

## Modality and its Conversational Backgrounds in the Reconstruction of Argumentation

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**Abstract** The paper considers the role of modality in the rational reconstruction of standpoints and arguments. The paper examines in what conditions modal markers can act as argumentative indicators and what kind of cues they provide for the reconstruction of argument. The paper critically re-examines Toulmin's hypothesis that the meaning of the modals can be analyzed in terms of a field-invariant argumentative *force* and field-dependent *criteria* in the light of the Theory of Relative Modality developed within linguistic semantics, showing how this theory can provide a more adequate model for exploiting the modals as indicators. The resulting picture confirms Toulmin's intuition only in part: on the one hand the modals are always relational in nature and dependent on a contextual *conversational background* of propositions; on the other hand only *epistemic-doxastic* modals *directly express* a speech-act level inferential relation between a set of premises and a standpoint. Other modalities express relations (e.g. *causal* or *final* relations) better seen as part of the *content* of the argument whose argumentative relevance depends on the argumentation scheme employed. Thus non-epistemic modals function as argumentative indicators only *indirectly*.

**Keywords** Argumentative indicators · Modal qualifier · Toulmin · Relative modality theory · Argumentation schemes

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An earlier stage of this investigation was first presented in a shorter paper of the same title at *ISSA 2006. 6th International Conference on Argumentation*. Amsterdam, June 28–30, 2006, which now appears in the proceedings of the conference (Cf. Rocci 2007b). The present paper substantially expands and revises in many points that early formulation. Moreover, the paper has greatly benefited from the detailed and extremely helpful remarks of two anonymous reviewers to whom the gratitude of the author is due.

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## 1 The Semantics of the Modals and the Reconstruction of Arguments

This paper addresses the role of modal expressions as argumentative indicators and the importance of considering the semantics of modality in the reconstruction of argumentation. Modal expressions include modal verbs, such as the English *may*, *can*, *must*, *should*, *will* and many other lexical and grammatical devices. For instance, in English we find modal adjectives (*possible*, *necessary*, *probable*, *likely*, *certain*), adverbs (*maybe*, *necessarily*, *certainly*, *probably*, *likely*, *perhaps*) and nouns (*possibility*, *necessity*, but also less obvious ones like *risk*).

The present investigation builds on previous linguistic work on the semantics of modality (see Rocci 1997, 2000a, b, 2005a, b, 2006, 2007a) which showed that modals can function as indicators of relations between discourse units in a text or dialogue, and that epistemic modals, in particular, can serve as signals of inferential, and hence argumentative, relations. Here we consider what this analysis entails for the task of reconstructing the structure of argumentation.

To do so we will first go back to Toulmin's views on the relevance of modality for understanding the structure of arguments and, more precisely, to the views he states in the very first chapter of *The Uses of Argument* concerning modals and fields of arguments. We will argue that Toulmin is indeed after something which is crucial for the semantics of the modals and relevant for the reconstruction of arguments, but, at the same time, his analysis is problematic on important respects. In the second part of the article we will present a view of modality, originating in linguistic research on formal semantics, which we believe can capture Toulmin's insights but is not plagued by the same problems and thus can serve as the basis for a treatment of modals in their role of indicators of argumentation.

Before entering the discussion of modality it is useful to spend a few words on the notion of an argumentative indicator, which we take from Pragma-Dialectics. Houtlosser (2002, 169–170) defines the notion argumentative indicator as follows:

“*argumentative indicators* [...] point to speech acts that are instrumental in the various stages of dispute resolution. Argumentative indicators may make it clear that argumentation has been advanced and how this argumentation is structured”

A first question which arises concerning potential argumentative indicators is to know when, under what conditions, a given expression can be said to be an indicator of argumentation. In the pragma-dialectical approach the notion is not restricted to expressions that *always* refer to arguments: van Eemeren et al. (2007, 1) say that an argumentative indicator is “a sign that a particular argumentative move might be in progress, but it does not constitute a decisive pointer”.

It is important here to observe that the non-conclusive nature of the indicator may depend on the *polysemy* of the linguistic structure involved (such as with the connective *because*, which can be used both in arguments and in explanations), but it can also depend on the fact that the indicator does not *refer* to the argumentative move itself but to some other semantic or pragmatic categories, which, for a variety of reasons, can happen to be often—not necessarily always—concomitant with that argumentative move. Many of the indicators discussed by van Eemeren et al. (2007) are, in fact, of the latter type.

For instance, these authors (172–173) observe that the use of future tense markers (*will, shall, be going to*, etc.) is an indicator that some type of causal argumentation scheme is being used to support the standpoint. Contrary to the case of *because* mentioned above, the link between the future and the argument scheme in question is indirect and connected with different forms of causal reasoning in *different* ways. On the one hand, statements in the future tense are often *predictions*, and predictions are often justified causally by arguments *from cause to effect*—such as in (1). On the other hand, deliberation on future actions is often justified by the positive/negative nature of the (later) future consequences of these actions. In this second case both the standpoint (Stp) and the argument (Arg) refer to the future, and the inferential link goes *from the evaluation of the effect to the evaluation of the cause*—as shown in example (2).

- (1) Arg: Storms have devastated the crops throughout the country. Stp: The price of vegetables will increase.
- (2) Stp: Travelling with Mark is definitely a bad idea. Arg: He will annoy you to no end with his strange fixations about hygiene on buses and airplanes.

We will come back to varieties of causal argumentation later in the paper. For now, let us establish a distinction between *direct indicators*—which are signs that, in some of their uses, *refer* to argumentative moves (e.g. the connective *because*) and *indirect indicators*, which refer to semantic or pragmatic categories *correlated* to argumentative moves. This distinction will help us in dealing with the modals' role as indicators.

A second question concerning indicators is what exactly do these expressions tell us about an argumentation. As observed by Houtlosser (2002, 169), in order to be able to evaluate an argument we need *at least*<sup>1</sup> to reconstruct:

- (a) What is the standpoint (conclusion) that is argued for, what is its precise content;
- (b) What is the *force* of conviction with which the standpoint is presented;
- (c) What statements are presented as arguments (or premises) supporting the standpoint;
- (d) What is the nature of the inferential link that is established between the arguments/premises and the standpoint, that is what kind of *deductive rule/toposargumentation scheme* is applied;
- (e) What implicit premises need to be supplied by the audience in order to saturate the requirements of the *argumentation scheme* or *topos*.

Linguistic expressions of modality have been addressed as indicators mainly with respect to the *force* of standpoints and considered to be indicators only when they manifest a specific kind of modality, namely *epistemic modality* (Cf. Snoeck-Henkemans 1997, 108–117). Snoeck-Henkemans observes that the degree of commitment expressed by the modal “enables the analyst to determine what degree

<sup>1</sup> van Eemeren et al. (2007) propose a more comprehensive list of relevant kinds of information, which follows systematically from the stages of the model of critical discussion. For the purposes of the present article it is not strictly necessary to consider this broader list.

of justificatory or refutatory potential the argumentation should have, in order to lend sufficient support to the standpoint” (p. 113)<sup>2</sup>.

