MODAL SUBJECTIVITY AND TYPES: AN EMPIRICALLY MOTIVATED ACCOUNT

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Resumen

El presente trabajo examina la relación entre subjetividad (en tanto que orientación al hablante) y tipología modal (dinámica, deóntica, epistémica). La revisión de las dos propuestas teóricas más significativas al respecto ofrece una base sobre la que construir un procedimiento capaz de determinar con precisión los límites extensionales de la subjetividad modal y su distribución en relación con los distintos tipos modales.

Palabras clave: subjetividad, objetividad, tipo modal.

Abstract

This paper studies the relation between subjectivity (understood as orientation to the speaker) and modal typology (dinamic, deontic, epistemic). The revision of the two most significant approaches to the topic provides a basis on which to build a procedure capable of stating the precise extensional limits of modal subjectivity and its distribution in relation to the different modal types.

Key words: subjectivity, objectivity, modal type.

Résumé

Ce travail examine la relation entre la subjectivité (en tant qu'orientation du sujet parlant) et la typologie modale (dynamique, déontique, épistémique). La révision des deux propositions théoriques les plus significatives à ce sujet offre une base à partir de laquelle on peut construire un procédé capable de déterminer avec précision les limites extensionnelles de la subjectivité modale et sa distribution en relation avec les différents types modaux.

Mots-clés: subjectivité, objectivité, type modal.

Sumario

1. Introduction

The study of modal verbs can be seen as striving to account for two different yet related questions: (a) how many different modal meanings are there?, (b) which particular verbs express which modal meanings? In my view, these questions underlie major contemporary linguistic research into modal verbs.

Subjectivity is one of the many semantic concepts that have been used to provide an answer to questions (a) and (b). Palmer (1986: 4) lists subjectivity along with attitudes and opinions, speech acts, non-factivity, non-assertion, possibility and necessity as the relevant areas of meaning involved in modal semantics. However he notices two facts about these components: that they do not exclude one another, but rather interact into the making of modal meanings, and that their definition is, in practice, "vague and difficult to apply with any degree of precision, and do not lead to clearly distinct categories" (Palmer (1986: 4)). It is not difficult to agree with Palmer that no categorical answer to questions (a)-(b) above can be made until the conceptual and empirical basis of the alleged components are cleared up.

It is the primary purpose of this work to bring into the discussion on modal subjectivity a number of empirical tests which are precise and applicable enough to yield a classification of the different modals and modal meanings as subjective or objective. In so far as this objective is reached, the possibility will exist to advance an answer to questions (a)-(b) on the basis of the resulting subjective classification.

But now, the question is where to look for such reliable tests. The strategy I will follow is to revise those works on modal verbs and subjectivity which, to use Palmer's characterisation, have rendered the concept inapplicable and vague. On a close inspection, these works can be shown to differ precisely in their understanding of the exact relation between subjectivity and questions (a) –(b) above. At the same time, their vagueness is not so absolute as to leave us unaided in our attempt to make the concept more accurate. Quite on the contrary, these works (at least the representative samples reviewed below) make strong conceptual assertions inviting the empirical work undertaken here.

2. Two theories of modal subjectivity

Semantic theories of modal meaning differ in the treatment and status granted to subjectivity. Most of these theories have identified subjectivity with one kind of modal meaning, namely epistemic meaning. A smaller group of theories have challenged this identification and advocated a distinction between subjectivity and objectivity within all major modal types[1].

Among the first group of theories we can include Hoffman (1976), the first scholar to draw a general division of modal verbs into root and epistemic modals. In general, generative works like Ross (1969) or Pullum and Wilson (1977) accept this division and attribute it, among other things, to the expression or not of the speaker's opinions and attitudes[2]. In a

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1   I will, following practice coined by Palmer (1986), refer to meaning distinctions between modals as modal types.

2   But see below for data and discussion challenging this division.

Functional Grammar perspective, Halliday (1970) reaches a similar conclusion. Finally, cognitive linguists like Langacker (1990, 1991), Nuyts (1993), Pelivás (1996), or Nakamura (1997) have also adopted this distinction.

In the second group of theories we can include Lyons (1977) or Perkins (1983) . These authors have argued in defence of a pervasive presence of the opposition subjectivity/ objectivity throughout the modal type paradigm. In other words, they defend the unmarked character of all modal types in relation to subjectivity: they can all be either objectively or subjectively used.

Obviously, the bone of contention between the revised theories is epistemic modality. Theories in the first group would readily accept subjectivity and objectivity outside the limits of epistemic modality (e.g. in deontic modality), but not within them. Seen in this light, the discussion around subjectivity and modal verbs turns into a discussion on the extensional and intensional characterisation of modal types, i.e. the objective set out in question (a) above. Special attention will hence be paid to claims regarding modal types and subjectivity as well as to empirical procedures capable of checking both these claims and the concept of subjectivity explicitly or implicitly emerging from them.

The following is a revision of the major theoretical tenets of these two encountered visions of modal subjectivity. This revision will be centred on representative samples of each position (Langacker (1991) for the first one and Lyons (1977) for the second). However, as much as possible of the remaining works will be introduced where felt to be relevant.

I start with Lyons' theory of subjective and objective epistemic modality.

2.1. Logical theories of modal subjectivity

Lyons holds that a sentence like (1) is inherently ambiguous between an objective and a subjective reading.

(1)   Alfred may be unmarried.

Under its subjective reading, (1) conveys the speaker's opinion or belief that it is possible that Alfred is unmarried. Its objective reading expresses the fact that it is possible that Alfred is unmarried. The context that Lyons offers to make the latter interpretation salient is one where Alfred is a member of a group of ninety people thirty of whom are unmarried. In such a context, the possibility of Alfred being unmarried is statistically rather than subjectively supported.

Lyons recognises the empirical objectionability of this distinction[3], but he defends it on theoretical grounds.

> This is not a distinction that can be drawn sharply in the everyday use of language; and its epistemological justification is, to say the least, uncertain (...) It is nonetheless of some theoretical interest to draw the distinction between subjective and objective epistemic modality. (Lyons (1977: 797))

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3   Palmer (1986: 53) finds (1) " a theoretically possible, but rather contrived, example of objective epistemic modality".

