

A CROSS-LINGUISTIC VIEW OF THE SELECTION OF INDICATIVE AND SUBJUNCTIVE ^(*)

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Abstract: In general, the available analyses on mood share the idea that subjunctive is associated with those contexts that are not taken to be true, indicative being the unmarked mood. Although such an approach seems to account for mood selection in some languages (like Rumanian, Hungarian and Modern Greek), it fails to explain the selection of subjunctive in some contexts in what regards the majority of Romance languages. In this paper I will argue for a unified view of mood selection in the languages under consideration, proposing that the indicative is the mood associated with particular modal values, while the subjunctive is the default mood.

Keywords: Mood, Modality, Indicative, Subjunctive, Romance languages

1. INTRODUCTION

The selection of mood, particularly in connection with sentential complementation, is a subject which has received considerable attention in the literature. However, in what respects the majority of Romance languages, there are some contexts where the presence of subjunctive remains unexplained. In this paper, I will address the issue of mood selection, proposing that the distribution of subjunctive and indicative in Romance languages could be explained if one assumes that mood is an expression of modality and that the marked mood (that is, the one associated with particular values) is the indicative, the subjunctive being the

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default mood. I will first consider the state of the art in what respects this subject, after which, I will show the problems that are unresolved by such analysis, presenting then my own proposal.

2. THE STATE OF THE ART ON MOOD SELECTION

Several analyses have been proposed on the attempt to find the rules that govern the distribution of subjunctive and indicative (though usually this latter mood is considered only in relation to the subjunctive). Some of such proposals aren't substantially different and can in general be related to the approaches that are summarised below.

2.1. *The assertion / non-assertion hypothesis*

According to the approach found in Hooper (1975), Klein (1975, 1990) Bybee and Terrell (1990) and others, indicative is selected for assertive sentences, the subjunctive being selected for other sentences (such as those expressing *doubt*, *command* and other notions). This view would explain the selection of subjunctive by the equivalents of verbs like *command*, *deny*, *doubt*, *regret* and others, since in no case an assertion is being made, and it would as well explain the selection of indicative both in declarative sentences and in the complement clause of verbs like *say* or *declare*.

This proposal raises at least the following questions: (i) as Palmer (1986) points out, how does it explain the occurrence of indicative in non-assertive sentences, such as interrogatives? (ii) how does it explain the selection of indicative by verbs associated with a non-assertive speech act, such as (the equivalents of) *to promise*? (iii) in what concerns verbs like (the equivalents of) *know* or *find out*, indicative governors, have their complements (always) an assertive interpretation? If so, what is the semantic notion that constitutes the basis for the assertion / non-assertion distinction (a question raised by Palmer (*op. cit.*) and by Farkas (1992))?

2.2. *The degrees of belief hypothesis*

As part of the solution to the last question, some authors support another widely discussed hypothesis for the explanation of mood distribution. According to them, indicative is selected for those cases where the subject shows some positive degree of commitment to the truth of the proposition (hence, the selection of indicative by the equivalents of the verbs *know*, *think* and others), while subjunctive is selected for those contexts where a negative commitment (as 'I don't believe that *p*', 'I doubt that *p*') or a lack of positive commitment (as 'maybe *p*', or 'it is possible that *p*') is expressed.

Although this hypothesis accounts for the selection of mood in a considerable number of cases, it raises at least two new problems. First, as Farkas (*op. cit.*) observes, some verbs which govern indicative don't commit anybody to the truth of the complement proposition. Such is the case of a class of verbs, which she names 'fiction verbs', such as (the equivalents

of) *imagine* or *dream*. Second, there is an important number of verbs, nouns and adjectives that govern subjunctive (in French, Portuguese, Italian, Castillian and other languages) and, nevertheless, indicate a commitment of the subject to the truth of their complement proposition. Such is the case of predicates like (the equivalents of) *regret*, *surprise*, *be odd / strange / good ...* and of nouns like (the equivalents of) *fact*:

- (1) Je regrette qu'il soit / *est malade.¹
 'I regret that he is-SUBJ / *is-IND sick.'
 'I regret that he is sick.'
- (2) Le fait qu'il soit / *est malade l'ennuie.
 'The fact that he is-SUBJ / *is-IND sick him bothers.'
 'The fact that he is sick bothers him.'

The same can be said about concessive clauses. Its truth is also assumed and yet the subjunctive is the only mood that may occur in this kind of sentences, as shown by the construction that follows:

- (3) Bien qu'il soit / *est malade, il viendra à la fête.
 'Although he is-SUBJ / *is-IND sick, he will come to the party.'
 'Although he is sick, he will come to the party.'

2.3. *Extensional vs Intensional anchoring*

Another hypothesis for the explanation of mood selection in complement clauses is the one defended by Farkas (*op. cit.*). Central to her analysis is the idea that the truth of a proposition has to be relativised to individuals. Thus, considering the two following sentences, one can see that (4) commits the speaker to the claim that Mary has a sister, while (5) commits John to such claim, but not the speaker:

- (4) Mary has a sister.
 (5) John thinks that Mary has a sister.

The individuals related to the truth value of the proposition are designated given the name 'individual anchor' in Farkas's system. Thus, in (4) the individual anchor of the truth of the proposition 'Mary has a sister' is the speaker, while in the second one is John. This link between the truth value of a proposition and an individual is made indirectly: the propositions are anchored to possible worlds and these to particular individuals.