According to Snoeck-Henkemans (1997) only what linguists call *epistemic* modalities—many logicians would prefer here to speak of *doxastic* modalities—are used to indicate “the extent to which the speaker is prepared to commit himself to the truth or acceptability of the propositional content of his standpoint” (Snoeck-Henkemans 1997, p. 109) and are not “part of the proposition towards which the speaker has put forward a standpoint” (*Ibid.*), while other kinds of modality, like deontic modality, are *part of the proposition* and thus cannot play the role of *force* indicators. Here Snoeck-Henkemans follows one broad linguistic-semantic tradition of analysis of the stratification of the utterance in terms of its propositional and extra-propositional elements—see Lyons (1977), Doherty (1987), Hengeveld (1988) and Kronning (1996) among its most notable representatives<sup>3</sup>.

As we will see later, the present study basically agrees with this tradition and consequently with Snoeck-Henkemans in positing a fundamental distinction between the epistemic and the other kinds of modality with regard to argumentation. *Nevertheless*, we think it is worth exploring the possible role of *all* the modalities as (direct or indirect) indicators with respect to the five questions concerning argumentative reconstruction mentioned above in (a)–(e). To do so it is useful to start from Toulmin’s position.

## 2 Modals and Fields of Argument: Force and Criteria

Interestingly, Toulmin seems to have subscribed to the idea that *all* kinds of modals, not only those that we called *epistemic*, act as indicators of the *force* of the claim, and are intimately connected to the structure of argumentation, at least if we look at the extensive discussion on modals and fields of argument in the first chapter of *The Uses of Argument*.

We will show that in this chapter Toulmin comes close to capture a fundamental insight on the semantics of the modals, one which is of capital importance for the reconstruction of argumentation, namely their *context dependency*<sup>4</sup>; but, trying to

<sup>2</sup> In Houtlosser (2002) and van Eemeren et al. (2007) epistemic expressions modifying the force of the assertion are discussed in relation to the *confrontation stage* also as (indirect) indicators of the act itself of putting forth a standpoint in the confrontation. For instance, a weak assertive expression such as *I believe* can be used “to convey the speaker’s expectation that his assertive will not be immediately accepted by the interlocutor” (Houtlosser 2002, 174), at least, not without supporting arguments.

<sup>3</sup> Although the view that epistemic modals can be extra-propositional has been supported by a number of semantic tests proposed by the authors cited, the current literature on modality is far from unanimous. There are, for instance, studies such as Papafragou (2006), which question the results of the semantic tests for propositionality and argue that, at least in the case of modal verbs, epistemic modality is, in fact, always part of the propositional content.

<sup>4</sup> Linguistically encoded meanings are nearly always underspecified with respect to the proposition expressed by an utterance, and henceforth are dependent on the context of utterance for their “enrichment” (Cf. Carston 2002). However, the term *context dependency* in semantics is often used in a narrower sense to refer to those units whose linguistically encoded meanings contain precise contextual parameters, that is “empty slots” to be filled with particular types of contextual information. Indexicals (*I, here, now* etc.) are the classic example of context dependent linguistic expression, but subtle semantic

**Table 1** Modals and phases of an argument according to Toulmin (1958)

Modal markers	Phases of the argument
Possibility: <i>may/possible/[can]</i>	Putting forward an hypothesis as worth considering;
Impossibility: <i>cannot</i>	Ruling out an hypothesis;
Necessity: <i>necessarily/must</i>	Having ruled out other hypotheses, presenting one particular conclusion as unequivocally the one to accept.

muster the modals as evidence for his thesis on the field dependence of argumentation, ends up blurring one fundamental distinction between *epistemic-doxastic* modality and other kinds of modality.

Toulmin (1958, 18) suggests that modal terms should be understood in terms of their argumentative functions and that their meaning can be analyzed in terms of a stable *force* and “field dependent” *criteria*:

“These terms—‘possible’, ‘necessary’ and the like—are best understood, I shall argue, by examining the functions they have when we come to set out our arguments” (Toulmin 1958, 18).

Toulmin proposes to draw a parallel between modal meanings and phases in a process of inquiry or argumentation as shown in Table 1.

Toulmin explicitly connects this analysis in terms of phases with his quest for a new “procedural” notion of argument form, based on a judicial metaphor, as an alternative to the notion of argument inherited from logic. In fact, according to this analysis the various modals are to be considered as illocutionary markers signaling different kinds of speech-acts relevant in the process of argumentation.

In the second chapter of the book a related pragmatic-argumentative analysis is fleshed out for the epistemic modal adverb *probably*, and for other probability idioms. Toulmin criticizes the statistical interpretation of the semantics of probability expressions, proposing a speech-act based alternative where to say ‘Probably p’ is seen as “asserting guardedly or with reservations that p” (p. 85). Toulmin’s speech-act account of *probability* has been the object of some attention by argumentation scholars: Freeman (1991), which follows Toulmin’s views in many respects, criticizes it at length, while Ennis (2006) has recently put forth a qualified defense of it.

Finally, in the third chapter, Toulmin introduces the category of (*modal*) *qualifier* as a distinct component in the so-called “Toulmin model”, meant to provide an “explicit reference to the degree of force which our data confer to our claim in virtue of our warrant” (Toulmin 1958, 101) and exemplified by epistemic expressions such as *necessarily*, *probably*, *presumably*, *almost certainly*. The latter certainly represents the best known contribution of Toulmin to the analysis of

Footnote 4 continued

context dependency has been shown to characterize a much wider range of expressions (Cf. Récanati 1989). Toulmin’s analysis of the modals treats them as context dependent in the above sense and in this respect—we argue—is decidedly on the right track, anticipating an important aspect of the Relative Modality approach.

modals in arguments and seems to be the one from which the prevailing view of modality in argumentation theory stems.

Here, however, we would like to focus on the less quoted remarks of the first chapter, as it is here that one finds the stronger claim that all kinds of modals—not only those we call epistemic or doxastic—are argumentative markers and that their meaning should be understood in terms of an invariant argumentative “force” and context-dependent “criteria”. Toulmin illustrates the role of *must* in the speech act of drawing a conclusion with examples like the following:

- (3) Under the circumstances, there is only one decision open to us; the child *must* be returned to the custody of its parent.
- (4) Considering the dimensions of the sun, moon and earth and their relative positions at the time concerned, we see that the moon *must* be completely obscured at the moment.

The role played in the argument characterizes the specific, field invariant, *force* of the modal; while the logical type both of the conclusion and of the premises varies according to what Toulmin calls the “field of argument”. In fact, the whole discussion of the modals in this chapter is instrumental to assert the field dependence of the criteria of soundness for argumentation (against the idea of formal validity).

To use the only example of modal operator that Toulmin discusses at length in the first chapter, the force of the “modal” *cannot* consists in “ruling out an hypothesis”, but the criteria of this “ruling out” may vary: physical ability, rules and regulations, linguistic conventions, etc.

The criteria behind the different uses of *cannot*—such as (5–8) below, which we quote directly from Toulmin—can be made explicit following a common pattern, presented in (9):

- (5) “Your physique being what it is, you can’t lift that weight single-handed—to attempt to do so would be vain”.
- (6) “The seating capacity of the Town Hall being what it is, you can’t get 10,000 people into it—to attempt to do so would be vain”.
- (7) “The nomenclature of sexes and relationships being what it is, you can’t have a male sister—even to talk about one would be unintelligible.”
- (8) “The by-laws being as they are, you can’t smoke in this compartment, Sir—to do so would be a contravention of them”.
- (9) ‘P being what it is, you must rule out anything involving Q: to do otherwise would be R and would invite S’ (Toulmin 1958, 24–29)

According to Toulmin this kind of analysis shows, on the one hand, the invariant argumentative *force* of the modal, and, on the other, the variety of facts and considerations that can saturate the variables P, Q, R, S and define the field dependent “criteria” of the modal.