Let us briefly review the theoretical arguments that lead Lyons to make such a controversial distinction.

Lyons (1977) adopts the position that natural language modal expressions are tied to the logical notions of possibility and necessity[4]. He sees the first interpretation of (1) above as reflecting a view of epistemic modality which he finds very popular among linguists but which is not reducible to a treatment in terms of standard systems of epistemic logic (by which he means the standard systems of alethic logic[5]). He concludes that

> We will try to account for this difference between the typically linguistic and the typically logical view of epistemic modality, in the distinction that we will draw between subjective and objective epistemic modality. (Lyons (1977: 792))

The next obvious step is the one that Lyons takes. If objective epistemic modality expresses logical modality, and subjective epistemic modality is logical modality plus linguistic content, linguistic structure must reflect the difference at some point or other. That is to say, the distinction between objective and subjective epistemic modality must be grammaticalised rather than simply lexicalised[6].

Lyons distinguishes between what he calls an *I-say-so* or neustic component and an it-is-so or trophic component of utterances. He argues that epistemic modality consists in the same modal operators qualifying these two different components: the *I-say-so* component in the case of subjective epistemic modality, and the *it-is-so* component in the case of objective epistemic modality. This account leaves us with the following approximate paraphrases of the two interpretations of (1) that we are discussing[7].

(1)   a   I think Alfred is unmarried.
       b   I say that it is possibly the case that Alfred is unmarried.

A very important consequence of this grammatical analysis of subjective and objective epistemic modality is that it renders them testable on empirical grounds. It is common

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4   These notions have operational status in the most basic branch of logic, alethic logic (logic of truth). The operators $\Diamond$ (possibility) and $\Box$ (necessity) stand in equivalence relations to one another through the negative operator ($\sim \Diamond$ $p \equiv \Box \sim p$, $\Diamond \sim p = \sim \Box \sim p$, $\Box p = \sim \Diamond \sim p$, $\Box \sim p = \sim \Diamond p$, etc).

5   As is well known, there are different branches of modal logic (doxastic logic or the logic of beliefs, deontic logic or the logic of prescriptions, and epistemic logic or the logic of knowledge) which take root in the procedures of alethic logic. These branches of logic would be nearer to what Lyons' calls the linguists' view of epistemic modality than to his objective/ logical view of natural language epistemic modality. Lyons (1977: 797) recognises it when he says that "it is also difficult to draw a sharp distinction between what we are calling objective epistemic modality and alethic modality".

6   Whatever the difference between these concepts may be, Lyons himself does not explicitly use these labels in connection with the problem, but, as will become clear presently, he defines different structural environments for one and the other modal meaning.

7   The relation between the subjective interpretation of (1) above and the paraphrase in (1a) is not prima facie evident. Lyons justifies the metamorphosis operated on the I-say-so component by the modal operator on the basis that "its [the modal operator] function in the neustic position is to express different degrees of commitment to factuality" (Lyons (1977: 805)).

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belief that the *I-say-so* and the it-is-so component of utterances (and the elements associated with them) exhibit a markedly different syntactic and semantic behaviour. Lyons offers a number of criteria to test the objective/ subjective distinction. Among them, two are particularly relevant to the present discussion: *if*-clause embedding and insertion in the complement of a factive operator.

In a conditional clause, only elements belonging to the it-is-so component of the utterance can fall within the scope of the *if* operator. Borrowing exemplification from Infantidou-Trouki (1993), it can be observed that the parenthetical in (2) does not fall within the scope of *if*, i.e. is not part of the conditions under which the apodosis of (2) is true. In Lyons' words, the parenthetical does not belong in the propositional content or it-is-so component of (2).

(2)   If, I think, he is in Berlin, he will not be here for the party.

Applied to a case like (3), the test reveals, in Lyons' opinion, that epistemic *may* can be interpreted as part of the *it-is-so* component of the utterance.

(3)   If it may be raining, you should take your umbrella.

Lyons sees (3) as possible though "undoubtedly rare in English" (Lyons (1977: 806)).

The second test proposed is that of embedding in the complement of a factive predicate. The test works this way: factive predicates entail the truth of its complement; consequently, only the propositional or *it-is-co* components of such complement can fall within the scope of the factive predicate. Lyons puts (4) as an example of an epistemic modal falling within the scope of a factive operator.

(4)   I knew that Alfred must be unmarried.

Effectively, *must* can be read epistemically in (4) and is certainly a part of the complement clause whose truth follows from the truth of (4).

The main arguments of Lyons' defence of the subjective and objective epistemic modality can be summarised in the following four points:

(i) Modals express the logical notions of possibility and necessity; objective modality consists in the more or less pure expression of these logical notions in the realms of epistemic and deontic modality; subjective modality relates them to speaker's beliefs/ knowledge (for epistemic uses) or desires (for deontic modality).

(ii) The only place to establish the grammatical distinction is utterance structure; two places of occurrence, the *I-say-so* component, and the *it-is-so* component are responsible for the distinction between modal objectivity and modal subjectivity.

(iii)   Being a grammatical distinction, the opposition is open to empirical confirmation; *if* clause embedding and insertion in the complement of a factive predicate can make objective from subjective uses of modals.

In what follows, I want to argue that, being correct in itself, assumption (iii) does not confirm the previous ones. Rather, it seems to demand an important revision of them.

As I argued before, *if*-clause embedding and complementation of a factive predicate are good tests to check that a given expression belongs to the propositional content of an

utterance. The problem is that, confronted with the kind of expressions revised in this work, they do not seem to favour Lyons' position on modal subjectivity.

An utterance like (3) above (repeated as (5) now) is hardly acceptable. Native informants agree that this utterance is definitely awkward, though perhaps just understandable[8].

(5)   If it may be raining, you should take your umbrella.

