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# MODALS AS LEXICAL INDICATORS OF ARGUMENTATION<sup>1</sup>. A STUDY OF ITALIAN ECONOMIC-FINANCIAL NEWS

ANDREA ROCCI

## 1. Introduction

In this paper I will investigate the role of lexical expressions of modality as argumentative indicators<sup>2</sup>. More precisely, I will argue that modal expressions are closely intertwined with the establishment of *argumentative discourse relations* between utterances in discourse, both at a pragmatic and at a logico-semantic level.

The paper constitutes an interim report of a broad ongoing research project investigating the relationship between *argumentation* and the semantic and pragmatic functioning of lexical and grammatical markers of modality in Italian.

The project chose to investigate this relationship within the genre of *economic-financial newspaper articles*, using a large corpus of Italian economic-financial news, consisting of roughly 4 million words collected from three specialized Italian dailies (*Il Sole 24 Ore*, *Italia Oggi* and *MF/Milano Finanza*)<sup>3</sup>. As it will become clear through the following sections, the choice of a corpus from such a specific discourse genre was far from coincidental or merely practical. Rather it was motivated by a series of quite unique semantic-discursive characteristics of this news genre that make it, at the same time, an ideal testbed for studying the relationship between modality and arguments and a promising socially relevant field of application for the findings of such an investigation.

Here I will limit my discussion to the two Italian modal verbs *potere* and *dovere*. I will devote special attention to the role of the latter as an argumentative indicator, looking at its uses both in the indicative and in the conditional mood.

The Italian modal verbs *potere* and *dovere* can contribute to signal *argumentative relations* in discourse, where the modalized proposition is understood as a *standpoint* or *conclusion* (I will consider these terms as equivalents thereafter) presented by the arguer to the

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<sup>1</sup> The present investigation is carried out as part of a research project entitled *Modality in argumentation. A semantic-argumentative study of predictions in Italian economic-financial newspapers*. The project is supported by the Swiss National Science Foundation (Grant: 100012-120740/1).

<sup>2</sup> According to van Eemeren, Houtlosser & Snoeck-Henkemans (2007: 1) an argumentative indicator is "a sign that a particular argumentative move might be in progress, but it does not constitute a decisive pointer".

<sup>3</sup> The qualitative analysis of the corpus examples on which the present paper rests was carried out on a sub-corpus 95 articles from the properly financial sections of the *Il Sole 24 Ore*, extracted from eight April 2006 issues of the daily (about 55.000 words).

addressee as *inferrable* – with a variable degree of certainty – from a set of *premises* that the addressee is invited to supply, recovering them from the preceding or following co-text, or constructing them on-line from the stock of opinion and knowledge, which is assumed to be part of the common ground of the arguer and the addressee. In section 3.1 I will briefly sketch a view argumentative discourse relations based on the notion of *connective predicate* from Congruity Theory (Rigotti 2005).

The role of modals as argumentative indicators has been most often recognized when modals acquire an epistemic reading, and especially for those modals where the epistemic reading is accompanied by an *inferential evidential*<sup>4</sup> specification.

The epistemic-evidential readings that the verb *dovere* can undergo in certain tenses of the indicative mood – mostly in the present, the imperfect, and the remote past – exemplified by (1), represent the paradigmatic case:

(1) Ratan Tata, presidente del gruppo indiano Tata dal 1991, è noto per aver svecchiato l'impresa di famiglia e per l'affermazione 'Niente mi stimola di più di una sfida'. **Deve** essere stato questo che ha fatto scattare un feeling istintivo tra lo stesso Tata e Sergio Marchionne, a.d. del gruppo torinese, durante le trattative che hanno portato ad un accordo commerciale tra i due gruppi in India. (*Il Sole 24 Ore*, April 19, 2006)

'Ratan Tata, chairman of the Indian group Tata since 1991 is known for having renewed this family company and for having declared: "Nothing stimulates me more than a challenge". It **must** have been this that triggered an instinctive feeling between Tata and Sergio Marchionne, CEO of the Turin based group, during the negotiations that lead to a commercial agreement between the two groups in India.'