Another central idea of her proposal is that some predicates introduce a particular possible world to which their complement proposition is anchored (*extensional predicates*), while others introduce a set of possible worlds (*intensional predicates*). As examples of *extensional predicates*, she presents epistemic verbs (such as *believe*), declaratives (as *say*), and 'fiction

¹ The examples are given in French, but subjunctive is also selected for these contexts in the other western Romance languages (Portuguese, Castillian, Catalan, Italian)

verbs' (such as *dream*, *imagine*, *lie* or *fantasise*). A common property of all these verbs is that their complement proposition is true according to the subject of the main sentence, that is, all of them introduce a possible world (possibly different from the real one), to which their complement proposition is anchored. In what regards *intensional predicates*, she presents modal verbs as paradigmatic examples, but, she claims, 'directive predicates', such as *order*, and 'desiderative predicates', as *wish*, are also *intensional predicates*, that is, they have the property of introducing not just one possible world, but a set of different possible worlds which anchor their complement proposition. In her words:

«Directives introduce a set of worlds, $W(f)$, whose membership is constrained as follows: the worlds in $W(f)$ are possible futures, that is, they inherit from W_R [the world that models reality] everything up to the time of the issuing of the directive. With respect to the future, they are allowed to differ within the limits of what one takes to be possible. Now this set $W(f)$ of possible future worlds is partitioned into a subset in which the directive is fulfilled, call it W' , and its complement. The worlds in W' satisfy the truth conditions of the complement of the directive, i.e., W_p contains W' , where W_p is the set of worlds of which p is true. Satisfying the truth conditions of p , the complement of the directive, is a necessary condition for membership in W' . In order to complete the picture we have to add that the directive is an instruction to the addressee, who has to bring it about that the actual future world will be in W' [...]

Desideratives, I suggest, are intensional predicates as well. The set of worlds they introduce, $W_d(x)$, are worlds towards which the referent of the subject has a positive attitude. The complement proposition is anchored to this set in the following way: there must be worlds in $W_d(x)$ which satisfy the truth conditions of the complement proposition, i.e., $W_d(x)$ and W_p must intersect.» (pp. 90 - 91)

Turning to the issue of mood selection, Farkas proposes that extensional predicates select indicative, while intensional ones select subjunctive. This means that if the complement sentence is taken to be true by some entity, regarding a particular world, indicative is selected, otherwise the subjunctive being preferred. Thus, Farka's proposal establishes a relation between the selection of mood and commitment to the truth of the (relevant) proposition, just as the proposals presented in 2.3. However, since such commitment is relativised to particular worlds, it explains the selection of indicative by 'fiction verbs', since their complement proposition is assumed to be true by someone at a particular world (and at a particular time, one should say).

Nevertheless, this analysis makes the wrong prediction (in what respects the majority of Romance languages) that all factive verbs² govern indicative, since they are also extensional

² I am using the term 'factive verbs' as defined in Karttunen (1971): factive verbs are those whose complement proposition is taken to be true, regardless of the truth value of the main clause; i.e., those which allow one to infer the truth of their complement proposition when they occur in affirmative sentences, as well as in negative sentences, a property that can be stated as follows (where x stands for the subject of the main sentence, V for the factive verb and p for the complement proposition):

$$x V p \Rightarrow p \quad \wedge \quad \neg x V p \Rightarrow p$$

Thus, for instance, the verb *know* is factive, but the verb *want* is not.

predicates. The data, however, shows that in French, Portuguese, Italian, Castilian and Catalan, although some factive verbs are indicative governors (cf. The equivalents of *know*, *find out*, *verify* ...), others govern subjunctive (cf. The equivalents of *regret*, *astonish* ...). In this respect, such languages differ from Rumanian, a Romance language that behaves like Hungarian and Modern Greek: all factive verbs govern indicative. Thus, there seems to be a parametric variation regarding the class of factive verbs: in some languages they select indicative, while in others some of them select subjunctive, others indicative. The proposal of Farkas accounts for mood selection in the first group of languages, but not in the second group.

Concessive clauses constitute another context where the presence of subjunctive isn't explained by Farkas's proposal. In such clauses, subjunctive is obligatory, as noticed above, despite the fact that the clause is extensionally anchored (or taken to be true in one possible world - the actual one).

Finally, another problem which the proposal of Farkas may face is the fact that verbs such as (the equivalents of) *believe*, extensional predicates in her system, select subjunctive in Italian and admit both indicative and subjunctive in Portuguese.

2.4. *The non-veridicality hypothesis*

Traditional grammars of Portuguese analyse the distribution of indicative and subjunctive as related to the distinction between reality and irreality. According to such view, subjunctive would be selected by verbs whose complement clause isn't taken to be true, as those verbs expressing *doubt*, *desire*, *hope*, *order* and others, while indicative – traditionally considered to be the *default mood* – would be selected for the sentences expressing reality. The fact that some factive verbs, adjectives and nouns select subjunctive lead some grammarians to speak of an 'illogical subjunctive', thus stressing the idea that the indicative / subjunctive division mirrors the reality / irreality distinction. Such idea seems to be pursued also by the French grammatical tradition, which, after Guillaume (1929), bases the indicative / subjunctive opposition on the actuality / virtuality distinction.

Another analysis that one might include in the same vein is that proposed by Giannakidou (1994), who takes in consideration data from Modern Greek. She observes that in this language the contexts where subjunctive may occur are the same where Negative Polarity Items (henceforth NPIs) appear. Assuming that NPIs are licensed by a non-veridical operator, as defended by Valencia et al. (1993), she concludes that subjunctive occurs only in non-veridical contexts. It should be stressed that the concept of *veridicality* she uses is less strong than the one that appears in Montague. In effect, Montague introduced this concept as being similar to the one of *factivity*, i.e., veridical propositions would be those assumed to be true in the real world and veridical NPs would be those whose referent is assumed to exist in the actual world. Giannakidou, on her side, establishes a relationship between the concept of 'veridicality' and the concept of 'extensional anchoring', introduced by Farkas, assuming that

«The boundaries of extensionality and factuality are clearly delimited: factual operators are simply regarded as a special case of veridical operators. Veridical

operators need not be factual, that is, the anchor world introduced by a veridical predicate need not model reality or anybody's version thereof.» (p. 13)

This analysis, if transposed to the majority of Romance languages, faces the same problems that Farkas faced: it doesn't explain the selection of subjunctive by the sub-group of factive verbs that introduce a veridical (actually factive) context.

