Rui Marques

Modality, context change potential and mood selection in European Portuguese

The purpose of this paper is to shed some light on the semantic and pragmatic principles governing mood selection in European Portuguese. The proposal is made that the selection between the indicative and subjunctive moods is conditioned by three factors: veridicality, the kind of attitude expressed towards the proposition and the effect that the assertion of the proposition has on the context set. In some constructions, this last factor also seems to play a role in the choice between a finite mood and the infinitive, suggesting that the distribution of the infinitive is not constrained solely by syntactic factors.

1.   Introduction

A large part of the literature on the indicative and subjunctive moods has focused on the distribution of these moods in complement clauses. This is not the only context where these moods occur, but it is the context that shows greatest variation in mood selection. Hence, particular attention has been devoted to mood selection in complement clauses, in an attempt to establish which factors govern the selection of a particular mood. In this paper, I will consider data from European Portuguese, trying to describe the factors that seem to be operative in mood selection. Particular attention will be devoted to complement clauses, but some adverbial clauses will also be discussed. I assume that the identified factors may also play a role in the selection of mood in other Romance languages, thought I will not present a comprehensive view of all of these. Nevertheless, some data from other Romance languages will occasionally be considered.

The paper is organised as follows: The next section provides a general description of the distribution of indicative and subjunctive in European Portuguese. Section 2 presents a general overview of two of the main lines of enquiry that have been explored in the literature, arguing that none of them allows a satisfactory description of the data. In section 3, I will try to show that to a large extent the selection of the indicative or the subjunctive for complement clauses can be accounted for by the assumption that mood is a grammatical category related to the expression of modality. In particular, it

will be argued that the selection of the indicative or the subjunctive follows from the combination of two factors: veridicality and kind of modality. In 4.1, constructions will be considered in which both the indicative and the subjunctive can occur, the suggestion being made that to some extent the selection of mood is ruled by the effect that the speaker wants the assertion of the sentence to have on the discourse. This means that, apart from the factors identified in section 3, a comprehensive account of mood selection in Portuguese must also take into account some modelling of discourse. The consideration of this factor may shed some light on a less explored issue in the semantic literature: the selection of an infinitive or of a finite mood, a subject that will be partially considered in section 4.2.

2.   Indicative and subjunctive in European Portuguese – a general
        overview

In European Portuguese, both the indicative and the subjunctive moods may occur in independent and subordinated clauses of different types. In complement clauses, the selection of one or another mood is, to a large extent, conditioned by the predicate of the main clause: predicates of the types listed in (1) select the subjunctive, while those listed in (2) select the indicative.

Subjunctive governors:

(1a)   desideratives – e. g. want, hope ...

(1b)   directives – e. g. order, ask, suggest ...

(1c).   predicates of fear – e. g. be scared

(1d)   epistemic predicates expressing negative commitment – e. g. doubt

(1e)   negative declaratives – e. g. deny

(1f)   some factive verbs[1]: astonish, find strange, like, regret, deplore, forgive ...

(1g)   authorise, allow, forbid ...

(1h)   be enough, cause, avoid, imply, try ...

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[1]   In the definition of *factive verb*, I follow Karttunen (1971), assuming that factive verbs are those which trigger the presupposition that their complement clause is true. That is, those verbs which allow the inference that the complement clause is true, regardless the truth value of the main clause.

(1i)   be convenient, be urgent ...

Indicative governors:

(2a)   declaratives – e. g. say, claim, confess ...

(2b)   fiction verbs (a term I borrow from Farkas (1992)) – e. g. imagine, dream ...

(2c)   commissives – e. g. promise ...

(2d)   some factive verbs – e. g. know, foresee, realise, find out, ignore, notice ...

There is a small group of verbs that accept both the indicative and the subjunctive in the complement clause, such as *acreditar* ('believe'), *supor* ('suppose'), and a few others, with related meaning.

   In independent and main clauses the indicative occurs in sentences describing reality, otherwise subjunctive occurs. For instance, in independent clauses, the subjunctive is allowed in sentences expressing desire or similar notions (3a), in imperative sentences (3b) and sentences introduced by *talvez* ('maybe') (3c), while the indicative is the only accepted mood in declarative sentences (4):

(3a)   Que Deus te ouça!
       that God you hear
       'God hears you'

(3b)   Saiam!
       leave-3PL
       'You leave'

(3c)   Talvez chova!
       maybe rain-3SG
       'Maybe it rains'

(4)   Está a chover.
       is-3SG at rain
       'It is raining'

In adverbial clauses, for the most part, the situation is similar: the indicative is selected for those sentences taken to be true, with the subjunctive being selected otherwise:

(5a)   A Ana foi morar para Paris quando *acabou o curso*.
       the Ana went leave to Paris when finished-3SG-IND the graduation
       'Ana moved to Paris when she graduated'

(5b)   A Ana vai morar para Paris quando *acabar o curso*.
       the Ana went leave to Paris when finish-3SG-SUBJ the graduation
       'Ana will move to Paris when she graduates'

Sentence (5a) allows the inference that the clause in italics is true, contrary to (5b). In most of the other adverbial clauses, the selection between the indicative and the subjunctive follows the same pattern: the indicative is selected if the sentence is taken to be true, otherwise the subjunctive occurs. The only exception is the concessive clause introduced by the connector *embora* ('althought), where the subjunctive is selected, despite the fact that the subordinated clause is taken to be true:

(6)   Embora *esteja a chover*, o dia está agradável.
       although is-3SG-SUBJ at rain, the day is pleasant
       'Although it is raining, the day is pleasant'

As for relative clauses, in restrictive relatives both moods might occur. Mood selection in relative clauses deserves a closer look, which I will not attempt in this paper. I will only note that the selection of the indicative or the subjunctive seems to be related to the referential degree of the relativized NP, as suggested by the following examples:

(7a)   A Ana quer contratar *uma secretária que fala Russo*.
       the Ana want hire a secretary that speak-3SG-IND Russian
       'Ana want to hire a secretary that speaks Russian'

(7b)   A Ana quer contratar *uma secretária que fala Russo*.
       the Ana want hire a secretary that speak-3SG-SUBJ Russian
       'Ana want to hire a secretary that speaks Russian'

(8a)   A Ana teve *alguém que a ajudou*.
       the Ana had someone who her help-3SG-SUBJ
       'Ana had someone who helped her'

(8b)   A Ana teve *quem a ajudasse*.
       the Ana had who her help-3SG-SUBJ
       'Ana had help'

Sentence (7a), with the indicative, allows the inference that there is a particular secretary that Ana wants to hire and she knows which secretary it is. On the contrary, (7b) does not tell us that Ana has in mind a particular secretary that she wants to hire, and the secretary might even not exist. As for sentences (8a) and (8b), though both allow the inference that someone helped Ana, in the first one, with indicative, the relativized NP is referential, pointing to some particular entity of the world, contrary to what is observed in the second one. In this case, the NP in italics does not identify anyone in particular; it only asserts the existence of someone who helped Ana.

