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On objective and subjective epistemic modality again

Evidence from Portuguese and Spanish modal auxiliaries

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This aim of this chapter is to prove the linguistic reality of the distinction between objective and subjective epistemic modality as made in FDG, according to which the former modifies the Episode and the latter the Propositional Content. The chapter studies the two basic Spanish modal auxiliaries *poder* 'can, may' and *deber* 'must' and its Portuguese cognates *dever* and *poder* in order to see (i) which of the criteria (proposed by Hengeveld (1988) for the lexical expression of this distinction) yield testable criteria for the grammatical expression of epistemic modality and (ii) if the objective-subjective dichotomy somehow relates to the degrees of possibility and necessity expressed by these modal auxiliaries. With respect to (i), it is argued that there are two testable criteria, i.e. non-locatability in time and space and the boundedness to the 'locutionary agent' of propositions, for the identification of subjective auxiliary expressions. As for (ii), it turns out that the expressions of auxiliaries of necessity are prone to express subjective epistemic modality, whereas those of probability and possibility generally express objective epistemic modality.

1. Introduction

This chapter deals with epistemic modality, discussing the old problem of how to establish the difference between objective and subjective modality, particularly with respect to modal auxiliaries. According to Hengeveld (2011) and later publications on Functional Discourse Grammar, objective epistemic modality operates on the Episode, which may consist of a series of thematically coherent States-of-Affairs or a single State-of-Affairs. Subjective modality specifies the truth value of a proposition, and is therefore considered to operate on the layer of the Propositional Content.

The difference between objective and subjective modality is discussed in detail by Hengeveld (1988), who illustrates the difference between the two types of modality by comparing two kinds of lexical expressions of modality, i.e. (objective) impersonal adjectival complement clauses and (subjective) modal adverbs. Hengeveld’s approach has met with some criticism, most notably from Nuyts (1992), who argues that the difference between objective and subjective epistemic modality is so subtle that it cannot be linguistically relevant at all. Nuyts follows Lyons (1977), who is generally invoked whenever the objective – subjective dimension of epistemic modality is being discussed. According to Lyons, “it is much more natural to use modal verbs for subjective, than for objective, epistemic modality” (Lyons 1977: 806).¹ Nuyts redefines the distinctions within epistemic modality as subjectivity versus intersubjectivity. The difference between the two is defined in terms of evidence: subjective epistemic modality is based on “poor or vague, intuitive evidence” and intersubjective epistemic modality is based on “evidence [that] is known to (or accessible by) a larger group of people who share the same conclusion based on it.” (Nuyts 2001: 393). In this way, Nuyts introduces a direct relation between language and cognition, characteristic of cognitive linguistics, which may be intuitively attractive, but it is not helpful when trying to analyze the use of modals. After all, although Nuyts claims that the (inter)subjective approach to epistemic modality is typologically relevant (2001: 395–397), there is no immediate relation between the cognitively based concept of (inter)subjectivity and linguistic expression.

The aim of this chapter is twofold: first of all, we want to show that the distinction between objective and subjective epistemic modality is linguistically relevant and, secondly, we want to find out how this distinction is related to the possibility – necessity cline within epistemic modality.

In order to reach these aims, we compare epistemic modal auxiliaries in Spanish (*poder* and *deber*) and Brazilian Portuguese² (*poder* and *dever*) to clarify (i) which of the criteria proposed by Hengeveld (1988) are relevant for modals, and (ii) whether the matter of objectivity and subjectivity varies depending on the modal semantics (possibility, probability and certainty).

1. One of the reasons for Lyons’ view on the linguistic relevance of this difference may be the fact that in his example objective epistemic modality is basically equated with alethic modality. As we will show in this chapter, objective modality is more widely applicable.

2. For Spanish, we will make use of various corpora from the Peninsular and Hispanoamerican varieties. With respect to Portuguese, we will confine ourselves to the Brazilian variety, which differs considerably from the European variety.

However, before going into concrete details, we need to mention a further issue involved when it comes to the grammatical expression of subjective expressions of certainty, i.e. its relation with inferential evidentiality. It has been shown in various publications that, from a typological viewpoint, there is a considerable overlap in the expression of these two concepts (Van der Auwera & Plungian 1998: 85–86). In a similar vein, Hengeveld and Mackenzie (2008: 155) consider inferentiality a modal category on a par with subjective epistemic modality. In more recent publications in FDG (e.g. Hengeveld 2011, 2017), it has been acknowledged that despite the existing overlap there is reason to distinguish these two subcategories on semantic grounds: inferential evidentiality is related to the source of a proposition, whereas subjective epistemic modality is concerned with the commitment to the truth of a proposition, as nicely explained by Nuyts (2017: 72–73). Although we will be concerned with epistemic modality only, we will return to this issue in Section 5.

The chapter is structured as follows. In Section 2 we will introduce the objective – subjective dichotomy as presented by Hengeveld (1988). In Section 3, we discuss Hengeveld’s (1988) criteria for the distinction between objective and subjective epistemic modality one by one, in order to see which of these criteria are applicable to Spanish and Brazilian Portuguese basic modals. The existence of such criteria is evidence of the fact that the distinction between objective and subjective epistemic modality is a linguistic reality. The application of the selected criteria in Section 4 will yield the answer to our second question, identifying the relation between the semantic distinctions on the possibility – necessity cline and the distinction between objectivity and subjectivity. Section 5 is dedicated to the discussion of the results of Sections 3 and 4 in relation to the expression of inferentiality mentioned above. Section 6 concludes.

As this chapter concerns Functional Discourse Grammar, it goes without saying that, while taking Hengeveld (1988) as a starting point, we will, wherever relevant, adapt the point made in this publication to more recent insights in Functional Discourse Grammar (Hengeveld & Mackenzie 2008; Hengeveld 2011, 2017).

2. Objective vs. subjective epistemic modality: Definition and preliminary criteria

We define modality as the marking of a (set of) State(s)-of-Affairs or a Propositional Content “for being underdetermined with respect to its factual status, i.e. neither positively or negatively factual” (Narrog 2005: 697). This definition is compatible with the FDG approach to modality as proposed by Hengeveld (2011: 583), as well

as with the ensuing views on this subject,³ which separate the domain of modality from that of evidentiality.

A recent and very useful definition of epistemic modality is given by Narrog (2012: 8), according to whom “[e]pistemic modality refers to someone’s world knowledge, typically that of the speaker. If the proposition is entailed by this person’s knowledge, it is necessarily true; if it is compatible [with] his or her knowledge it is possibly true.” This definition covers both subjective and objective epistemic modality, as it combines the concepts of ‘knowledge’ and ‘truth’, which are carefully distinguished in the FDG approach. This definition reflects the author’s view, because while recognizing the difference between objective and subjective modality, he considers the objectivity – subjectivity distinction a matter of degree (Narrog 2012: 36–43). In fact, there are only few linguists who make the distinction between subjective and objective modality in the same way as has been done in F(D)G.⁴

In FDG, *subjective epistemic modality* is concerned with the beliefs of the primary human referent, generally the speaker, rather than with his or her knowledge. More specifically, subjective modality expresses the commitment of the primary or quoted speaker to the truth value of a Propositional Content (Dall’Aglío Hattner & Hengeveld 2016: 4). Nevertheless, for the ease of reference, we will follow other FDG publications in simply using “the speaker” in this context (Hengeveld & Mackenzie 2008: 145–157; Dall’Aglío Hattner & Hengeveld 2016).

As regards *objective epistemic modality*, Hengeveld (2017: 20) provides the following description: “In this type of modality a situation is objectively evaluated in terms of its likelihood of occurrence in terms of what is known about the world.” In other words, it is not about truth-commitment but about the relative probability of the occurrence of events.

In order to clarify the differences between objective and subjective modality, Hengeveld (1988) proposes five criteria for the identification of subjective modality, most of which are based on Lyons (1977: 797–823):

- (1) a. ‘Subjectively modalized propositions cannot be questioned’
(Hengeveld 1988: 236)
- b. ‘Subjectively modalized propositions cannot be hypothesized’
(Hengeveld 1988: 236)
- c. “Subjective modality can be formulated in positive terms only”
(Hengeveld 1988: 236)

3. For more details on the FDG approach on Modality, which is largely based on Hengeveld (2004), see the relevant sections of Hengeveld & Mackenzie (2008) as well as Dall’Aglío Hattner (2008) and Dall’Aglío Hattner & Hengeveld (2016) on Portuguese, Olbertz & Gasparini Bastos (2013) and Olbertz (2017) on Spanish.

4. One example is Wolf (2012), who reintroduces the objective – subjective distinction, explicitly rejected by e.g. Kratzer (1981), along the very same lines into formal semantics.