2.5. *Open questions*

Taking in consideration the aforementioned analysis of mood distribution, one might conclude that the selection of subjunctive for the complement clauses of a group of factive predicates as well as the selection of this mood in concessive clauses constitutes an evidence unexplained by the different analysis. All of them have in common the search for a relation between the selection of mood and the truth value of the relevant proposition. However, it seems to me that an enterprise searching for such link – in what concerns languages like French, Portuguese, Castilian and Italian – is condemned to frustration. Indeed, on one side, both indicative and subjunctive are found in propositions assumed to be true: subjunctive occurs in complement clauses of some factive verbs and in concessive clauses, while indicative occurs in complement clauses of other factive verbs and in verbs whose complement clause is taken to be true by someone. On the other side, both subjunctive and indicative may occur in propositions that are not assumed to be true. In fact, subjunctive is selected for the complement propositions of verbs like *avoid*, *doubt*, *want* and others, while, indicative occurs in complement clauses of verbs like *warn* or *promise*. It doesn't seem that any of such propositions is taken to be true.

Things being so, it seems very difficult to explain the distribution of subjunctive and indicative in the languages under scrutiny on the basis of the acceptance or non-acceptance of the truth of the relevant clause.

3. TOWARDS AN ANALYSIS

Contrary to what has been assumed, I propose that in Romance languages (with the exception of Rumanian), the truth value of the proposition isn't directly relevant to mood selection. Instead, I assume that mood is an expression of modality, the indicative being selected for those sentences associated with values of epistemic modality and the subjunctive for the other cases. This being so, the indicative emerges as the marked mood, expressing a particular value, the subjunctive being the default mood. I shall test such hypothesis against data from (European) Portuguese, though references to other languages will be made.

3.1. Mood selection in verbal argument clauses

As noticed above, the behaviour of factive verbs, in what concerns mood selection, constitutes a problem for the proposed analysis, since a group of these verbs selects subjunctive, despite the fact that their complement clause is taken to be true. A list of factive

verbs that select indicative is given in A, those listed in B are factive verbs that select subjunctive:

- A – *aperceber-se* ('perceive'), *compreender* ('realise'), *constatar* ('ascertain'), *descobrir* ('find out'), *esquecer* ('forget'), *ignorar* ('ignore'), *lembrar* ('remember'), *notar* ('observe'), *reconhecer* ('acknowledge'), *reparar* ('notice'), *saber* ('know'), *ver* ('see'), *verificar* ('verify')
- B – *censurar* ('censure'), *chocar* ('offend'), *espantar* ('astonish'), *estranhar* ('find strange'), *incomodar* ('disturb'), *lamentar* ('regret'), *lastimar* ('deplore'), *perdoar* ('forgive')

The majority of factive verbs that select indicative allow the inference that the subject of the main sentence is aware of the fact described by their complement sentence. The only exceptions are the verbs *ignore* and *forget*. In what regards these two verbs, however, they express knowledge of the speaker in what concerns the fact described by the complement proposition. Thus, all factive verbs that select indicative are associated with the expression of an attitude of knowledge, the agent of such attitude being only the speaker – as in the case of the verbs *ignore* and *forget* –, or else the speaker and the subject of the main sentence – in the case of all the other factive verbs that select indicative. Since the notion of 'knowledge' is a value of *epistemic modality*, one might say that these verbs are associated with that modality.

As for factive verbs that select subjunctive, their complement clause is also taken to be true by the speaker and the main subject. However, contrary to what happens with the other factive verbs, I think that this is not the most relevant information they convey. Instead, they seem to be primarily associated with the expression of a state of mind related to the fact described by their complement clause. That is, the attitude expressed by those verbs is not an epistemic one, but instead an attitude related to what has been called 'evaluative modality'. Thus, one might say, these verbs convey an extra-epistemic value, the knowledge of their complement proposition being taken for granted but not expressed.

This being so, with respect to factive verbs (in Portuguese, French and other languages), one might observe a relation between the expression of an attitude of knowledge and the selection of indicative, on one side, and a link between the expression of an evaluative modality and the selection of subjunctive, on the other side.

In what concerns non-factive verbs, I'll first consider those that govern indicative, a group of verbs that might be divided as follows:

- C - Epistemic: *pensar* ('think'), *concluir* ('conclude'), *ser possível* ('be possible') ...
 D - Declarative: *dizer* ('say'), *declarar* ('declare'), *informar* ('inform')...
 E - Comissive: *prometer* ('promise'), *ameaçar* ('warn') ...
 F - Fiction verbs: *imaginar* ('imagine'), *sonhar* ('dream') ...

A common feature to all these verbs is that they express the belief (of the subject of the main clause) in the truth of their complement clause. This is undoubtedly the case of *epistemic verbs* and also of *fiction verbs*, though in the case of the latter, as Farkas (*op. cit.*) pointed out, the belief in the truth of their complement proposition regards a world different from the one modelling reality. In what concerns the other two classes of verbs identified – *declarative* and

commissive –, I think one might also consider that they express an attitude of belief, as I will try to show.

Concerning declarative verbs, their meaning is obviously associated with a declarative act whose agent is identified by the subject of the main clause. Following Stalnaker (1979), Heim (1982) and others, it might be considered that when someone adds a proposition to the *common ground*, by declaring that proposition, (s)he believes in the truth of what (s)he said (at least assuming that a principle of conversation, such as Grice proposed, is being observed). Thus, when interpreting a complement clause of a declarative verb, it might be considered that the subject of the main sentence expressed his belief in such proposition, by asserting it.

In what concerns commissive verbs (like *promise*, *warn* and others), provided one assumes, once again, a theory of speech acts, one might infer that when someone promises something, (s)he assumes that in the future the proposition that describes the promise will be true, otherwise the act of promising, (or warning or other) would be *infelicitous*, in the sense of Austin (1962). That is to say, *commissive verbs* also express an attitude related to belief, since by committing himself with the realisation of a given fact, the subject says that he believes that the sentence describing that fact will become true.