In (1) the role of the indicative epistemic *dovere* (henceforth *deve<sub>E</sub>*) is not limited to expressing – in fact rather vaguely – a certain degree of confidence lower than that of a bare, non modalized, assertion. It also contributes to establishing an argumentative discourse relation between the two utterances. Note that if we eliminate the modal the level of discourse coherence is affected:

(2) Ratan Tata, presidente del gruppo indiano Tata dal 1991, è noto per aver svecchiato l'impresa di famiglia e per l'affermazione 'Niente mi stimola di più di una sfida'. È stato questo che ha fatto scattare un feeling istintivo tra lo stesso

<sup>4</sup> The term *evidentiality* refers to "the grammatical encoding of the speaker's (type of) grounds for making a speech act" (Faller 2002: 2). Inferential evidentiality refers to grammatical morphemes marking that the information conveyed by the utterance is the result of reasoning from indirect evidence. The study of evidentiality as a *grammatical-typological* category had been traditionally limited to languages, such as Quechua and several other native American languages, where evidentials correspond to clearly obligatorily manifested morphological categories. However, with Chafe & Nichols (1986) and later Dendale & Tasmowski (1994) evidentiality as a *semantic category* has been increasingly investigated also in languages such as French, Italian or English where it is only intermittently or indirectly manifested by morphology, or relies solely on lexical strategies for its manifestation. For a recent discussion of grammatical and lexical evidentiality in Italian see Squartini (2008).

Tata e Sergio Marchionne, a.d. del gruppo torinese, durante le trattative che hanno portato ad un accordo commerciale tra i due gruppi in India. (*Il Sole 24 Ore*, April 19, 2006)

‘Ratan Tata, chairman of the Indian group Tata since 1991 is known for having renewed this family company and for having declared: “Nothing stimulates me more than a challenge”. It was this that triggered an instinctive feeling between Tata and Sergio Marchionne, CEO of the Turin based group, during the negotiations that lead to a commercial agreement between the two groups in India.’

In (2) it is no longer clear that the first utterance functions as a premise supporting an inferred conclusion in a partially manifested argument. In the original version (1), *deve<sub>E</sub>* truly functions as an inferential evidential, signaling that the writer is inferring that the reason why Marchionne and Tata get well together *must* be that they both like challenges. This is a complicated abductive inference resting on a number of unstated premises, which notably include the belief that Mr. Marchionne likes challenges (which is, in Aristotelian terms, an *endoxon*<sup>5</sup> with respect to the common ground of the Italian readers of *Il Sole 24 Ore*) and some major premise supporting the inference from similarity to getting together well, which is also easily recoverable as an *endoxon* in the cultural common ground: *Chi si somiglia si piglia* ‘Birds of a feather flock together’. In contrast, in the modified version in (2) the writer seems to be just *reporting* that the reason why Marchionne and Tata get well together is their common liking for challenges.

It seems, therefore, that a modal like *deve* can function as an indicator that the propositional content of the utterance is *inferred* by the communicator from evidence available in the context, and not independently known from direct experience or hearsay.

In the case of (1) the premises supporting the inferential operation signalled by the modal are identified in part anaphorically with the content of the preceding utterances in the text and in part with *endoxa* in the cultural common ground.

It is this kind of observations that have lead linguists (cf. Dendale 1994, Squartini 2004, Rocci 2005) to the conclusion that modals like *deve*, in their epistemic readings function as lexical markers of *inferential evidentiality*, much like the grammaticalized evidential morphemes and particles specifying the source of knowledge of the propositional content of the utterance, which are well known from the study of Amerindian languages (cf. Fallor 2002) and are indeed found in many languages of the world.

In the following sections of this paper I will show, through a qualitative analysis of a series of examples extracted from the corpus of Italian financial news, that beyond these rel-

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<sup>5</sup> The ancient rhetorical term *endoxon* (pl. *endoxa*) can be used to refer to values and beliefs shared in the communal common ground (Cf. Clark 1996) of some relevant cultural community, especially inasmuch they can be mobilized to serve as premises in an enthymematic argument. In the *Topics*, Aristotle gives an articulated definition of the *endoxa*: “[*endoxa* are those opinions] which commend themselves to all, or to the majority, or to the wise – that is or to all of the wise or to the majority or to the most famous and distinguished of them” (*Topics* I 100b 21-23).

atively well known *epistemic* and *evidential* readings, which I labeled *deve<sub>E</sub>*, there are many other readings of the modal verb *dovere* in the indicative and in the conditional mood that can contribute to signaling argumentative relations in discourse.

