

Conversation and mood in European Portuguese

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Abstract

The literature on mood in Romance languages has identified the conditions that lead to the use of Subjunctive or of the Indicative moods. For syntactic contexts where only one of these moods is allowed, its obligatoriness follows from the semantics of the main clause, but, in cases of mood choice, the option is pragmatically driven. This paper focuses on cases of mood choice in European Portuguese, presenting data that suggests that mood choice is conditioned by the intended effect on the conversational context.

1 Introduction

A lot of debate has been devoted to the relation between (non) assertion and the Indicative and Subjunctive moods in Romance languages. The old idea that Indicative occurs in assertive sentences and Subjunctive in non-assertive contexts seems to account for most data concerning non-complement clauses, but faces important problems when complement clauses are taken into consideration. Accounts of mood in formal semantics allowed the understanding of the rationality lying at the opposition between Indicative and Subjunctive with no reference to assertion being needed. However, in some cases there seems to exist an undeniable relation between mood choice and assertion.

This paper proposes to investigate the relation between mood, context set, and dynamics of discourse, focusing on complement and adverbial clauses of European Portuguese (EP). Instead of focusing solely on the contrast between the Indicative and Subjunctive moods, the opposition between finite and infinitive clauses will also be considered, providing new insights concerning the relation between mood and dynamics of conversation.

The next section presents the traditional idea that Indicative occurs in assertive contexts, Subjunctive in non-assertive ones, and problems for it. Section 3 summarizes the conditions for the use of Indicative or Subjunctive in EP. These conditions account for the cases of lexically selected mood and for the interpretations obtained in cases of mood choice, which will be further deepened in sections 4 and 5. Notes towards a formalization of the given observations are presented at section 6 and Appendix contains authentic examples of the analyzed constructions.

2 Mood and (non) Assertive Speech Acts

Two traditional widespread ideas concerning the Indicative and Subjunctive moods in Romance languages are the *realis/irrealis* proposal and the assertion/non-assertion hypothesis. The first one claims that the Indicative/Subjunctive opposition mirrors the *realis/irrealis* distinction, Indicative occurring in sentences describing reality and Subjunctive in sentences linked to a virtuality level, such as those describing desires, possibilities, orders, and so on. This idea, though explaining the obligatoriness of the Indicative in different kinds of sentences that describe reality (e.g., complement clauses of predicates like the equivalents of *know* or *find out*, declarative un subordinating clauses, causal clauses), faces two major problems: (i) it does not explain the selection of Indicative by fiction predicates, such as (the equivalents of) *dream*; (ii) it does not explain Subjunctive in complements of factive-emotive predicate, as, e.g., the equivalent of *regret*, as well as the obligatoriness of this mood in other factive contexts, as in (1) or (2):

- (1) *embora* {*esteja*_{-SUBJ} / **está*_{-IND}} *a chover, o dia está agradável*
'Although it is raining, the day is pleasant'

- (2) eles conseguiram que a reunião {fosse_{-SUBJ} / *foi_{-IND}} adiada

‘They managed the meeting to be postponed’

Concerning complement clauses of factive-emotive predicates, an ancient idea to explain the occurrence of Subjunctive in this context resorts to the distinction between assertion and presupposition, Indicative being the mood of assertion and Subjunctive the mood of non-assertion. This idea, which dates back at least to Hooper 1975, is grounded on the observation that the assertion of (3) will only be felicitous in a context where the speaker assumes that the complement clause belongs to the common ground:

- (3) lamento que o teu gato {tenha_{-SUBJ} morrido / *morreu_{-IND}}

‘I regret that your cat has died.’

The occurrence of Subjunctive in this context is then explained as following from the fact that the complement clause is presupposed, not asserted.

However, the proposal that Indicative occurs in contexts of assertion, Subjunctive being the mood of non-assertion, faces several problems, among which the very concept of (non-)assertion¹. Concerning complement clauses, the proposal that the Indicative and Subjunctive moods occur, respectively, in assertive and non-assertive contexts amounts to say that the main clause’s predicate is assertive (hence an Indicative ruler) or non-assertive (hence a Subjunctive ruler). In EP, a group of verbs, as *acreditar* (‘to believe’), accept both the Indicative as the Subjunctive in the complement clause:

- (4) A: Achas que vamos ganhar o jogo?

‘Do you think we will the match?’

- B: a. Acredito que podemos_{-IND} ganhar.

b. Acredito que possamos_{-SUBJ} ganhar

‘I believe we might win’

In this kind of sentences, the choice between Indicative and Subjunctive is dependent on the degree of belief being expressed. In (4), by choosing the Indicative, the speaker indicates that, in his opinion, there is a good possibility of winning the game, while the choice of Subjunctive indicates that such possibility is unlikely. In other words, Indicative signals a high degree of belief, Subjunctive a lower degree. Now, if the choice of mood is conditioned

by the assertion/non-assertion opposition, (4) shows that the same predicate can be assertive or non-assertive. Given that the difference between (4a) and (4b) is the degree of belief being conveyed, it follows that assertive predicates (whose complement will be in the Indicative) will be the ones that express a full (or at least a high) commitment with the truth of the complement clause. Such is the case of factive-emotive predicates, which express the information that the attitude holder takes the complement proposition to be true, but they select the Subjunctive (see (3)). Hence, the assertion/non-assertion hypothesis faces the same problems as the *realis/irrealis* hypothesis.

A more reasonable interpretation of what is an assertive predicate would be based on the Stalnakerian concept of assertion (roughly, assertion of *p* is the addition of *p* to the common ground): assertive predicates will be the ones whose complement clause can be added to the common ground. However, one can easily think of examples of Indicative ruler’s predicates whose complement clause is presupposed, not added to the common ground, in the same way as will be the case with factive-emotive predicates, as in (3). For instance:

- (5) a. Todos sabemos que vamos_{-IND} morrer um dia.