3.   Semantic and pragmatic approaches to mood selection

Simplifying somewhat, one might say that most of the semantic and pragmatic approaches to mood selection have followed two main approaches. One of them establishes a link between the selection of mood and the kind of speech act that the clause is primarily related to. The other approach seeks to relate the selection of indicative or subjunctive to the acceptance of the truth of the relevant proposition. These two approaches will be considered in the following subsections.

3.1.   The assertion / non-assertion hypothesis

One of the most thorough accounts of the selection of indicative or subjunctive in Romance languages assumes that mood selection is related to speech acts, the indicative being the mood of assertion and the subjunctive the mood selected for non assertive contexts. The following arguments have been presented in favour of this hypothesis (cf. e. g. Klein-Andreu 1990, Bybee & Terrell 1990, Ahern 2005):

(i)   The indicative is selected in declarative clauses, while the subjunctive occurs in main clauses that express order, desire or some related notion, as shown by the following examples:

(9a)   As crianças estão caladas.
         the children are-IND quiet

(9b)   Estejam caladas!
         be-3PL-SUBJ quiet

(9c)   Deus queira!
         God wishes-SUBJ
         'God willing!'

(ii)   The indicative is selected by causal connectives, while the subjunctive is selected in purpose clauses:

(10a)   A Ana saiu porque estava atrasada.
          the Ana went out because was-3SG-IND late
          'Ana went out because she was late.'

(10b)   Construíram uma barragem para que o rio não transbordasse.
          built-3PL a dam for that the river not overflow-SUBJ
          'They built a dam in order to prevent the river from overflowing.'

(iii)   In complement clauses, the indicative is selected by declarative predicates
        (cf. (11a)), while the subjunctive is selected by verbs expressing desire,
        doubt, order, fear, among other notions (cf. e. g. (11b)):

(11a)   A Ana disse que o computador está avariado.
        the Ana said that the computer is-IND broken
        'Ana said that the computer is broken.'

(11b)   A Ana quer que o filho acabe o curso.
        the Ana wants that the son finishes-SUBJ the degree
        'Ana wants her son to finish his degree.'

Moreover, the interpretation of some verbs – e. g. *insist* or *feel* – is different,
depending on whether the indicative or subjunctive occur in their complement
clause. In fact, as Klein-Andreu (1990), among others, observes, in Spanish, the
verb *feel* is interpreted as equivalent to *notice* if its complement clause is in the
indicative mood, while it is interpreted as the equivalent to *regret* if the
subjunctive is selected:

(12a)   Siento que aprende. (Spa.)
        feel-1SG that learns-3SG-IND
        'I feel that he is learning.'

(12b)   Siento que aprenda.
        feel-1SG that learns-3SG-SUBJ
        'I regret that he is learning.'

The assumption that the indicative is selected in assertive clauses and the
subjunctive in non-assertive clauses goes back at least to Hooper (1975), who
proposes the following classification of sentence complementation predicates:

Table 1: *Hooper's classification of predicates*

Assertives	Non-factives	think, believe, say, agree
	Semi-factives	find out, discover, know
Non-assertives	Non-factives	be likely/possible/probable
	Factives	regret, resent, be odd/strange

Both in Spanish (the language Hooper examines) as in most other Romance
languages, Hooper's assertive predicates take the indicative, while the
subjunctive is selected by non-assertive predicates.

    Despite the initial appeal of the hypothesis that the indicative is the mood of
assertion and that the subjunctive is used in non-assertive contexts, some
criticism has been pointed out in the literature. A major problem for this
analysis, as Palmer (1986) observes, is the selection of the indicative in
interrogatives, a clearly non-assertive context. Another difficulty is the fact

that some epistemic predicates accept both the indicative and the subjunctive in their complement clause. For instance, *believe* preferably selects the subjunctive in Italian, and the indicative in the other Romance languages. Finally, as stressed by several authors, the hypothesis at stake lacks a semantic basis that underlies the notion of 'assertion'. Particularly in the case of complement clauses, it is hard to grasp a feature common to all Hooper's assertive predicates that distinguishes them from the non-assertive predicates.

Several authors (cf. Noonan 1985, Bybee and Terrell 1990, Hengeveld 2004, among others) argue that factive predicates such as *regret* select the subjunctive because their complement clause is presupposed, not asserted. As for the other subjunctive governors (the non-assertive and non-factive predicates in Hooper's classification), they do not commit the speaker or anybody else to the truth of their complement clause and, thus, they are not assertive predicates. This view falls back on a Stalnakerian concept of 'assertion'. It explores the idea that a proposition with the indicative mood is presented as conveying new information. However, an approach along these lines fails to explain the selection of the indicative in the sentences in italics of (13) and the selection of subjunctive in examples like (14):

(13) Todos sabemos *que a Ana reprovou no exame*; não precisas de nos lembrar.
      all know-1PL that the Ana failed-IND in-the exam; not need-2SG of us remember
      'We all know that Ana failed the exam; you don't need to remind us.'

(14) Como as imagens mostram, a barragem não impediu *que o rio transbordasse*.
      as the pictures show, the dam not prevented that the river overflew-SUBJ
      'As the pictures show, the dam didn't prevent the river from overflowing.'

The sentence in italics in (13) is not intended to add new information to the common ground and the sentence in italics in (14) might convey new information. However, the indicative is obligatorily selected in the first case and excluded from the second case, thus contradicting the hypothesis that the indicative is used if new information is conveyed, with the subjunctive selected otherwise.

3.2.   The veridicality hypothesis

Another line that has been explored in the literature connects the selection of the indicative or subjunctive to the truth value of the proposition. According to this approach, the indicative is selected if the sentence is taken to be true; otherwise the subjunctive is chosen. This is the idea found in traditional grammars, where the link is established between the indicative and reality, on

the one hand, and between the subjunctive and unreality or virtuality, on the other hand.

A similar intuition is explored by Palmer (1986), Bell (1990), and others, who relate the selection of mood to the degree of belief being expressed. According to these authors, a high degree of commitment to the truth of the proposition leads to the selection of the indicative, otherwise the subjunctive is used:

> The indicative is used where the subject shows some positive degree of commitment to the proposition, either total as with ASSERT, or partial as with THINK. Where there is no degree of positive commitment as with BE POSSIBLE, but either non-commitment or negative commitment as with DOUBT (partial negative commitment) or *don't think* (total negative commitment), the subjunctive is used.
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> (Palmer 1986: 145)

One fact that favours this hypothesis is exhibited in the Spanish examples (15a-b), from Palmer (1986), and the Portuguese examples (16a-b):

(15a)   Tal vez venga mañana.
            maybe comes-SUBJ-3SG tomorrow

(15b)   Tal vez vendrá mañana.
            maybe comes-IND-3SG tomorrow
            'Maybe he comes tomorrow.'