- d. “Subjective modality is bound to the moment of speaking”
(Hengeveld 1988: 237)
- e. ‘The source of the subjective modalization is the speaker’
(Hengeveld 1988: 237)

Criterion (1a) is based on the assumption that a felicitous question presupposes the lack of knowledge. A Propositional Content of which an individual has no knowledge cannot be believed by that same individual. Criterion (1b) concerns a semantic incompatibility: hypothesizing a Propositional Content is the very contrary of being committed to the truth of this content, because it consists of presenting the Propositional Content as a theoretical possibility. Criterion (1c) is in keeping with the fact that negation would considerably weaken the degree of truth-commitment, because “with negation, the speaker distances her/himself from the judgement” (Narrog 2012: 34). However the evidence provided is based on the assumed morphological impossibility of negating the adverb *probably*.⁵ Criterion (1d), on the other hand is based on the generally accepted view that (subjective) epistemic evaluation is, in principle, based on the *hic et nunc*, i.e. it represents the speaker’s view at the very moment of speaking. Criterion (1e) should not be taken too literally, because, as correctly observed in Narrog’s definition quoted above, the source of the modal evaluation is “typically” but not necessarily the actual speaker, but may also be another human referent (cf. also Hengeveld & Mackenzie 2008: 144). In example (2) we apply the tests in exactly the same way as done in Hengeveld (1988). The example contains the subjective modal adverb *probably* and is therefore illustrative of the above mentioned restrictions.

- (2) He probably thought I was a crazy-haired chatterbox
(www.theguardian.com/, 2016)
 - a. ??Did he probably think that I was a crazy-haired chatterbox?
 - b. ??If he probably thought that I was a crazy-haired chatterbox, what would he have thought of my sister?
 - c. ??He improbably thought I was a crazy-haired chatterbox
 - d. ??He had to have thought I was a crazy-haired chatterbox
 - e. Who says so?

The application of all of the original tests show the expected result, with the exception of (2e). This does not mean that the criterion is inappropriate; it merely shows that this is an infelicitous way of testing the criterion. We will come back to this point in Section 3.5.

5. Albeit rarely, English *improbably* can be used as a sentence adverb, but then its meaning is counter-expectational rather than epistemic:

- (i) *Thirty minutes later he locks up the bikes at the entrance to Freetown, a local anarchist community that has improbably become one of Copenhagen’s most popular tourist destinations.*
(COCA, Magazine)

We are grateful to Evelien Keizer for drawing our attention to the existence of *improbably*.

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Example (3) contains the non-verbal impersonal expression *it is probable that*, i.e. an expression of objective epistemic modality. The application of the tests in (1) yield fully grammatical and acceptable sentences:

- (3) It is probable that the School will receive less money than last year.
- a. Is it probable that the School will receive less money than last year?
 - b. If it is probable that the School will receive less money than last year, we must try to raise funds from elsewhere.
 - c. It is improbable that the School will receive less money than last year.
 - d. It was probable that the School would receive less money than in 2001. (www.lse.ac.uk)
 - e. Who says so?

One of the aims of this chapter is to determine, on the basis of Spanish and Portuguese data, which of the five criteria for the distinction between objective and subjective epistemic modality work for auxiliary constructions.⁶ We are aware of the fact that the behaviour of auxiliaries is highly language specific, and it will even become clear that there are considerable differences between Portuguese and Spanish in this field. Nevertheless, we hope to show by discussing the Iberoromance data that the objective – subjective dichotomy is linguistically relevant. In addition it will turn out that this dichotomy helps us to understand some of the idiosyncrasies of the constructions with modal verbs in both languages.

Before applying the individual criteria, we would like to challenge the claims that “[m]odal adverbs give expression to subjective modality” (Hengeveld 1988: 236) and that the lowest degree of probability expressed by modal adverbs is that of possibility (Hengeveld 1988: 239). Counter-examples to the latter claim are Portuguese *difícilmente* ‘difficultly’ (and its Spanish cognate), which, in addition to their literal meanings, function as modal adverbs of improbability (see Wanders 1993 for Spanish), and Spanish *improbablemente* (and its Portuguese cognate):⁷

- (4) a. Portuguese
 “É preciso dizer que dificilmente frei Damião
 COP.3SG necessary say.INF that difficultly monk Damião

6. We will not discuss the auxiliary nature of these verbs, for which we have provided the evidence elsewhere. For Portuguese epistemic *poder* and *dever* see Dall’Aglío Hattnher & Hengeveld (2016: 6–8) and for Spanish epistemic *poder* and *deber* see Olbertz (1998: 243–246).

7. Ramat and Ricca (1998: 226–228) claim that modal adverbs of low probability expressions are a typological rarity, but there turn out to be similar expressions in English (*hardly*) and Dutch (*moeilijk*). We are grateful to an anonymous reviewer for drawing our attention to this fact.

sairá *com vida*”, *admitiu* *seu médico* [...]

leave.FUT.3SG with life admit.PST.PFV.3SG his medical-doctor [...]

‘“It must be said that Father Damião will hardly come out of this alive”,

his medical doctor [...] admitted.’ (CdP, Press, Brazil, 1997)

b. Spanish

Decidí estirarlo [el diálogo] cuanto fuera posible, aunque tuviera que seguir allí de pie, bajo la despreciativa vigilancia de Eutimio y sosteniendo la torpe amenaza de una detención ‘I decided to stretch it [the dialogue] as much as possible, even if I had to continue standing, under Eutimio’s disparaging vigilance, and stick to the stupid menace of a detention,’

que muy improbablemente iba a practicar.

which very improbably go.PST.IPFV.1SG to practice.INF

‘which I would almost certainly not put into practice.’

(CREA, fiction, Spain, 2000)

In both languages the epistemic use of *dificilmente* and *improbablemente* is less frequent than the positively oriented epistemic adverbs corresponding to ‘possibly’ and ‘probably’,⁸ and the use of these adverbs seems to be restricted to the coding of objective epistemic modality. In (4) they express the unlikelihood of the occurrence of the future events specified.

The most obvious conclusion, that the objective nature of these adverbs would be due to their negative meaning is, however, not warranted, as we also found a number of non-marginal cases of *provavelmente* / *probablemente*, which cannot be read as expressions of truth-commitment due to the combination of future tense and first person singular reference: the plans expressed about the first person referent cannot be deemed to be true or false by that very same referent. Therefore, they can only concern the probability of the occurrence of (sets of) events:

(5) a. Portuguese

“Eu tenho muitos, muitos elementos que eu acho funcionariam muito bem em outro filme, e se eu puder amarrá-los todos juntos, eu provavelmente ia querer fazer isso”,

I probably go.PST.IPV.1SG want do.INF this

disse [Brad Pitt], em maio.

say.PST.PFV.3SG in May

“‘I have many, many elements that I think would work very well in another film, and if I can combine them, I would probably like to do this”, he [Brad Pitt] said in May.’

(CdP, cinema.uol.com.br, 2013, Brazil)

8. We have not found any evidence for Ramat & Ricca’s (1998: 226–227) claim that the negatively-oriented epistemic adverbs tend to occur in generic contexts.

b. Spanish

Probablemente estaré en Madrid en junio
 probably COP.LOC.FUT.1SG in Madrid in June
 ‘I will probably be in Madrid in June’

(CdE, principiamarsupia.com, 2013, Spain)

This means, firstly, that it is not the case that epistemic modal adverbs minimally express possibility, and, secondly, that it is not the case that epistemic modal adverbs necessarily express subjective epistemic modality.

3. Which criteria are applicable to Brazilian Portuguese and Spanish epistemic modals?

In this section we will take up the criteria presented in (1) and illustrated in (2) and (3) above to see which of them are applicable to the basic Spanish and Portuguese modal auxiliaries that encode epistemic possibility, probability and necessity, Spanish and Portuguese *poder* ‘can, may’, on the one hand and Spanish *deber* and Portuguese *dever* on the other. As will become clear from the examples, the matter is less simple than it appears to be, because the Portuguese epistemic modal *dever* expresses a weaker degree of probability than its Spanish cognate (Oliveira 2000). More concretely, while Spanish *deber* can easily be translated into English as ‘must’, we will use ‘be likely to’ for the English translation of *dever*. As will be shown in Section 4, this semantic difference affects the applicability of these modals for the expression of objective epistemic modality.

We will structure this section in accordance with the tests to be considered. Section 3.1 will be dedicated to the use of modals in questions and Section 3.2 to their occurrence in hypothetical clauses. Section 3.3 concerns the combination of modals with negation. In Section 3.4 we will discuss ways of testing the claim that subjective modality is bound to the moment of speaking. Section 3.5 considers the source of modal evaluation, and Section 3.6 will summarize our findings.