Deontic modals exhibit a different behaviour in conditional contexts. Deontically interpreted modals are judged to be ambiguous between a subjective and an objective reading by Lyons. He argues that an utterance like (6) is ambiguous between an interpretation in which the speaker reports an external imposition (objective reading) and one where he himself is the imposer (subjective reading).

(6)   You must do your homework.

Embedded in the *if*-clause of (7), the deontic reading of *must* sounds perfectly natural.

(7)   If you must do your homework, everyone else in the class must too.

It is also very obvious that (7) can only be interpreted objectively, i.e. with a deontic source or imposer which is not directly identifiable with the speaker, but with some external, non subjective authority.

(6)-(7) show that conditional contexts systematically exclude subjective readings of modals. The fact that deontic *must* in (7) is allowed in this structural setting demonstrates that it has a non subjective reading. Furthermore, the fact that such a reading appears in all other contexts in which the subjective reading applies can be taken as proof of its basic rather than derived character. As for epistemic readings of modals, the unacceptability of (5) shows that there are not empirical grounds to defend the existence of an objective epistemic *may* (at least not as there are for an objective deontic one[9]).

The second test I have chosen from the various ones Lyons offers is embedding in complements of factive predicates. In this case, the example put forward by Lyons ((4) above, (8) below) is less objectionable.

(8)   I knew that Alfred must be unmarried.

Effectively, (8) is not as awkward as (5). Nevertheless, it is also a matter of fact that the results of the test do not carry over to present forms of the factive verb in (8).

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8   Curiously, they seem to coincide with Palmer's (1986) judgement above that the epistemic interpretation of the example sounds contrived, though, maybe, theoretically plausible. The indulgence with which some speakers tend to judge (5) may be due to the epistemic modal chosen. Notice that an utterance like (i) is manifestly less understandable than (5) above.

(i) If it must be raining, you should take an umbrella.

9   To a great extent, Lyons' theory can be seen as an attempt to have a distinction between objectivity and subjectivity carry over from an area of modal meaning (deontic modality) where it is relatively unproblematic into another (epistemic modality) where it is much more so.

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(9)   I know that Alfred must be unmarried.

In a sentence like (9), the epistemic sense of *must* has died out to the point that it is hardly distinguishable from the dynamic sense of *have to* in (10)[10].

(10)   I know that Alfred has to be unmarried.

As is well-known, and will be argued at length below, dynamic readings of modal verbs never convey subjective (speaker-based) evaluations of reality; i.e. they are always objective. On this basis, Lyons would be right in his identification of (8) with objective modality, but would be wrong in his identification of it with epistemic modality.

The main conclusion of the discussion on (8)-(10) seems to be that, contrary to what assumption (i) above states, subjectivity is not neutral to all modal semantic distinctions. Epistemic modality is never objective but always subjective. In this sense, the tests put forward by Lyons confirm the view of modal subjectivity which is so typically espoused by linguists and refutes the view of subjectivity advocated by logicians and linguists who, as Lyons, favour a logically-based approach to modal meaning.

The last point that remains to be addressed is the one raised by assumption (ii) above: does modal subjectivity have an overt structural reflex in the *I-say-so* component? In my opinion, it can be shown that this is not necessarily the case, not at least on the basis of Lyons' argumentation. Remember that (1a) and (1b) (repeated now as (11a) and (11b)) were the approximate paraphrases of the subjective and the objective interpretations of (1) (repeated as (11) now), respectively.

(11)   Alfred may be unmarried.
(11)   a   I think Alfred is unmarried.
        b   I say that it is possibly the case that Alfred is unmarried.

(11a), the alleged paraphrase of subjective *may* contained a complement clause standing for the *it-is-so* component of (11), and a cognition verb (viz *think*) standing for the combination of the *I-say-so* component and the possibility operator contributed by the modal. Accepting that (11a) is an appropriate paraphrase of (11), it can be shown that it cannot be the result of a blending of the modal and the *I-say-so* component. To see why, consider (less controversial) cases of blending between mood and the *I-say-so* component.

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10 It is not exclusive of *must* to have a marginal non-subjective reading. In a corpus-based study, Coates (1983: 132) attests the existence of a relatively marginal root possibility *may*, semantically closer to ability *can* than to epistemic *may*.

(i)   I am afraid this is the bank's final word. I tell you this so that you may make arrangements elsewhere if you are able to.

Notice that, similarly to dynamic *can* (cf. (ii)) but contrary to epistemic *may* (cf. (iii)), this interpretation of *may* does not admit negative disjunction.

(ii) * I am afraid this is the bank's final word. I tell you this so that you may or may not/ can or cannot make arrangements elsewhere.

(iii) She may or may or may not make arrangements elsewhere.

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(12)		Is it raining?
(12)	a	I wonder if it is raining.
(13)		It's raining.
(13)	a	I tell you that it is raining.

Lyons (1977: 805) explicitly defends that (11a) is in the same relationship to (11) as (12a) to (12) and (13a) to (13). This simply seems to be wrong. It is hardly arguable that the mood element paralinguistically or implicitly conveyed by (12) and (13) can be explicitly expressed by the speech verbs of (12a) and (13a), respectively. But it is no less true that *think* is not a speech verb, and that, at difference of (12a) and (13a), (11a) can be the complement of a speech verb and still be an appropriate paraphrase of (11).

(11)	b	I say that I think that Alfred is unmarried.
(12)	b	I say that I wonder if it is raining.
(13)	b	I say that I inform you that it is raining.

The obvious conclusion is that the modal content of *may* can be made explicit independently of the *I-say-so* component. Consequently, nothing in the paraphrase of (11a) forces us to think that epistemic modals qualify the *I-say-so* component of the utterances in which they occur[11].

Summing up, it can be concluded that the main claim of what I have called logical theories of subjectivity (i.e. the subjectivity/ objectivity opposition pervades modal types) is not empirically tenable. Nevertheless, the proofs put forward, though challenging the conceptual core of these theories, seem to provide a reliable basis on which to test the alternative view that the subjectivity/ objectivity opposition underlies major modal types. To this point I will turn presently.