(16a)   Eu acredito que a Ana ganhe as eleições.
            I believe that the Ana wins-SUBJ the elections

(16b)   Eu acredito que a Ana ganha as eleições.
            I believe that the Ana wins-IND the elections
            'I believe Ana will win the elections.'

Though both the indicative and the subjunctive might occur in these cases, sentences (15a) and (16a), with the indicative, express a higher degree of certainty than (15b) and (16b), where the subjunctive is selected. Therefore, in the examples below, the selection of the subjunctive is odd in sentence (17a), which expresses a high degree of belief, and the selection of the indicative is odd in sentence (18a), which expresses a low degree of belief:

(17a)   ?Acredito convictamente que haja sobreviventes.
            believe-1SG really that is-3SG-SUBJ survivors.

(17b)   Acredito convictamente que há sobreviventes.
            believe-1SG really that is-3SG-SUBJ survivors.
            'I really believe that there are survivors.'

(18a)   ?É difícil acreditar que alguém sobreviveu.
            is hard believe that someone survived-IND

(18b)   É difícil acreditar que alguém tenha sobrevivido.
        is hard believe that someone has-SUBJ survived
        'It is hard to believe that someone has survived.'

Nevertheless, the proposal that the indicative occurs in sentences taken to be true and the subjunctive in the other cases faces two main problems. The first one, as Farkas (1992) observes, is that it does not account for the selection of the indicative by verbs like *dream* or *imagine*. Such verbs select the indicative, as shown in the following sentences, although their complement proposition does not describe reality and they do not allow the inference that someone believes that their complement proposition is true.

(19)   Imagina que estavas no Brasil.
      imagine-IMP.2SG that were-IND-2SG in-the Brazil
      'Imagine you were in Brazil.'

(20)   Ele sonhou que era um astronauta.
      he dreamed that was-3SG-IND an astronaut
      'He dreamed he was an astronaut.'

The second problem is that the hypothesis at stake fails to account for the selection of the subjunctive in sentences taken to be true. Such is the case with complement clauses of factive predicates like *regret* or *be a shame* (cf. (21)), which in Portuguese and other languages select the subjunctive, complement clauses of some nouns, like the equivalent of *fact* in French (cf. (22)), and concessive clauses introduced by *embora* ('although') (cf. (23)):

(21)   É pena que esteja a chover. (Por.)
      is pity that is-3SG-SUBJ raining
      'It is a pity that it is raining.'

(22)   Le fait qu'il soit malade l'ennuie. (Fra.)
      the fact that he is-SUBJ ill him bothers
      'The fact that he is ill bothers him.'

(23)   Embora esteja doente, ele está a trabalhar. (Por.)
      although is-SUBJ ill, he is at work
      'Although he is ill, he is working.'

The first problem is solved by the concept of 'extensional anchoring', proposed by Farkas, or '(relativised) veridicality', as defined in Giannakidou (1999). According to this view, the indicative is selected if the relevant clause is taken to be true by some entity in a particular possible world, not necessarily the real world. Hence, the verb *to dream*, for instance, selects the indicative because its complement clause is taken to be true in the world modelling the main subject's dreams, though it might be false in the real world.

As Farkas (1992) observes, this approach faces problems when French (and other Romance languages, one might add) is considered, given that the subjunctive is selected by some factive predicates, such as (the equivalent of) *regret,* which she labels 'factive-emotives'. Since the complement clause of such predicates is taken to be true, the proposal predicts that the indicative will be selected. In Romanian, this prediction is confirmed, but not in the other Romance languages. Farkas suggests that the parametric variation in mood selection shown by these verbs is due to the fact that some languages are more sensitive to their factive character, while other languages give prominence to their emotive feature. Romanian, as well as Modern Greek (cf. Giannakidou 1999) and other languages where these predicates select the indicative, would belong to the first group, while the other Romance languages, where these predicates select (obligatorily, as in Portuguese, or optionally, as in French[2]) the subjunctive, would belong to the second group. However, even if this idea might account for the selection of the subjunctive by factive-emotive predicates, it cannot explain the selection of the subjunctive by causative predicates in sentences like (14), above, or (24):

(24)   A rápida intervenção dos bombeiros permitiu que toda a gente fosse salva.
        the quick intervention of-the firemen allowed that every the people was-SUBJ saved

        'Thanks to the quick intervention of the firemen, everybody was saved.'

In these constructions, where the sentence with the subjunctive is given as true, the selection of the subjunctive cannot be explained in the same way that Farkas suggests for complement clauses of factive emotive predicates.

   In short, a proposal that links the selection of indicative or subjunctive to the assumption of the truth of a proposition (even if the acceptance of the truth is relativized to possible worlds different from that modelling reality) fails to explain the selection of subjunctive by causative predicates and the fact that in most Romance languages factive-emotive predicates govern the subjunctive. In the next section, I will present a different analysis, following the claim that the grammatical category mood is a mean to express modality.

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[2]   See Farkas (1992), Quer (1988) and Quer (this volume) for a clearer description of the selection of mood by factive-emotive predicates in French, Spanish and Catalan.

4. Modality and mood selection

Taking the concept of modality to refer to the attitude expressed towards a proposition (cf. e. g. Palmer 1986), a relationship can be found between this semantic concept and the choice of indicative or subjunctive in most contexts. To show this, I will consider complement clauses, but the proposed analysis may be extended to constructions of other kinds.

Let us begin by considering factive verbs, a class of verbs that has been at the heart of a large debate on the literature on mood. While in Romanian all such verbs govern the indicative, in the other Romance languages, some of them select the indicative while the others select[3] the subjunctive. Factive verbs that select the indicative include (the equivalents of) *know*, *foresee*, *realise*, *find out*, *notice* and *be unaware* (in the sense of *not knowing*). All these verbs express an attitude of an epistemic nature. As for the factive verbs that select the subjunctive, they express a different kind of attitude, one that corresponds to an evaluation of the state of affairs described by the complement clause. This is the case with factive verbs like (the equivalents of) *astonish*, *like*, *regret*, *deplore* or *forgive* and predicative expressions like (the equivalents of) *be a pity* or *be pleased*. With this in mind, it is clear that the factive verbs that select the indicative are those which express an epistemic attitude towards the complement clause, that is, factive verbs related to epistemic modality[4], while those that select the subjunctive are those related to what Rescher (1968) calls evaluative modality.

Considering now the non-factive verbs, one may notice that those that select the indicative express an attitude of belief. This is clearly the case with the equivalents of *think* or *assume*, and also of declarative predicates, given that they commit the referent of the main clause subject to the acceptance of the truth of the complement clause. Similarly, commissive predicates (e. g. *promise*), which also take the indicative, allow the inference that their complement clause will become true according to the main clause subject, otherwise the speech act that such predicates express is infelicitous, in Austin's sense. Finally, fiction verbs also express an attitude of belief, though the belief is relativised to worlds (possibly) different from the real one.

This being so, the conclusion arises that all verbs that select the indicative express an attitude of knowledge or belief, that is, an attitude of epistemic or doxastic nature. On the other hand, a connection between the selection of the subjunctive and a particular kind of modality does not seem to exist. In fact,

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[3]   Or accept, see footnote 2.