Here Toulmin points to a crucial insight for understanding the semantics of the modals and their role in arguments: modals are not *one-place operators*, but *relational predicates*. Their apparently widely divergent uses can be reduced to a common *logical core* and to the saturation of certain variables with propositions

indeed belonging to different semantic types. The *semantic type* of these propositions and their precise identification sometimes can be made explicit by the syntax of the modal sentence, or recovered from the preceding discourse, but in many uses it must be inferred by the hearer. The same modal word, in different uses, preserves the invariant force taking up different criteria, relevant for the field under discussion.

Where Toulmin's proposal becomes problematic is in its identification of the *logical core* of the modals with a "role"—in fact a kind of speech act—in an argumentative process, so that the modals become direct argumentative indicators in *all* their uses. The evidence against Toulmin's suggestion is indeed strong; even if this might not be immediately apparent.

In fact, Toulmin chooses his examples quite aptly. For instance, the fact that he chooses, unexpectedly, to focus his discussion on the impossibility manifested by *cannot* rather than on possibility or necessity modals is not devoid of consequences—as we will see later. Surprisingly Toulmin does not tell us much about *can*: it is not clear whether he considers it an expression of possibility like *possible* and *may* (that is introducing an hypothesis worth considering), nor the exact relationship in which *can* stands with respect to *cannot*.

Interestingly, if we look at *can* certain problems inherent in Toulmin's view become more apparent. Consider a sentence like (10.a) below, derived from one of Toulmin's *cannot* examples:

(10.a) John *can* lift 100 kg single-handed.

Here the criteria called forth by the modal appear to be the same of Toulmin's *cannot* example: "John's physique being what it is". The modal seems to indicate what is **possible** to accomplish with respect to John's muscles, and physical build in general. The paraphrase of *can* with *possible* seems fitting. But can we say that the above criteria coincide with the *kind of evidence* at our disposal in evaluating the hypothesis in (10.a)? Let us consider different kinds of arguments that might be relevant for (10.a):

(10.b) John *can* lift 100 kg single-handed. He has an exceptionally powerful physique.

(10.c) John *can* lift 100 kg single-handed. I've seen him doing so with my own eyes.

(10.d) John *can* lift 100 kg single-handed. The trainer told me so.

If in (10.b) we rely indeed on our knowledge of John's physical build to come to the conclusion via a *causal* argument scheme. At the same time, John's physical build is the criteria of the modal. This is what we expect from Toulmin's hypothesis.

But let us consider (10.c), where we base our argument on *testimony* and *example* relying quite solidly on the Aristotelian axiom that *ab esse ad posse valet illatio*. Here we expected that the criteria of the modal should change as the grounds of our argument change. But there is a strong intuition that they don't: in (10.c) *can* continues to mean 'possible with respect to John's physical build'. This is even clearer in (10.d) where the argument is based on the authority of an expert (*argumentum ex auctoritate*) but *can* does not come to mean "possible with respect to what an authority said"—the modality is still about the physique.



It has to be stressed that this does not mean that the criteria of the modal cannot change. They do change. Consider (10.e):

(10.e) John can lift 100 kg. The trainer has given his permission/is OK with it.

Here *can* is no longer referring to physical conditions but to the authority of the trainer. Toulmin was right in saying that the meaning of the modals involves a contextual component, but examples (10.b, c, d) showed us that this contextual component does not always change as we change the grounds of our conclusion. This suggests that the “criteria” of the modal and the “grounds” in the argumentative sense are not the same thing.

Let us consider a related issue. We have successfully paraphrased *can* with *possible* in (10.b, c, d): the arguments have to do with what is possible or impossible to do with a physique like John’s. However it is not sure that this *possibility* corresponds to the act of “putting forward an hypothesis as worth considering” as Toulmin would have it.

It seems that in the above arguments the arguer rather presents *conclusive* evidence to assert the general *compatibility* of the action with the agent’s body, rather than presenting an *uncertain* hypothesis on this action taking place on any particular occasion.

Interestingly, we can convey the very same compatibility as being *the content of a hypothesis worth considering* if we add a second modal, of a different kind, which we would call epistemic or doxastic:

(11) Maybe/Perhaps/It (may/might) be the case that John can lift 100 kg single-handed

Here one could still erect a last dike to defend Toulmin’s hypothesis by pointing out that Toulmin never says that *can* expresses possibility. However, Toulmin says that *possible* expresses possibility, and yet we can have (12):

(12) *Perhaps* it’s *possible* to re-set the body’s aging clock and *maybe* make someone live longer. (example retrieved through *Google*)

Here the two epistemic markers *perhaps* and *maybe* do refer to an hypothesis worth considering, but *possible*—which here takes “biological laws” as its criteria—is definitely part of the content of that hypothesis. Moreover Toulmin sees *must* as always expressing a *conclusion* as its force, while the grounds on which the conclusion is based may pertain to different fields, for instance *legal* vs *astronomical*, as illustrated by Toulmin’s examples in (3) and (4). Yet, in (13) we find *must* embedded as the *content* of an hypothesis worth considering:

(13) If someone wants, for instance, to buy clothes, he must know where to buy them. He must go to different shops. *Maybe* he *must* negotiate with the salesperson. (example retrieved through *Google*)

Clearly, *must* in (13) does not indicate an act of conclusion, nor any other kind of speech act.



The above discussion shows two things:

- (a) Modal *criteria* do not always map on types of arguments for a conclusion and
- (b) Modal *force* does not always correspond to the force with which the standpoint is advanced or to a phase or type of speech-act in an argumentative discussion.

It might seem now that there is little to salvage in Toulmin's hypothesis. Yet, in the next section we will argue that, despite the flaws of Toulmin's implementation, looking at the context dependency of the modals and to the different "logical types"<sup>5</sup> of propositions that are presupposed by it remains a key task in the reconstruction of arguments involving modal statements.

### 3 Another View of the Modals'Context Dependency: The Theory of Relative Modality

A rich and flexible account of the dependence of modalities on contextually determined sets of propositions can be worked out in the theory of Relative Modality developed within formal linguistic semantics.

The fundamentals of the theory stem from seminal papers by German linguist Angelika Kratzer (1977, 1981, 1991)<sup>6</sup>. Kratzer showed that, in natural language, *necessity* is to be understood in terms of *logical consequence* of the modalized proposition from a presupposed *conversational background* of propositions belonging to a certain logico-ontological type, while natural language *possibility* is to be conceived in terms of logical compatibility with the conversational background.

This contrasts with the absolute notions of necessity and possibility which are sometimes found in modal logic. Hughes and Cresswell (1968, 23) characterize this absolute necessity as follows:

"When we say that a certain proposition is necessary, we do not mean that, things being what they are, or the world being as it is, it cannot fail to be true; but rather that it could not fail to be true no matter how things were, or no matter what the world turned out to be like".