This being so, the conclusion follows that all non-factive verbs that govern indicative express an attitude of belief in the truth of their complement proposition. Such belief might regard the world that models reality – as in the case of epistemic, declarative and commissive verbs –, or a different world – in the case of fiction verbs. Moreover, it might be projected in the future – as with commissive verbs – or it might regard any time interval. In some cases the belief attitude is related to the subject of the main clause – in the case of verbs like *think*, *imagine*, *say*, *promise* and others –, and in other cases such attitude regards the speaker – as is the case of predicates like *be probable* or *seem*. Regardless these differences, it seems that all non-factive verbs under analysis are associated with the expression of an attitude of **belief**. Since the factive verbs that govern indicative are associated with the expression of **knowledge**, as proposed above, it turns out that indicative seems to be associated with the expression of the attitudes of belief or knowledge, that is, **epistemic attitudes**.

Nevertheless, subjunctive is also selected, or admitted, by some verbs associated with the domain of epistemic modality. Such is the case of the verbs *duvidar* ('doubt') and *negar* ('deny'), subjunctive governors, and also of verbs like *acreditar* ('believe'), *admitir* ('admit') and others, which, in Portuguese, allow both subjunctive and indicative to occur in their complement clauses. Thus, it seems that indicative governors aren't the only verbs associated with values of epistemic modality. However, in what regards the verbs that select indicative, as observed before, they express either an attitude of knowledge or an attitude of belief. Epistemic subjunctive governors – namely, the equivalents of *doubt* and *deny* –, on their side, express a negative epistemic attitude, that is, an attitude of non-belief in the truth of the complement proposition.

As for the group of verbs that admit both subjunctive and indicative in their complement clause, as observed by some authors, when they govern subjunctive they express a lower degree of belief than the one expressed when they govern indicative, an observation that is illustrated by the following sentences:

- (6) A Ana acredita sinceramente que ele está em Paris / ?esteja em Paris.
 'The Ana believes sincerely that he is-IND in Paris / is-SUBJ in Paris.'
 'Ann really believes that he is in Paris.'
- (7) A Ana acredita que ele está / esteja em Paris, aliás tem quase a certeza.
 'The Ana believes that he is-IND / is-SUBJ in Paris, actually, [she] has almost the certainty.'
 'Ann believes that he is in Paris, actually she is almost sure.'
- (8) Custa acreditar que ele saia / *sai daqui.
 '[It] costs believe that he leave-SUBJ / *leave-IND from here.'
 'It is hard to believe that he leaves.'

In the two first sentences a high degree of belief in the truth of the complement clause is expressed and the selection of indicative is preferred. As for (8), on the contrary, a low degree of belief is expressed, hence the preference for the subjunctive. Thus, it seems that verbs like the equivalent of *believe* select indicative when an attitude of belief is being expressed, selecting subjunctive when the relevant attitude is near the expression of doubt, which confirms the view that in what regards verbs associated with epistemic modality, those that express knowledge or belief select indicative while those that express a lack of belief (or at least a low degree of belief) select subjunctive.

It should be noticed that subjunctive is also selected by verbs not associated with epistemic modality. For instance, one might consider (the equivalents of) verbs like *order* and *forbid*, subjunctive governors, associated with deontic modality, (the equivalents of) the verbs *desire* or *hope*, also subjunctive governors, associated with a volitional attitude and other subjunctive governors associated with different modality values. However, it seems useless to list all the modalities associated with subjunctive governors, since in what concerns mood selection the differences between these various modalities aren't apparently relevant. Rather, the situation seems to be one in which a certain attitude, namely the expression of knowledge and belief, is marked with indicative, while the expression of any other attitude leads to the selection of subjunctive.

According to this view, indicative is the strong, marked, mood, that is, the mood associated with a particular value, while subjunctive, associated with a richer variety of modalities, becomes the default mood, occurring in those contexts that don't require the presence of indicative. Such hypothesis can be confirmed by the analysis of mood selection in argument clauses of verbs occurring under the scope of negation.

3.2. Mood selection in completive clauses and negation

As is well known, in negative sentences some verbs select a mood different from the one selected in affirmative sentences. Such is the case of the following two kinds of verbs:

- (i) verbs which express an attitude of belief: (the equivalents of) *think*, *believe*, *say*, *promise*, and related verbs.

In affirmative sentences these verbs select indicative, but they may be subjunctive governors if they occur under the scope of negation, as shown by the following sentences:

- (9) Eu não penso / acredito / digo / prometo que eles cheguem a tempo.
 'I [do] not think / believe / say / promise that they arrive-SUBJ in time.'
 'I don't think / believe / say / promise that they arrive in time.'

(ii) verbs which express an attitude of non-belief: (the equivalents of) *doubt* and *deny*

These verbs, subjunctive governors in affirmative sentences, might select indicative in their complement clause if they occur under the scope of negation:

- (10) Eu não nego / duvido (de) que ele perdeu o avião.
 'I [do] not deny / doubt that he missed-IND the plane.'
 'I don't deny / doubt that he missed the plane.'

In what concerns those verbs that express an attitude of knowledge – as the equivalents of *know*, *find out*, *ignore*, and others –, they select indicative in affirmative and in negative sentences. Sentential negation doesn't also influence mood selection in what concerns verbs associated with non-epistemic modality – verbs like the equivalents of *regret*, *desire* and others. This kind of verbs select subjunctive in affirmative as well as in negative sentences.

Therefore, negation influences mood selection only in what regards verbs associated with the expression of an attitude of (non-)belief. As for the other verbs, their selection of mood in negative sentences may be accounted for by the same rule that governs mood selection in affirmative sentences: those verbs that express an attitude of knowledge select indicative, the others select subjunctive. As a matter of fact, the attitude expressed by the verbs under consideration in negative sentences is the same that they express in affirmative ones: verbs like *regret*, *want* and others don't express an epistemic attitude and, thus, select subjunctive, while verbs like *know*, *ignore* and others express an attitude of knowledge both in affirmative and in negative sentences.³

Leaving aside these unproblematic cases, let us return to the verbs that in negative sentences select a mood different from the one they select in affirmative sentences. It should be noticed that all these verbs may govern in negative sentences the same mood they do in affirmative ones, if negation has a metalinguistic function. That is, if the function of the negative sentence is to correct a (supposed) previous assertion, the corresponding affirmative sentence – the one whose informative content is being corrected – might be anaphorically recovered, and the negation operator will not interfere with mood selection. Such possibility is illustrated by the following sentences:

- (11) Eu não disse que ele está doente, o que disse foi ...
 'I [did] not say that he is-IND sick, what [I] said was ...'