2.2. Linguistic theories of modal subjectivity

Of the different theoretical traditions advocating a division of modal types into epistemic/ subjective and non epistemic/ objective modals I have chosen Cognitive Grammar for illustration and debate. Cognitive linguists generally[12] have been interested in the

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11 As already stated (cf foot note 8), the distinction is easier to defend in the case of deontic modality than in the case of epistemic modality. For example, a subjective reading of the deontic modal in (i) would render it synonymous with (ia), whereas an objective reading would make it roughly paraphraseable as (ib).

(i) You must do your homework.

(ia) I order you to do your homework.

(ib) I say that it is your duty to do your homework.

The paraphrases make it obvious that the subjective reading influences (qualifies) the I-say-so component, while the objective reading falls somewhere below that component (probably in the *it-is-so* component). It goes without saying that this theoretical interpretation rests on the assumption that the two interpretations of (ia) and (ib) are autonomous rather than derived from one another, a point which needs to be confirmed on independent grounds and which will be taken up in the final part of this work.

12 I include under this label the theoretical contributions of Talmy (1985, 1988), or Sweetser (1990), who are, properly speaking, cognitive linguists rather than adherents to Langacker's (1990, 1991) Cognitive Grammar.

relation between modal types and subjectivity. Their work is especially interesting in the context of the present discussion because they have made very precise contributions regarding the theoretical status of subjectivity and its relation to modal types.

The specific theoretical contribution that I will focus on is subjectification and epistemic grounding. The former concept alludes to the grammaticalisation of subjectivity, the latter to the application of subjectivity to modal types. The programme seems suggestive.

2.2.1. Subjectification and epistemic grounding

Subjectification was originally postulated by Langacker as a grammatical process capable of accounting for a wide range of otherwise disconnected data. It consists in "the semantic extension by which an entity originally construed objectively comes to receive a more subjective construal" (Langacker (1991: 554)). To illustrate this point, consider the metaphorical extension in (15) of the factual meaning of the verb *rise* in (14).

(14)   The mountain rose by orogeny.
(15)   The mountain rose gently from the bank of the river..

In (14), *rise* describes the physical movement of an object (viz *the mountain*) designated by a part of the sentence. In (15), some kind of movement is expressed, but it is neither a physical movement nor one undergone by an object explicitly designated by a part of the sentence. Rather, it is the conceptualiser (i.e. the person figuring out the meaning of the sentence) who somehow moves subjectively up the mountain. The examples resume the two components of subjectification: (a) a metaphorical transfer of a predication from one domain to another (e.g. in the objective domain, *rise* designates physical upward motion, in the subjective domain, *rise* designates conceptualiser's motion), and (b) reorientation of the predication from one element in the objective domain to one element in the subjective domain.

Langacker sees subjectification as underlying the opposition between objective and subjective uses of modals. As a consequence, he sees the objective/ subjective opposition as a derivative one: subjective uses of modals derive from objective ones. Langacker calls the process by which modals become more subjective epistemic grounding. An entity is epistemically grounded when, in Langacker's words, "...its location is specified relative to the speaker and hearer and their spheres of knowledge"[13].

Abstracting away from specific terminology, it can be established that Langacker sees epistemic/ subjective uses of modals as derived from main verbs through an intermediate objective phase. He considers that modal verbs are predications which relate a process (landmark process) to some element which stands in a modal relation to it (the source of potency). The three steps from main verb to epistemic modal are depicted in (14). Roughly, dashed arrows represents the potency relation and thick lines the explicitly communicated content (called the profile). G stands for ground (the speaker).

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13 More generally, grounding is the fully grammatical process by which the thing denoted by a noun or the state of affairs denoted by a clause are located relative to the speaker.

(14)
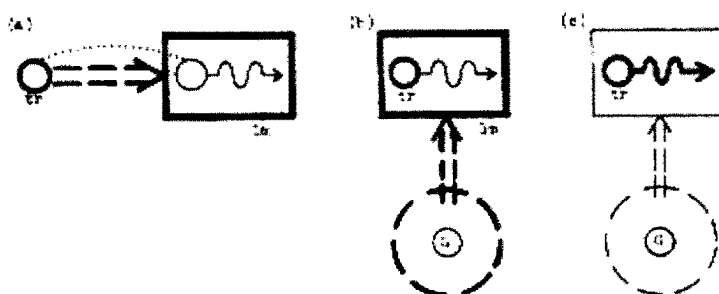
Stage (a) of the subjectification process is that in which the element which stands in a modal relation to the state of affairs described is itself a member of that state of affairs[14]. Pattern (b) is that where the locus of potency has receded into the ground but is not totally identifiable with it, but with some aspect of it. Finally, pattern (c) reflects the semantics of modals where the speaker carries the modal weight of the predication.

In order to illustrate (14) with modal verbs, I resort to Langacker's own examples. Pattern (a) characterises the main verb stage of modal verbs; i.e. the diachronically past stadium of language when *cunnan* (the historical source of current *can*) meant *know*. Pattern (b) is found in deontic modal verbs like *must* in (15), where the speaker merely reports someone else's opinion that noises are not desirable or advisable.

(15)   This noise must stop immediately! (you know what the landlord thinks about noises at night)

Finally, pattern (c) can be illustrated with (16), uttered by the speaker as an indication of his own position that it is necessary, advisable or obligatory that the noise should stop.

(16)   That noise must stop immediately!

It follows from (14) that modal typology depends on modal potency and, more specifically, on its location. This provides a very general, programmatic answer to question (a) above. (14) is sufficiently explicit about the location of potency. Three elements are identified as maximally relevant to this effect: sentence subject, context and speaker.