‘We all know that we will die some day’

- b. «Nós todos sabemos que o fumo é prejudicial, não é?»

(CETEMPÚBLICO *ext471815-nd-96b-2*)

‘We all know that smoking is harmful, right?’

Conversely, it is also easy to find examples of Subjunctive rulers whose complement proposition is presented as new information, to be added to the common ground. For instance, consider the following example as part of a story which the public is hearing/reading for the first time:

- (6) A situação era desesperante e muitas pessoas pensavam que nunca iriam sair dali. **Foi preciso que a tempestade passasse_{-SUBJ} para que o avião conseguisse_{-SUBJ} finalmente levantar voo!** Mas os esforços do piloto não impediram que um raio atingisse_{-SUBJ} o avião.

‘The situation was hopeless and many people thought they would never leave. **It took the**

¹ Another major problem, as Palmer 1986 points, is that interrogatives are obviously non-assertive contexts (whatever

concept of assertion is considered), thus the proposal not explaining the obligatoriness of Indicative in interrogatives, as *Que horas são?* (‘what time is it?’).

storm to pass for the plane to finally take off! But the pilot's efforts did not prevent lightning from striking the plane.'

In sum, the use of the Indicative or of the Subjunctive in complement clauses does not seem to be triggered by the issue of whether the complement proposition does or does not belong to the common ground. Both moods can occur in sentences that are taken to be part of the common ground prior to their utterance as in sentences that convey new information. Hence, an approach that bases the selection of mood on the kind of speech act doesn't seem tenable. Instead, the choice between one and another mood in complement clauses seems to be semantically driven, following primarily from the lexical meaning of the main predicate, not dependent on pragmatic issues.

Still, in some constructions the option for the Indicative or the Subjunctive mood is conditioned by whether the complement proposition is or is not presented as taken to be part of, or to be integrated in, the common ground. Such is the case of sentences as the following, which express a contrast between the speaker's belief at utterance time and his previous belief, in (7a), or someone else's belief, in (7b):

- (7) a. Naquela altura, eu não acreditava que os Vikings chegaram-_{IND} à América.
'At that time, I didn't believe that the Vikings reached America.'
- b. Ele não acredita que os Vikings chegaram-_{IND} à América.
'He does not believe that the Vikings reached America'

These sentences convey the information that, according to the speaker, the complement proposition is true. In the same kind of sentences, the Subjunctive might also occur, but, then, the truth of the complement proposition is not conveyed (i.e., such proposition might be true or false, no commitment with its truth value being conveyed):

- (8) a. Naquela altura, eu não acreditava que os Vikings tenham-_{SUBJ} chegado à América.
'At that time, I didn't believe that the Vikings reached America.'
- b. Ele não acredita que os Vikings tenham-_{SUBJ} chegado à América.
'He does not believe that the Vikings reached America'

Hence, in this kind of construction, by choosing the Indicative for the complement proposition, the speaker presents such proposition as one that belongs, or is to be added, to the common ground, while the choice of the Subjunctive states merely a negative epistemic state.

To summarize, the hypothesis that the Indicative/Subjunctive opposition mirrors the assertion/non-assertion distinction is too naïf to be an explanation for the distribution of these moods in EP (or in other Romance languages, presumably), but data as (7) and (8) show that some relation exists between mood and assertion. Thus, an account of mood in EP has to explain why is the Indicative obligatory in some clauses and the Subjunctive in others, despite the status of the proposition concerning its relation to the common ground, while in other cases the choice between one and another mood is grounded on whether the speaker intends to add the proposition to the common ground. In the following section, a semantic explanation for the first issue, detailed in Marques 2022, will be synthesized, after what, in the following section, the second issue will be resumed.

3 Indicative vs Subjunctive

The reason for some predicates to be Subjunctive rulers (i.e., the Subjunctive might occur in their complement clauses, the Indicative might not) and others to be Indicative rulers is nowadays understandable and can be expressed in a simple sentence (a slight amendment, justified and presented below, will be needed): Indicative is selected by those predicates whose meaning leads to consider only *p*-worlds (i.e., worlds where the proposition *p* is true), while the Subjunctive is selected by those predicates whose meaning leads to take into account (also) non-*p* worlds. Descriptively, the Indicative occurs in those sentences that are taken to be true and an epistemic or doxastic attitude is expressed towards them, otherwise (i.e., if the proposition is not presented as accepted to be true or if the attitude towards it is not an epistemic or doxastic attitude) the Subjunctive occurs. This explains why Subjunctive is selected by non-veridical predicates, as, e.g., predicates of desire (as the equivalents of *want*, *prefer*, etc.), deontic predicates (as the equivalents of *order*, *suggest*, etc.), modal predicates (as the equivalents of *be possible*, *be probable*, etc.), among others. Such predicates are non-veridical (in the sense of Giannakidou 1994, and several other texts of her), not expressing anyone's

compromise with the truth of the complement proposition. It also explains why the Indicative is selected by several veridical predicates, such as the equivalents of *know*, *verify*, *find out*, and others, which express an attitude of knowledge concerning the complement proposition, the equivalents of doxastic predicates as, e.g., *think*, or the equivalents of *verba dicendi*, as, e.g., *say*, *confess* or *assure*, and the equivalents of fiction predicates, as, e.g., the equivalents of *dream*. All these predicates indicate that the complement proposition is true in the model towards which it is evaluated. Such model is the one introduced by the main clause's predicate: a model that represents the epistemic state of the attitude holder, in the case of predicates like *think* and *verba dicendi*, the model that represents John's dream in a sentence like *last night, John dreamed that he was in Australia*, and so on. The most problematic cases are the Subjunctive clauses that describe facts. This is the case of complement clauses of factive-emotive predicates, as the equivalents of *regret*, *irritate*, *surprise*, and many others, as well as it is the case of complement clauses as those in bold in (6), above, and also of concessive clauses, where in EP the Indicative is also ruled out, as shown by (1), above. However, as synthesized in the following paragraph, the meaning of all of these constructions also involves the consideration of non-*p* worlds, which explains the obligatoriness of the Subjunctive.