³ Actually, in negative sentences, verbs like *know* don't express knowledge of the truth of their complement clause by the subject of the main sentence. However, the expressed attitude is still one of the domain of knowledge, though it regards only the speaker. The inverse situation is found with verbs like *ignore*: in affirmative sentences they express knowledge of the speaker, but not of the main subject, while in negative sentences one might infer that both the speaker and the main subject know the fact described by the complement clause. In all cases, the attitude expressed by these two kinds of verbs involves knowledge and thus indicative is selected.

'I didn't say that he was sick, what I said was ...'

- (12) Eu não duvido de que ele esteja doente, do que duvido é de que ...
 'I [do] not doubt of that he is-SUBJ sick, of-the what [I] doubt is of that ...'
 'I don't doubt that he is sick, what I doubt is that ...'

As for the cases of negative sentences where negation doesn't have a metalinguistic function, if negation interacts with verbs of non-belief, such as the equivalents of *doubt* or *deny*, then the attitude expressed is the contrary one – an attitude of belief –, hence the selection of indicative:

- (13) Eu não nego / duvido que ele chegou a tempo.
 'I [do] not deny / doubt that he arrived-IND in time.'
 'I don't deny that he arrived in time.'

Similarly, if the verbs are associated with the expression of belief, when they are negated the attitude expressed is the opposite one – an attitude of non-belief –, a fact which leads to the selection of subjunctive:

- (14) Eu não digo / penso / acredito / prometo que chegue a tempo.
 'I [do] not say / think / believe / promise that [I] arrive-SUBJ in time.'
 'I don't say / think / believe / promise that I'll arrive in time.'

A particular observation should be made with respect to the verb *believe*. As noted above, in affirmative sentences this verb may select indicative or subjunctive depending on whether a high or a low degree of belief is being expressed. In negative sentences, only an absence of belief may be expressed, a fact that leads this verb to select subjunctive:

- (15) Ele não acredita que a Ana esteja em Paris.
 'He [does] not believe that the Ana is-SUBJ in Paris.'
 'He doesn't believe that Ana is in Paris.'

However, this verb may also select indicative in negative sentences, as shown by (16):

- (16) Ele não acredita que a Ana está em Paris.
 'He [does] not believe that Ana is-IND in Paris.'

The presence of indicative in (16) might be justified by the fact that in such sentence it might be inferred that the speaker accepts the truth of the relevant proposition. Such inference isn't available in (15), where subjunctive is selected.

This being so, if the speaker and the main subject coincide, then it should be expected that indicative can't be selected, a fact that can be confirmed by (17):

- (17) Eu não acredito que a Ana esteja / *está em Paris.
 'I [do] not believe that the Ana is-SUBJ / *is-IND in Paris.'
 'I don't believe that Ann is in Paris.'

However, the following sentence shows that indicative might also be selected even when the individual referred by the subject of the main sentence is the speaker:

- (18) Eu não acreditava que a Ana estava em Paris.
 'I [did] not believe that the Ana was-IND in Paris.'
 'I didn't believe that Ann was in Paris.'

I think that the presence of indicative in (18) and the impossibility of the occurrence of such mood in (17) is related with the tense of the main clause. Actually, (18) refers to a previous state of non-belief, but the sentence allows one to infer that by the utterance time the speaker accepts the truth of the complement proposition, hence the selection of indicative. In other words, in (18), two states of belief are brought to consideration: a previous state of non-belief and the actual state of belief, which justifies the presence of indicative. In (17), on the other side, only the actual state – one of non-belief – is considered. Since the attitude expressed is one of non-belief, there is no reason for the selection of indicative.

Thus, the hypothesis made in the previous sub-section seems to account also for the selection of mood in negative sentences: when the attitude expressed is one of belief (or of knowledge), indicative is selected, otherwise subjunctive is preferred.

3.3. Mood selection in nominal or adjectival argument clauses

The hypothesis in question might also account for mood distribution in complement clauses of nouns and adjectives. To see how, let us consider the following nouns of sentential complementation:

Nouns that select indicative: *afirmação* ('affirmation'), *certeza* ('certainty'), *conclusão* ('conclusion'), *confissão* ('confession'), *convicção* ('conviction'), *conhecimento* ('knowledge'), *crença* ('belief'), *descoberta* ('discovery'), *ignorância* ('ignorance'), *promessa* ('promise'), *verificação* ('verification') ...

Some of these nouns are associated with an attitude of knowledge – *discovery*, *ignorance*, *knowledge* and others. Others are associated with the expression of belief – *conviction*, *conclusion*, *belief* and others. As for the remaining nouns, they are either associated with a declarative act – *affirmation* and *confession* – or with a commissive act – *promise*. Since, as observed before, the attitudes of saying or promising indicate belief in the truth of the relevant clause, it follows that all nouns that select indicative are associated with the expression of an attitude of knowledge or with an attitude of belief. None of the nouns that select subjunctive express one of these attitudes:

Nouns that select subjunctive: *aceitação* ('acceptance'), *autorização* ('authorisation'), *desejo* ('desire'), *dúvida* ('doubt'), *interesse* ('interest'), *medo* ('fear'), *necessidade* ('need'), *proibição* ('prohibition'), *rejeição* ('rejection') ...

Of all these nouns, only 'doubt' is associated with epistemic modality. However, the attitude it is associated with is not one of knowledge or of belief, but an attitude of non-belief. None

of the nouns that select subjunctive, therefore, express the attitudes of knowledge or belief - those that lead to the selection of indicative.