[4]   In the broad sense, which includes both epistemic (i. e. related to knowledge) and doxastic (i. e. related to belief) modality.

the subjunctive is associated with a wide variety of attitudes, being selected by bouletic predicates (e. g. *want* or *desire*), evaluative predicates (e. g. *regret* or *be pleased*), predicates of a deontic nature (e. g. *force* or *forbid*), and so on. Thus, contrary to what is generally assumed, the subjunctive does not seem to signal any particular value, contrary to the indicative, which occurs exclusively in contexts of epistemic modality.

Nevertheless, it should be noticed that the subjunctive may also occur in epistemic environments. In fact, there is a group of epistemic predicates that may select the indicative or the subjunctive in Portuguese. This is the case with a small group of verbs such as the equivalents of *believe, admit* or *suspect*. As shown by (16a-b) above, verbs of this kind select indicative or subjunctive depending on the degree of belief being expressed. Moreover, the negative verbs *duvidar* ('doubt') and *negar* ('deny') also accept the subjunctive in their complement clauses, as shown by the following example:

(25) duvido / nego que o Paulo tenha sido assaltado.
      doubt-1SG / deny-1SG that the Paulo has-SUBJ been robbed
      'I doubt / deny that Paulo was robbed.'

These verbs are also epistemic, in the sense that they also express an epistemic (or better, doxastic) attitude relating the subject of the main clause to the complement proposition. This being so, one has to conclude that epistemic modality is not the only issue that leads to the selection of the indicative.

Let us consider the verbs *doubt* and *deny*. One obvious difference between these verbs*,* on the one hand, and the majority of the verbs that select the indicative on the other, is that the former do not allow the inference that the subject of the main clause accepts the truth of the complement clause, contrary to most indicative governors. In other words, the verbs *doubt* and *deny* express a negative epistemic attitude, contrary to indicative governors such as *conclude* or *say*, for example. Other epistemic verbs which do not indicate that the (entity referred by the) subject of the main clause takes the complement proposition to be true are the factive verbs *be unaware of* (in the sense of *not knowing*) and *forget,* which, however, do govern the indicative:

(26) a Ana ignora / esqueceu-se de que a sala estava fechada
      the Ana is unaware of / forgot-herself that the room was-IND closed
      'Ana doesn't know / forgot that the room was closed'

Nevertheless, such verbs are factive. They allow for the inference that their complement clause is true according to the speaker. On the contrary, the verbs *doubt* and *deny* do not commit anyone to the truth of their complement clause. Therefore, apart from the kind of attitude expressed by the predicate, another factor that plays a role in the selection of the indicative or the subjunctive in

complement clauses in Portuguese seems to be Giannakidou's concept of 'veridicality'.

According to Giannakidou (1999), in Modern Greek the subjunctive is selected by non veridical operators; i. e., those operators that do not allow the inference that the proposition they introduce is true in some epistemic model. On the basis of this notion, one might observe that the verbs *ignore* and *forget* are veridical, since they allow the inference that their complement clause is true, according to the speaker, while *doubt* and *deny* are non-veridical verbs, since they do not allow the inference that their complement clause is taken to be true by someone. Apart from this difference, both groups of verbs – *ignore* and *forget*, on one side; *doubt* and *deny*, on the other side – express an epistemic attitude relating the subject of the main clause to the complement proposition.

Thus, the selection of the indicative or the subjunctive for complement clauses in Portuguese seems to follow from a combination of two factors: veridicality and epistemic modality. The reason for the selection of one mood over the other can be stated as follows: the indicative is selected for veridical contexts – i. e., for propositions taken to be true by some entity in some possible world – if the attitude towards the complement proposition is of epistemic nature; otherwise, subjunctive is selected. In other words, if the attitude expressed by the main predicate is the belief in the complement proposition, the indicative is selected. If the predicate expresses some other kind of attitude (e. g. desire, evaluation …) or if the sentence is not taken to be true, the subjunctive is selected.

Let us now consider two cases of mood variation in complement clauses of epistemic non-factive verbs. In both cases, the variation can be accounted for by the hypothesis that the indicative is selected in veridical epistemic contexts. The first case is illustrated by the following examples:

(27a)   Acredito que a Maria está doente.[5]
        believe-1SG that the Maria is-IND ill

(27b)   Acredito que a Maria esteja doente.
        believe-1SG that the Maria is-SUBJ ill
        'I believe that Maria is ill.'

As mentioned above, in these sentences the selection of one or another mood is related to the degree of belief being expressed. The indicative signals a high degree of belief, the subjunctive a lower degree. In other words, the indicative

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[5]   The group of verbs that allow both the indicative and the subjunctive to occur in their complement clause includes the equivalent of *believe* and some other verbs with the same core meaning (e. g. *admit*, *suspect*, *assume*).

is selected if the complement clause is taken to be true; otherwise the subjunctive is selected. Hence, the concept of veridicality accounts for this case of mood variation. With the indicative, the inference follows that the relevant proposition is true (according to the subject of the main clause), contrary to what happens if the subjunctive is selected.

As expected, if the main verb is negated, absence of belief is expressed and only the subjunctive is allowed:

(28)   Não acredito que a Maria esteja / *está[6] doente.
          not believe-1SG that the Maria is-SUBJ / *is-IND ill
          'I don't believe that Maria is ill.'

However, as observed by Guitart (1984), Hengeveld (1988), among others, if the subject of the main clause is different from the speaker, both the subjunctive and the indicative may occur:

(29a)   A Ana não acredita que a Maria esteja doente.
          the Ana not believes that the Maria is-SUBJ ill

(29b)   A Ana não acredita que a Maria está doente.
          the Ana not believe that the Maria is-IND ill
          'Ana doesn't believe that Maria is ill.'

The same is observed with the verb *duvidar* ('doubt'):

(30a)   A Ana ainda duvida que a Maria esteja doente.
          the Ana still doubts that the Maria is-SUBJ ill

(30b)   A Ana ainda duvida que a Maria está doente.
          the Ana still doubts that the Maria is-IND ill
          'Ana still doubts that Maria is ill.'

The selection of the indicative or the subjunctive in these cases illustrates a second case of mood variation that can be accounted for by the hypothesis that the indicative occurs in epistemic veridical contexts. Mood choice in examples (29) and (30) is not a matter of free choice. The complement clause with the indicative allows for the inference that the speaker accepts the truth of the complement proposition, while the subjunctive in the complement clause does not allow for the inference that the sentence is taken to be true by some entity. Naturally, in (28), the indicative may not occur because a contradiction would arise. On the one hand, the indicative would signal that the speaker takes the complement clause to be true; on the other hand, the sentence expresses the

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[6] The indicative is accepted if the sentence does not describe absence of belief, but surprise (roughly equivalent to *I can't believe it*! *Maria is ill*!). In this case, the sentence is taken to be true.

information that the same entity – the (individual identified by the) subject of the main clause – does not believe that the complement clause is true. No contradiction arises, though, if the sentence refers to a previous state of belief, as in the following examples:

(31a)   Eu não acreditei que a Maria estava doente.
        I not believed that the Maria was-IND ill

(31b)   Eu não acreditei que a Maria estivesse doente.
        I not believed that the Maria was-SUBJ ill
        'I didn't believe that Maria was ill.'