Of all the cases where the Subjunctive is obligatory (in EP, allowed in other Romance languages) in sentences that describe facts, the most debated case is the one of complement clauses of factive-emotive predicates. The most common explanation for why these predicates take (in EP, accept in other languages) the Subjunctive is that they are gradable predicates, whose meaning leads to consider alternatives (see Villalta 2008; Godard 2012, Giannakidou & Mari 2016, 2021, a.o.). For instance, to say '*x* regrets that *p*' means that *x* would prefer if *p* were not true; one cannot say that 'it is fair that John resigned' without thinking of alternative worlds where John did not resign, and so on. However, as observed in Marques 2022, gradability does not explain all the cases where Subjunctive occurs in sentences describing facts. It explains, however, the selection of Subjunctive by some factive-emotive verbs, as *lamentar* ('regret'), *gostar* ('like') or *merecer* ('deserve'), as well as by adjectival predicates as the equivalents of *be (un)fair*, *be normal/strange*, and so on. Concerning factive verbs

as the equivalents of *surprise*, *irritate*, and others, predicates whose argument structure is different from the preceding ones, the proposal was made that these are Subjunctive rulers because they express a causal relation. For instance, to say that 'Ana is surprised that it is raining' means that the fact that it is raining caused surprise on Ana. Given that, according to counterfactual theories of causality (see Lewis 1973, Salmon 1998, a.o.), causality involves the consideration of alternatives – A caused B means that if A had not occurred, all the rest being the same, B would not have occurred either –, the reason for these predicates to be Subjunctive rulers follows straightforwardly: their meaning involves counterfactual reasoning, leading to the consideration of non-*p* worlds (worlds where the complement proposition is false), hence they are Subjunctive rulers. The same explanation is extendable to the fact that Subjunctive is selected by predicates that express a necessary (as the equivalents of *be needed*) or a sufficient condition (as the equivalents of *be enough*). To say that, e.g., 'we had to climb the mountain to reach our destination' means that, if we had not climbed the mountain, all the rest being the same, we would not have reached the destination. Likewise, to say that, e.g., 'just a few drops of rain were enough for people to start leaving the stadium' means that, if no drop of rain had fallen, all the rest being the same, people might have not left the stadium.

As for concessive clauses, where the Subjunctive also occurs even if this is a veridical context, the proposal was made that this follows from the fact that concessive constructions express the information that an expectation following from *p* does not hold in every possible world that forms the context set. For instance, *the room is cold, although the heater is turned on* expresses the denial of expectation that the room is warm, an expectation that follows from the concessive clause.

Hence, the conditions for the use of Indicative or Subjunctive in EP can be stated as follows: if the (syntactic) context where a sentence S occurs leads to consider only worlds where S is true and the inferences (including conversational implicatures) following from S hold, the verb of S inflects in the Indicative; if the (syntactic) context where S occurs leads to consider worlds where S is false or where an inference following from S does not hold, the verb of S inflects in the Subjunctive.

This explanation accounts for the cases where only one of the Indicative and Subjunctive moods

is allowed as well as for cases where either of these moods may be used, as is the case of (7) and (8), above. In (7), the Indicative is used because the speaker describes his own opinion concerning the complement proposition, stating that his epistemic state at utterance time contains only worlds where such proposition is true. In (8) the Subjunctive is used because the speaker describes only the opinion of the attitude holder, stating that his epistemic state contains only worlds where the complement proposition is false. Thus, the Indicative is a mark that signals the consideration of only p -worlds, the Subjunctive one that signals that non- p worlds or worlds where an inference from p does not hold are to be considered.

In many cases, it is the meaning of the main clause's predicate (or, in the case of non-complement clauses, the meaning of the conjunction, or of another sentential operator) that leads to consider only p -worlds or (also) non- p worlds. But in (7) the use of the Indicative for the complement clause follows from pragmatics, not from the compositional meaning of the construction, which leads to the use of the Subjunctive, as in (8). The contrast between (7) and (8) provides sense to the traditional idea that Indicative is the mood of assertion, Subjunctive the mood of non-assertion: the speaker chooses between one or the other mood depending on whether he asserts the complement clause or not. Resorting to the Indicative is a device the speaker can use to signal that the complement clause belongs to (or is to be added to) the common ground.

In the two next sections the relation between mood choice and common ground will be deepened.

4 The case of (negative) epistemic commitment

In EP, the choice between Indicative and Subjunctive moods for complement clauses is available whenever the main clause is negative and the main predicate expresses a doxastic attitude:

- (9) ele não {acredita / pensou / acha / disse / duvida / admite / ...} que {tinha_{IND} / tivesse_{SUBJ}} perdido as eleições!
 'He {does / did} not {believe / thought / think / said / doubt / admit / ...} that he has lost the elections!'