However, there is a small number of nouns associated with an attitude of belief which admit both subjunctive and indicative in their complement clause. Such is the case of nouns like the equivalents of '*idea*', '*hypothesis*' and '*suspicion*'. As J. Peres (p.c.) observed, these nouns seem to select subjunctive or indicative depending on the degree of belief that is being expressed in each case, a situation also founded in what concerns verbs of sentential complementation, as observed before.

Considering complementation adjectives, it might also be observed that those associated with knowledge or belief select indicative, while those associated with other attitudes select subjunctive:

Adjectives that select indicative: *ciente* ('aware'), *consciente* ('conscious'), *convencido* ('convinced'), *evidente* ('clear'), *informado* ('informed') ...

Adjectives that select subjunctive: *cansado* ('tired'), *desejoso* ('eager'), *esperançado* ('hopeful'), *farto* ('full'), *interessado* ('interested'), *necessitado* ('indigent'), *temente* ('fearful') ...

Thus, the hypothesis that indicative is the mood that signals the attitudes of knowledge and belief, the subjunctive being the default mood, seems to explain the distribution of these moods in all kinds of complement sentences - verbal, nominal and adjectival complement clauses.

4. THE PARAMETRIC VARIATION OF MOOD DISTRIBUTION

The hypothesis sketched in the previous section - linking the expression of an epistemic attitude and the selection of indicative - seems to account for the data provided by Portuguese. In other Romance languages - French, Italian, Castilian and Catalan - indicative and subjunctive seem to occur in more or less the same contexts than in Portuguese. Thus, the hypothesis presented here might also account for the data provided by such languages. However, in some languages where these two moods also occur, their distribution isn't the same as in Portuguese and related languages. Such is the case of Rumanian and Hungarian, according to Farkas (*op. cit.*), and also of Modern Greek, according to Giannakidou (*op. cit.*). The main difference between Portuguese and related languages, on one side, and Rumanian and other languages, on the other side, is that in the latter group of languages all factive verbs select indicative, contrary to what happens in the former group of languages, as seen before. Non-factive verbs, on their side, don't seem to present many differences in what respects indicative / subjunctive selection in the considered languages. Subjunctive governors in Portuguese select also subjunctive in Rumanian and the other considered languages, and the same goes for indicative governors⁴.

⁴ I am only considering the distribution of indicative and subjunctive. I do not take in consideration the possibility of finding other moods in the complement clauses of the verbs in question.

Thus, in what concerns the distribution of indicative and subjunctive in the considered languages, a parametric variation is observed that can be described in the following terms:

- in some languages (Portuguese and the majority of Romance languages) the indicative is selected when the attitudes of belief or knowledge are being expressed;
- in some other languages (for instance, Rumanian, Hungarian and Modern Greek) the indicative is selected whenever the sentence is taken to be true by someone.

That is, it seems that, in what respects Rumanian (and other languages) the indicative is selected by those predicates that allow the inference that the subject believes in the truth of their complement sentence (like *believe*, for instance) and by those whose complement sentence is taken to be true (like *know* or *regret*), regardless of being associated with a value of epistemic modality or of any other modality. This being so, the distribution of subjunctive and indicative in these languages apparently is accounted for by the proposals of Farkas (*op. cit.*), Giannakidou (*op. cit.*) or Portner (1993), all of which somehow assume the basic idea that subjunctive is associated with non acceptance of the truth of the relevant clause and indicative with the acceptance of such truth.

The following picture gives an illustration of the principles that rule mood selection in the two groups of languages in question:

		Rumanian, Hungarian, Modern Greek	Portuguese, French, Castillian, Italian
Veridical verbs	Epistemic verbs (ex.: <i>verify, know, ignore, think, say, dream, promise</i>)	INDICATIVE	INDICATIVE
	Non-epistemic verbs (ex.: <i>regret, be odd</i>)		SUBJUNCTIVE
Non-veridical verbs (ex.: <i>be enough, be useful, doubt, avoid, forbid, allow, want</i>)		SUBJUNCTIVE	

Veridical verbs are those whose complement sentence is true – that is *factive* operators – and those that allow the inference that someone believes in the truth of their complement sentence. Epistemic verbs are those associated with the expression of the attitudes of belief or knowledge: a sub-group of the veridical operators. Thus, as the pictures shows, the two groups of languages considered exhibit a difference in the behaviour of veridical operators.

The difference between the two groups of languages identified may become clearer if one tries to formalise the analysis of mood selection proposed in this article. In the next section, I will present some notes aimed at contributing to a formal analysis of mood.

5. TOWARDS A FORMALISATION

In this section I will only present some notes that might be explored in an attempt to formalise the proposal I presented. I think one might give an account of the facts by the exploration of Karttunen's definition of presupposition together with the montagovian idea of truth relative to indices (namely to individuals, as in Lewis), which Farkas (*op. cit.*) has already invoked in connection to mood. For what matters here, the individuals that count can be either the speaker or the relevant sentential subject.

Thus, let us consider the set of sentences that the speaker believes in (say the set Bsp) and the set of sentences that the subject of the main sentence takes for granted (the set Bsu). Each verb either allows the inference that its complement clause is a member of Bsp or doesn't and the same goes for Bsu. Thus, the following possibilities shall be considered (where x stands for the matrix subject, V for the verb and p for its complement sentence):

- (i) $x \ V \ p \Rightarrow p \in B_{sp}$
- (ii) $x \ V \ p \ * \Rightarrow p \in B_{sp}$
- (iii) $x \ V \ p \Rightarrow p \in B_{su}$
- (iv) $x \ V \ p \ * \Rightarrow p \in B_{su}$

Since, as noticed above, negation interferes with verbs associated with belief, one should also consider the following inferential schemata:

- (v) $x \ \neg \ V \ p \Rightarrow p \in B_{sp}$
- (vi) $x \ \neg \ V \ p \ * \Rightarrow p \in B_{sp}$
- (vii) $x \ \neg \ V \ p \Rightarrow p \in B_{su}$
- (viii) $x \ \neg \ V \ p \ * \Rightarrow p \in B_{su}$

The following division of the verbs under analysis will be considered:

VERBS			
NON-VERIDICAL (ex.: <i>want, doubt</i>)		VERIDICAL	
		NON-FACTIVES (ex.: <i>think, believe, dream, promise, say</i>)	FACTIVES
			NON-EPISTEMIC (ex.: <i>regret</i>)
			EPISTEMIC (ex.: <i>know, ignore</i>)

The first division observed separates veridical and non-veridical verbs. The non-veridical ones verify inference schemata (ii), (iv), (vi) and (viii), above. That is, these verbs don't allow the inference that their complement sentence is true according to the subject (of the main clause) or according to the speaker, whether in negative or affirmative sentences:

- (19) John hopes (/ doesn't hope) that Mary comes to the party.
 * \Rightarrow The speaker believes that Mary will come to the party.
 * \Rightarrow John believes that Mary will come to the party.