Sentence (31a), where the indicative is used, conveys the information that, at the time of utterance, the speaker believes that the complement proposition is true, contrary to his former belief. Sentence (31b), where the subjunctive is used, only states that the speaker did not believe, at some prior moment, that Maria was ill. It does not allow for the inference that at the speech time, the speaker believes that the proposition is true or false.

In summary, the sentences that express lack of belief show that when the indicative is selected different states of belief are considered. In examples like (29b) or (30b), the indicative signals the contrast between the state of belief relating the complement clause to the speaker and the one concerning the complement clause and the (entity refereed by the) main subject. In examples like (31a), the indicative signals a contrast between the present and a previous state of belief of the speaker concerning the complement clause, stating that he now believes in something that he did not believe before. In either case, when the indicative occurs in the complement clause, the sentences are taken to be true (according to the speaker) and the attitude expressed towards the proposition is one of (non)belief (i. e. the complement clause occurs in a context of epistemic, or doxastic, modality).

To sum up, the analysis of mood selection for complement clauses in Portuguese reveals that the indicative occurs in veridical epistemic contexts. That is, the indicative occurs when the complement clause is taken to be true (either in the real world – cf. e. g. the complement clause of verbs like *know* – or in some other possible world – cf. e. g. the complement clause of verbs like *dream*) and the attitude expressed towards this proposition is one of epistemic or doxastic nature. This accounts for the cases of mood variation observed so far: (i) cases where the selection of the indicative or subjunctive depends on different degrees of belief being expressed; (ii) cases where the selection of mood is related to different states of belief (states of belief relating to different individuals or to the same individual at different times). In either case, the indicative is selected if the complement clause is presented as one which some

entity assumes to be true at some point, with the subjunctive being selected otherwise.

In the next section, other cases of mood variation will be taken into consideration.

5.   Context change potential and mood selection

5.1.   Indicative *vs* subjunctive

To a large extent, the hypothesis that the selection of the indicative or the subjunctive is related to veridicality and the kind of attitude being expressed towards the proposition accounts for the data from Portuguese (and from other Romance languages). However, apart from the cases considered above, there are other instances of mood variation which, at first sight, cannot be accounted for along the same lines. One of them relates to the epistemic verb *pensar* ('to think'), which accepts both the indicative and the subjunctive in its complement clause without any semantic distinction. This is shown in the following sentences:

(32a)   Pensei que a Maria estava doente.
         thought-1SG that the Maria was-IND ill

(32b)   Pensei que a Maria estivesse doente.
         thought-1SG that the Maria was-SUBJ ill
         'I thought that Maria was ill.'

Both (32a) as (32b) may be felicitously asserted in a context where the speaker accepts that Maria is ill, as well as in a context where he accepts that she is not. Hence, in these cases the selection of one mood or another does not seem to be due to the (non) acceptance of the truth of the complement proposition.

Another context of variation in mood selection concerns the complement clauses of the verb *believe*. As has been observed in the literature, in Italian, the equivalent of this verb preferably selects the subjunctive, while in the other Romance languages, it is the indicative that most naturally occurs in its complement clause:

(33)   Credo che Maria sia malata. (Ita.)
         believe-1SG that Maria is-SUBJ ill

(34)   Je crois que Marie est malade. (Fra.)
         I believe that Marie is-IND ill

These facts show that, apart from the two issues identified as operative in the selection of the indicative or the subjunctive – veridicality and epistemic modality –, some other feature plays a role in mood selection.

Mood variation in these cases seems to be accounted for if one invokes Heim's concept of context change potential (CCP) (cf. Heim 1992). Roughly, the CCP of a sentence is its capability of changing the context set (the set of possible worlds available at each point of the conversation). According to Heim's framework, by asserting a declarative sentence, the speaker gives the instruction to remove from the context set all but those worlds where the complement proposition is verified. For instance, if the sentence *it is raining* is successfully asserted against a context set c, the result will be a new context set: a subset of c which contains only worlds where it is raining.

In the examples under consideration, the selection of the indicative or the subjunctive might be related to the instruction that the speaker is willing to give by asserting the sentence. The hypothesis is that, if indicative is selected, the instruction will be given to consider only those possible worlds where the relevant proposition is verified. On the other hand, if the subjunctive is selected, the update of the context set would allow for possible worlds where the proposition is false to remain available.

To evaluate this hypothesis, let us compare the Italian sentence (33) with (35a), from Wandruszka (1991), where the indicative is necessarily selected:

(35a)   Creda che sono veramente mortificato. (Ita.)
         believe-3SG-IMP that am-1SG-IND really sorry

(35b)   *Creda che io sia veramente mortificato.
         believe-3SG-IMP that I am-1SG-SUBJ really sorry
         'Believe me, I am really sorry.'

By asserting (35a), the speaker gives the instruction to discard possible worlds where the complement proposition is not verified. On the contrary, by asserting (33), with the subjunctive, possible worlds where the complement proposition is not verified might remain available in the context set after the (successful) assertion of the sentence. Thus, a phrase like 'but I might be wrong' is a possible continuation of (33), but not of (35a).

A similar explanation might be proposed for the Portuguese cases (32a-b). By asserting (32a), with the indicative in the complement clause, the speaker is focusing on his former belief that Maria was sick, remaining silent as to whether, at the time of utterance, he accepts the proposition to be true or not. Hence, by asserting the sentence, the speaker gives the instruction to consider (even if temporally, given that discourse might continue with a sentence like *but I was wrong*) only possible worlds where Maria was sick at a previous time. On the other hand, the speaker might want to say that at the speech time

he admits the sentence to be false, in which case he wants the hearer to also consider worlds where the proposition is not verified. The selection of the indicative or subjunctive seems to be related to the instruction the speaker is giving. When all the possible worlds to be considered are those where the proposition is verified, the indicative is selected. If the instruction is given to also consider worlds where the proposition is not verified, the subjunctive will be preferred. Hence, the selection of the indicative in (32a) as in (35a), and the selection of the subjunctive in (32b) and (33).

To sum up, so far three factors have been considered to be relevant for mood selection in complement clauses: (i) the kind of modality that the main predicate is associated with, (ii) veridicality, and (iii) the context change potential of the sentence (i. e., when indicative is selected, the instruction is given to discard, even if temporally, possible worlds where the sentence is not verified). In a simplified manner, the proposal being advocated is that the indicative is selected when the purpose is to express the acceptance of the truth of the proposition, with the subjunctive being selected otherwise. Thus, the subjunctive occurs in non-veridical contexts (such as complement clauses of desire predicates) and in veridical non-epistemic contexts (such as complement clauses of predicates like *regret*), since in this case, the primary purpose is not to express belief in the relevant proposition. Epistemic non-factive verbs (such as *believe* or *think*) show variation in mood selection depending on whether the instruction is given to consider only worlds where the relevant proposition is verified.