In all these cases, the use of Indicative indicates that the complement clause is true, according to the

speaker, and is part of, or is to be added to, the common ground, while the use of the Subjunctive does not indicate what is the speaker's opinion concerning the truth value of the complement clause. Mari 2016 claims that in Italian the same kind of factor lies at the mood choice for the complement clause of *credere* ('believe') in affirmative sentences. According to her, (10a), with the Indicative, merely expresses the attitude holder's opinion concerning the truth of the complement clause, the question of whether such sentence is, in fact, true not being at issue, while the assertion of (10b), with the Subjunctive, presents the complement clause as a candidate to integrate the common ground:

- (10) a. Gianni crede che Maria è_{IND} malata.
 b. Gianni crede che Maria sia_{SUBJ} malata.
 'Gianni believes that Mary is sick'

This proposal cannot be extended to EP, a language where, like in Italian, both the Indicative and the Subjunctive might occur in complement clauses of *acreditar* ('believe') in affirmative sentences. Regardless of whether the complement clause exhibits the Indicative or the Subjunctive, the sentence might merely describe the epistemic state of the attitude holder, as in (4), above, as it might be uttered in a context where the truth value of the proposition as a matter of fact is at stake, as shown by the following example:

- (11) A: Did John really wrote that letter?
 B: eu acredito que {escreveu_{IND} / tenha_{SUBJ}} escrito}
 'I believe he wrote / might have wrote'

Another piece of evidence that Mari's proposal is not extendable to EP comes from examples as (12):

- (12) Ainda não acredito que ganhei_{IND}!
 'I still don't believe that I won!'

In these negative *believe*-clauses, where the main clause's subject identifies the speaker, the Indicative in the complement clause is only possible with a certain intonation showing surprise. This construction indicates that the complement proposition describes a fact. Clearly, the resort to the Indicative does not indicate that only the private epistemic state of the attitude holder is being described, as Mari claims to be the case in Italian, but that the complement proposition belongs (or is to be added) to the common ground.

To summarize, in EP, doxastic predicates accept both the Indicative as the Subjunctive in the com-

plement clause. In the case of affirmative sentences, the choice between one or the other mood depends on the degree of belief being expressed, the Indicative signaling a high, the Subjunctive a low, degree of belief (in other words, if the epistemic state of the attitude holder contains only *p*-worlds, the Indicative is used; if such epistemic state contains non-*p* worlds, the Subjunctive is used). In negative sentences, since a low degree of belief (the null degree) is expressed, the Subjunctive is the obvious mood, but the Indicative might also be used, to convey the information that, unlike what the attitude holder believes / believed at a previous time, the complement proposition is true. In other words, concerning doxastic predicates in EP, only in those cases where the main clause is negative and the complement clause is in the Indicative is the complement proposition presented as describing a fact; i.e., the complement clause is interpreted as if it were an independent clause. Hence, these cases – negative clauses with doxastic predicates and Indicative in the complement clause – are instances where two discourse units – the main clause and the embedded proposition – are at stake. In other words, two models are considered in the interpretation of the complement clause: the model representing the attitude holder’s beliefs (at a previous time) and the one representing the speaker’s belief (at utterance time) / the information shared by the participants in the conversation.

The conditions for the use of the Indicative or the Subjunctive moods provided on section 3 are coherent with these occurrences of the Indicative: by resorting to the Indicative, the speaker conveys the information that his epistemic state (and, presumably, the one of the other participants in the conversation) contains only *p*-worlds. In addition, the construction at stake shows that, at least in these cases, there is a relation between mood and discourse updating. Seeking to deepen the understanding of the relation between mood and context of assertion, in the next section infinitival clauses will also be brought into consideration.

5 Finite vs Infinitival clauses

As, e.g., Portner 1997 observes, in many cases where both an infinitival or a finite clause might occur there is no obvious semantic difference between the two constructions, as shown by the following examples:

(13) a. Penso chegar_{INF} a tempo.

b. Penso que chego_{IND} a tempo.
‘I think I will arrive on time’

(14) a. Esperemos conseguir_{INF} chegar lá!

b. Esperemos que consigamos_{SUBJ} chegar lá!
‘Let’s hope we manage to get there’

By contrast, in other cases, the choice between an infinitival and a finite clause has semantic import, as shown by (15):

(15) a. É possível cultivar_{INF} lá uvas.

‘It’s possible to grow grapes there’

b. É possível que se cultivem_{SUBJ} lá uvas.
‘It’s possible that grapes grow there’

In (15b) the modal predicate has only an epistemic reading, which is unavailable in (15a). This shows that the option between a finite or an infinitival clause is not always a matter of free choice. Also in different kinds of adverbial clauses differences of interpretation are observable between infinitival and finite clauses.

5.1 Before and until-clauses

In EP, the verb of temporal clauses introduced by the equivalent of *before* or *until* may inflect in the Infinitive or in the Subjunctive mood:

(16) a. Emigrou antes de a guerra começar_{INF}.
‘(S)he emigrated before the war begun’

b. Emigrou antes que a guerra começasse_{SUBJ}.
‘(S)he emigrated before the war would begin’

(17) a. Fica aqui até alguém te chamar_{INF}.

b. Fica aqui até que alguém te chame_{SUBJ}.
‘Stay here until someone calls you’

In (16a) and (17a), the embedded proposition is presupposed, its truth surviving if the main clause is negated, contrary to what is verified in (16b) and (17b). At first sight, in the latter cases, the embedded sentence is either taken to be false or else as describing a possibility. However, other examples, as (18), show that, even with the Subjunctive, the embedded clause may be true:

(18) a. Sai antes que morras_{SUBJ}!
‘Get out before you die!’

b. Vou ficar aqui até que morra_{SUBJ}.
‘I will stay here until I die’

Thus, the difference between infinitival and finite clauses in *before* and *until*-clauses is not primarily related to the truth value of the embedded clause. Moreover, both the infinitival and the finite clauses

express temporal precedence between the situation described by the main clause and the one described by the embedded clause. However, the infinitival clause can only be felicitously asserted in a context where it is part of the common ground, whereas the Subjunctive clause may not belong to the common ground – as in (16b) and (17b) – or else it introduces in discourse a new topic – as in (18).