Regarding modal types, Langacker only considers deontic and epistemic modality. As may be expected from a linguistic theory of subjectivity, we find epistemic modality classified as a genuinely subjective modality. In the case of deontic modality, Langacker is not so

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14 García Núñez (1999 and forthcoming) offers some evidence that the so-called volitive *will* (cf. Haegeman (1983, 1989)) can be seen as a present-day English remnant of this pattern. This requires an analysis of this modal as an agent-oriented deontic modal. Being anchored in the thematic agent (i.e. a grammatically specified participant), the modal comes out fully objective according to the standards fixed in this work. Although I will centre on patterns (b) and (c), it should be noticed that volitive *will* fits in the approach to modal subjectivity sketched out below.

categorical in his subjectification analysis. He finds that most modals are ambiguous between an objective and a subjective reading. In this he coincides with most other cognitive proposals[15] as well as with logical theories of modal subjectivity. But what is interesting is that in both cases (epistemic modality and deontic modality) Langacker provides little empirical evidence for his position. He relies on judgements like the ones offered to explain the relation between (15) –(16) and (14). But this strategy is utterly circular: subjectification patterns are introduced to distinguish between modal meanings and to account for their diachronic ties, but when asked to prove their validity, they resort to the modal types that they supposedly help to convey. As was made evident in our discussion of logical theories of modal subjectivity, this seems to be common to sil of theories which have had a word to say on modal subjectivity. However, exactly as in the case of logical theories, subjectification makes claims regarding its grammatical status which are open to empirical confirmation and which, I believe, can give access to the exact locus of potency of all modals. Once this is established, the exact nature of the potency exerted (i.e. the modal type) comes out naturally.

2.2.2. Subjectification tested: The conditional test

(14) makes an important claim regarding the grammatical status of objectivity and subjectivity. It was mentioned in passing before: thick dashed lines represent the explicit content of the utterance, whatever is considered to be part of the explicitly communicated message[16]. In subjectification pattern (c) the locus of potency is identified with the speaker. Consequently, modal potency needs an individual and a speech time as reference in order to be well-formed. This is what Langacker calls grounding. For example, infinitive clauses, being tenseless, are not temporally grounded. As was said above, epistemic grounding is another kind of grounding, in fact one complementary to time grounding (most modals do not express time and are incompatible with tense markers). It follows from this line of reasoning that modals patterning like (c) in (14) will not be as likely as those patterning like (b) to appear in conditional *if*-clauses. It must be recalled from our revision of logical theories of modal subjectivity that these structural settings were hostile to subjective readings of modals. The reasons cited there were shaped in the terminology and conceptual framework under revision at the moment. In the present context, the reasons are the same, but we can say, using current terminology, that conditional clauses are not grounded: they do not allow tense markers with temporal meaning (temporal grounding), and the state of affairs they express need not be related to the speaker's actual beliefs or knowledge (epistemic grounding). We can hence expect that conditional embedding will make pattern (b) modals from pattern (c) ones on an empirically founded basis.

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15 Cf. Sweetser's (1990: 67-68) interesting examples and discussion.

16 The terminology is somewhat illegitimate in the context of a discussion on Cognitive Grammar and cognitive linguistics generally, for it is a stronghold of this theoretical school that the distinction between grammar and pragmatics is not a clear-cut one. Cognitive linguists would generally accept the position that inferential phenomena fall somewhere outside the purview of grammar, but would certainly reject the view that deixis is a pragmatic phenomenon. For them, all conventional references to extragrammatical elements are grammatical. In what follows I will sacrifice accuracy to explanatory comfort in my use of terms like explicit content and implicit content.

It should be recalled at this point that the application of the conditional test to epistemic and deontic modals yielded the following classification of these types: epistemic modals were subjective, and deontic modals were objective. The theories revised now make the right empirical prediction regarding epistemic modal verbs (i.e. they belong to subjectification pattern (c) in (14)), but miss the second one, for they ascribe deontic modal verbs to patterns (b) and (c) indistinctly. The conditional test does not bear out this result. And not simply because some deontic modals are objective, but because some others are fully subjective. Let us take up some cases and ask the conditional test for their subjectivity.

An utterance like (17) contains an instance of the modal verb *should* which, in the context provided, is very likely to be interpreted as deontic.

(17)   Peter should go to China.

Embedding (17) in an *if* clause reveals that it is not objective at all.

(18)   ? If Peter should go to China, I should go too.

The fact that, unlike deontic *must* and *may*, *should* cannot be inserted in a conditional protasis shows that the latter modal is fully subjective (i.e. makes reference to the speaker's desires or impositions). This is why it is unacceptable in contexts where other deontic modals are acceptable only if interpreted non-subjectively.

The point can be generalised to other deontic modals which are fully subjective. This is the case of the so called commissive *shall*[17] and of the idiomatic *had better* in (19) and (20), respectively.

(19)   * If Peter shall go to China next year, I will see to it that he does.
(20)   * If Peter had better go to China, I will see to it that he does.

The deontic readings of these modal forms are not embeddable in conditional *if* clauses. They pattern with deontic *should* because they are fully subjective deontic modals.

To sum up, we can say that linguistic theories of modal subjectivity make appealing characterisations of subjectivity in terms of modal potency. The source and the nature of modal potency are kept conceptually separate. This is the way they should stand, at least if it is assumed, as I am assuming here, that objectivity/ subjectivity (i.e. the source or locus of modal potency) can be informative about modal types (i.e. different natures of modal potency). Unfortunately, the theories reviewed in this section abandon the distinction as soon as the practical work starts. I think this is the wrong strategy, and I hope to have shown that it leads to wrong results. One of the strengths of linguistic theories of modal subjectivity (and the sole reason why it was chosen as the target of the present revision) is that they identify modal meanings with different subjectivity patterns. Although this identification is certainly not as weak as postulated by logical theories of modal subjectivity, it does not seem to be as strong as posited by linguistic theories of modal subjectivity either.

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17   Palmer (1986: 115-116) draws on Searle's (1983: 166) definition of commissive illocutionary acts as those "where we commit ourselves to do things". For Palmer these are rarely grammaticalised in the English language, "though English *shall* with 2nd and 3rd person forms is clearly of this type" (Palmer (1986: 115)).

In what follows, I combine the conditional test with new empirical evidence in pursue of a non-circular definition of subjectivity which can be informative about the exact relation between the nature (types) and the source of verbal modality.