3.1 ‘Subjectively modalized propositions cannot be questioned’

As mentioned above, questioning generally presupposes the absence of truth-commitment, because one cannot believe what one does not know. However, Matthews (2003: 61–62) shows that modals such as *might*, *could* and *would* can occur in open questions, while the same is true for *must*, although it is more restricted:

- (6) A. Tom must have arrived.
 B. Must he? (Matthews 2003: 62)

Example (6) is a case of what Matthews calls ‘modal challenge’, i.e. echo questioning of the very same modal used by the interlocutor. However, he also claims that *must*, as well as *can*, *need*, *have to* and *be bound to*, can occur in what he calls ‘modal dissent’, “when an asserted proposition is questioned” (Matthews 2003: 61), which he illustrates as follows:

- (7) A. John appears to have arrived.
 B. Can he have? (Matthews 2003: 62)

Of course we could just conclude that the use of *can* illustrated in (7) cannot be subjective. But then (6) could, of course, be subjective, because as Matthews correctly observes, “any modal that can appear in a declarative clause with an epistemic interpretation can be challenged” (2003: 62).

In order to exclude such complications, we have adapted the questioning test. Rather than using polar questions like (6) and (7), we use content questions that are, by their very nature, related to Episodes or State-of-Affairs, i.e. questions asking for space and time. Although questions for space may not always be equally felicitous for expressions of objective modality, because not all (sets of) events can easily be located in space, Propositional Contents cannot be located in space or time at all (Vendler 1967: 144), and therefore, such questions cannot be grammatical and/or acceptable in the context of subjective modality. Put differently, whenever either of these questions is acceptable and/or grammatical, the epistemic modal contained in that question is bound to express objective modality. We will first present examples for questions asking for space with Portuguese *onde* and Spanish *dónde*, starting with *poder* ‘can, may’.

- (8) a. Portuguese
Barulho ao frear: onde pode estar
 noise at-the brake.INF where can.3SG COP.TEMP.INF
o problema?
 the problem
 ‘Noise when braking: where can the problem be?’
 (www.foxlux.com.br/blog/dicas/, Brazil, 2016)
- b. Spanish
 [I have followed each step exactly as indicated, and I’m in despair...]
¿Dónde puede estar el error?
 where can.3SG COP.LOC.INF the error
 ‘Where can the error be?’ (CdE, ayudawordpress.com, Spain, 2015)

Example (9) asks for location with Portuguese *dever* ‘be likely to’.

(9) Portuguese

[*As idéias geniais não costumam surgir diante da Vênus de Milo ou na baía de Nápoles, mas em lugares anódinos, garantia Salvador Dali. Brotam no meio da rua ou no banheiro.* ‘Good ideas do not normally come up in front of the Venus of Milo or in the Bay of Naples, but in insignificant places, Salvador Dali claims. They come up in the middle of the street or in the bathroom.’]

Onde deve ter emergido a concepção do
where be-likely.3SG AUX.INF emerged the concept of-the
Caesar Park Resort?

Caesar Park Resort

‘Where is the concept for Caesar Park Resort likely to have emerged?’

(CdP, press, Brazil, 1997)

Spanish behaves differently in this respect. The Spanish cognate of *dever* rarely occurs in questions asking for location,⁹ and when it does, it invariably expresses deontic modality:

(10) Spanish

¿Dónde debe aparecer el ISBN?
where must.3SG appear.INF the ISBN

‘Where must the ISBN appear?’

(CdE, indautor.sep.gob.mx/isbn/, Mexico, 2016)

We now turn to questions asking for the time of the event, beginning again with *poder* ‘can, may’, exemplified in (11), and then dealing with Portuguese *dever* and Spanish *deber*.

(11) a. Portuguese

[about a public contest for potential employees at the House of Representatives]

Quando pode sair o edital?

when can.3SG come.out.INF the announcement?

‘When is the announcement expected to be published?’

(blog.grancursosonline.com.br/, Brazil, 2016)

9. We found 89 examples of Spanish *dónde debe(n)* ‘where must he/she/it/they’ in CdE 2015–2016 (2 billion words), against 902 of the corresponding Portuguese expression *onde deve(m)* in the Brazilian section of CdP 2015–2016 (ca. 558.4 million words).

b. Spanish

[research into the history of imprisoned critics of the Spanish Franco-Regime]

¿Tiene idea de cuándo pudo ingresar
 have.2SG.FORM idea of when can.PST.PFV.3SG enter.INF
 en prisión?
 in prison

‘Have you got any idea when he could have been imprisoned?’

(CREA, fiction, Spain, 2001)

Again, questioning with *dever* / *deber* yields different results for Portuguese and Spanish. In the former epistemic *dever* can be questioned for time:

(12) Portuguese

Quando deve sair a regulamentação?
 when be-likely.3SG come-out.INF the regulation

‘When is the regulation likely to become effective?’

(CdP, interviews, Brazil, 1997)

But in Spanish, content questions asking for time are only possible with deontic *deber*:

(13) Spanish

Hablando de edad, ¿cuándo debe un hijo tener
 speaking of age when must.3SG a son/daughter have.INF
 su primera tarjeta_de_crédito?
 POSS.3 first credit-card

‘Speaking about age, when should your son or daughter have his or her first credit card?’ (CdE, transunion.com.do, República Dominicana, 2015)

Summing up, our adapted questioning test serves a double function: on the one hand it tests the absence of truth-commitment and the other it tests the locatability in space and time, which is incompatible with Propositional Contents. It has turned out that on the basis of this test, the modals of possibility in Spanish and Portuguese can apparently express objective modality, and the same holds for Portuguese *dever* ‘be likely to’. However, the test is not applicable to the Spanish *deber* ‘must’, which seems to indicate that *deber* cannot express objective epistemic modality.¹⁰ We will come back to this point in Section 4.

10. The difference between the syntactic properties of modals of certainty from modals expressing lower degrees of commitment has already been observed by Palmer (1986: 58).

3.2 ‘Subjectively modalized propositions cannot be hypothesized’

Whereas interrogative illocution presupposes the absence of truth-commitment, hypothetical modality is a way of expressing the absence of truth-commitment, and is therefore equally incompatible with subjective epistemic modality. Objective epistemic modality can, however, occur in conditional clauses (Lyons 1977: 805–806; Hengeveld 1988: 236).

In (Brazilian) Portuguese and Spanish epistemic modals rarely occur in conditional clauses, but we did come across a few epistemic cases with *poder*:

(14) a. Portuguese

[about possible actions for peace]

Se pode acontecer na Bolívia, pode acontecer
if can.3SG happen.INF in-the Bolivia can.3SG happen.INF
na Índia.
in-the India.

‘If it can happen in Bolivia, it can happen in India.’

(CdP, resistir.info, Brazil, 2004)

b. Spanish

[about possibly racist features of an American movie]

Si esto puede ser así para el ciudadano
if this can.3SG COP.INF like-this for the citizen
norteamericano promedio, ni habremos de los
North-American common not-even speak.HORT.PL about the
espectadores de otros países
viewers from other countries

que no necesariamente conocen la evolución política de Estados Unidos.

‘If this can be like that for the common North-American citizen, it will be much worse for the viewers from other countries, who do not necessarily know about the political evolution of the United States.’

(Fabio Nigra, “El mayordomo”. *Imagofagia* 9, Argentina, 2014)

Given the semantic incompatibility of hypothetical and subjective epistemic modality, the fact that epistemic *poder* can occur in these contexts is sufficient proof of their objective character.

As regards the occurrences of *dever* and *deber* in conditional clauses in our corpora, they invariably have a non-epistemic meaning, i.e. they express either deontic modality or their lexical meaning ‘owe’; in addition, we were unable to make up any convincing examples ourselves. The scarcity of epistemic modals in conditional clauses as well as the impossibility of testing both types of epistemic modals renders this test useless for our present purpose. We will therefore not pursue this issue any further.

3.3 “Subjective modality can be formulated in positive terms only”

The very definition of subjective epistemic modality in terms of the commitment to the truth of a proposition implies that there must be at least some degree of commitment to this truth, somewhere in between the logical extremes of possibility and certainty (or: necessity). Indeed, we have seen in our discussion of adverbs of improbability at the end of Section 2, that such adverbs express objective epistemic modality. In this section we would like to consider whether the combination of modal auxiliaries with negation yields a viable testing procedure for distinguishing between objective and subjective epistemic modality. We will start by considering the interaction of *poder* with negation.

In principle, *poder* allows both, pre-modal and post-modal negation.

- (15) a. neg poss (ep/e/f^c) – Sp. *no puede* / Pt. *não pode*
 b. poss (neg p/ep) – Sp. *puede no* / Pt. *pode não*

With pre-modal negation, presented in (15a), *poder* can only express deontic and dynamic (or: facultative) meanings. As is obvious from the presentation, the place of the negation reflects its scope, the possibility operator ‘poss’ is within the scope of the negation, a situation which we will call “external negation”.¹¹ Conversely, the case post-modal negation, in (15b), corresponds to “internal negation”, i.e. the modal is outside the scope of the negation. However, as illustrated in (16), internal negation with *poder* holds for all kinds of epistemic possibility, potentially operating on Propositional Contents (subjective) or Episodes (objective) without allowing for a differentiation between them, in other words, we are unable to decide, on this basis, whether the examples in (16) express subjective or objective modality.¹²

- (16) a. Portuguese
Meu julgamento pode estar errado e você pode
 my judgement may.3SG COP.TEMP.INF wrong and you may.3SG
não ser a pessoa ideal para esse trabalho.
 not COP.INF a person ideal for this job
 ‘What has been stated above may be untrue, it is only an example to think about.’
 (CdP, fiction, Brazil, 1992)

11. Our use of the concepts of internal and external negation is restricted to the case of modality (Duffley 1997), including low-level modal distinctions, such as participant-oriented deontic and dynamic modality.