5.2 *Without*-clauses

Clauses introduced by *sem* ('without') are another case where the choice exists between an infinitival and a Subjunctive clause:

- (19) a. Ganhou o jogo sem se esforçar_{INF} muito.
 b. Ganhou o jogo sem que se tenha_{SUBJ} esforçado muito.
 '(S)he won the game without a great effort'

Both sentences indicate that the embedded proposition is false, but (19b) conveys the information that such falsity was unexpected, contrary to (19a), which does not convey unexpectedness (see also examples A18 of the Appendix). If the unexpectedness of $\neg q$ follows from p plus world knowledge, the use of the infinitive in p *without* q is much more natural with than without an intonation indicating surprise. By contrast, the use of a subjunctive clause dismisses the use of a particular intonation:

- (20) a. Caminhou em cima de brasas sem SE QUEIMAR_{INF}!
 b. Caminhou em cima de brasas sem que se tenha_{SUBJ} queimado.
 '(S)he walked over embers without getting burned'

This shows that the infinitival proposition is adequate to retrieve a proposition that belongs to the common ground (or that is expected given the information belonging to the common ground), while the subjunctive clause forces the consideration of possibilities outside the common ground. More precisely, in sentences of the form p *without* q , the subjunctive may occur in q if $\neg q$ is unexpected, while the infinitive may occur if the normalcy of $\neg q$ is assumed. If $\neg q$ is unexpected and infinitive

is used, resort to a suppletive device, as intonation, will be needed.

5.3 *Because*-clauses

If, as stated above, causality involves counterfactual reasoning and, therefore, leads to the use of Subjunctive, one could expect Subjunctive to be the mood occurring in causal clauses. However, the Subjunctive might only exceptionally occur in some (affirmative²) causal clauses, as (21), and even in these cases it is not obligatory, the indicative being also acceptable, if not preferred:

- (21) "No dia 4 de Outubro, como **estivesse**_{SUBJ} bastante pior, voltei à Urgência do Hospital de São José, onde uma médica me diagnosticou «conjuntivite bilateral purulenta»".
 (CETEMPÚBLICO, par=ext471198-nd-94b-1)

'On the 4th of October, as I was much worse, I returned to the Emergency Department of the Hospital de São José, where a doctor diagnosed me with «bilateral purulent conjunctivitis»'

The explanation I propose for Indicative to be used in causal sentences, while Subjunctive is obligatory in complement clauses of causal predicates, as in *a chuva fez com que a prova* {*fosse*_{SUBJ} / **foi*_{IND}} *adiada* ('the rain caused the race to be postponed') is that sentences of the form p *because* q do not express a causal relation between p and q in the same way as causal predicates. Sentences as p *caused* q mean that if p had not occurred, all the rest being the same, q would not have occurred either. As for sentences of the form q *because* p , they indicate that, among the necessary conditions for q , the speaker highlights p as being the most relevant one. A nice example that sustains this claim is the answer that Edmund Hillary, the first man to climb Mount Everest, will have given when he was asked why he climbed the mountain: "because it was there". Obviously, the mountain being where it is does not cause anyone to climb it. It is, however, a necessary condition for the climbing event, in addition to other necessary conditions, such as the

2 Under the scope of negation, as in other sentences where the causal clause is not presented as true, Subjunctive might occur: *não saiu porque estivesse*_{SUBJ} *incomodado, mas por outra razão* ('he did not leave because he was upset, but for another reason') / *ou porque estivesse*_{SUBJ} *doente ou porque houvesse greve de transportes, o certo é que faltou à aula*

('either because he was sick or because there was a transport strike, the truth is that he missed the class'). Infinitive is also possible in these (negative) constructions. The Indicative might also occur, but only if the negative operator is an instance of metalinguistic negation.

willing to climb the mountain, the ability to do it, and so on.

Given this, let us consider infinitival and finite causal constructions:

- (22) a. Ela chegou atrasada porque se perdeu_{IND}.
b. Ela chegou atrasada por se ter_{INF} perdido.
‘She arrived late because she got lost’

In the same way as observed in clauses introduced by *before*, *until* or *without*, the utterance of the infinitival sentence is adequate in a context where such proposition is part of the common ground, while the finite clause may introduce new information in discourse. In other words, the infinitival clause is useful to retrieve a proposition that is already known by the addressees, while, with the Indicative, the assertion of the causal sentence consists in the same process as the assertion of an independent declarative clause: by uttering it, the speaker expresses his belief that the proposition is true and presents it as a piece of information to be added to the common ground, if it is not yet part of the common ground. Evidence that a finite causal sentence may update the context of assertion, while an infinitival clause can only point to a proposition whose acceptance is shared by the participants in the conversation, can be found in the following dialogues:

- (23) A: Ficou em casa porque estava_{IND} a chover.
‘(S)he stayed home because it was raining’
B: Não! {Não estava a chover! / Ficou em casa porque estava de quarentena!}
‘No! {It was not raining! / She stayed home because she was in quarantine!}’
- (24) A: Ficou em casa por estar_{INF} a chover.
‘(S)he stayed home because it was raining’
B: Não! {#Não estava a chover! / Ficou em casa porque estava de quarentena!}

5.4 Complement clauses

Complement clauses of some verbs, as the equivalents of *say*, *think* or *believe*, are another case that suggests that the choice between infinitival and finite clauses is pragmatically triggered. Basing on an example of Mandy Simons (see, e.g., Simons 2007, 2019, a.o.), the observation arises that the choice of an infinitival or a finite complement has different effects on the discourse:

- (25) A: How will the weather be there?
B: A Ana {disse / pensa} que está_{IND} a chover.
/ Duvido que esteja_{IND} a chover.

‘Ana {says / thinks / believes} that it is raining / I doubt that it is raining’

- (26) A: How will the weather be there?
B: A Ana {disse / pensa} estar_{INF} a chover.
‘Ana {says / thinks / +-believes} it to be raining’

While B’s answer in (26) describes only Ana’s opinion, in (25) it also allows the complement proposition to be interpreted as an answer to A’s question. Thus, also in this kind of sentences, data suggests that an Indicative proposition may add new information to the context of conversation, contributing to update of the common ground, contrary to infinitival clause, whose assertion has no effect on the information shared by the participants.