3. Subjectivity and modal types: an empirically motivated account

As pointed out, the above confrontation of subjectification patterns with the conditional test is done only at the expense of enlarging the conceptual framework in which the patterns were shaped. There is a more straightforward test to check the predictions made by the theories under revision. The test relies heavily on the neutral notion of locus of modal potency and makes scant use of the related but dangerous notion of nature of modal potency. Besides, carefully handled, the test reveals further and important aspects of the relation between subjectivity and modal types.

The test consists in a systematisation of Lang's (1979: 210) observation that a sentence like (21) is ambiguous in a way that one like (22) is not[18].

(21)   Peter drinks another schnaps, because it is probable that he is
         addicted.
(22)   Peter drinks another schnaps, because he is probably addicted.

(21) can be interpreted as stating that Peter ignores or that he knows that his likely addiction is the cause for his drinking another schnaps. In (22), Peter's drinking another schnaps is not caused by his knowing about his probable addiction. These facts are interpreted by Nuyts (1993: 953) as an indication of the different kind of modal qualification made by the adjective *probable* in (21) and by the modal adverb *probably* in (22). The former can be interpreted as anchored in the subject of the matrix clause or in the speaker; the latter must be interpreted as anchored in the speaker. In the terminology used here, we would say that the former is objective, and the latter fully subjective.

So considered, the test aims at the same kind of phenomena reviewed by the conditional test, but unlike this one, it addresses the issue of the locus or source of modal potency quite explicitly: modals are straightforwardly shown to orient to the speaker or to participants other than the speaker, and this is achieved by making the least assumptions possible regarding the nature of the modals involved, which is a desirable outcome, given the danger of circularity pointed out above.

3.1. Epistemic modals

Let us consider epistemic modals first.

(23)   Peter drinks another schnaps because he may be addicted.
(24)   Peter drinks another schnaps because he must be addicted.

In both (23) and (24), with epistemic readings of *may* and *must*, Peter's drinking another schnaps can be caused by anything but the epistemic qualification in the corresponding *because* clauses. The modal qualification is hence unambiguously anchored in the speaker; that it to say, they are fully subjective. The new test bears out the results of the conditional test.

18 The original examples were in German. I offer the English translation.

3.2. Deontic modals

Deontic modality constitutes the second major modal type to review. Logical theories of subjectivity, it should be recalled, have it that deontic modality can be either objective or subjective. I concluded on the basis of application of the conditional test to deontic readings of *may* and *must* in 2.1. above that their subjective reading had a derived character with respect to their objective reading. Deontic readings of these modals were acceptable in conditional *if* clauses only on condition that they received an objective interpretation. Now, the orientation test seems to yield the same results.

(25)   Peter is learning Chinese because he must go to China.

Notice that in (25) a variety of interpretations regarding the modal source or locus of potency for deontic *must* are available, but that none includes the speaker. It can be interpreted that someone not explicitly mentioned in (25) is the compelling authority whose commands are followed by Peter; or it can even be interpreted that Peter himself is the sole source of potency. But it is not possible to interpret that the speaker is the participant who imposes on Peter the obligation to go to China. It seems hence possible to conclude that whatever is felt to be subjective in the deontic reading of *must* is pragmatically imposed upon a fully objective semantic core. But this, I want to argue, is only a plausible alternative. Nothing in the previous argumentation forces us to adopt this position. I will try to explain why. In order to do so, let us confront the fully subjective deontic modals reviewed in the previous section with our new subjectivity test.

(26)   * Peter is learning Chinese because he should go to China.
(27)   * Peter is learning Chinese because he shall go to China next year.
(28)   * Peter is learning Chinese because he'd better go to China.

It is rather striking that (26)-(28) should be unacceptable. We know from the discussion in 2.1. above that a subjective modal is not appropriate in an *if* clause. We also know that subjective epistemic modals do not fall within the scope of *because*, but why should a subjective modal be incompatible with a *because* clause? This seems to be due to the special relation between deontic meaning and causation: a deontic statement can be considered the cause of some behaviour only under certain conditions of generality or force; an individual's personal (subjective) desires do not count as a sufficient cause for a given course of action, not at least as regards the type of causation expressed by *because* clauses.

The point that we need to make here is that exclusively subjective deontic modals are not appropriate in *because* clauses. Now, it follows from these facts that the relevant modals make conventional, systematic reference to the speaker, and that they are hence semantically rather than pragmatically subjective. Considering that deontic modals like *must* and *may* can never occur in the reviewed contexts with a subjective reading, it becomes possible to argue that this reading is in fact a semantic alternative to, rather than a mere pragmatic reinterpretation of, their objective reading. Anyway, it is always possible to keep to the idea that the subjective reading is pragmatic and that it cannot arise in the conditional

contexts simply because they are incompatible with the subjective readings of deontic modals, whatever their linguistic origin or nature turns out to be.

Summing up: the proposed tests confirm that deontic modals do not constitute a homogeneous class regarding subjectivity. Some are subjective (*should, shall, had better*) and some are objective or objective and subjective (*must, may*). The data demand a revision of linguistic typologies based on a division between root and epistemic modality. As Palmer (1986: 103) points out, this general division was in part motivated by the need to blur the differences between deontic and dynamic modality. Speaker orientation was felt to be so strongly tied to epistemic modals that it became very tempting to put all other modals in a single class. The examples and discussion provides conclusive evidence that this is not a viable alternative, at least if deontic modals like *should, shall* or *had better* are taken into account.

The next question to ask is if there are fully objective, non subjective deontic modals. The literature on modality contains an abundance of references to fully objective deontic modality, which is identified with semi-modal verbs like *have to*. The *because* test, unlike the conditional one, can let us confirm this view.

Leech (1971), Palmer (1974), Perkins (1983) or Coates (1983) insist on the need to distinguish between deontic *must* and deontic *have to* on the basis that the former is, to use Coates' (1983: 55) words, "associated with a continuum of meaning from subjective to objective", and that the latter can only express objective modality[19]. Stated in simpler terms, the point is that deontic *have to* is compatible only with a deontic source of potency external to the speaker; deontic *must* does not exhibit such a restriction, it is compatible with a deontic source which is external to the speaker as well as with the speaker himself as the very deontic source.