Veridical verbs, on the contrary, allow the inference that their complement proposition belongs to Bsu or to Bsp, as we shall see. This class of verbs is divided in two major subclasses: factives and non-factives. This distinction, first noticed by Kiparsky and Kiparsky, might be based, following Karttunen (1971), on the fact that only factive verbs trigger the presupposition that their complement proposition is true (according to the speaker). That is, in Karttunen's terms, the truth of the complement sentence is taken for granted regardless the truth value of the main sentence. Hence, one might infer the truth of the embedded clause both in affirmative and in negative sentences, as shown bellow:

- (20) John knows / regrets that Mary lives in Paris.
 \Rightarrow (The speaker believes that) Mary lives in Paris.
 (21) John doesn't know / regret that Mary lives in Paris.
 \Rightarrow (The speaker believes that) Mary lives in Paris

Veridical non-factive verbs, on their side, don't allow such inference:

- (22) John said / dreamed / thinks that Mary lives in Paris.
 * \Rightarrow The speaker believes that Mary lives in Paris.
 (23) John doesn't say / dream / think that Mary lives in Paris.
 * \Rightarrow The speaker believes that Mary lives in Paris.

In this respect, veridical non-factive verbs behave like non-veridical ones. However, contrary to non-veridical verbs, veridical non-factive verbs allow the inference that their complement sentence belongs to Bsu, as the following sentence shows:

- (24) John said / dreamed / thinks that Mary lives in Paris.
 \Rightarrow John believes that Mary lives in Paris.

Such inference, however, isn't available in negative sentences:

- (25) John doesn't say / dream / think that Mary lives in Paris.
 * \Rightarrow John believes that Mary lives in Paris.

Finally, one has to account for the differences in the two considered classes of factive verbs: epistemic and non-epistemic ones. As already seen, they have in common the fact that they trigger the presupposition that the **speaker** believes in their complement sentence. Another presupposition associated with non-epistemic factive verbs, though not shared by the epistemic ones, as observed by J. Peres (p. c.), is the fact that the **subject** believes in the truth

of the complement clause. That is, non-epistemic factive verbs validate inference rules (iii) and (vii), sketched above, as shown by the following sentences:

- (26) John regrets that Mary lives in Paris.
 \Rightarrow John believes that Mary lives in Paris.
 (27) John doesn't regret that Mary lives in Paris.
 \Rightarrow John believes that Mary lives in Paris.

As for epistemic factive verbs, the majority of them verifies inference (iii), but not inference (vii), as the following sentences show:

- (28) John knows / found out that Mary lives in Paris.
 \Rightarrow John believes that Mary lives in Paris.
 (29) John doesn't know / didn't find out that Mary lives in Paris.
 $*\Rightarrow$ John believes that Mary lives in Paris.

Another epistemic factive verb, namely *ignore*, has the opposite behaviour: it verifies inference (vii), but not (iii):

- (30) John ignores that Mary lives in Paris.
 $*\Rightarrow$ John believes that Mary lives in Paris.
 (31) John doesn't ignore that Mary lives in Paris.
 \Rightarrow John believes that Mary lives in Paris.

Regardless this difference, no factive epistemic verb triggers the presupposition that the subject of the main sentence believes in the truth of the complement clause (considering that the test for presuppositionhood is survival of the relevant inference to negation). Such presupposition, however, is associated with non-epistemic factive verbs. In short, all factive verbs trigger the presupposition that their complement proposition is true according to the speaker, but only a sub-group of factive verbs trigger the presupposition that such proposition is true according to the main subject.

To get a clearer view of the facts, let us consider the several kinds of verbs identified and the inferences associated with them:

NON-VERIDICAL verbs (e.g. *want*, *hope*, *doubt* ...)

Affirmative sentences	Negative sentences
$x \vee p \quad * \Rightarrow p \in \text{Bsp}$	$x \neg \vee p \quad * \Rightarrow p \in \text{Bsp}$
$x \vee p \quad * \Rightarrow p \in \text{Bsu}$	$x \neg \vee p \quad * \Rightarrow p \in \text{Bsu}$

VERIDICAL NON-FACTIVE VERBS

CLASS I (e.g. *think*, *say*, *imagine*, *promise* ...)

Affirmative sentences	Negative sentences
$x \vee p \quad * \Rightarrow p \in \text{Bsp}$	$x \neg \vee p \quad * \Rightarrow p \in \text{Bsp}$
$x \vee p \quad \Rightarrow p \in \text{Bsu}$	$x \neg \vee p \quad * \Rightarrow p \in \text{Bsu}$

CLASS II (e.g. *believe* ...)