Medieval philosophers<sup>7</sup> had already observed that modal words like *necessarily* are often used not in an absolute but in a relative way, to convey the necessity of an

<sup>5</sup> Toulmin has been rightly criticized (cf. van Eemeren et al. 1996, 155) for the vagueness of his use of the term *logical type* and its unclear relationship with *field of argument* and other notions in his model. One of the goals of our work on modality is also to contribute to a sound semantic typology of standpoints.

<sup>6</sup> Earlier, more informal, approaches to the semantics of the modals that have several points of similarity with Kratzer's are Wertheimer (1972) and White (1975). For a fairly comprehensive and technical account of the current state of the art in the theory of Relative Modality see Kaufmann et al. (2006).

<sup>7</sup> The distinction between *necessitas consequentiae* (or *necessitas conditionata*) and *necessitas consequentis* (or *necessitas absoluta*) is discussed in several passages of the works of St. Thomas Aquinas. One well known instance is the passage of the *Summa contra gentiles* (lib. 1 cap. 67 n. 10) where Aquinas discusses whether God's foreknowledge entails that every action happens *necessarily*, and therefore excludes human freedom. Aquinas argues that there is a necessity of the consequence from God's foreknowledge of an action to the future happening of said action but this does not mean that the action becomes *absolutely* necessary. Aquinas uses perceptual evidence as an analogy: if I see that

entailment (*necessitas consequentiae*) and they guarded against confusing it with *necessitas consequentis*, that is with the absolute necessity of the consequent. We can represent the two readings respectively as (14) and as (15):

(14) *Necessitas consequentiae*:  $\Box(p \rightarrow q)$

(15) *Necessitas consequentis*:  $p \rightarrow \Box q$

Let us consider the use of *must* in the following utterances:

(16.a) If Alfred is a bachelor, he *must* be unmarried.

(16.b) Alfred is a bachelor. He *must* be unmarried.

Superficially in (16.a) the modal is syntactically embedded in the consequent of the conditional, but its semantic interpretation does not correspond to the logical form of the *necessitas consequentis* shown in (15). In other words (16.a) does not mean that if Alfred happens to be a bachelor in the actual world then he will be unmarried no matter what the world turns out to be like (i.e. in all possible worlds). In fact, the interpretation of (16.a) corresponds to the logical form in (14) where the necessity operator takes scope over the conditional (*necessitas consequentiae*): ‘no matter what the world turns out to be like, if Alfred is a bachelor he will be unmarried’. Interestingly, in (16.b), where instead of a syntactic conditional we have two syntactically autonomous discourse units, we obtain the same interpretation corresponding to the *necessitas consequentiae*. Here the restriction of the necessity operator by the antecedent proposition seems to be realized *anaphorically* in discourse by the *premise* presented in the preceding unit. In the view espoused by the Relative Modality approach the restrictions on modality manifested by conditional syntax or recovered through anaphora in discourse can be seen as a partial manifestations of a more general contextual restriction which characterizes the semantics of the modals.

Basically, in Kratzer’s approach, necessity modals are taken to indicate that the argument proposition is *necessarily entailed* by (that is *logically follows* from) a set of propositions, called the *conversational background* (B) of the modal:

(17) *Must/Necessarily* (B,  $\varphi$ )  $\Leftrightarrow \Box(B \rightarrow \varphi)$ <sup>8</sup>

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Footnote 7 continued

Socrates is sitting, then I must necessarily conclude that he is sitting, but my seeing does not make Socrates’s sitting an *absolute* necessity: “sicut necessarium est Socratem sedere ex hoc quod sedere videtur. Hoc autem non necessarium est absolute, vel, ut a quibusdam dicitur, necessitate consequentis: sed sub conditione, vel necessitate consequentiae. Haec enim conditionalis est necessaria: si videtur sedere, sedet.” (*Summa contra gentiles* lib. 1 cap. 67 n. 10, in Busa 2005).

<sup>8</sup> Actually, the formulas in (17) and (19) provide the semantics of the relative modal operators indirectly, by translating them in terms of an absolute modal quantifier ( $\Box$  and  $\Diamond$  respectively) and of a truth-conditional connective ( $\rightarrow$  and  $\wedge$  respectively), for which a standard semantics is assumed. The semantic clauses in (18) and (20), on the other hand, define the semantics of the modals equivalently, through the relations of *logical consequence*, and *logical compatibility*, for which a possible world semantics can be given as in Kratzer (1991, 641): a proposition  $p$  is a logical consequence of a set of propositions  $A$ , if and only if  $p$  is true in all the worlds of the “universe”  $W$  in which all the propositions belonging to  $A$  are true; and analogously a proposition  $p$  is logically compatible with  $A$ , if and only if there is at least a world in  $W$ , where all the propositions of  $A$  and the proposition  $p$  are true.

Or, alternatively:

(18)  $[[\textit{must/ necessarily} (B, \varphi)]] \Leftrightarrow [[\varphi]]$  is a logical consequence of B

Likewise, the basic structure of relative possibility can be defined by (15) or (16):

(19)  $\textit{May/Can/Possibly} (B, \varphi) \Leftrightarrow \neg \Box (B \rightarrow \neg \varphi) \Leftrightarrow \Diamond (B \wedge \varphi)$

(20)  $[[\textit{Can/May/Possibly} (B, \varphi)]] \Leftrightarrow [[\varphi]]$  is logically compatible with B

A proposition is a possibility relative to a given conversational background B, if and only if the proposition is logically compatible with B—that is if  $\{B \cup \varphi\}$  is a *consistent* set of propositions. Sometimes, the conversational background may be expressed, as Kratzer remarks, by phrases such as *in view of*—as in (21),

(21) In view of the laws of our country, you must pay taxes

which are quite similar to the phrases used by Toulmin to make explicit what he calls the “criteria” of the modal. But most of the times the hearer has to infer the conversational background of the modal from the context and the co-text of the utterance.

The various interpretations of the modals and their finer nuances can be expressed in terms of the different conversational backgrounds restricting the modal operator. One of the appeals of the theory is precisely that it allows for an indefinite number of conversational backgrounds, while at the same time it makes it possible to characterize broad classes of uses of the modals on the basis of the kinds of propositions that enter the background.

A critical, and somewhat tricky, aspect of the theory is the notion of *proposition*, which is not intended to mean a linguistic object, nor a mental object, nor an assertion or other speech act, nor a premise, but is taken ontologically to mean a *possible state of affairs*, something that can possibly be a fact, or in other words, a fact in some possible world or situation<sup>9</sup>....

In the following paragraphs I will propose a particular version of the theory of Relative Modality (based on Rocci 2005a) through a series of informal *paraphrase schemes* for different notions of relative necessity or possibility corresponding to major classes of conversational backgrounds<sup>10</sup>. Ultimately, the justification of these analyses will lie in their capacity of illuminating the myriad of uses of the modals, and, with respect to the purpose of this study, in their potential for argumentative reconstruction. The examples analyzed in the following pages are meant to provide a partial illustration of this potential.

<sup>9</sup> I take this to be the main philosophical significance of the notion of proposition in possible world semantics. In the technical implementation of the theory the definition of proposition is, in fact, rather counterintuitive: a *proposition* is just a set of possible worlds, the set of worlds in which the proposition holds true, in which it is a *fact*. One of the reasons of the scarce intuitive appeal of this definition is that the theory takes the notion of *possible world* as primitive rather than the notion of *possible state of affairs* or *possible fact*.