6 Conclusion and notes towards formalization

The observed data allows the following conclusions:

- Subjunctive instructs the hearer to consider non-*p* worlds or worlds where an expectation following from *p* does not hold.
- Indicative instructs the hearer to consider only *p*-worlds and where the expectations following from *p* hold.
- Infinitive instructs the hearer to retrieve a proposition that is part of the common ground or is expected, its assertion not providing any change in the context of assertion.
- Finite moods in complement clauses of some verbs allow the complement proposition to be added to the context of conversation, contrary to the Infinitive.

Seeking to capture formally the above observations, let us consider some basic notions used in modal semantics and in dynamic semantics (see, e.g., Portner 2009 or Fintel & Gilles 2007):

M – Model of evaluation (the model representing the state of information against which the proposition is evaluated)

Cg – Common Ground (the set of propositions that participants in the conversation agree to accept as true)

C – Context Set (the set of propositions compatible with the Common Ground)

Since a proposition denotes a set of possible worlds (the worlds where the proposition is true),

the Context Set is a set of possible worlds. I assume that this set is ordered; i.e., some worlds of C are closer to what is expected than others. For instance, the possibility that a huge meteorite will hit the Earth in a near future, even if compatible with C_g , is less likely than, e.g., that elections for the Italian Parliament will be anticipated. Thus, possible worlds where a huge meteorite will hit the Earth in a near future are more distant than worlds where there will be anticipated elections for the Italian Parliament, even if all these worlds are part of the Context Set (C). Being ordered, C will contain a sub-set of Best worlds, those which are closer to what is expected given what is assumed:

B_c – The subset of C that is closer to C_g (i.e., B_c contains worlds where the expectations following from what is assumed are met)

Each proposition is evaluated against a Model. In the case of non-subordinated propositions, the model against which they are interpreted is C , the set of possible worlds that models the context of assertion. The assertion of a simple proposition p , as *it is raining*, is made against a context of assertion (or an information state) C , and, if p is accepted by the participants in the conversation, the assertion of p results in a new context, which is the subset of C that contains all but the non- p -worlds:

$$c + p = c^* \quad (c^* = [c/\neg p] = c \cap p)$$

Hence, the meaning of a sentence corresponds to its Context Change Potential (CCP). I assume that also adverbial clauses are evaluated against C , as well as complement clauses of non-attitudinal predicates, as, e.g., *prevent* (as in *the hurricane prevented the plane from landing*) or *lead to* (as in *bad weather led Maria to give up the trip*). Complement propositions of attitudinal predicates are evaluated against the model introduced by the attitude predicate.

Given this, I propose that adverbial clauses have the following CCP (Figure 1 schematizes the information):

$$c + p_{INF} = c^* \mid ((B_c^* \cap p) \neq \emptyset) \wedge (B_c \cap p) \neq \emptyset)$$

(p is already part of the Common Ground or an expectation that follows from what is assumed in the context of assertion)

$$c + p_{SUBJ} = c^* \mid ((B_c^* \cap p) \neq \emptyset) \wedge ((B_c \cap p) = \emptyset)$$

(the assertion of a Subjunctive proposition p in a context c leads to consider worlds outside B_c ; i.e., p refers an unexpected possibility)

$$c + p_{IND} = (c \cap p)$$

(the assertion of a proposition p in the Indicative removes non- p worlds from the context set; no restriction is given concerning whether p is part of C_g , B_c , or whether it is outside B_c ; i.e., p may be known, expected or new information in discourse).

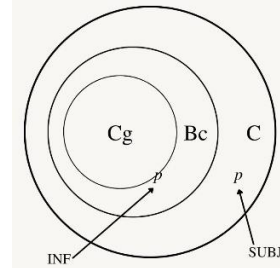


Figure 1 – Infinitival and Subjunctive adverbial propositions

The idea is that adverbial infinitival propositions are part of what is known or expected in discourse, while adverbial Subjunctive propositions, on the contrary, have the presupposition that the state of affairs described by the adverbial proposition is unexpected in discourse.

Concerning complement propositions of attitudinal predicates, they are evaluated against a model M_i that represents the epistemic state of the attitude holder i . Identically to the model representing the context of assertion, there is a set of propositions that the attitude holder takes for granted (what (s)he knows) and a superset, which is a (ordered) set of propositions compatible with what (s)he knows or takes for granted. Hence, the model against which complement clauses are evaluated is identical to the one represented in Figure 1. As seen above, the Indicative signals that M_i contains only p -worlds, the Subjunctive leading to the considerations of non- p worlds. Subjunctive rulers as, e.g., *duvidar* ('doubt') indicate that the epistemic state of the attitude holder contains non- p worlds, and the interpretation of factive-emotive predicates, as *lamentar* ('regret'), involves counterfactual reasoning, leading to the consideration of non- p worlds. Hence, in both cases the Subjunctive forces to search for worlds outside the center of the model of evaluation (i.e., Subjunctive indicates to search for possible worlds outside what is known or assumed).

As for infinitival complement clauses, it was observed that only finite clauses may be integrated in the context of assertion of the main clause (see (9) and (25)-(26)). In other words, an infinitival clause

is simply evaluated against a model M_i , while a finite complement clause is evaluated against a model M_i and may also be evaluated against C , the context of assertion of the main clause. Hypothetically, the complementizer (which is obligatory in the case of finite complementation and absent in infinitival complementation) introduces the instruction to check $(C \cap p)$, in the case of Indicative complement clauses, or $(C \cap \neg p)$, in the case of Subjunctive complement clauses. That is, Indicative signals the consideration of only p -worlds, Subjunctive instructing to consider non- p worlds, and the complementizer would give the instruction to check the sustainability of the complement proposition in C .