Moving now to main and adverbial clauses, it might be observed that the indicative occurs only in those contexts where the speaker expresses his belief in the proposition. In fact, the indicative is the mood found in declarative simple sentences, as shown by (36), in causal clauses, as (37), and in temporal clauses that describe events that occurred, as shown by (38) and (39), or which have atemporal or generic readings, as (40):

(36)   Viena é a capital da Áustria.
         Vienna is-IND the capital of-the Austria
         'Vienna is the capital of Austria.'

(37)   Ele caiu *porque a Ana o empurrou*.
         he fell because the Ana him pushed-IND
         'He fell because Ana pushed him.'

(38)   Ele veio *quando o chamaram*.
         he came when him called-3PL-IND
         'He came when he was called.'

(39)   *Enquanto ele esteve doente*, nunca foi chamado.
          while he was-IND ill, never was-1SG called
          'While he was ill, he was never called.'

(40)   O bebé chora *quando tem fome*.
          the baby cries when is-3SG-IND hungry
          'the baby cries when he's hungry'

In these cases, by asserting the sentence, the speaker expresses his belief that the proposition is true, hence the indicative is selected.

As for the subjunctive, it occurs in sentences that are not taken to be true, such as (41) – (43), but also in concessive clauses introduced by *embora* ('although), such as (44), a veridical context:

(41)   Talvez a Ana esteja em casa.
          maybe the Ana is-SUBJ at home
          'Maybe Ana is at home.'

(42)   ele vem quando / se o chamarem
          he comes when / if him call-3PL-SUBJ
          'he will come when / if he is called'

(43)   Ele saiu antes que começasse a chover.
          he left before that star-3SG-SUBJ at rain
          'He left before it would start raining.'

(44)   Embora esteja frio, o dia está agradável.
          although is-3SG-SUBJ cold, the day is pleasant
          'Although it is cold, the day is pleasant.'

The selection of the subjunctive in (41) – (43) is explained by the concept of veridicality. Since the sentence is not taken to be true, the indicative cannot be selected. The selection of the subjunctive in (44) cannot be due to the same factor, since concessive clauses are a veridical context. The selection of the subjunctive in a case such as this is most naturally explained by a discourse parameter. One hypothesis is to presume that, by asserting the concessive clause, the speaker assumes that this clause describes a state of affairs known prior to the utterance. I think that in a context where the speaker assumes he is giving new information, an adversative clause, that demands the indicative and is semantically equivalent to a concessive clause, is more natural than a concessive clause with *embora*[7]. If this is so, the proposal can be put forward

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[7]   A reviewer observes that the English translation of (44) might be uttered as an answer to the question *how is the weather?*, in which case both the main and the concessive clauses introduce new information. I think that in Portuguese (44) would sound a bit strange as an answer to this question, particularly if the concessive clause

that the selection of the indicative or subjunctive in main and adverbial clauses depends on the context change potential of the sentence. If the purpose is to give the instruction to remove from the context set all but those worlds where the proposition is true, the indicative occurs, otherwise the subjunctive is selected. In the case of concessive clauses introduced by *embora*, the selection of the indicative will not be justified because the proposition is presupposed; that is, there are no worlds in the context set where the proposition is false and, thus, the instruction to remove such worlds makes no sense.[8]

5.2.   Infinitive *vs* finite moods

So far, only the indicative and subjunctive moods have been considered. Another major mood of the Romance languages is the infinitive, which has not received the same amount of attention as the subjunctive and the indicative in the semantic literature on mood in the Romance languages. I will not provide a comprehensive analysis of the infinitive in Portuguese, but will concentrate only on two kinds of adverbial clauses which might select the infinitive or a finite mood.

In Portuguese, as in other languages, the infinitive may occur in different types of sentences, including the following kinds of adverbial clauses, which will be considered in this paper: clauses introduced by causal connectives, and clauses introduced by the temporal connectives *até* 'until' or *antes* 'before'. In the next subsections, the hypothesis will be considered that the selection of the infinitive or of a finite mood in these kinds of adverbial clauses is conditioned by the effect that the assertion of the sentence has on the context set. Specifically, I will try to show that, in the kinds of clauses under investigation, the infinitival clause is not capable of changing the context set, contrary to what happens if a finite mood is chosen.

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precedes the main clause. This seems to be a particularity of the concessive conjunction *embora*. A concessive clause introduced by *apesar de*, which does not select the subjunctive, would sound natural:

(i)   apesar de estar frio, o dia está agradável.
       despite of be.INF *cold, the day is plesant*
       'Although it is cold, the day is pleasant.'

[8]   In colloquial speech, indicative might occur in concessive clauses introduced by *embora* 'although' if the speaker assumes he is giving new information. Such a fact favours this hypothesis.

5.2.1. Mood selection by causal connectives

In Portuguese, causal connectives may introduce a finite clause with the indicative mood as well as an infinitival clause:

(45a)   A Ana ficou em casa porque estava doente.
         *the Ana stayed at home because was-*3SG-IND *ill*

(45b)   A Ana ficou em casa por estar doente.
         *the Ana stayed at home by be-*INF *ill*
         'Ana stayed home because she was ill.'

These two sentences do not differ in meaning. However, the contexts in which the sentences are appropriately uttered only partially match up. In fact, in a context where it is known that Ana was ill, both (45a) and (45b) might be uttered, but in a context where such information is not available only (45a), with the indicative, seems adequate. In other words, the infinitival clause does not seem to be capable of introducing new information into discourse, contrary to the finite indicative clause. This fact becomes clearer if negative sentences are taken into consideration. In this case, not only the indicative and the infinitive but also the subjunctive may occur in the clause introduced by the causal connective:

(46a)   A Ana não ficou em casa porque estava doente.
         the Ana not stayed at home because was-3SG-IND ill

(46b)   A Ana não ficou em casa por estar doente.
         the Ana not stayed at home because be-INF ill
         'Ana didn't stay home because she was ill.'

(46c)   *A Ana não ficou em casa porque estivesse doente*, ficou em casa porque estava à espera de visitas.
         the Ana not stayed at home because was-3SG-SUBJ ill, stayed home because was at the expecting guests
         'Ana didn't stay home because she was ill, she stayed home because she was expecting guests.'