<sup>10</sup> The classification of conversational backgrounds and the formulation of the paraphrase schemes draw from a vast pool of analyses in the logical and linguistic traditions, which Rocci (2005a) discusses extensively. In drawing from this body of research the proposed paraphrase schemes make a number choices among partially alternative proposals, and I have added pointers to the relevant literature for the less obvious ones.

A first type of modality is characterized by a conversational background containing propositions that are ‘facts of a certain kind in the actual world’. These modalities deal with what is necessarily or possibly the case *in view of facts of such and such kind*. We will call this first kind of modality *ontological*<sup>11</sup>.

We can paraphrase modalities with ontological conversational backgrounds using the following scheme:

- (i) A possible state of affairs  $\varphi$  is entailed by or compatible with facts of kind B.

If ontological modalities are mainly concerned with natural causality, the normative modalities (*deontic* and *anankastic*) bring in the world of human actions, social conventions and institutional realities. *Deontic* conversational backgrounds can be characterized by the formula:

- (ii) An action  $\alpha$  is entailed by or compatible with norms or ideals of kind B.

While in *anankastic* conversational backgrounds (Cf. Conte 1995):

- (iii) A social/institutional fact  $\varphi$  is entailed by or compatible with the set of social/institutional facts of the relevant kind B.

And, finally, we have *doxastic* (or *epistemic* as linguists prefer to call them)<sup>12</sup> conversational backgrounds:

- (iv) A (meta-represented)<sup>13</sup> hypothesis  $\varphi$  is entailed by or compatible with a relevant set of beliefs B held by the speaker at the moment of utterance.

Ontological modalities range from very general physical or natural necessity or possibility (*what is possible/necessary in view of physical/natural laws*) to the consideration of very specific sets of circumstances—be they agent oriented (*what is necessary/possible in view of certain internal features of an agent*) or circumstantial

<sup>11</sup> Another, better established, name for this kind of modality is *alethic* (Cf. Lycan 1994; Kronning 2001). However some authors, especially linguists, reserve the term *alethic* for purely logical necessity and possibility, which are only the most abstract of ontological modalities. So, we use *ontological* instead of *alethic* to avoid confusion. Kratzer (1981) speaks of these as *realistic conversational backgrounds*.

<sup>12</sup> Note that strictly speaking *epistemic* conversational backgrounds, in the logician’s sense of the word, that is conceived as dealing with *knowledge* rather than with *belief*, should be treated, as Kratzer (1981) suggested, as a kind of *ontological* (*realistic* in Kratzer’s terminology) background: the background consisting of the *facts* that happen to be known by the relevant agent or by the relevant epistemic community. On the contrary, *doxastic* backgrounds are not a kind of ontological background. One of the main differences between our discussion of modal meanings and Kratzer’s is that hers does not use *doxastic* backgrounds to capture “epistemic” modal meanings, but uses instead a more complex apparatus (cf. Kratzer 1991, 643–645) making modality *doubly relative* to a true epistemic background (‘in view of the available evidence’), and to a second *stereotypical* conversational background (‘in view of the normal course of events’). Some interesting shortcomings of Kratzer’s strategy in accounting for the way an epistemic modal (*must*, in particular) is used in arguments are mentioned by Stone (1994). For a more thorough discussion of these theoretical options see Rocci (2005 a, b).

<sup>13</sup> Cognitively, epistemic/doxastic modalities relate to the higher faculty of *metarepresentation*: that is the ability of an agent to represent one’s thoughts as representations distinct from the world, thus enabling the agent to cope with her partial and fallible access to the facts. In *doxastic* modalities the proposition  $\varphi$  is entertained as a metarepresentation—as a thought—and compared with the agent’s beliefs. For a detailed discussion of the role of metarepresentation in the linguistic-semantic analysis of epistemic modality see Papafragou (2000).

(*what is necessary/possible in view of certain facts of the external world*). Ontological possibilities/necessities are what is possible/necessary in view of a certain aspect of the structure of reality.

With the exception of the most abstract kind of metaphysical possibilities, which rarely come into play in everyday discourse, ontological modalities are submitted to time, and are causal in nature: they concern the possibility/necessity of a certain event to become the case in view of the causes.

The fine tuning of the restrictors that apply to each ontological interpretation of the modals—that is the precise content of the conversational background—is determined in the context of utterance. Compare the following examples involving John, a famous pop singer:

- (22.a) John cannot sing. His golden voice is gone for good. (permanent internal physical circumstances)
- (22.b) John cannot sing. He has a sore throat. (temporary internal physical circumstances)
- (22.c) John cannot sing. He's stuck in a traffic jam. (external physical circumstances)
- (22.d) John cannot sing. The concert organizers rescinded the contract. (external social circumstances)

The second sentence of examples (22.a–d) provides at the same time a specification of the kind of ontological conversational background that the modal takes and presents an argument based on the causal argumentation scheme *from cause to effect* refuting the standpoint contained in the sentence modalized by *cannot*. For these examples Toulmin's analysis of *cannot* seem to hold. But let us see why exactly it is so.

The *cannot* sentences can be taken as *indirectly indicating* the refutation of the standpoint 'John will sing (tonight, next season, etc.)' because they directly assert the causal incompatibility of the future action with facts of a certain kind. What is impossible given a certain kind of facts will continue (monotonically) to be impossible no matter what additional kinds of facts we consider. If John's sore throat rules out the singing, it won't help observing that he arrived on time, or that he is very talented, etc.

Now, if we consider that we are supposed to *know* what we are asserting—per the felicity conditions of assertion—we can see that any asserted ontological impossibility also entails epistemic impossibility. This contributes to make *cannot* special, and apt to indirectly convey refutations based on causal argumentation schemes.

This is not the case with *can*, as what is ontologically possible with respect to certain kinds of facts (e.g. the singer's physique) might still happen to be made impossible by other circumstances (e.g. the traffic jam). Ontological possibilities don't *entail* epistemic ones. However, very often they *implicate* them pragmatically on Gricean grounds: if I assert that John *can* sing, because his throat got well, when I *know* that *he won't* because he's stuck in a traffic jam, I am being logical but quite uncooperative, as it would be more informative to say that he *could* sing, or *would be able* to do so. So, also *can* ends up as frequently having epistemic implicatures in causal argumentation.

While ontological modality is a universal one and can affect any kind of state of affairs, *deontic* modality applies only to a certain type of states of affairs: *human actions*. Deontic conversational backgrounds are not made by propositions that are actual facts in the world, but by propositions that are *ideals*. There can be many subtypes of deontic conversational background:

(23.a) John must leave the country. The new immigration law was voted by the parliament.

(what the application of the law entails)

(23.b) John must leave the country. So that he can live and continue the fight.

(what the realization of the political goals entails)

(23.c) John must leave the country. So that he can provide for his family. (what the fulfilment of a goal-moral obligation entails)

(23.d) John: “I must leave the country. I cannot stand the vulgarity of the times.”

(what the satisfaction of the aesthetic preferences entails)

An elementary type of ideal proposition, often neglected but quite relevant for argumentation, is represented by simple *goals*. A goal is the possible desired end state of a course of action (cf. Rigotti 2003). Consider the following example:

(24.a) The Socceroos *must* keep cool heads in the heat of the world spotlight. (from an Australian football news website just before the 2006 World Cup)<sup>14</sup>

The conversational background of such a modal can be provided by a phrase like *given their goal of advancing in the tournament* or *if they want to do well in the World Cup*. However the Socceroos text leaves such a goal for granted without specifying it linguistically.