Interestingly, compared with the case of *deve<sub>E</sub>*, many of the uses that I examine here can be considered *epistemic* only very indirectly. Some of them give rise to an epistemic evaluation only as a highly context dependent implication on the basis of other kinds of modal meanings, such as, for instance, deontic meanings. Similarly, some of these uses can be considered to convey an *evidential* specification only as a contextual effect in discourse. Some of them do not function as evidential at all, and yet they are deeply intertwined with argumentation.

One of the reasons why these findings are worth reporting is that they can contribute to cast a new light on crucial questions concerning the role of modals in arguments that have arisen in argumentation theory since its inception.

## 2. Modality in argumentation theory

### 2.1 Three takes on the modals in Toulmin

The idea of a close connection between modal meanings and argumentation is not new in argumentation theory. It appears in Stephen Toulmin's (1958) foundational book *The Uses of Argument*, which deals with modals in three separate chapters: the first chapter (*Fields of arguments and modals*), the second (*Probability*) and the third, where he includes the modal qualifier as a component of what was to be known as the "Toulmin model". Rather than building on what precedes, each of the three chapters approaches the issue from a different angle.

In the first chapter, Toulmin suggests that modal terms should be understood in terms of their argumentative functions:

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 argued for an exact parallelism between the semantics of modal words like *may*, *must*, *possible*, *cannot* and discourse moves corresponding to different phases of an argument: taking an hypothesis into consideration (*may*), excluding an hypothesis (*cannot*), and concluding (*must*). He claimed that the modals have an invariant force, to be understood in terms of argumentative moves, and variable "field dependent" *criteria*. This view can be illustrated by the following examples provided by Toulmin:

(3.a) Under the circumstances, there is only one decision open to us; the child *must* be returned to the custody of its parent.

(3.b) 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.

According to Toulmin, in both examples the modal *must* signals the speech act of drawing a conclusion. This invariant argumentative function is the *force* of the modal. On the other hand, the logical type both of the conclusion and of the premises varies according to what Toulmin calls the “field of argument”. In (3.a) the conclusion is a required course of action, in view of the circumstances of the case and some relevant legal and moral principles to which the author and the addressee abide, while in (3.b) the conclusion is a necessary astronomical fact, in view of other astronomical facts and of the relevant physical laws governing the movement and interactions of those celestial bodies. Toulmin develops this hypothesis through a detailed analysis of the uses of *cannot*, which can be reduced, according to Toulmin, to a common pattern (4.a) expressing an invariant force (ruling out an hypothesis) and a number of open variable slots that are filled differently according to the different fields to which the grounds for ruling out the hypothesis belong. Two of the possible fillings considered by Toulmin are exemplified by (4.b) and (4.c).

(4.a) ‘P being what it is, you must rule out anything involving Q: to do otherwise would be R and would invite S’

(4.b) “The seating capacity of the Town Hall being what it is, you can’t get ten thousand people into it –to attempt to do so would be vain”.

(4.c) “The by-laws being as they are, you can’t smoke in this compartment, Sir – to do so would be a contravention of them” (Toulmin, 1958: 24-29)

In Rocci (2008) I have discussed at length the merits of Toulmin’s analysis as well its shortcomings and the apories it encounters, tackling a number of specific aspects, including the seemingly bizarre choice of an obviously semantically composite unit (*cannot*) to illustrate a general point on the meaning of the modals.

On the one hand, Toulmin’s analysis contains valuable insights: it anticipates later semantic analyses of the modals as context dependent relational predicates characterized by open slots that have to be filled in context, putting us on the right track by inviting us to look for the relationship between the different fillings of these slots and different kinds of propositions used to support a standpoint. On the other hand, his straight identification of the invariant meaning of the modals – the force – with an argumentative speech act is difficult to defend.

Let us consider the case of the English modal *must*. For Toulmin, *must* signals the act of presenting one particular conclusion as unequivocally the one to accept, having ruled out other hypotheses. What changes in the different interpretations of the modals are the grounds, or *criteria*, on which this act of drawing a conclusion is based, as illustrated in his well chosen examples presented as (3.a) and (3.b) above, where conclusions are drawn respectively on legal/moral and on physical grounds. According to this view, the Italian modal *deve* in example (5) below would have to be considered similar in kind to the *must* in (3.a) and signal an act of drawing a conclusion on a required course of action from legal grounds:

(5) Un aspirante fotografo **dovrà** effettuare 55 passaggi burocratici e bussare alla porta di una ventina di uffici [...]



