w_0, t_0 \rangle$ is part of the logical space considered in the interpretation of the sentences. Thus, if the logical space considered in the interpretation of these sentences is the set $\{\langle w_0, t_0 \rangle, \langle w_1, t_0 \rangle, \langle w_2, t_0 \rangle, \langle w_2, t' \rangle, \dots\}$, all these requisites are fulfilled. In some of the considered pairs of $\langle w', t' \rangle$, the sentence is true, while in others, it is not; the pair $\langle w_0, t_0 \rangle$ belongs to the considered logical space and may belong to the subset where the sentence is true or to the complementary subset. Thus, the requirement that non- p worlds are taken into consideration in the interpretation of subjunctive clauses can be satisfied without resorting to the future.

5. Conclusions

Generally, verbal tenses are seen as temporal operators, and the modal values associated with them are seen as non-basic values. There are different verbal tenses linked to modal values, among which the past (or imperfect) subjunctive, a form used in many

languages to express counterfactuality (and keen modal values). The literature on this subject has largely focused on conditional constructions, but the scope of this domain is much wider. Both in English and different Romance languages, the past subjunctive semantically contrasts with the present tense (of the indicative in English and of the subjunctive in Romance languages such as Spanish), the former signaling some kind of displacement from the context of utterance, as observed in Stalnaker's seminal work. Analyses of subjunctive conditionals in English largely fall into two groups: the 'past-as-modal' view and the "past-as-past" view. The first one sees this shift from the context of utterance as either being a displacement from utterance time—giving rise to temporal readings of the past tense—or else as being a displacement from what is presupposed in context—giving rise to modal readings, such as counterfactuality. In other words, this kind of approach holds that the interpretation of the past subjunctive either involves the consideration of points (or intervals) of time or the consideration of possible worlds. The second view seeks an analysis of the past subjunctive as always being a temporal operator, even in cases in which it signals counterfactuality or other modal values. Neither of these views seem promising if we wish to enhance our understanding of the tense system of the subjunctive in Portuguese. In this language, in addition to the past and present, there is also a future tense of the subjunctive; no temporal difference being observable between the present and future tenses, nor is it the case that some modal value is associated with one but not the other of these forms.

The proposal made in this paper differs from both the 'past-as-past' view, rejecting the assumption that verbal tenses are simply temporal operators, and the 'past-as-modal' view, discarding the idea that each verbal tense either has a temporal or a modal interpretation. Instead, the proposal was made that subjunctive verbal tenses are devices to indicate the logical space that is to be taken into consideration in the interpretation of the sentence. A logical space is conceived of as a set of ordered pairs of times and worlds. Both the present and the future tenses of the subjunctive point to a logical space that includes the pair $\langle w_0, t_0 \rangle$, thus being deictic tenses, while the past subjunctive points to a logical space that might not include the pair $\langle w_0, t_0 \rangle$. Additionally, Portuguese, unlike other Romance languages, has two non-past tenses, one of them signaling that the entire logical space is to be taken into consideration. Hence, the subjunctive tenses of Portuguese are complementary. They are marks that guide the listener in interpreting the sentence by indicating to him/her which logical space is to be considered. From the point of view of the speaker, the system of subjunctive tenses of Portuguese can be understood through the following questions. (1) Do I want the hearer to consider a logical space that necessarily includes $\langle w_0, t_0 \rangle$? If no, use the past subjunctive; if yes, proceed to the second question. (2) Do I want the hearer to consider the entire logical space (i.e., does the tense occur in a sentence that is a restrictor in a tripartite quantificational structure)? If yes, use the future subjunctive; if not, use the present subjunctive.

Prior to these questions, the speaker has to consider another one: should I use the indicative or the subjunctive mood? This question has been the focus of much literature, and currently there seems to be a consensus that the subjunctive mood signals the consideration of possible worlds in which the subjunctive clause is false. That is, the Modal Base (or Model of Evaluation; see, for example, [Giannakidou and Mari 2021](#)) against which the subjunctive clause is evaluated contains non- p worlds. Given that the same morpheme expresses mood and tense, it makes sense that the subjunctive morphemes point to pairs of possible worlds and times, as proposed in this paper. That is, an analysis along these lines better aligns with the evidence that, in Portuguese as in other languages, mood and tense are conveyed by the same morpheme (i.e., it is not the case that there is one morpheme of tense and another of mood) than an analysis that separates temporal and modal interpretations of verbal tenses.