Both of them being objective, deontic *must* and *have to* can be predicted to behave similarly, though not totally identically, in relation to the conditional test. In effect, both (29) and (30) are acceptable conditional clauses.

(29)   If Peter has to go to school every day in the afternoon, he won't be able to train three times a week.

(30)   If Peter must go to school everyday in the afternoon, he won't be able to train three times a week.

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19 Regarding the British variety of English, the opposition can be said to hold between *have to*, on the one hand, and *must* and *have got to*, on the other. Coates (1983: 52-54) claims on the basis of corpus examples like (i) below that *have got to* is not as fully objective as *have to*.

(i)   We've got to bear in mind that there is not one healthy fox.

Other corpus examples cited by Coates (e.g. (ii) below) lead Perkins (1983: 60-61) to dispute the claim.

(ii) This I think is something on which universities have got to begin now to take a stand on.

For Perkins both *have to* and *have got to* express external authority.

I think that Coates' position is more inclusive, for nothing in her account prevents *have got to* from having an external authority interpretation. The kind of ambiguous deontic source which Coates posits for *have got to* is similar to the one posited for *must*. This is born out by the fact that *must* can replace *have got to* in (i) and (ii).

It also follows from the above characterisation of these modals that *must* has lost part of its meaning possibilities in (30) while nothing of that sort has happened with *have to* in (29): (32) is ambiguous in a manner in which (30) is not: (31) is as unambiguous as (29).

(31)   Peter has to go to school everyday.

(32)   Peter must go to school everyday.

Consider now the results of the *because* test.

(33)   Peter wakes up at six o'clock because he has to be at school at seven o'clock.

(34)   Peter wakes up at six o'clock because he must be at school at seven o'clock.

In (33) Peter is fully aware of the fact that his waking up at six is caused by his having to be at school at seven, and the same happens with (34), where a subjective reading of *must* would render the whole utterance unacceptable.

These results answer the question that we have posed: some modals (more specifically, some deontic modals) are fully objective, and have no subjective reading whatsoever.

(33) and (34) also reveal an interesting thing about subjectivity, at least as expressed by deontic modal verbs like *must*. There is an interpretive possibility in (34) which does not arise in (33). As has been pointed out, both utterances are interpretable with a deontic imposer external to the speaker. This possibility is the only one available in the case of (33), but not in the case of (34). In (34) it can be interpreted that the source of the deontic imposition is Peter himself, a possibility not open to (33).

The data seem to bear out the traditional distinction between *have to* and *must* on the basis of their different subjective status: the former modal is fully objective but the latter is not. However, the discussion on (33)-(34) also makes clear that the non-subjectivity of *must* is not reducible to full objectivity, but can target to grammatically specified participants. In fact, it can be doubted, on the basis of the previous discussion, that the semantics of deontic *must* should be identified with the expression of fully objective deontic meaning. A plausible alternative, given the data, would be to assume that this modal conveys the expression of a deontic modality unmarked for subjectivity, i.e. without any specification of deontic source.

3.3. Dynamic modals

The only modal type which remains to be confronted with subjectivity tests is dynamic modality. The theoretical status of dynamic modality has been a point of controversy among linguists working in the field. For scholars favouring the root/ epistemic division, there is no need to posit a distinction between deontic and dynamic modality, both being instances of root modality, the opposite of epistemic modality. I hope to have offered evidence that this general distinction is not rooted in an empirically founded conception of modal subjectivity. The obvious conclusion is that dynamic "root" modals could have a special subjective status as well.

According to Palmer (1986: 102-103), an advocate of a separate dynamic type, dynamic modality is concerned with neutral or circumstancial modality, with subject-

oriented modality and with ability and disposition[20]. (35) is an example of circumstancial modality, (36) represents subject-oriented modality, and (37) stands for ability modality.

(35)   Litmus paper will turn red every time it gets wet.
(36)   Peter won't come to the party; he is annoyed with you.
(37)   Peter can speak three languages.

Application of the conditional and *because* tests reveals that these modals are fully objective.

(37)   a   If litmus paper will turn red every time it gets wet, it must be sensitive to H_2O.
        b   Litmus paper is used as a rain predictor because it will turn red every time it gets wet.
(38)   a   If Peter won't come to the party, it won't be fun.
        b   Peter plans to go to the cinema this evening because he won't come to the party.
(39)   a   If Peter can speak three languages, he must be very intelligent.
        b   Peter has applied for that job because he can speak three languages.

The (a) examples are unobjectionable. In the (b) examples, it is perfectly possible to understand that the modal qualification in the *because* clause is the cause for the action carried out by the main clause agent.

3.4. Disputed cases

Next I want to show how the proposed tests can help ascribe difficult cases to one modal type or another. Consider the case of non deontic *can*. Palmer (1974: 115) describes three different uses of *can*: ability, sensation and characteristic. Most other authors[21] prefer to call the last one the possibility use of *can*. The three uses are exemplified in (38)-(40).

(38)   He can lift a hundredweight.
(39)   I can see the moon.
(40)   Litmus paper can turn red.

There has been an important debate on the exact modal type expressed by *can* in (40). There are two different views: some linguists (Pullum and Wilson (1977: 784), Antinuci and Parisi (1971: 38)) consider that *can* is ambiguous between an epistemic (possibility sense of (40)) and a root meaning (ability sense of (38)); others (Perkins (1983), Coates (1983)) feel that possibility *can* is not epistemic. The arguments put forward are varied, as are the theoretical frameworks in which they have been launched[22]. What need interest us

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20   The latter two concepts are drawn from von Wright's (1951: 8) original characterisation of dynamic modality.

21   Cf. Antinuci and Parisi (1971: 38), Pullum and Wilson (1977: 784), Coates (1983: 93-99).

22   It is nonetheless interesting that theoretical arguments favour the same conclusion reached on the basis of subjectivity tests (i.e. possibility *can* is not epistemic). Pullum and Wilson (1977: 784), for example, defend that epistemic

here is that, given the tight correspondence between epistemic modality and subjectivity shown above, it becomes possible to check whether possibility *can* is an epistemic modal by testing it for subjectivity.