This conversational background consisting of a set of goals is the one typically connected with *practical reasoning* (Cf. Walton 1996, 2006, 299–333). For this reason Kronning (1996, 2001) calls this conversational background *deontic-practical*.

According to Walton (2006, 300) the “simplest kind of practical inference” can be described as follows:

- I have a certain goal.
- Carrying out this action is the means to realize my goal.
- Therefore, I ought (practically speaking) to carry out this action.

The translation of this chain of inference in terms of our Relative Modality analysis shows how this form of practical reasoning is basically deductive in nature<sup>15</sup>:

<sup>14</sup> *The World Game*, June, 9, 2006. Retrieved August 15, 2006 from <http://www6.sbs.com.au/socceroos/index.php?pid=st&cid=71987>.

<sup>15</sup> Practical inferences are sometimes said to be “neither deductive nor inductive in nature” (Walton 2006, 300). This characterization certainly holds for the vast majority of practical inferences, which are typically defeasible. It is however interesting to show that inferences based on the simplest practical inference scheme discussed by Walton can be treated as deductive under the assumption of the consistency of the set of goals of the agent. In practice, this assumption cannot be always maintained and several complications arise. Further complications concern the difference between the modal *must* and the modal *ought* when used in practical reasoning. We hope to discuss these issues in detail in a forthcoming paper entirely devoted to the treatment of modalities in practical reasoning.

State of affairs  $\varphi$  is a goal of mine (belongs to the set of goals G):  $\varphi \in G$   
 The realization of  $\varphi$  necessarily entails carrying out action  $\alpha$ :  $\Box(\varphi \rightarrow \alpha)$   
 Therefore, it is a practical necessity for me to carry out action  $\alpha$ :  $\Box(G \rightarrow \alpha)$

The above analysis is however still highly idealized. It has to be observed that, typically, a set of general goals are not sufficient *per se* to require determinate courses of action. Normally, goals do entail particular courses of action jointly with certain real world conditions. This gives rise to a particular mixed conversational background, where the action is the necessary implication of the conjunction (set theoretic union) of the goal and some set of real world conditions akin to those considered in ontological modality. For instance, if we look at the wider context of the above Socceros example we find precisely this kind of practical reasoning:

(24.b) The Socceros *must* keep cool heads in the heat of the world spotlight, however, for despite their high hopes they are the underdogs of their group, with a world ranking of 42. They must face Asian champion Japan (No.18), defending champion and five times World Cup winner Brazil (No.1) and the powerful 1998 semifinalists Croatia (No.23).

Because of their conversational background, deontic-practical modalities can be indirect indicators that an argumentation based on practical reasoning is being put forth. But this is not necessarily so. For instance, (13) above contains three clear examples of deontic-practical modality (e.g. *If someone wants [...] to buy clothes, he must know where to buy them*) but it does not correspond to any argument put forth by the speaker based on practical reasoning.

*Anankastic* modality (Cf. Conte 1995) is a distinct type of normative modality and differs from deontic modality as it is based on norms but does not require the modalized proposition to be a human action. In fact, anankastic modality is better characterized as an ontological modality referring to the peculiar ontological level that is institutional reality. Consider the following example:

(25.a) To be elected in the Italian Senate, you must be at least 35 years old.

Contrary to deontic modalities, the anankastic modality expressed by (25.a) does not concern actions, and cannot be translated into an imperative, as demonstrated by the absurdity of (25.b):

(25.b) \*Be 35 years old, if you want to be a Senator!

If it turns out that someone was elected and was not 35, the election is null. Nullity is different from violation. This difference is related to Searle's distinction between *regulative* and *constitutive* rules (Searle 1969)<sup>16</sup>. *Violation* describes a situation where a certain behaviour contrary to regulative rules takes place, while *nullity* refers to the fact that a certain (expected, intended) institutional state of affairs turns out not to be the case, because its constitutive conditions are not satisfied. Only conventional social facts are subject to anankastic modality:

<sup>16</sup> For a more detailed discussion of the collocation of anankastic modality with respect to constitutive rules see Conte (1988, 1993).



(26.a) \*Water must be (mostly) H<sub>2</sub>O

is difficult to interpret, but

(26.b) To be called “water” a liquid must be (mostly) H<sub>2</sub>O

is much more acceptable, because language is conventional and semiotic relations are institutional states of affairs.

#### 4 The Proper Relation of Epistemic and Non-epistemic Modals to Argumentation

We can now move on to a closer examination of the *epistemic/doxastic* conversational backgrounds. By examining the way in which these backgrounds work and by comparing them with the other backgrounds discussed above, we will show why, contrary to what was hypothesized by Toulmin, only the *epistemic/doxastic* uses of the modals relate constitutively to the structure or “form” of the argument—to the *inferential relations*. These modals function as *direct indicators* of argumentatively relevant speech acts, such as putting forward a hypothesis for consideration or concluding that a hypothesis must be the case.

On the other hand the various shades of *ontological* and *deontic* modality express relations between the modalized proposition and sets of facts, values or norms that are part of the *content level* of the argumentation and may or may not be exploited inferentially through specific argumentation schemes, as we have seen in the preceding section. Non epistemic modals are *indirect indicators* of argumentation connected to the level of argumentation schemes, that is to the level of the specific content relations on which the acts of argumentation rest (Cf. Snoeck-Henkemans 2001 for a similar two-level view of argumentative discourse relations). Let us consider example (27a–b):

(27.a) I cannot see John’s car in the parking lot.

(27.b) He *must* have already left the University.

It is quite natural to understand the first utterance (27.a) as corresponding to what Aristotle calls a *sign*. For Aristotle (*Prior Analytics*, 70a 7–9), when something regularly occurs, or more generally is the case, at the same time or before, or after that something else is the case, that something is a *sign* of the occurrence of this something else (the *denotatum*). Of the two concomitant facts, the *sign* is the better known fact—often a perceptually accessible fact—and the *denotatum* is the unknown, less accessible fact. If our argument is indeed based on a *sign*, the explicit premise does not suffice to account for the inferential process involved. To obtain our conclusion, we also need to supply a second implicit premise stating the regular co-occurrence of the *sign* and its *denotatum*. Such an argument scheme has been analyzed among others (see for instance Walton 1996, 2006) by Rigotti (2005), whose analysis we follow here. A plausible reconstruction of the unstated premise of our argument is (27.c),

(27.c) ‘Generally, if John’s car isn’t in the university parking lot, he is not at the university’

which, in turn, could be derived from the knowledge of the fact that John almost always drives to the University and parks his car in the University parking lot.

We can now appreciate the difference in the way *ontological* and *doxastic* modalities relate to argumentation. The analysis of the argument scheme of the sign in (23) shows that, contrary to the ontological modalities examined above, the necessary entailment here does not correspond directly to a *causal* relation between facts. Rather a (hypo-)thesis is entailed or compatible with a relevant set of beliefs held by the speaker at the moment of utterance.