Given that only subjunctive tenses were considered in this paper, the question emerges as to whether tenses of other moods also indicate pairs of times and worlds, not just points (or intervals) of time. Though I remain agnostic about this question, I see no reason in

principle to exclude this possibility. In the case of the indicative tenses, it might just be the case that, in most instances, only one world is considered in the interpretation of indicative clauses and, therefore, it is useless to consider the w variable of the ordered pairs $\langle w, t \rangle$. Whether an analysis departing from this assumption is tenable and might be useful to understand modal values of verbal tenses other than those considered in this paper is a matter for further discussion.

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Notes

¹ Also called *Futuro do Pretérito* (“Future of the Past”).

² Adapted from an example of (Karttunen and Peters 1979).

³ Iatridou (2000) and, more emphatically, (von Fintel and Iatridou 2023) also observe that the issue is not restricted to conditionals.

⁴ She uses the term “Imperfect”.

⁵ As, for example, von Fintel and Iatridou observe, both the terms “subjunctive conditionals” and “counterfactual conditionals” are misleading. I will keep using the terms indicative/subjunctive conditionals only for simplicity.

⁶ As a reviewer observes, this raises the following questions: how does this explain why the future subjunctive occurs in some *if*-clauses but not in other conditional clauses, such as (10a)—*O que devo dizer caso alguém pergunte por ti?* (“What should I say in case someone asks for you?”)? And why does the future subjunctive occur in temporal clauses introduced by *assim que* (“as soon as”), as shown by (17a)—*Com este buraco na telha, assim que chover a cozinha fica inundada!* (“With this hole in the roof tile, the kitchen will get flooded as soon as it rains!”)—but is ruled out of temporal clauses introduced by *logo que*, which seems to have the same meaning as *assim que*? Concerning conditional clauses, I propose that *if*-clauses are restrictors of a quantificational domain, as assumed in the literature and stated above, while conditional clauses introduced by *caso* (lit. “case”) have a free-choice interpretation. That is, “*se-p, (então) q*” (“*if-p, (then) q*”) indicates that every p -world doxastically accessible from the context of utterance is a q -world, while “*caso-p, q*” (lit., “*case-p, q*”) indicates the following: if we pick up any p -world doxastically accessible from the context of utterance, such a world will be a q -world. Thus, in *if*-clauses, the whole set of p -worlds doxastically available is taken into account, and hence the future subjunctive will occur, unlike in *case*-clauses, *caso* (“case”) being a free-choice item. In other words, the present subjunctive occurs in *case*-conditionals and the future subjunctive will occur in *if*-clauses for the same reason that the present subjunctive occurs in relative clauses in cases such as *qualquer estudante que se inscreva* _1SG_SUBJ_PRESENT (“any student that assigns”), with the free-choice item *qualquer* (“any”), and future subjunctive occurs in relative clauses in cases such as *os estudantes que se inscreverem* _3PL_SUBJ_FUTURE (“the students that assign”), wherein the entire set of students that assign is considered. As for temporal clauses with *logo* (+SUBJ_PRESENT) and *assim que* (+SUBJ_FUTURE), both operators can be translated by *as soon as*, but I think that there is a subtle difference between the meanings of these temporal operators. My intuition is that “*p assim que q*” (“*p as soon as q*”) expresses temporal ordenation, and “*p logo que q*” (“*p immediately after q*”) expresses the ordenation of events. More precisely, I believe that the former is equivalent to “*the moment at which p, q*”, expressing contiguity between the temporal location of p and that of q , while “*p logo que q*” indicates that between the events p and q , there is no other relevant event. Thus, *telefone ao médico assim que receber* _1SG_FUTURE_SUBJ *os resultados das análises* (I will phone the doctor as soon as I receive the results of the analyses) indicates that the time of the phone call will immediately follow the reception of the results, while *telefone ao médico logo que receba* _1SG_SUBJ_PRESENT *os resultados das análises* means that the first thing to be done after receiving the results of the analyses is phoning the doctor (between p and q , there will be no other relevant event, but this does not imply that the phone call will be made immediately after receiving the results; maybe the speaker will first wait a while, or maybe (s)he will have a glass of water, take a break, or perform some other action that is irrelevant to the context of the test results). If this is so, then “*p assim que q*” will involve universal quantification over the single set formed by the time at which the results are received (being equivalent to “*p at the moment which q*”), while “*p logo que q*” will express the ordering of events, but no universal quantification. In other words, “*p assim que q*” is of the same kind as *when*, and “*p logo que q*” is of the same kind as *after*.

⁷ Or of the domain of quantification (see von Fintel 1998).

⁸ Some authors, such as Godard (2012) and Giannakidou and Mari (2021), propose that the subjunctive signals the consideration of both p and non- p worlds, the indicative occurring if only p or only non- p worlds are taken into consideration; others, such as

Marques (2024), argue that the subjunctive signals the consideration of non-*p* worlds, regardless of whether *p*-worlds are also taken into consideration or not.

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