In sum, the picture that emerges is that the assertion of an infinitival proposition does not make any change in the context of assertion, being merely an instruction to check the existence of p -worlds in the context of evaluation (which is M_i in the case of complement clauses, C in the case of adverbial clauses); the assertion of a subjunctive clause gives the instruction to look outside the center of the model of evaluation, and the assertion of an indicative clause gives the instruction to consider only p -worlds. In addition, concerning non-infinitival propositions, if the model of evaluation is M_i , they may also be evaluated against C , not necessarily making any change in C .

Schematically, each of the considered moods would give the following instructions:

p -Infinitive: check that p -worlds are part of the model of evaluation

p -Subjunctive: search for non- p worlds (necessarily outside the center of M , which contains only p -worlds); If $(M \neq C) \rightarrow (\neg p \cap C) = ?$

p -Indicative: remove non- p worlds from the model of evaluation; If $(M \neq C) \rightarrow (p \cap C) = ?$

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References:

von Fintel, K. & A. Gillies: 2007, *An opinionated guide to epistemic modality*, in T. Szaebo (ed.), *Oxford Studies in Epistemology*, Vol. 2. Oxford University Press, Oxford: 32-62.

- Giannakidou, A. 1994. *The semantic licencing of NPIs and the Modern Greek subjunctive*. *Language and Cognition 4*, yearbook of the Research Group for Theoretical and Experimental Linguistics. Univ. Groningen.
- Giannakidou, A. & A. Mari. 2016. *Emotive predicates and the subjunctive: A flexible mood OT account based on (non)veridicality*. In *Proceedings of Sinn und Bedeutung 20*: 288-305.
- Giannakidou, A. & A. Mari. 2021. *Truth and Veridicality in Grammar and Thought: Mood, Modality, and Propositional Attitudes*. Chicago University Press, Chicago.
- Godard, D. 2012. *Indicative and subjunctive mood in complement clauses: from formal semantics to grammar writing*. In C. Piñón (ed.), *Empirical Issues in Syntax and Semantics*, 9: 129–148.
- Hooper, J. B. 1975. *On assertive predicates*. In P. Kimball (ed.); *Syntax and Semantics*, 4. Academic Press, New York: 91 - 124.
- Lewis, D. 1973. *Causation*. *The Journal of Philosophy*, 70(17): 556–567.
- Mari, A. 2016. *Assertability conditions of epistemic (and fictional) attitudes and mood variation*. *Proceedings of SALT 26*: 61–81.
- Marques, R. 2022. *Not Just Gradability – Explaining the Subjunctive in Factive Contexts*. Communication presented at *Linguistic Symposium on Romance Languages 52*, Univ. Wisconsin-Madison.
- Palmer, F. R. 1986. *Mood and Modality*. Cambridge University Press, Cambridge.
- Portner, P. 1997. *The Semantics of Mood, Complementation, and Conversational Force*. *Natural Language Semantics*, 5: 167-212.
- Portner, P. 2009. *Modality*. Oxford University Press, Oxford.
- Salmon, W. C. 1998. *Causality and Explanation*. Oxford University Press, Oxford.
- Simons, M. 2007. *Observations on embedding verbs, evidentiality, and presupposition*. *Lingua*, 117(6): 1034-1056.
- Simons, M. 2019. *The Status of Main Point Complement Clauses*. In *Proceedings of the 23rd Workshop on the Semantics and Pragmatics of Dialogue*.
- Villalta, E. 2008. *Mood and Gradability: An Investigation of the Subjunctive Mood in Spanish*. *Linguistics and Philosophy*, 31(4): 467–522.

Appendix. Examples of the analyzed constructions retrieved from the electronic corpus CetemPúblico (<https://www.linguateca.pt>)

Subjunctive clauses that describe facts:

A-1 “Cheguei ao Rio numa noite de Verão, embora fosse_[SUBJ] Inverno.” (ext1144787-nd-93b-1)

‘I arrived in Rio on a summer night, even though it was winter.’

A-2 “(...) Jill Jolliffe não desistiu e, juntamente com a RTP, consegui que Dom Rotheroe concluísse_[SUBJ] o projecto já iniciado.” (ext12281-clt-96b-2)

‘Jill Jolliffe did not give up and, together with RTP, managed to get Dom Rotheroe to complete the project already started.’

A-3 “Em Lisboa, foi preciso que os estudantes fechassem_[SUBJ] as portas a cadeado sob as luzes da comunicação social para que fossem_[SUBJ] escutados.” (ext858783-soc-95a-1)

‘In Lisbon, students had to lock the doors under the lights of the media so that they could be heard.’

A-4 “A situação política na Argélia não impediu que cerca de cem mil pessoas tivessem_[SUBJ] assistido, na capital, ao maior concerto realizado naquele país nos últimos cinco anos.” (ext83903-clt-96b-1)

‘The political situation in Algeria did not prevent around 100,000 people from attending, in the capital, the biggest concert held in that country in the last five years.’

A-5 “Só lamento que Souness tenha_[SUBJ] dito que eu não tinha qualidade para jogar no Benfica.” (ext41444-des-98a-1)

‘My only regret is that Souness said that I didn't have the quality to play for Benfica.’

Believe-clauses:

A-6 “Eu acredito que ele não teve_[IND] nada a ver com isso.” (ext1222201-nd-96b-1)

‘I believe he had nothing to do with it.’

A-7 “A regionalização está na Constituição e acredito que vá_[SUBJ] para diante.” (ext70224-opi-97a-1)

‘Regionalization is in the Constitution and I believe it will be done.’

A-8 “Muitos americanos não acreditam que os europeus têm_[IND] quatro ou cinco semanas de férias.” (ext769223-eco-95a-2)

‘Many Americans don't believe that Europeans have four or five weeks of vacation.’