Let us now consider two examples taken from Kratzer (1991)<sup>17</sup>, which are particularly clear thanks to the incompatibility of the English possibility modal *can* with purely doxastic conversational backgrounds (cf. Papafragou 1998) and the incompatibility of the possibility modal *may* with most ontological backgrounds:

(28.a) Hydrangeas can grow here. = Growth is compatible with the conditions of soil and climate

(28.b) There may/might be hydrangeas growing here. = ‘They grow’ is compatible with what I know/believe to be the case.

In the first case we have an ontological modality where we assert the compatibility of the growth with some kind of real world conditions, most likely the conditions of soil and climate. In this case we can have an argument about *whether hydrangeas can grow here*, where we can take a standpoint like:

(28.c) I am absolutely certain that they can. = I am absolutely certain that their growth is compatible with the conditions of the soil and the climate.

On the contrary, it would be bizarre to have an argument about whether they *may* grow here. In fact, *There may/might be hydrangeas growing here* is not something about which one can have a discussion, it is rather a standpoint of uncertainty in a discussion about whether they *do* grow here. It means that my evidence—just *any* type of evidence I may happen to have—does not contradict the hypothesis, which is the interpretation of a possibility modal saturated with a doxastic conversational background. This is why an utterance like (28.d) would sound rather bizarre:

(28.d) \*I am absolutely certain that they may/might. = ? I am absolutely certain that the hypothesis that they grow here is compatible with all the evidence I have.

Such an utterance would involve making explicit the meta-cognitive operation implied by the doxastic qualification<sup>18</sup>, which is usually not required in a discussion. Pinto (2001) makes a similar point in arguing that the “secondary” doxastic attitudes other than simple belief—doxastic possibility is one such attitude—that take scope on the conclusion of an argument are not properly part of the *content* of

<sup>17</sup> “Epistemic modality is the modality of curious people like historians, detectives, and futurologists. Circumstantial modality is the modality of rational agents like gardeners, architects and engineers. A historian asks what might have been the case, given all the available facts. An engineer asks what can be done given certain relevant facts.” (Kratzer 1991, 646).

<sup>18</sup> On the meta-cognitive nature of epistemic modality see also the interesting remarks in Papafragou (1998).

the standpoint, but have a structural role in the argument. The following passage is worth quoting in full:

“Might one then [...] try to construe the cases involving the secondary doxastic attitudes as concerned with second-order meta-cognitions about first-order propositions (e.g. one presents reasons for straightforwardly believing the proposition that the evidence for a first order proposition is counterbalanced by the evidence against it)? At least some cases can and probably should be interpreted along these lines. But even in these cases the *point* of getting someone accept the second order proposition is typically to modify his or her attitude toward a first order proposition.” (Pinto 2001, 13).

Let us consider another example involving, this time, a *deontic* modality. To utter  
(29) John must leave the country

I need not know *exactly* why he must, what pressing needs or lofty goals, what obligations, what laws, norms and regulations necessitate his departure from the country. I might just have confidence in someone in the know, an expert, and subscribe to the belief that ‘John must leave’ on the basis of his/her authority. Just as I can ask a gardener about the compatibility of a certain soil or climate with the growth of hydrangeas.

But my relying on the expert does not change the conversational background of the modal: what makes the departure a deontic necessity is not the word of the expert but still those needs, goals, obligations, laws, etc...according to the circumstance. What makes the growth possible is not the word of the expert, but the soil and the climate. Even if my belief comes into being because of the expert, the deontic or ontological necessity comes into being because of something else.

Of course, a different, more Toulminian, scenario is also possible: because of my knowledge of said goals, needs, laws, etc. I might happen to be entitled to conclude that our friend John must leave the country. In that case my inferences follow the same path of the deontic consequence. But what has to be stressed is that this is *possible*—maybe even typical, expected—but it is *not* part of the nature of a deontic necessity modal to be a *conclusion* of an inference from laws and regulations; just as it is not part of the nature of an ontological modality to be a *conclusion* drawn from the knowledge of whatever real circumstances necessitate or are compatible with the state of affairs that falls in the scope of the modal. This is why these modals are *indirect indicators*.

On the contrary, epistemic/doxastic uses of *must* refer exactly to that: to what is *necessary to conclude* from the beliefs of the speaker at the moment of utterance. If I say

(30) John must have already left the university

I mean that a certain state of affairs is necessarily the case in view of what I know or believe. If I use such a construction I am automatically arguing—at the very least I am arguing with myself (cf. Rocci 2005c). The evidence that makes up the modal’s conversational background cannot be but something I know or I believe. When I use an ontological modality, the facts that make something possible or

necessary are *per se* something that I may or may not know. Also in the case of deontic modality, strangely enough, social reality continues to exist and to exercise its peculiar causal power even if I ignore it. As the classic maxim goes: “ignorance of the law is no excuse”.

The above observations prompt us to conclude that epistemic modality truly belongs to the form of argumentation. An epistemic modal like *must* indicates a relationship between a proposition and the evidence available to the speaker at the moment of utterance.

In fact, the epistemic *must*—for this very reason—has been described as an *evidential* marker of inference (Cf. Palmer 2001; Nuyts 2001a on *must*, and Dendale 1994; Dendale and De Mulder 1996; Rocci 2005a for the corresponding French and Italian modal verbs) akin to the evidential morphemes we find in some Amerindian languages (Cf. for instance Faller 2002), which mark the type of knowledge source of the propositional content of an utterance distinguishing between what has been directly witnessed by the speaker (*direct evidentiality*), what has been learned from the discourse of others (*reportative evidentiality*) and what has been inferred (*inferential evidentiality*).

In the above example it is presupposed that the speaker did not directly witness Louis’ leaving the University: one cannot add to example (30) *and I saw him leave with my own eyes, believe me!*. In fact, the speaker of (30) does two things: she shows her own chain of inference, and, by showing it, offers to the hearer reasons to reach the same conclusions. If the speaker does present such evidence to the hearer or points to it in some way, then the epistemically modalized utterance becomes an act of argumentation in the strictest sense. If such evidence remains the private belonging of the utterer, the utterance does not count as *interpersonal (dialogical)* argumentation, but remains an instance of *intrapersonal (monological)* argumentation (Rocci 2005 c).

Applying the theory of Relative Modality to the analysis of modal markers as indicators can also help us in reconsidering the role of epistemic expressions as markers of the degree of commitment of the speaker towards the standpoint. While all epistemic expressions share this function, there seem to be a noticeable difference between mental state predicates such as *I think, I believe, I’m sure that* and the epistemic readings of context dependent modals such as *may* or *must*. Compare *must* and *I’m sure*, which more or less share the same *strong assertive* degree of force:

- (31.a) He went home early tonight. He *must* have been tired.  
 (31.b) He went home early tonight. *I’m sure* he was tired.

While *must* in (31.a) unequivocally points anaphorically to the preceding sentence as the manifestation of the argument supporting the standpoint in the modalized sentence, *I’m sure* in (31.b) is more fuzzy and less direct in pointing to the evidence. What the verb puts onstage is the *subjective* commitment of the speaker, rather than the inferential relation. In (31.b) it is easy to interpret the state of certainty of the speaker as stemming from various kinds of evidence, which may include the fact that he left early but are not limited to it: perhaps he also looked tired, his wife had told the speaker that he was tired, etc.