These sentences differ as to the readings they display, three readings being possible. The first one is the metalinguistic reading of negation, which corresponds to the denial of the related affirmative sentence, previously asserted. Such reading is available in (46a) and (46b), but not in the sentence in italics in (46c), given that in affirmative sentences the causal connective may not introduce a subjunctive clause. The other possible readings correspond to the internal and external reading of negation. In the internal reading, only the main clause is within the scope of negation. That is, the sentence expresses the information that Ana did not stay home and the reason

for this is that she was ill. Given this reading, a possible continuation of the discourse is the sentence *she went to the hospital*. The external reading of negation corresponds to denying that the reason why Ana stayed home was her illness. The metalinguistic reading of negation is a special case of external reading, although not the only one. In fact, a negative sentence may have an external reading without the corresponding affirmative sentence having been previously asserted. This non-metalinguistic external reading of negation is barely accepted for (46a), with the indicative mood, but is available in (46b), where the infinitive is used, and is the only possible reading of (46c), where the subjunctive mood is used. As for the internal reading, it is the only reading displayed by (46a), with the indicative, and is also available in (46b), with the infinitive. Thus, the infinitive allows for the external and internal readings, the subjunctive allows for the external reading only and the indicative only displays the internal reading.

Apart from this difference concerning the available readings, sentences (46a-c) also show what one might call a pragmatic difference. To see this, let us first observe that the internal reading of negation allows for the inference that the proposition introduced by the causal connective is true, i. e., the causal connective is a veridical operator[9] (if *p because q* is true, then *q* is true). The external reading of negation, on the contrary, allows neither this inference nor the inference that the relevant proposition is false. With these observations in mind, let us consider the assertion of (46a), (46b) and (46c) in a context where the information that Ana is ill is not available − context A − and the assertion of such sentences in a context where this information is part of the common ground − context B.

In context A, any of the sentences (46a-c) might be felicitously asserted. Sentence (46a), where the indicative is used, will be interpreted as having internal negation and (if the sentence is accepted) the context will be updated with the information that Ana was ill. On the contrary, if (46b), where the infinitive is used, or (46c), where the subjunctive occurs, are uttered against context A, only the external reading of negation is available, and the context is not updated with the information that Ana was ill.

In context B, (46a), with the indicative, and (46b), with the infinitive, may be felicitously uttered, contrary to (46c), with the subjunctive. In this context, (46a), with the indicative, has an unambiguous internal reading of negation, while (46b), where the infinitive occurs, shows ambiguity between the internal and external readings.

The following table summarises the possible readings of sentences with the same form as (46a-c) and the contexts where they might be felicitously

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[9] See Sanchez Valencia et al. (1993) for the definition of veridical operators.

asserted (*p* stands for the proposition introduced by the causal connective; the mood of this clause is registered in the left column; *c* stands for the *common ground*). Notice that the relevant external reading of negation is not the metalinguistic reading.

Table 2: mood selection by causal connectives in negative sentences

	não q *porque* p (*not* q *because* p)			
	Internal negation [¬ q *because* p]		External negation ¬ [q *because* p]	
	$p \in c$	$p \notin c$	$p \in c$	$p \notin c$
Subjunctive	*	*	*	o.k.
Infinitive	o.k.	*	o.k.	o.k.
Indicative	o.k.	o.k.	*	*

In the constructions under consideration, the possibility of selecting the subjunctive is constrained by the truth value of *p*: the subjunctive may be selected only if *p* is not taken to be true. Thus, the clause corresponding to proposition *p* may only be uttered in a context where *p* does not belong to the context set and the external reading of negation is the only one available (since the internal reading allows for the inference that *p* is true). As for the indicative, it is compatible with the internal reading of negation, the reading that allows for the inference that the proposition introduced by the causal connective is true, but is not compatible with the external non-metalinguistic reading of negation. Finally, the selection of the infinitive is not conditioned by the truth value of *p*, this mood being compatible with both the external and the internal readings of negation. The only case where the infinitive is ruled out corresponds to the third column of the table: *p* is not known to be true and the negation has internal reading. In this case, *p* is given to be true (the causal connective is veridical) and the assertion of *p* updates the context with that information. The fact that the infinitive might not be selected in this case shows that the infinitive is not capable of updating the context with new information. The indicative turns out to be the only mood capable of introducing into the discourse the information that *p* is true. In other words, by asserting a causal sentence with the indicative, the speaker can give the instruction to remove from the context set all but those worlds where the sentence is true, while the assertion of an infinitive causal sentence provides no change in the context set.

5.2.2. Mood selection with the temporal connectives *até* and *antes*

In Portuguese, the prepositions *até* ('until') and *antes* ('before') may introduce an infinitival clause or a clause with the subjunctive mood:

(47a) A Ana vai ficar à espera até alguém a chamar.
        the Ana will stay to-the wait until someone her call-INF

(47b) A Ana vai ficar à espera até que alguém a chame.
        the Ana will stay to-the wait until someone her call-SUBJ
        'Ana will wait until someone calls her.'

(48a) É melhor sair antes de começar a chover.
        is better leave before of start-INF to rain
        'It is better to leave before the rain starts.'

(48b) É melhor sair antes que comece a chover.
        is better leave before that start-SUBJ to rain
        'It is better to leave before it starts raining.'

Neither of these sentences allows for the inference that the proposition introduced by *before* or *until* is true at utterance time. However, (47a) and (48a), where the infinitive occurs, allow for the inference that the proposition is expected to become true, while (47b) and (48b), where the subjunctive is selected, do not allow for such an inference. In other words, (47a) may be felicitously asserted in a context where it is known or expected that someone will call Ana, but (47b) would seem odd in such a context. Similarly, the assertion of (48a) is natural in a context where it is assumed that it will start raining, a context where the assertion of (48b) would be odd. Conversely, in a context where the state of affairs described by the clause introduced by the temporal connective is not taken for granted, it is natural to assert (47b) or (48b), where the subjunctive occurs, but not the corresponding sentences employing the infinitive. This suggests a connection between the choice of the infinitive or the subjunctive and the truth value of the proposition: if the proposition is expected to become true, the infinitive is selected, otherwise, the subjunctive is preferred. This hypothesis is favoured by the following examples, where the temporal connectives have a retrospective use:

(49a) Ele morreu antes de eu ter nascido.
        he died before of I be-INF born

(49b) *Ele morreu antes que eu tivesse nascido.
        he died before that I be-SUBJ born
        'He died before I was born.'

(50a)   A Ana ficou calada até a terem chamado.
        the Ana stayed silent until her have-3PL-INF called

(50b)   *A Ana ficou calada até que a tivessem chamado.
        the Ana stayed silent until her have-3PL-SUBJ called
        'Ana remained silent until she was called.'

In these cases, the proposition introduced by *antes* or *até* is taken to be true and the subjunctive is ruled out, contrary to the infinitive. However, the following sentences lead to the rejection of the hypothesis that the selection of the infinitive or the subjunctive by the temporal connectives under consideration is linked to the truth value of the proposition:

(51a)   A Ana saiu antes de alguém ter tido tempo para a avisar.
        the Ana left before of someone have-INF had time to her advise

(51b)   A Ana saiu antes que alguém tivesse tido tempo para a avisar.
        the Ana left before that someone have-SUBJ had time to her advise
        'Ana left before anyone had time to advise her.'