A-9 “Por regra, as pessoas não acreditam que alguém se esgote_[SUBJ] no cumprimento das suas obrigações.” (ext1151109-nd-97b-2)

‘As a rule, people do not believe that someone is exhausted in fulfilling their obligations.’

Before-clauses:

A-10 “O assaltante, que estava encapuzado, teve ainda tempo para a fechar no quarto de banho da loja antes de fugir_[INF].” (ext769965-soc-95b-1)

‘The assailant, who was hooded, still had time to lock it in the store's bathroom before escaping.’

A-11 “Crêem alguns que Fujimori decidiu encabeçar o golpe antes que os jovens turcos do Exército o depusessem_[SUBJ].” (ext17092-pol-92a-2)

‘Some believe that Fujimori decided to lead the coup before the young Turks in the army deposed him.’

A-12 “O jogo é ocupar posições antes que os norte-americanos, um dia, regressem_[SUBJ].” (ext77837-pol-95a-1)

‘The trick is to take positions before the Americans one day return.’

Until-clauses:

A-13 “A vizinhança diz ter sido alertada para o que estava a acontecer por um automobilista que ia a passar e que resolveu apitar até alguém surgir_[INF] à janela.” (ext268037-soc-97b-1)

‘Neighborhood says they were alerted to what was happening by a passing motorist who decided to whistle until someone came to the window.’

A-14 “São como máquinas de ferro que prosseguem o seu caminho até que alguém rebente_[SUBJ] com elas.” (ext1564991-clt-94b-1)

‘They are like iron machines that keep on going until someone blows them up.’

Without-clauses:

A-15 “Não era possível entrar ou sair do quartel sem levar_[INF] tiros.” (ext24850-pol-95b-2)

‘It was not possible to enter or leave the barracks without being shot.’

A-16 “Imagine chegar à Polónia, no princípio dos anos 80, e perder-se na cidade de Szczepreszynie -- sem falar_[INF] uma palavra de polaco, nem ter nascido com o dom natural para pronunciar quatro consoantes de uma só vez.” (ext961749-eco-92a-1)

‘Imagine arriving in Poland in the early 1980s and getting lost in the city of Szczepreszynie -- not speaking a word of Polish, nor being born with the natural gift for pronouncing four consonants at once.’

A-17 “Uma vasta operação da GNR realizada na quarta-feira, envolvendo seis centenas de militares dos distritos de Lisboa, Setúbal, Leiria e Santarém fiscalizou 3874 condutores sem que qualquer deles acusasse_[SUBJ] excesso de alcoolémia.” (ext411048-soc-95b-1)

‘A vast GNR operation carried out on Wednesday, involving six hundred military personnel from the districts of Lisbon, Setúbal, Leiria and Santarém, inspected 3,874 drivers without any of them accusing excessive alcohol consumption.’

A-18 “Subitamente, sem que nada o fizesse_[SUBJ] prever, recorda Emmanuel Desplechin, de 16 anos, «o autocarro flectiu à esquerda, inclinou-se, acabou por desabar e prosseguiu, de rojo, por 150 metros».”
(*ext19180-soc-95b-2*)

‘Suddenly, without anything to predict it, recalls Emmanuel Desplechin, 16 years old, «the bus turned left, leaned, ended up collapsing and continued, dashing, for 150 meters».’

A-18’^{??}Subitamente, sem nada o fazer_[INF] prever, (...) ‘Suddenly, without anything to predict it, (...)’

Because-clauses:

A-19 “Será que pensou que por ter_[INF] contratado um campeão tinha garantido vitórias atrás de vitórias?”
(*ext1327948-des-98a-2*)

‘Did he think that because he hired a champion he had secured victory after victory?’

A-20 “Não participou porque foi_[IND] precisamente no dia da festa que nasceu Maria Antónia.”
(*ext19275-clt-95a-1*)

‘(S)he did not participate because it was precisely on the day of the party that Maria Antónia was born.’

Finite / Infinitival complemente clauses:

A-21 “Um número mais restrito disse que tinha_[IND] lido o livro.” (*ext97206-soc-97b-1*)

‘A more restricted number said that they had read the book.’

A-22 “Carlucci disse ter_[INF] sido sempre partidário do apoio às «forças democráticas».”
(*ext26706-soc-91b-1*)

‘Carlucci said that he had always been in favor of supporting "democratic forces".’

A-23 “Considera-se a si próprio como um homem modesto e duvida estar_[INF] à altura de tão altos cargos, mas, teoricamente, Jiang Zemin, 67 anos, é a figura mais poderosa da China, que desde há década e meia não concentrava tantos títulos num único dirigente.”
(*ext223530-pol-93b-1*)

‘He considers himself a modest man and doubts he is up to such high positions, but theoretically, Jiang Zemin, 67, is the most powerful figure in China, which has not held so many titles in a decade and a half in a single leader.’

A-24 “Quanto ao prazo avançado pela Câmara de Lisboa, duvida que se cumpra_[SUBJ].”
(*ext227550-soc-96a-1*)

‘As for the deadline set by the Lisbon City Council, he doubts that it will be met.’

A-25 “O ídolo acha que tem_[IND] poderes milagrosos e pensa ser_[INF] responsável pela cura de várias crianças que sofriam de cancro.” (*ext591706-soc-93b-1*)

‘The idol thinks he has miraculous powers and thinks he is responsible for curing several children who suffered from cancer.’

A-26 “Hasse Ferreira pensa que tudo ficará_[IND] resolvido este mês, sendo assim possível cumprir o plano de actividades para 1991, que estabelece o arranque da reconstrução.” (*ext46502-nd-91a-2*)

‘Hasse Ferreira thinks that everything will be resolved this month, making it possible to fulfill the activity plan for 1991, which establishes the start of reconstruction.’