Jan Nuyts (2001b) has observed that the mental state predicates (e.g. English *I think*, Dutch *ik denk*, German *ich glaube*) often seem to imply a more subjective source for the speaker's belief, which is not necessarily intersubjectively shareable, and are therefore much less univocal in pointing to the arguments that are invoked to support the standpoint.

Rather than just markers of the strength of commitment *must* and other modals should be considered also as the same time as relational indicators of the link between premises and conclusions, similar, in this respect, to argumentative connectives such as *therefore* and *because* (cf. also Freeman 1991, 117).

In fact, we could hypothesize that this difference between the epistemic readings of the modals and the meaning of the mental state predicates is motivated by the context dependent semantics of the modal, which functions as an instruction prompting the interpreter to find in the context a suitable saturation of the conversational background. Space constraints prevent us from further pursuing this line of linguistic-semantic analysis here<sup>19</sup>.

It is now time to pause and take stock of the above remarks on the relationship of epistemic and non-epistemic modals to argumentation. Going back to the list of types of information needed for reconstruction, which we introduced in the first section of the paper, we can see that epistemically interpreted modals help us (a) to recognize the standpoints being advanced, (b) to make explicit the force of the commitment towards the standpoints, and that at the same time they prompt the anaphorical recovery of premises (c). Finally, we have seen that non-epistemic modals can be *indirect* indicators and that they can convey information on the argumentation schemes being used (d)—as in the case of ontological modalities pointing to causal argument schemes or deontic-practical modalities functioning as indicators of practical reasoning.

## 5 Modal Conversational Backgrounds in Argumentative Discussions: Vagueness, Divergence and Shifts

Concluding the present paper I would like to go back once again to the non-epistemic interpretations to show how a careful consideration of the context dependence of the modals—which is made possible by the theory of Relative Modality—can still play an important role in the reconstruction of arguments even in cases where there is no direct correspondence between the underlying semantic structure of the modal and the structure of the argument.

Whether they are exploited as sets of premises or not, conversational backgrounds of non-epistemic modals do enter in every case into the content of the standpoint and they have to be made explicit if we want to reconstruct the argumentation in order to evaluate its soundness.

<sup>19</sup> This line of explanation of the evidential constraints of epistemic modals is fully developed, with respect to Italian modals, in Rocci (2005a).

We have already noticed that in order to use a modal is not necessary that the addressee should be able to recover precisely *every single proposition* in the B set. This level of specification of the conversational background is not necessary for the modals to function in communication. For instance, we might be simply announced that

(32) Unfortunately, tonight John cannot sing

and led to infer that there are some *causes* that make the event impossible which remain unspecified.

As Lycan (1994, 195) poignantly observes “when the context fails to supply any very specific cue” for the determination of the modal conversational background, “a modal assertion is often utterly pointless”, as amusingly illustrated in the following quotation from a popular novel:

“And the insurance?” Callaway asked. “When may the beneficiaries expect to have the claim approved?” Dora smiled sweetly. “As soon as *possible*,” she said, and shook his hand. (L. Sanders, *The Seventh Commandment*, quoted in Lycan 1994).

A different case is represented by discussions involving deontic standpoints that take place between people that do not share the same set of values, but might not know or might not be fully aware of the fact that they don’t share the relevant values. This can happen, for instance, in situations of intercultural communication where people might tacitly refer to different traditional or religious values. For instance someone might utter

(33) You must not contradict John in that way!

Intending a supposedly shared deontic conversational background that includes the value

(34) Openly contradicting people older than you is disrespectful

which is not made explicit. The respondent might object to this standpoint, having in mind a different set of cultural values which does not include the above commandment but rather the commandment

(35) Speak your mind openly and honestly.

The fact is that since the saturation of the conversational background B is *covertly* different, the standpoint being *put forth* and the standpoint being *objected to* are not the same:

(36) Standpoint put forth by the proponent = The action of you (= the respondent) contradicting John is incompatible with the set of cultural norms B<sub>1</sub>.  
Where B<sub>1</sub> = { ‘Openly contradicting people older than you is disrespectful’, ... }

(37) Standpoint objected to by the respondent = The action of me (= the respondent) contradicting John is incompatible with the set of cultural norms B<sub>2</sub>.  
Where B<sub>2</sub> = { ‘Speak your mind openly and honestly’, ... }

In terms of the pragma-dialectic model of the critical discussion (cf. van Eemeren and Grootendorst 2004) we can say that the divergent saturation of a supposedly shared conversational background gives rise to a defective *confrontation* stage<sup>20</sup>, which hinders the resolution of the difference of opinion.

One thing is to argue *within* a certain set of norms—e.g. two lawyers arguing within the same legal system—another thing is to move to a higher level discussion about identified disagreements about the propositions making up the deontic conversational background and their hierarchy within the value system. If such a disagreement remains covert in the implicitness that the use of modals allows, such a discussion might never begin, to the detriment of intercultural understanding.

A final case—which was hinted at by language philosopher David Lewis in his famous article on *scorekeeping in a language game* (Lewis 1979/1991)—is represented by the implicit and more or less covert *shifts* of modal conversational background that may occur during an argumentative discussion: Lewis imagines a conversation where A—an elected official—discusses with B about the ways he might deal with an “embarrassment”:

(38)A: “You see, I *must* either destroy the evidence or else claim that I did it to stop Communism. What else *can* I do?”

B: “There is another *possibility*, you *can* put the public interest first for once!”

(Adapted from Lewis 1979/1991, 425)

Here the shift in the modal conversational background is quite sharp, as participant B proposes a course of action which is arguably not a possibility consistent with the quite restricted deontic—practical conversational background presupposed by participant A—something like *In view of my goal of being elected again*. In fact, the shift serves to open a new argumentative dialogue game embedded in the other: before deciding what to do, we need to discuss what kind of values motivate our actions.

Each of the above three cases—the *vagueness*, the *covert divergence* and the *shift of the conversational background*—would deserve a more detailed analysis to be carried out with the recourse to a corpus of authentic argumentative texts. The same could be said with respect to the remarks we have presented concerning non-epistemic modals as indirect markers of particular argumentation schemes. We have now begun to carry out more extensive analyses of modals in argumentative discourse and we hope to present their results in a forthcoming paper<sup>21</sup>.

For now, however, it is sufficient to have shown, in this brief exploration of a rather vast domain, that there is, after all, much to salvage in Toulmin’s intuition of the context dependence of the modals, and that the theory of Relative Modality

<sup>20</sup> “In the *confrontation stage* of a critical discussion, it becomes clear that there is a standpoint that is not accepted because it runs up against doubt or contradiction, thereby establishing a [...] difference of opinion” (van Eemeren and Grootendorst 2004, 60).

<sup>21</sup> This investigation of modals in argumentative texts is being carried out, in particular, in the context of a research project concerning argumentation supporting predictions in economic-financial newspaper articles (Cf. Rocci and Palmieri 2007).



offers the basic semantic tools to explore such intuitions without incurring in the problems that afflict Toulmin's original account<sup>22</sup>.

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<sup>22</sup> Here a final note is due with respect to this article's relationship with Toulmin's contribution. The fact that a large share of this article is devoted to discuss and, in part, to refute views that Toulmin expressed 50 years ago can only be taken as a sign of the intellectual vigour and vitality of his thought. We do not dare to dream that, in 50 years, our own contribution could be considered wrong in such an interesting and insightful way.

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