(52a)   O anterior campeão desistiu da corrida antes de ter chegado ao fim.
        the former champion gave-up of-the race before of be-INF arrived at-the end

(52b)   ??/*O anterior campeão desistiu da corrida antes que tivesse chegado ao fim.
        the former champion gave-up of-the race before that be-SUBJ arrived at-the end
        'The former champion gave up before finishing the race.'

All these sentences allow for the inference that the proposition introduced by the temporal connective is false. Still, the infinitive or the subjunctive may be selected in (51), while in (52) only the infinitive is accepted. Thus, the data show that the subjunctive is ruled out if the proposition is taken to be true (cf. (49b) and (50b)), but is not necessarily accepted if the proposition is taken to be false (cf. (52b)). The infinitive may occur regardless of the truth value of the proposition. Therefore, the selection of the subjunctive or the infinitive in the constructions under investigation is not conditioned by the truth value of the proposition.

    A more promising hypothesis is that the selection of the infinitive or the subjunctive for the clauses introduced by *até* and *antes* is dependent on the information available in the context of assertion. Specifically, though the infinitive and the subjunctive clauses may have the same truth conditions, the infinitive seems to be selected when the complement clause of *antes* or *até* describes a state of affairs that is known to exist or expected to occur; otherwise, the subjunctive is preferable. For instance, in (49a), the infinitival clause describes a state of affairs that is known to exist prior to the utterance. In (52a), the infinitival clause describes a state of affairs that is expected, given the previous clause (if an athlete takes part in a race, it is natural to expect that

he will finish it). In these cases, the infinitive occurs naturally, but the subjunctive is ruled out. Subjunctive clauses are better suited for clauses describing a state of affairs that is not expected prior to the assertion. To exemplify, consider (51a), where the infinitive is used, and (51b), where the subjunctive occurs. The first sentence may felicitously be asserted in a context where it is assumed that someone should have advised Ana, while (51b) may be felicitously uttered only in a context where this assumption is not at hand. For instance, (51a) would be a possible answer to the question *why didn't you advise Ana?*, while (51b) would sound odd as an answer to this question. Similarly, (48a) may be uttered in a context where there is evidence that it will start raining, while (48b) may be uttered in a context where such evidence is not available.

To sum up, the observed data suggest that subjunctive clauses may introduce the description of a new state of affairs into discourse, while infinitival clauses refer only to states of affairs available at the utterance time (because, for example, they have been previously described or because the proposition that describes them follows from what was said). Using the basic notions of the Context Change Potential Framework, this hypothesis can be roughly described as follows. According to the considered framework,

> the meaning of a sentence is its *context change potential* (CCP). (…) A CCP is a function from contexts to contexts. Contexts are here identified with states of information, which in turn are construed as sets of possible worlds, and the change effected by the CCP of a sentence consists of updating that information by what the sentence says. (Heim 1992: 185)

If a declarative sentence p is successfully asserted against a context c – a set of possible worlds –, the result will be a new context, which corresponds to c minus those worlds where p is not verified. Thus, the assertion of p against a context c gives the instruction to remove possible worlds – those where p is not verified – from c. In the case of clauses introduced by the connectives *até* and *antes*, neither the infinitive nor the subjunctive clause gives the instruction to remove possible worlds from the context. Thus, their context change potential is of a different nature. The hypothesis under scrutiny is that if the sentence is in the infinitive, it provides no change in the context, while if it is in the subjunctive mood, it brings into consideration possible worlds that were less accessible prior to the utterance.

If this is so, the considered data suggest that in the analysis of mood selection there is another factor to be taken into account, one that has been used in the description of modality within possible worlds semantics: ordering sources (cf. e. g. Kratzer 1991, Portner 2009). Kratzer proposes that the meaning of modal verbs, and other modal operators, may be described

according to three parameters: (i) modal force; (ii) modal base, and (iii) ordering source. The basic idea of ordering sources is that the relevant possible worlds form a set ordered on the basis of the proximity to the ideal. The ideal may be, for instance, *what the law provides*, if a deontic ordered source is considered, *what is normal or expected to assume*, if an epistemic or stereotypical ordering source is considered, *what is desired*, if a bouletic ordering source is considered, and so on.

It seems natural to assume that in the course of each conversation, the set of possible worlds that form the context set – i. e., the possibilities that are alive – is ordered according to *what is more natural to assume*. Given this, consider a context of a conversation C where a certain topic (say, the present weather in Paris) is being discussed. Imagine that in this context of conversation what is assumed to be the case is compatible with possible worlds where there is life on Mars, as it is compatible with possible worlds where it is raining in Paris at the time. In this case, the context set includes, among others, possible worlds where there is life on Mars and possible worlds where it is raining in Paris at the time. In other words, the existence of life on Mars is a possibility that is alive at the considered context, and the possibility that it is raining in Paris at the time is also a living possibility. However, given the topic and the accepted purpose of the conversation, it is not expected that reference is made to possible worlds where there is life on Mars. On the contrary, it is natural to refer to possible worlds where it is raining in Paris at the time. That is, in the given context of conversation C, possible worlds where there is life on Mars are part of the context set, but reference to such worlds is farther away from the expected continuation of the conversation than reference to possible words where it is raining in Paris at the time.

Given this, the advocated hypothesis concerning the selection of the infinitive or the subjunctive for clauses introduced by the temporal connectives *até* and *antes* is that the subjunctive clause makes reference to a possibility that is farther away from the expected continuation of the conversation. In this sense, the subjunctive clause provides a change in ordering of the context set, by bringing into consideration possible worlds that were distant from what was expected from previous discourse. The infinitival clause, on the contrary, provides no change in the ordering of the context set. In the constructions under consideration, the infinitival clause refers to possibilities that were mentioned by previous discourse or that are expected to follow from what was said.

6.   Conclusion

On the basis of the data that have been observed, three factors have been identified as responsible for the selection of mood: veridicality − the indicative occurs only in veridical contexts −, kind of modality (modality being understood as the kind of attitude towards the proposition) − the indicative occurs only in epistemic environments −, and the context change potential of the clause − an indicative clause has the potential to remove possible worlds from the context set, a subjunctive clause may change the ordering of the worlds forming the context set, and an infinitival clause provides no change in the context set (in the considered adverbial clauses). In a simplified manner, the proposed hypothesis puts forward the idea that the selection of mood is dependent on the communicative intention: if no change in the context set is intended, the infinitive occurs; if the purpose is to express belief in the relevant proposition, the indicative is selected; if some other kind of attitude is expressed, the subjunctive is chosen.

Naturally, this generalisation, principally concerning the infinitive, is only tenable if other contexts where this mood can occur are taken into consideration, particularly complement clauses. Nevertheless, the kinds of adverbial clauses that were considered suggest that the context change potential plays a role in the choice between the infinitive and a finite mood. The observation of the semantic or pragmatic contribution of the infinitive in other kinds of clauses might give rise to a reformulation of the hypothesis outlined in this paper, or it might lead to the conclusion that the context change potential plays a role in the selection of the infinitive together with other factors.

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