12. As will become clear in Section 5 below, epistemic *poder* expresses objective modality only.

b. Spanish

*Lo expuesto puede no ser verdad, es sólo un
 what stated may.3SG not COP.INF truth COP.3SG only a
 ejemplo para pensar.
 example for think.INF*

‘What has been stated above may be untrue, it is only an example to think about.’
 (CREA, philosophy, Argentina, 1997)

This means that in the case of *poder* the relation between the modal auxiliary and the negation offers no indication of the objective or subjective nature of the modalizations illustrated here.

As regards *dever / deber*, the situation is even less clear. Both in Portuguese and Spanish, pre-modal negation is the standard, both for epistemic and deontic uses. The lack of ordering variation is illustrated by the deontic examples (17), followed by an illustration of the modals in their epistemic function in (18).

(17) a. Portuguese

*Não devemos perder a esperança. Não devemos parar
 not must.1PL lose.INF the hope not must.1PL stop.INF
 de lutar.
 PRP fight.INF*

‘We must not lose hope. We must go on fighting.’

(CdP, press, Brazil, 1997)

b. Spanish

*los principios morales, ésos no debían faltar
 the principles moral those not must.PST.IPVF.3PL be-absent.INF
 nunca, ni en la sociedad ni en la familia
 never CORR.NEG in the society CORR.NEG in the family*

‘moral principles, they should never be absent, neither in society nor in families’
 (Alcalá, 16)

(18) a. Portuguese

[speaker describes his feelings when he was about to be assaulted]
*e eu passando falei “ah... num deve ser
 and I passing say.PST.PFV.1SG ah not be-likely.3SG COP.INF
 nada ne? [em] Mirassol vai acontecer alguma coisa?
 nothing TAG in Mirassol go.3SG happen.INF some thing
 vai acontecer nada”
 go.3SG happen.INF nothing*

‘and walking by I said [to myself] “ah... this is probably nothing, right? should there be something going on [in] Mirassol? there is nothing going on”’
 (Iboruna, 74)

b. Spanish

[About the education of a little boy]

En el suelo había restos de algo que
 on the floor there-be.PST.IPV.3SG residues of something which
había escupido que imagino no le
 AUX.PST.IPFV.3SG spit.PTCP which imagine.1SG not him.DAT
debió gustar
 must.PST.IPFV.3SG please.INF

‘On the floor there were residues of something he had spit, which I imagine he must not have liked’ (diariodeunamadreingeniera.com, Spain, 2014)

This lack of ordering variation¹³ indicates that in this case there is no iconic relation between the place of the negation and its scope as observed in the case of *poder*. Obviously, the pre-modal position of the negation in the deontic cases in (17) cannot correspond to external negation. As regards the examples in (18), the translations by means of *probably* in these two examples show that this is not a case of external negation either.

In sum, in Spanish and Portuguese, negation never scopes over the epistemic modal auxiliary; rather, the only possible way of negation with epistemic modals, be they subjective or objective, is internal negation, i.e. the negation of the content. Therefore, the incompatibility of the negation of the modal marker with subjectivity cannot be tested in the context of modal auxiliaries in these languages.

3.4 “Subjective modality is bound to the moment of speaking”

There is general agreement that subjective epistemic evaluation is bound to the moment of utterance,¹⁴ even in approaches that do not distinguish between objective and subjective modality, such as Laca (2014: 78), who speaks of “zero tense” in this context.¹⁵

13. Whereas in Spanish pre-modal negation is the only possibility, post-modal negation is marginally possible in Brazilian Portuguese. Obviously, this does not affect the scopal relation between the negation and the auxiliary:

(i) *Essa dúvida na verdade deve não ser apenas minha*
 this doubt in-the truth be-likely-to.3SG not COP.INF only mine
 ‘This doubt indeed is likely to be not only mine.’

(capaciteredacao.forum-livre.com, Brazil, s.d.)

14. In the literature, particularly in cognitively oriented approaches, this property is often associated with performativity (cf. e.g. Verstraete 2001: 1517–1524); see Narrog (2012: 42–43) for an overview and further references. Interestingly, both Lyons (1977: 805) and Palmer (1986: 60) also loosely associated subjective epistemic modality with performativity.

15. See Laca (2014: Section 1) for further references to the generative approach to epistemic modality.

Being bound to the moment of speaking does not necessarily mean that a verbal modal expression needs to have present tense morphology. In the context of reported speech or in narrative contexts, the form of the modal verb can have past tense morphology as a consequence of (relative past) tense concord or *consecutio temporum* (Narrog 2012: 32; Laca 2014: 83). The examples in (19) and (20) illustrate the use of epistemic *poder* and *dever / deber*, respectively, in past tense narratives:

(19) a. Portuguese

– *Entao o senhor num se arrependeu de ter casado tao novo?*
 – *Não, graças a Deus nao... de jeito nenhum foi*
 no thanks to god no of way none COP.PST.PFV.3SG
a melhor coisa que podia ter acontecido
 the best thing which can.PST.IPFV.3SG AUX.INF happen.PTCP
 ‘– So you you have never been sorry for having married so young?
 – No, thank God, no way, it was the best thing that could’ve happened to me.’
 (Iboruna, 111)

b. Spanish

me pusieron..... una navaja así... oxidada..... para que les diera el bolso, y yo inconsciente de mí me puse loca. Es que... me pareció horroroso. Y entonces empecé a pegarle con el bolso y salió corriendo o sea
me podían haber..... metido la- la navaja y...
 me.DAT can.PST.IPFV.3PL AUX.INF put.PTCP the the knife and
 ‘they held..... a knife... a rusty knife.... against me so that I should give them the bag, and I, unaware of what I was doing, I went nuts. It’s that... I found it horrible. And then I began to hit him with the bag and he hit the road, so they could have cut me with knife and...’
 (Alcalá, 30)

(20) a. Portuguese

[about a little girl’s possessive behaviour in relation to her father]
Nessa hora.... é que eu percebi que o_que
 in-this hour COP.3SG that I see.PST.PFV.1SG that what
tinha... era uma coisa assim de... uma
 have.PST.IPFV.3SG COP.PST.IPFV.3SG a thing like of a
mistura de sentimento que devia ter uma
 mixture of feeling which must.PST.IPFV.3SG have.INF a
ligação com ciúme...
 connection with jealousy

‘At that moment I realized that what she had was some sort of... a mixture of feelings that must have some connection with jealousy’ (Iboruna, 150)

b. Spanish

Era un hombre de paso enérgico y mandíbula de
 COP.PST.IPFV.3SG a man of step energetic and jaw of
boxeador que debía haber alcanzado los temidos
 boxer who must.PST.IVPV.3SG AUX.INF reached the feared

cincuenta años de edad.

fifty years of age

‘He was a man walking with energetic steps and the jaw of the boxer, who must have reached the dreadful age of fifty.’

(CREA, fiction, Colombia, 1988)

These examples show that the use of past tense reference is unrelated to the objectivity or subjectivity of the modalization, because they are all the result of tense-copying, a fully morphosyntactic operation, which is not semantically motivated.

What makes things more complicated is the fact that, in Spanish, the combination of modals with past tense is preferably marked on the modal verb only, i.e. instead of resorting to a pluperfect construction, as in (19), the modal auxiliary is expressed in the perfective past:

(21) a. Spanish

Ahora creemos que Trinidad pudo ser

now believe.1PL that Trinidad could.PFV.3SG COP.INF

asesinado [...] por algo que quizá tuvo que

murdered for something REL perhaps had.PFV.3SG REL

ver con esa otra actividad.

see.INF with that other activity

‘Now we believe that Trinidad may have been murdered [...] for something that perhaps had to do with that other activity.’

(CREA, fiction, Spain, 2000)

b. Spanish

Los años de Robespierre y Danton debieron de

the years of Robespierre and Danton must.PST.PFV.3PL PREP

ser terribles en Francia, ¿no es cierto?

COP.INF terrible in France not COP.3SG true

‘The years of Robespierre and Danton must have been terrible in France, isn’t it true?’