According to the conditional and *because* tests, *can* is not subjective: the modal is acceptable in the *if* clause of (41), and it can be part of what is known to the subject of the main clause in (42).

(41)   If litmus paper can turn red with water, we can use it as a rain gauge.

(42)   They have used litmus paper as a rain gauge because it can turn red with water.

The examples show that *can* is a fully objective modal. It can be added that, being non deontic and non epistemic, the uses of *can* illustrated in (38) and (40) must be dynamic.

It is much less controversial among linguists that *could* is, unlike its base form, an epistemic modal in uses like that in (43)[23].

(43)   Peter could be wrong on this matter.

The proposed tests bear out this position.

(44)   * If Peter could be wrong on this matter, he should change his mind.

(45)   Peter will change his mind because he could be wrong on this matter.

(44) is unacceptable, and, in (45) , the modal qualification must be ascribed to the speaker rather than to Peter.

3.5. Modal types, semantics or pragmatics?

The final service that the proposed tests can give is slightly theoretical in orientation. As has been mentioned above, some theories of modality adopt what Perkins (1983) calls a polysemantic approach to modal ambiguity, while others favour a monosemantic approach to the topic. The argumentation held so far does not commit

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can correspond to a one-place possibility operator. But if this is so, there is no way to explain why epistemic possibility *can*, unlike epistemic possibility *may*, takes scope under the negative operator.

(i)   Peter cannot be wrong (= it is not possible that Peter is wrong)

(ii) Peter may not be wrong (= it is possible that Peter is not wrong)

23 A number of independent arguments bear out this position: *could* is generally replaceable by epistemic *may* (cf. (i) below)and patterns with it in relation to negation scope, which applies to the main predication in both cases (cf. (ii) below); *can* is not replaceable by epistemic *may* (cf. (iii)) and falls within the scope of negation (cf. fn. 12 above).

(iii) Peter may/ could be wrong.

(iv) Peter may/ could not be wrong (= it is possible that Peter is not wrong)

(v)   Peter may be wrong (# Peter can be wrong)

us to any of the two theoretical positions. But there is a third theoretical stance which has made its way lately. It is the pragmatic position that there is but one single meaning for each modal, common to all its uses. This position has been defended by authors like Walton (1988), Groefsema (1992, 1995) or Berbeira Gardón (1996). Summing up, all these authors would agree that there is no semantic difference between the uses of *can* in (38)-(40) above and those in (46)-(47).

(46)	You can wash up for a change.
(47)	You can forget about that ice-cream.

The idea is that the core meaning is not identifiable with particular modal types, but that there is a meaning common to all types and uses to which that type can be put (e. g. to request some action in (47) and to threat in (48)). Competing theories would argue that in (46) and (47) there is a pragmatic interpretation of one of the core senses.

The point I want to argue here is that accepting the position that there is some core sense to all uses and types of one single modal does not commit to the stronger position that there are no semantically conventionalised distinctions between types. The point has been argued on different empirical grounds[24], but I want to show that in can be defended on the basis of the subjectivity tests proposed here.

(41)-(42) above showed that the possibility sense of *can* surfaced in the objectivity contexts provided by the conditional and the *because* tests. We can now see that this is also the case with the ability and the sensation sense of this modal.

(48)	If Peter can lift a hundredweight we'd better not get in his way.
(49)	We don't get in Peter's way because he can lift a hundredweight.
(50)	It you can see the moon from there, tell me the shape it has tonight.
(51)	She knows what shape the moon has tonight because he can see it from his site.

Now, in (52)-(55) below, the proposed senses do not surface in conditionals and do not count as the cause for main clause action in *because* clauses; the basic senses of *can* are still recoverable in these contexts: we have the possibility reading in (55), and the ability reading in all of (52)-(55).

(52)	If you can wash up you should do it.
(53)	She is putting on the apron because she can wash up for a change.
(54)	If you can forget about that ice-cream, you'd better do it.
(55)	? The little girl is crying because she can forget about the ice-cream.

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24 Pelivás (1996), for example, observes that negation behaves differently in the deontic and in the epistemic reading of *may*: it takes scope over the modal in the former reading but not in the latter.

(i) Peter may not come in in that guise (= John is not allowed to come in)

(ii) Peter may not be at home (= it is possible that John is not at home)

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(52)-(55) do not object to the position that *can* has an obligation and a threatening import in (46)-(47). What I think they reject is that these interpretations be given the same linguistic status as the three (or whatever number of) basic senses of *can* in (38)-(40)[25].

4. Conclusion

In this paper I have shown that subjectivity is an essential component of modality, at least as it is expressed by modal verbs. The objectivity/ subjectivity opposition has an important reflex in the grammar of modal verbs. Two tests built on the theoretical assumptions provided by current theories of modal subjectivity have proved descriptively adequate, as they reliably point out the subjectivity phenomena within the modal verb paradigm. The tests have also helped establish a connection between modal types and subjectivity (even in disputed cases like that of dynamic *can*): epistemic and dynamic modals are exclusively subjective and objective, respectively; deontic modals are either subjective or objective. Finally, the tests have shed some light on a theoretically and empirically decisive question: the semantic or pragmatic nature of modal type distinctions.

The work opens up new possibilities in different areas of the research into modal verbs. Given the narrow relation between modal types and subjectivity patterns, can the semantic characterisation of the former (what we have lately been calling the nature of modal potency) be defined in terms of the latter? Given that most modal verbs (or at least the ones revised here) belong to different types under ascription to different subjectivity patterns, can subjectivity have some bearing on the diachronic semantic evolution of modal verbs? These and other questions remain to be considered in future works.

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25 (52) and (54) are marginally interpretable with the relevant obligation and threatening import when they are interpreted echoically, i.e. as reproducing some other speaker's utterance or some thought. This interpretation does not change the argument, for its maximisation depend, in a way the maximisation of the basic senses do not, on the performative elements introduced in the conditional protasis by the echoic mention.

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