Affirmative sentences

$$\begin{aligned}
 x \vee p_{\text{IND}} &\Rightarrow p \in \text{Bsu} \\
 x \vee p_{\text{SUBJ}} & \\
 x \vee p_{\text{IND}} &* \Rightarrow p \in \text{Bsp} \\
 x \vee p_{\text{IND}} &* \Rightarrow p \in \text{Bsp}
 \end{aligned}$$

Negative sentences

$$\begin{aligned}
 x \neg \vee p_{\text{IND}} &\Rightarrow p \in \text{Bsp} \\
 * \Rightarrow p \in \text{Bsu} &x \neg \vee p_{\text{SUBJ}} \quad * \Rightarrow p \in \text{Bsp} \\
 x \neg \vee p_{\text{IND}} &* \Rightarrow p \in \text{Bsu} \\
 x \neg \vee p_{\text{SUBJ}} &* \Rightarrow p \in \text{Bsu}
 \end{aligned}$$

FACTIVE EPISTEMIC VERBS

CLASS I (e.g. *know, find out ...*)

Affirmative sentences

$$\begin{aligned}
 x \vee p &\Rightarrow p \in \text{Bsp} \\
 x \vee p &\Rightarrow p \in \text{Bsu}
 \end{aligned}$$

Negative sentences

$$\begin{aligned}
 x \neg \vee p &\Rightarrow p \in \text{Bsp} \\
 x \neg \vee p &* \Rightarrow p \in \text{Bsu}
 \end{aligned}$$
CLASS II (e.g. *ignore*)

Affirmative sentences

$$\begin{aligned}
 x \vee p &\Rightarrow p \in \text{Bsp} \\
 x \vee p &* \Rightarrow
 \end{aligned}$$

Negative sentences

$$\begin{aligned}
 x \neg \vee p &\Rightarrow p \in \text{Bsp} \\
 p \in \text{Bsu} &x \neg \vee p \Rightarrow p \in \text{Bsu}
 \end{aligned}$$

FACTIVE NON-EPISTEMIC VERBS

Affirmative sentences

$$\begin{aligned}
 x \vee p &\Rightarrow p \in \text{Bsp} \\
 x \vee p &\Rightarrow p \in \text{Bsu}
 \end{aligned}$$

Negative sentences

$$\begin{aligned}
 x \neg \vee p &\Rightarrow p \in \text{Bsp} \\
 x \neg \vee p &\Rightarrow p \in \text{Bsu}
 \end{aligned}$$

Thus, the following picture emerges (the mark * indicates that the verb doesn't allow the inference that its complement clause belongs to the relevant set, the mark *yes* indicates that the verb allows such inference):

	$p \in \text{Bsp}$	$p \in \text{Bsu}$	MOOD
<i>want</i>	*	*	Subjunctive
<i>not want</i>	*	*	Subjunctive
<i>think, say, imagine, promise</i>	*	yes	Indicative
<i>not think, say, imagine, promise</i>	*	*	Subjunctive
<i>believe</i>	*	yes	Indicative
<i>believe</i>	*	*	Subjunctive
<i>not believe</i>	*	*	Subjunctive
<i>not believe</i>	yes	*	Indicative
<i>know, find out</i>	yes	yes	Indicative
<i>not know, find out</i>	yes	*	Indicative
<i>regret</i>	yes	yes	Subjunctive
<i>not regret</i>	yes	yes	Subjunctive

It becomes now clear that the indicative is selected only when it could be inferred that the relevant clause belongs to Bsp or to Bsu. However, such is a necessary condition but not a

sufficient one. In fact, in order for the indicative to be selected, there must not exist the presupposition that the relevant clause belongs to both sets Bsp and Bsu. That is, the indicative is selected when it is signalled that some of the relevant entities believes in the complement clause and there isn't the presupposition that they both believe in it. Thus, the following rule can be proposed (\wp stands for presupposition):

- (I) If $(p \in (B_{sp} \cup B_{su}) \wedge \neg \wp [p \in (B_{sp} \cap B_{su})])$, then select the indicative; otherwise, select the subjunctive.

This rule seems to account for mood selection in complement finite clauses of Portuguese, French, Italian, Castillian and Catalan, as said above. In what regards languages as Rumanian, Hungarian and Modern Greek, it seems that the only condition that has to apply for the selection of indicative is the inference that the relevant clause belongs to Bsp or to Bsu. Thus, such languages observe only the first conjunct of rule (I):

- (II) If $(p \in (B_{sp} \cup B_{su}))$, then select the indicative; otherwise, select the subjunctive

6. CONCLUSION

The goal of this paper was to explain the selection of mood in finite clauses. The main problem that previous analyses of this subject faced was the selection of subjunctive for sentences taken as true, in what concerns the majority of Romance languages. Such problem doesn't exist with the analysis proposed here, which was made not by extending a previous hypothesis, but by proposing a different approach to the facts, trying to relate mood selection with the modality values being expressed. Such link isn't completely new. In fact, others supported the idea that mood is an expression of modality. However, I am not aware of any proposal that explicitly relates the selection of indicative to the expression of epistemic values, the subjunctive being selected if another (modal) value is at stake. It should be stressed that I am not proposing that the indicative mood is selected if some positive degree of commitment to the truth of the relevant clause is being expressed. What I am proposing is that the indicative, in Portuguese and related languages, is selected for those constructions where knowledge or belief is being expressed.

It should be observed that in this paper I only took in consideration the selection of mood in complement clauses. Nevertheless, I think that the hypothesis argued for here might be extended to the analysis of mood selection in other clauses as well, although for reasons of space, I can't make an exhaustive analysis of such subject. Still I would like only to signal that if one takes in consideration the occurrence of subjunctive and indicative in main clauses and adverbial clauses, one sees that, at least in Portuguese, the indicative is selected for those sentences taken to be true by the speaker and given as new information. Subjunctive, on the other side, is selected for those sentences not taken to be true (like imperative sentences, declarative sentences introduced by *maybe*, final clauses and others), the only exception being concessive clauses. In this kind of clauses, indeed, subjunctive is selected even if the truth of the proposition isn't questioned. However, I think that such sentences are used only when one already knows the truth of the concessive clause. That is, the fact described by such clause isn't given as new, but assumed to be known, which justifies the selection of subjunctive. As for relative clauses, I think that in the majority of the cases, the indicative is selected if the

entity to which the relativised NP points is assumed to exist and to be known, otherwise subjunctive being selected.

Finally, it should be noted that only the indicative and subjunctive moods were taken in consideration in this paper. Future research should determine which is the role played by the other moods not considered in this work, such as the infinitive. Nevertheless, I hope that this contribution might shed some light on the issue of mood distribution.

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