(CREA, fiction, Spain, 1986)

This property of Spanish is independent of the objective or subjective character of the modalization, and it is even common in deontic modalization.¹⁶ Such an option

16. Consider the following deontic example:

- (i) [*Teresa sabía todo eso al acudir a la capilla de Malverde con la agenda* ‘Teresa knew about this all when going the Malverde Chapel with the agenda’]

que nunca debió leer y que había leído

REL never must.PST.PFV.3SG read.INF and REL AUX.PST.IPFV.3SG read

‘with the agenda which she never had been allowed to read and which she had read’

(CREA, fiction, Spain, 2002)

Laca (2014: 84ff) explains this phenomenon as “tense-aspect” raising. In FDG the Morphosyntactic Level will have to account for this idiosyncrasy of Spanish modals.

is not available in Portuguese: the perfective past of *poder* cannot express epistemic modality,¹⁷ and *dever* is a defective verb which lacks the perfective past form.

So far, we have shown that for the identification of subjective epistemic modality, present tense morphology of the modalizer is not a necessary criterion. On the other hand, neither Hengeveld (1988) nor any other specialist in the field has ever claimed that present tense morphology of the modal expression represents a sufficient criterion for subjectivity. Being neither a necessary nor a sufficient condition for subjectivity, the present tense expression of the modalization will not be discussed here. The result of this section is that subjective modality’s being bound to the moment of speaking does not yield any testable correlate in linguistic expression.

3.5 ‘The source of the subjective modalization is the speaker’

There is no doubt that the source of the subjective modal evaluation is the (primary or quoted) speaker, (or, in more neutral terms, the “believer”, or “thinker”), because this is inherent in the very concept of subjectivity (see e.g. Lyons 1977: 800; Lyons 1982: 102–105; Finegan 1995; Narrog 2012: 13–39). However, as already mentioned in Section 2, the corresponding test proposed by Hengeveld (1988: 237) for the identification of subjective epistemic modality, meant to indicate the irrelevance of asking for the source of the Propositional Contents, is not without problems. The question ‘Who says so?’ is insufficiently unequivocal to serve as a test, because even in objectively modalized expressions, the source, in a more general sense, can be the speaker. Consider the following two examples:

(22) Spanish

[*En cualquier caso yo creo que todos los políticos debemos estar preparados para dejar los cargos cuando democráticamente así lo decide el partido.* ‘In any case I believe that everyone of us politicians must be prepared to leave their post whenever the party democratically decides so.’]

A mí me puede pasar dentro de unos
PREP me.EMPH me.DAT can.3SG happen.INF within some
cuantos años.

several years

‘This could happen to me in a couple of years’ time.’

(*Cambio 16*, press, Spain, 1990)

17. The perfective past of *poder* generally expresses dynamic modality:

- (i) *Não pôde adormecer pensando nisso.*
not can.PST.PFV.3SG fall-asleep.INF thinking in-that
‘He could not fall asleep while thinking of that.’ (CdP, fiction, Brazil, 1993).

- a. ??– *¿Quién dice esto? – Lo digo yo!*
 who say.3SG this it say.1SG me
 ‘– Who says so? – I say so!’

(23) Portuguese

ESTADO DE SÃO PAULO – Ele [seu pai] voltou alguma vez? ARRABAL – Desde que foi preso, quando eu tinha 3 anos, não. Mas sei que escapou da prisão e poderia estar vivo com 93 anos. Isso me angustia.

‘ESTADO DE SÃO PAULO – Has he [your father] ever come back? ARRABAL – Not after he was arrested when I was 3 years old. But I know that he escaped from prison and, being 93 years old, he could be alive. This distresses me.’

Ele pode aparecer um dia.

he may.3SG appear.INF one day

‘He may turn up one day.’

(CdP, interviews, Brazil, 1997)

- a. ??– *Quem diz isso? – Sou eu quem diz isso!*
 who say.3SG this COP.1SG I who say.3SG this
 ‘– Who says so? – It’s me who says so!’

In both examples, the question ‘Who says so?’ is equally infelicitous, because the speaker provides a description of the possible occurrence of events based on his or her experience or knowledge of the world. Moreover, the expression ‘who says so’ does not necessarily ask for a source, but it may also indicate disagreement or disbelief on the part of the interlocutor. The pragmatic deviance of the question for the source of the modal evaluation is therefore unrelated to the subjective or objective nature of the epistemic modalization. In fact, as we will show below, both of the above examples contain expressions of objective modality.

We therefore propose an alternative way of testing the source of the modalization. This test will consist in paraphrasing the verbal epistemic expressions in terms of complementation: objective expressions correspond to the impersonal type (*It is possible/probable*) and subjective expressions correspond to personal lexical expressions of truth-commitment (*X thinks/believes*), where *X* may be the actual or the quoted speaker. Whereas in the former type the speaker is not involved, in the latter type the speaker makes his or her commitment fully explicit. Let us apply this revised test to the above examples:

(22) Spanish

- b. *Es posible que me pase dentro de unos*
 COP.3SG possible that me.DAT happen.SBJV.3SG within some
cuantos años.
 several years

‘It is possible that it happens to me in a couple of years’ time.’

- c. ≠ *Pienso que me va a pasar dentro_de unos*
 think.1SG that me.DAT go.3SG to happen.INF within some
cuantos años
 several years
 ‘I think that this is going to happen to me within a couple of years’ time.’

(23) Portuguese

- b. *É possível que ele apareça um dia.*
 COP.3SG possible that he appear.SBJV.3SG one day
 ‘It is possible that he turns up one day.’
- c. ≠ *Penso que ele aparecerá um dia.*
 think.1SG that he appear.FUT.3SG one day
 ‘I think that he will turn up one day.’

The reformulations in terms of an impersonal adjectival constructions in (22b) and (23b) correspond exactly to what the speakers of (22) and (23), respectively, mean to say, i.e. they do not personally vouch for the event becoming a possible fact. In other words, although the variants (22c) and (23c) are grammatical, they do not correspond to what has been originally said.

Conversely, in the case of subjective epistemic modality, the impersonal construction fails to reflect the meaning of the modalization, while the construction expressing personal commitment is an appropriate paraphrase. This is exactly what happens in (24) and (25), both of which illustrate clear cases of personal convictions or beliefs:

(24) Portuguese

- Eu não estava olhando quando eu me esbarrei*
 I not COP.TEMP.INF looking when I REFL.1SG collide.PST.PFV.1SG
em você... deve ter sido o destino.
 in you must.3SG AUX.INF COP.PTCP the destiny
 ‘I didn’t look when I collided with you... it must have been destiny’
 (Poema de confiança, pensador.com, Brazil, 2005)

- a. ??*É provável que foi o destino.*
 COP.3SG probable that AUX.PST.PFV.3SG the destiny
 ‘It is probable that it was destiny.’
- b. *Tenho certeza de que foi o destino.*
 have.1SG certainty of that AUX.PST.PFV.3SG the destiny
 ‘I’m convinced it was destiny.’

In example (24) it is the irrationality of the concept of ‘destiny’ that makes the paraphrase in objective terms in (24a) odd.

(25) Spanish

El secuestro removió los recuerdos de tu madre, por primera vez con un atisbo de mala conciencia, según me confesó. No obstante, ni siquiera entonces se planteó revelarte la existencia de Michel, sus intentos por acercarse a ti.

Laura debió de ser una mujer muy dura,
 Laura must.PST.PFV.3SG PREP COP.INF a woman very hard
¿me equivoco?

REFL.1SG be-wrong.1SG

‘The kidnapping mixed up the remembrances of your mother, for the first time with a slight notion of bad conscience, as she confessed to me. Nonetheless, she did not consider even then to unveil the existence of Michel to you; his efforts to get near you. Laura must have been a very hard woman, or am I mistaken?’

(CREA, fiction, Spain, 2004)

a. *¿Es probable que Laura sea una mujer muy dura,*
 COP.3SG probable that Laura COP.SBJV.3SG a woman very hard
¿me equivoco?

REFL.1SG be-wrong.1SG

‘It is probable that Laura is a very hard woman, or am I mistaken?’

b. *Creo que Laura es una mujer muy dura,*
 believe.1SG that Laura COP.3SG a woman very hard
¿me equivoco?

REFL.1SG be-wrong.1SG

‘I believe that Laura is a very hard woman, or am I wrong?’

In (25) the final question *¿me equivoco?* implies that what precedes is a personal judgement. Therefore, the objective paraphrase in (25a) not only inappropriate but even incoherent.

We hope to have illustrated by means of these examples that reformulating an expression of epistemic modality in fully objective or fully subjective terms yields more convincing results than the test proposed by Hengeveld (1988: 237).

3.6 Summary

We have shown in this section that subjective epistemic modality’s being bound to the moment of speaking has no clear linguistic correlate and is thus a property that cannot be tested. The incompatibility of truth-commitment with hypothetical modality cannot be tested for Portuguese and Spanish, because in these languages epistemic modals hardly ever occur in conditional clauses. Two properties of subjective epistemic modality have clear correlates in linguistic expression in the two Iberoromance languages: (i) the incompatibility of truth-commitment with interrogative illocution because questioning presupposes the lack of truth-

commitment, and (ii) the source of subjective modality being the “locutionary agent” (Lyons 1982: 102), i.e. the original or quoted speaker. For these two properties we have adapted the relevant tests in such a way as to avoid possible ambiguities. In the next section we will apply our tests to a number of examples, which will help us to reveal the nature of the relation between objectivity and subjectivity and the semantics of the Portuguese and Spanish modals.

4. Objective and subjective modals in Brazilian Portuguese and Spanish

In this section we will apply our tests to *poder* (4.1) and then to *dever* and *deber* (4.2). The aim of the application is to find out how objectivity and subjectivity are related to possibility, probability and necessity as expressed by the Portuguese and Spanish modal auxiliaries. The conclusions with respect to this point will be presented in Section 4.3.

4.1 *Poder*

We will begin by applying our test to examples with past tense morphology, because we have not been able to disambiguate such cases on the basis of the association of subjective modality with the moment of speaking. Consider (26) and (27), from Portuguese and Spanish, respectively.

(26) Portuguese

[*Achei que não tinha entendido direito, mas também não quis perguntar. Todos estavam já bastante tensos; ‘I thought I hadn’t really understood, but didn’t want to ask either. Everyone was very nervous’*]

podia ter ouvido errado
can.PST.IPFV.1SG AUX.INF heard.PTCP wrong.

‘I could have misheard.’

a. *Onde você podia ter ouvido errado?*
where you can.PST.IPFV.2SG AUX.INF heard.PTCP wrong
‘Where could you have misheard?’

b. *Quando você podia ter ouvido errado?*
when you can.PST.IPFV.2SG AUX.INF heard.PTCP wrong
‘When could you have misheard?’

c. *É possível que eu tivesse ouvido errado.*
COP.3SG possible that I AUX.PST.SBJV.1SG heard.PTCP wrong
‘It is possible that I misheard.’

d. *≠ Penso que eu ouvi errado.*
think.1SG that I hear.PST.PFV.1SG wrong
‘I think that I misheard.’

In this example, asking where and when the event of acoustic misunderstanding took place is fine,¹⁸ and so is the reformulation as an impersonal expression of possibility. But the reformulation in terms of speaker commitment is not appropriate, because the speaker does not vouch in any way for the truth of the fact of having misheard.

(27) Spanish

[la muchacha] era la única persona que
 the girl COP.PST.IPFV.3SG the only person who
 había leído el texto que podía haber
 AUX.PST.IPFV.3SG read the text who can.PST.IPFV.3SG AUX.INF
 descubierto la falsedad de la fecha
 discovered the falsity of the date

‘[the girl] was the only person who had read the text and could have discovered the falsity of the date’ (CREA, fiction, Spain, 1978)

a. ¿Dónde podía haber descubierto la falsedad de
 where may.PST.IPFV.3SG AUX.INF discovered the falsity of
 la fecha?
 the date

‘Where may she have discovered the falsity of the date?’

b. ¿Cuándo podía haber descubierto la falsedad de
 where may.PST.IPFV.3SG AUX.INF discovered the falsity of
 la fecha?
 the date

‘Where may she have discovered the falsity of the date?’

c. Es posible que haya descubierto la falsedad de
 COP.3SG possible that AUX.SBJV.3SG discovered the falsity of
 la fecha.
 the date

‘It is possible that she has discovered the falsity of the date.’

d. ≠ Pienso que ha descubierto la falsedad de
 think.1SG that AUX.3SG discovered the falsity of
 la fecha.
 the date

‘I think that she has discovered the falsity of the date.’

The example in (27) represents an objective possibility of a past event, which can, as such, be questioned for its location in place and time. As expected, the paraphrase in terms of an impersonal expression of possibility is appropriate. But, as (27d) illustrates, there is no commitment to the truth of the discovery by the girl.

18. In the interest of pragmatic acceptability we adapted the deictics in the questions from the first to the second person, which does not affect the validity of the test.

So far, we have only seen objective epistemic uses of *poder* in both languages, i.e. in addition to the examples above, we have now proven that the examples in (8), (11) and (14) illustrate objective uses of *poder*. Does *poder* also express subjective epistemic modality? At first sight, the examples in (28) are potential candidates:

- (28) a. Portuguese
Posso ter minhas idiosincrasias, mas verme eu
 can.1SG have.INF my idiosyncrasies but vicious I
não sou!
 not COP.1SG
 ‘I may have my idiosyncrasies, but vicious I’m certainly not!’
 (CdP-web, fiction, Brazil, s.d.)
- b. Spanish
Yo puedo tener mis defectos, y hasta mis rarezas, pero
 I can.1SG have.INF my defects and even my curiosities but
soy un hombre cabal.
 COP.1SG a man honorable
 ‘I may have my shortcomings, and even my peculiarities, but I am an honorable man.’
 (CREA, fiction, Spain, 2000)

However, on closer examination, the examples in (28) turn out not to be expressions of weak truth-commitment, but rather scalar concessive conditional expressions (Haspelmath & König: 584–593), i.e. they are semantically equivalent to concessive conditionals that are formally marked as such:¹⁹

- (28) c. Portuguese
Ainda_que tenha minhas idiosincrasias, verme eu
 even-if have.SBJV.1SG my idiosyncrasies vicious I
não sou!
 not COP.1SG
 ‘Even if I have my idiosyncrasies, vicious I’m certainly not!’
- d. Spanish
Aunque tenga mis defectos, y hasta mis rarezas,
 even-if have.SBJV.1SG my defects and even my curiosities
soy un hombre cabal.
 COP.1SG a man honorable
 ‘Even if I have my shortcomings, and even my peculiarities, I am an honorable man.’

19. We are grateful to Lachlan Mackenzie for drawing our attention to this point.

The use of an epistemic modal expression of possibility in a concessive function seems to occur in quite a few languages. Elaborating on Bybee et al. (1994: 225–228), Van der Auwera & Plungian (1998: 90–91) regard concession as one of the potential post-modal developments of epistemic possibility (which the authors consider to be inherently subjective).

However, for the characterization of epistemic modality presented in this chapter, the concessive conditional interpretation of *poder* in (28) suggests that there is no such thing as an auxiliary expression of subjective epistemic possibility in Portuguese and Spanish.

4.2 *Dever* and *deber*

The first modal to be discussed in this section is Portuguese *dever*. Again, we will first discuss a past tense example. Consider (29) below:

(29) Portuguese

Devia ter sido um homem bonito [...], desses
 must.PST.IPFV.3SG. AUX.INF COP.PTCP a man handsome of-those
que recitam poemas depois do terceiro uísque.

who recite.3PL poems after-the third whisky.

‘He must have been a handsome man [...], one of those who recite poems after the third whisky.’

(CdP, fiction, Brazil, 1990)

a. *??Onde devia ter sido um homem bonito?*

where must.PST.IMPF.3SG AUX.INF COP.PTCP a man handsome

‘Where must he have been a handsome man?’

b. *??Quando devia ter sido um*

when must.PST.IMPF.3SG AUX.INF COP.PTCP a

homem bonito?

man handsome

‘When must he have been a handsome man?’

b'. *Quando foi um homem bonito?*

when COP.PST.PFV.3SG a man handsome

‘When was he a handsome man?’

c. *≠ É provável que fosse um homem bonito,*

COP.3SG probable that COP.PST.SBJV.3SG a man handsome

‘It is probable that he had been a handsome man.’

d. *Acredito que foi um homem bonito,*

believe.3SG that COP.PST.PFV.3SG a man handsome

‘I believe that he had been a handsome man.’

The tests show that (29) represents a subjective use of epistemic *dever*. Given the stative nature of the State-of-Affairs, the question in (29a) asking for place is unacceptable and even difficult to understand. The question asking for time (29b) is inappropriate too, whereas (29b'), which places the State-of-Affairs of the 'man being handsome' in time, is fine. This difference is additional evidence of the fact that the modalization in (29) does not concern an event but a Propositional Content. In keeping with the result of the questioning test, the objective reformulation does not correspond to the original, whereas the subjective one does. Note, finally, that in the subjective use *dever* expresses certainty ('must'), thus differing from the objective meaning of (weak) probability, as exemplified in the following example:

(30) Portuguese

eu num me recordo mas eu tenho a impressão de
 I NEG REFL.1SG remember.1SG more I have.1SG the impression of
que ele deve ter ganho da mãe dele...
 that he be-likely-to.3SG AUX.INF given.PTCP from-the mother of-his
eu num tenho bem certeza não... (Iboruna, 134)
 I NEG have.1SG well certainly not

'I don't remember, but I have the impression that he's likely to have received it from his mother... I'm not sure'

a. *Onde ele deve ter ganho da*
 where he be-likely-to.3SG AUX.INF received.PTCP from-the
mãe dele?
 mother of-his

'Where is he likely to have received it from his mother?'

b. *Quando ele deve ter ganho da*
 when he be-likely-to.3SG AUX.INF received.PTCP from-the
mãe dele?
 mother of-his

'When is he likely to have received it from his mother?'

c. *É provável que ele tenha ganho da*
 COP.3SG probable that he AUX.SBJV.3SG received.PTCP from-the
mãe dele
 mother of-his

'It is probable that he received it from his mother'

d. *≠ Eu acredito que ele ganhou da*
 I believe.1SG that he receive.PST.PFV.3SG from-the
mãe dele
 mother of-his

'I believe that he received it from his mother'

It is clear from the tests that *deber* as used in this example is not an expression of truth-commitment, but rather one of objective epistemic modality. Moreover, the context indicates that the modal does in fact not express much more than a conjecture of what may have happened.

Let us now turn to Spanish *deber*. Consider example (31) below, which is equal to example (21b) from Section 3.4:

- (31) Spanish
- siempre he pensado que debió de ser*
 always AUX.1SG thought that must.PST.PFV.3SG PREP COP.INF
algo así como asesor artístico de Batista
 something so like consultant artistic of Batista
 ‘I have always believed that he must have been something like an artistic consultant of Batista’ (=21b)
- a. ??*¿Dónde debió de ser algo así como*
 where must.PST.PFV.3SG PREP COP.INF something so like
asesor artístico de Batista?
 consultant artistic of Batista
 ‘Where must he have been something like an artistic consultant of Batista?’
- b. ??*¿Cuándo debió de ser algo así como*
 where must.PST.PFV.3SG PREP COP.INF something so like
*asesor artístico de Batista?*²⁰
 consultant artistic of Batista
 ‘When must he have been something like an artistic consultant of Batista?’
- c. ≠ *Siempre he pensado que era muy probable*
 always AUX.1SG thought that COP.PST.IPV.3SG very probable
que fuera algo así como asesor artístico
 that COP.PST.SBJV.3SG something so like consultant artistic
de Batista
 of Batista
 ‘I have always believed that it was very probable that he was something like an artistic consultant of Batista’

20. Note that, in analogy with the Portuguese example (29b’), something like (i) would be fully grammatical and acceptable, but it would be inappropriate within the the context of (29).

(i) *¿Cuándo fue algo así como asesor artístico de Batista?*
 when COP.PST.PFV.3SG something so like consultant artistic of Batista
 ‘When was he something like an artistic consultant of Batista?’

- d. *Siempre he pensado...*, *o sea que, he estado*
 always AUX.1SG thought or_rather, AUX.1SG COR.LOC.PTPC
convencido de que fuera algo así como
 convinced PREP that COP.PST.SBJV.3SG something so like
asesor artístico de Batista
 consultant artistic of Batista
 ‘I have always believed,... or rather, I was convinced that he was something
 like an artistic consultant of Batista’

As we already saw in Section 3.1, asking for time and place in the context of epistemic *deber* in (31a) and (31b) is very odd. Although the objective epistemic reformulation in (31c) is, in principle, grammatical, it does not correctly reflect the meaning of (31), whereas the subjective epistemic variant (31d) does. Example (31) is in fact a case of redundant marking of subjective modality, i.e. the subjective truth-commitment is marked lexically by means of *siempre he pensado* and grammatically by means of the epistemic auxiliary *deber*. Note that this is entirely independent of the fact that the SoA *ser algo así como asesor artístico de Batista* does probably not reflect reality.

4.3 Intermediate conclusion

The Spanish and Portuguese modal of possibility, *poder*, although highly frequent in all kinds of modal meanings, has not yielded any instance of subjective epistemic modality. From this fact we conclude that, with respect to epistemic modality, *poder* expresses objective modality only.

Portuguese *dever* can express both objective and subjective epistemic modality. When expressing probability, it functions as an expression of objective epistemic modality. When expressing certainty, it has a subjective epistemic function.

Objective epistemic modality can be expressed independently of the location of the event in time: the event may lie in the future, as in (12), (22) and (23), or in the past, as in e. g. (9), (21), (24) and (30) above. This fact supports the FDG analysis presented in Hengeveld (2011, 2017), according to which objective epistemic modality operates on the layer of the Episode, which can be freely located in time.

Our conclusion with respect to Spanish *deber* is that it is much less flexible than *dever*, because it can express subjective epistemic modality only: it never allows for questioning for time and space and never allows for paraphrases by means of impersonal constructions. This difference is probably related to the fact that *deber* only expresses certainty, because it seems that in natural language use epistemic

modals of necessity generally fail to express anything but a subjective meaning (cf. Olbertz & Honselaar 2017: 280 on Dutch).²¹

The results we have reached so far are summarized in Table 1.

Table 1. Scope relations of modal auxiliaries in Brazilian Portuguese and Spanish

Subjective epistemic modality (p_1)	Objective epistemic modality (ep_1)
necessity (<i>dever</i> , <i>deber</i>)	possibility (<i>poder</i>) probability (<i>dever</i>)

5. Subjective epistemic modality and inferential evidentiality

The modal auxiliaries of subjective epistemic necessity (or, simply, subjective certainty), *dever* in Portuguese and *deber* in Spanish, are also used as expressions of inferential evidentiality. Dall’Aglio Hattnher and Hengeveld (2016: 8) even claim that the subjective use of *dever* is not modal but evidential, i.e. it “qualifies the Propositional Content as a result of an inference processed by the speaker”. Similarly, Olbertz (1998: 410–412) claims that subjective epistemic necessity equals inferentiality. As we mentioned in the introduction to this chapter, there is indeed a certain overlap between epistemic modality and inferential evidentiality, but the two are basically different in the sense that inferentiality is based on a reasoning process and as such is essentially neutral with regard to truth-commitment (De Haan 1999).²²

Inferentials typically contain a motivation of the correctness of the inference, which helps to recognize inferentials at first sight. A reliable way of distinguishing between expressions of epistemic subjective modality and inferential evidentiality

21. An apparent exception are alethic modal expressions, which are objective expressions of necessity:

- (i) It is August, so the sun must set at about 20:20 h in the Netherlands.

However, the meanings of alethic modal necessity expressions can be rendered in natural language use without resorting to modality at all. In other words, outside the context of formal logic, (i) is equal to (ii):

- (ii) It is August, so the sun sets at about 20:20 h in the Netherlands.

22. The discussion whether modals of necessity express epistemic modality or inferential evidentiality is not new (see e.g. Dendale 1994). More recently, Boye (2012) deals with epistemic modality and its relation to evidentiality from a typological perspective.

is to substitute the modal with a lexical expression of evidentiality, such as the (Portuguese and Spanish) evidential adverb *aparentemente* ‘apparently’. If this paraphrase has no effect on the meaning of the proposition, we can conclude that the modal serves to express an inference.

This is the case in many of the Portuguese and Spanish examples we have found. Consider the following examples from Brazilian Portuguese:

(32) Portuguese

“O cara é coerente, a história tem lógica, e ele deu respostas seguras e ricas em detalhes.

Não deve estar mentindo”, pensava.

not must.3SG COP.TEMP.INF lie.GER think.PST.IPFV.1SG

‘“The guy is consistent, the story makes sense, and he has given reliable and very detailed answers. Apparently he is not lying”, I thought.’

(CdP, fiction, Brazil, 1993)

a. *Aparentemente não está mentindo”, pensava.*

apparently not COP.TEMP.INF lie.GER think.PST.IPFV.1SG

‘Apparently he’s not lying”, I thought.’

(33) Portuguese

eu gostaria até de ver, porque eu leio O

I like.POST.FUT.1SG even PREP see.INF because I read.1SG o

Globo todo dia, mas isso eu não vi, deve ter

globo each day but this I not see.PST.PFV.1SG must.3SG AUX.INF

sido algum dia que eu não vi

COP.PTCP some day that I not see.PST.PFV.1SG

‘I would even like to see it, because I read *O Globo* every day, but I haven’t seen this one, there must have been some day that I didn’t see it’

(PEUL, E28, Brazil, 1980)

a. *aparentemente teve algum dia que eu não*

apparently there-was.PFV.3SG some day that I not

vi

see.PST.PFV.1SG

‘apparently there was some day that I didn’t see it’

(34) Portuguese

A professora devia ter percebido o_que se

the teacher must.PST.IPV.3SG AUX.INF perceived what REFL.3

passava, pois se calou de_repente

happen.PST.IPV.3SG since REFL.3 stop-talking.PST.PFV.3SG suddenly

‘The teacher must have perceived what was happening, since she suddenly stopped talking’

(CdP, fiction, Brazil, 1943)

- a. *Aparentemente a professora tinha percebido o_que*
 apparently the teacher AUX.PST.IPV.3SG perceived what
se passava, pois se calou
 REFL.3 happen.PST.IPV.3SG since REFL.3 stop-talking.PST.PFV.3SG
de repente
 suddenly
 ‘Apparently the teacher had perceived what was happening, since she suddenly stopped talking’

The situation in Spanish is very similar. The following examples are representative of the inferential use of *deber*:

(35) Spanish

Algo debió de notar en mis ojos, porque me
 something must.PST.PFV.3SG PREP notice.INF in my eyes because me
preguntó qué era lo_que me ocurría.
 ask.PST.PFV.3SG what COP.PST.IPV.3SG what to-me happen.PST.IPV.3SG
 He must have noticed something in my eyes, because he asked me what was happening to me.’ (CREA, fiction, Cuba, 2000)

- a. *Aparentemente notó algo en mis ojos, porque me*
 apparently notice.PST.PFV.3SG something in my eyes because me
preguntó qué era lo_que me ocurría.
 ask.PST.PFV.3SG what COP.PST.IPV.3SG what to-me happen.PST.IPV.3SG
 ‘Apparently he noticed something in my eyes, because he asked me what was happening to me.’

(36) Spanish

se me debieron juntar todas las causas que
 REFL.3 to-me must.PST.PFV.3PL unite.INF all the causes which
pueden producir el infarto, había tomado muchos
 can.3PL produce.INF the attack AUX.PST.PFV.3SG taken many
años anticonceptivos, soy muy fumadora [...]
 years anti-conceptives COP.1SG very smoker
 ‘in me all the causes that can produce a heart attack must have come together, I had taken anti-conceptives for many years, I’m a heavy smoker [...]

(adapted from Alcalá, 46)

- a. *aparentemente se me juntaron todas las causas*
 apparently REFL.3 to-me unite.PST.PFV.3PL all the causes
que pueden producir el infarto
 which can.3PL produce.INF the attack
 ‘Apparently in me all the causes that can produce a heart attack have come together’

(37) Spanish

Fue, probablemente, un encargo de la Sociedad Filarmónica de Barcelona, y Granados no debió tener mucho tiempo para
 and Granados not must.PST.PFV.3SG have.INF much time for
componer=la, a juzgar por el apresuramiento de
 compose.INF=it to judge.INF by the haste of
la escritura,
 the handwriting

‘It probably was an assignment from the Philharmonic Society of Barcelona and Granados apparently did not have much time for composing it, judging from the haste of the handwriting,’ (CREA, press, Spain, 1996)

a. *y aparentemente Granados no tuvo mucho tiempo*
 and apparently Granados not have.PST.PFV.3SG much time
para componer=la, a juzgar por el apresuramiento de
 for compose.INF=it to judge.INF by the haste of
la escritura,
 the handwriting

‘and apparently Granados did not have much time for composing it, judging from the haste of the handwriting,’

When *dever* and *deber* express truth-commitment, i.e. subjective epistemic modality, as in the cases discussed in Sections 3 and 4 of this chapter, the paraphrases with *aparentemente* is infelicitous. Consider (40), which is a repetition of (24) from Section 3.5:

(40) Portuguese

Eu não estava olhando quando eu me esbarrei
 I not COP.TEMP.INF looking when I REFL.1SG collide.PST.PFV.1SG
em você... deve ter sido o destino.
 in you must.3SG AUX.INF COP.PTCP the destiny

‘I didn’t look when I collided with you... it must have been destiny’ (= 24)

a. *??aparentemente foi o destino.*
 apparently COP.PST.PFV.3SG the destiny
 ‘apparently it was destiny.’

The paraphrasis with *aparentemente* is inappropriate here due to the fact that ‘destiny’ is something one can believe in, but for which there cannot exist any kind of evidence.

An even clearer case is example (41), which is uttered in a semi-formal situation of a linguistic interview. The speaker seems to know what is expected from her and she is also aware of the fact that she is one of many interviewees.

(41) Portuguese

[The informant has been asked to tell about something that happened to someone else]

eu tenho um tio...[...] e ele teve uma amante..

I have.1SG a uncle and he have.PST.PFV.3SG a lover

sabe... apesar_que acho que vocês já deve [sic]

know.2SG although think.1SG that you.PL already must.2SG

ter ouvido muita história de amante...

AUX.INF heard many history of lover

‘I have an uncle... [...] and he had a lover... you know?... although I think you must have heard already lots of stories of lovers’ (Iboruna, 100)

a. ??*apesar_que acho que vocês aparentemente já têm*

although think.1SG that you.PL apparently already AUX.2PL

ouvido muita história de amante...

heard many history of lover

‘although apparently you have already heard lots of stories of lovers’

In this example, the speaker just assumes that in these interviews many stories of secret love affairs are being told. As the interviewee does not know any of the other interviews, she cannot have any evidence at all. This is why the paraphrase with *aparentemente* is odd.

In Sections 3.4 and 3.5, respectively, there are two Spanish examples (21b) and (25), respectively, containing tag-question asking for the confirmation of the truth of the preceding Propositional Content. (42) is a repetition of (21b) from Section 3.4, with some context added.

(42) Spanish

Los años de Robespierre y Danton debieron de

the years of Robespierre and Danton must.PST.PFV.3PL PREP

ser terribles en Francia, ¿no es cierto? Usted

COP.INF terrible in France not COP.3SG true you.FORM

pudo comprobar=lo.

can.PST.PFV.2SG.FORM verify.INF=it

‘The years of Robespierre and Danton must have been terrible in France, isn’t it true? You were able to verify this.’

a. ??*Aparentemente los años de Robespierre y Danton*

apparently the years of Robespierre and Danton

fueron terribles en Francia, ¿no es cierto?

COP.PST.PFV.3PL terrible in France not COP.3SG true

‘Apparently, the years of Robespierre and Danton fueron terrible in France, isn’t it true?’

The fact that the speaker adds the tag question *¿no es cierto?* ‘isn’t it true?’ implies that she or he asks for confirmation of the truth of what she/he just has claimed to be true. What makes the case even clearer is the fact that the speaker continues to say that the addressee is in the possession of evidence. Therefore, the evidential paraphrase (42a) is clearly out of place.

What we can conclude from all these examples is that *dever* and *deber* can express both inferential evidentiality and subjective epistemic modality. This is not surprising, since the two notions are in fact closely related. Although inferentiality is unrelated to truth-commitment, the (primary or secondary) speaker will probably be committed to the reliability of the information of a proposition which he or she inferred. Therefore, in practice, the distance to truth-commitment is not so big (Nuyts 2017: 73).²³

It may well be that *dever* and *deber* are on their way to develop into fully evidential auxiliaries. Such a development would be plausible particularly in the case of Spanish *deber*, because there is a competing expression within the domain of epistemic modality, *tener que* ‘have to’. This is not (yet) the case in Portuguese, where the cognate periphrases with *ter que* and *ter de* express dynamic and deontic modality only.

In our view, the double status of *dever* and *deber* as expressions of inferential evidentiality and of subjective epistemic modality need not be a problem for FDG. As both subjective epistemic modality and inferentiality operate on the Propositional Content, we can simply say that the two modals can express both functions, as indicated in Table 2.

Table 2. The functions of modal auxiliaries in Brazilian Portuguese and Spanish

	Propositional Content (p ₁)	Episode (ep ₁)
<i>evidentiality</i>	inference (<i>dever, deber</i>)	deduction
<i>modality</i>	necessity (<i>dever, deber</i>)	possibility (<i>poder</i>) probability (<i>dever</i>)

23. “If a speaker, for instance, indicates high reliability of an inference from facts to a possible state of affairs it is very hard not to understand that s/he is also quite sure that the state of affairs applies” (Nuyts 2017: 73). Nuyts uses the concept of ‘state of affairs’ instead of ‘proposition’, because he rejects the distinction between SoAs and propositions adopted in FDG and its predecessor Functional Grammar (cf. Nuyts 1992).

6. Conclusions

We have shown in this chapter that it is possible, on the basis of independent operationalized criteria, to distinguish between the use of modal auxiliaries as expressions of objective and subjective epistemic modality, thus confirming the linguistic relevance of this distinction. In FDG objective epistemic modality operates on the Episode and subjective epistemic modality on the Propositional Content.

Furthermore, the objective – subjective dichotomy turned out to be relevant for the semantic subcategories possibility, probability and necessity as expressed by these modal auxiliaries, in the sense that the auxiliary expressions of possibility and probability turn out to encode objective modal distinctions, whereas the auxiliary constructions of certainty (i.e. epistemic necessity) express a subjective meaning.

More concretely, this very distinction helps to disentangle the similarities and differences in the functions of the modals in the two major Iberoromance languages. The modal expression of possibility is *poder* in both languages, and in both languages it behaves in very much the same way. There is, however, a considerable difference between Portuguese *dever* and its Spanish cognate *deber*, the latter being restricted to performing subjective functions, whereas the former can fulfil both objective and subjective functions, depending on whether it expresses probability (objective) or certainty (subjective).

With respect to the subjective functions, we have shown that *dever* and *deber* can express both epistemic modality and inferential evidentiality. It seems as though both are on their way to evolve into grammatical expressions of inferential evidentiality only.

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