'A would-be photographer will have to perform 55 bureaucratic passages and knock at the door of about twenty offices' (*Il Sole 24 Ore*, April 4, 2006).

But certainly this is not the case in example (5). In this text the journalist is indeed *asserting* that the unnamed '55 bureaucratic passages' are *necessarily entailed* by Italian laws and regulations. We cannot say, however, that he is supporting the standpoint that a certain course of action is legally required for photographers by presenting Italian laws and regulations as an argument for drawing this conclusion. If anything because the specific laws and regulations remain unanalyzed and textually inaccessible, just as the modalized proposition is utterly uninformative about the specifics of the entailed action.

We can say that the modals do indeed point to a variable set of "grounds" or "criteria", as Toulmin surmised, but the relation they establish between this implicit background and the underlying modalized proposition is not always an argumentative one. Consider, for instance, the following English example:

(6) 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 sales-person (example retrieved through *Google*).

In (6) the modal *must* falls within the scope of another modal (*maybe*) and thus, to paraphrase Toulmin, we find it embedded as the *content* of an hypothesis worth considering. Clearly, *must* in (6) does not indicate an act of conclusion, nor any other kind of speech act.

The second chapter of Toulmin's book is devoted to defending an interpretation of the modal adverb *probably* and other probability idioms as speech-act markers of "guarded assertion" as more fitting to their actual use than the traditional statistical interpretation. In his analysis of *probably* Toulmin compares the adverb to illocutionary markers modifying the degree of commitment in a speech act, citing early speech-act theoretic work by Austin on the differences between saying *I shall do A* and *I promise I shall do A*, or between simply asserting a proposition *p* and saying *I know that p*.

According to Toulmin, a modal like *probably* can be similarly used to modify my commitment to a prediction – Toulmin takes the example of a meteorological forecast – limiting our answerability and shielding us from "some of the consequences of failure" (Toulmin 1958: 51). In other words, the basic meaning of *probably* is seen as a pragmatic function, which linguists would now call *hedging*<sup>6</sup>, which limits the responsibility of the speaker with respect to an assertive speech act.

Finally, in presenting what was to be known as the "Toulmin model" of argument structure (Chapter 3), Toulmin introduces the *modal qualifier* as a distinct category in the argument layout, separate from the claim, and meant to provide an "explicit reference to the degree of force which our data confer to our claim in virtue of our warrant" (Toulmin

<sup>6</sup> On *hedging* as a semantic-pragmatic category, see Lakoff (1973). Toulmin himself uses the word *hedging*, but only non-terminologically to refer in a derogatory way to the abuse of the shield provided by *probably*.

1958: 101). This analysis can be seen in the light of the analysis of *probably* in the previous chapter: modal qualifiers modify the claim of the argument expressing its *force*, again at a pragmatic level.

There is a certain feeling of disconnect between the treatment of modality in the different chapters of *The Uses of Argument*, which betrays their different origin and time of composition. The first chapter, in particular, offers a view of modality which is different than the one proposed in the subsequent chapters. In the first chapter modal are – so-to-say<sup>7</sup> – *illocutionary markers* signaling different relevant moves in argumentation (considering an hypothesis, ruling out an hypothesis, concluding), while later they become *illocutionary force modifiers* quantifying the strength of the act of concluding. Moreover, the emphasis on the *relational* meaning of the modal and on the different kinds of reasons that can saturate the “criteria” largely disappears in the subsequent chapters as the modal qualifier becomes closer to a one-place modifier of the force of conclusion.

## 2.2 Developments in argumentation theory

Given the important place that modality occupies in Toulmin’s book, it’s somewhat surprising that there has been comparatively little attention to the problem of modality by subsequent argumentation scholars. Among those who do discuss the role of modals in some detail, the contributions of James Freeman and Francisca Snoeck-Henkemans are certainly worth mentioning. These two authors provide emendations of roughly the same perceived shortcomings in Toulmin’s view, but do so in different ways.

Freeman’s (1991) account of modalities incorporates two Toulminian ideas: (1) that the modal should be treated as a distinct element in the “macrostructure” of arguments – as opposed to elements of the semantic microstructure of the propositions making up the argument – and (2) that the semantics of the modals is basically relational.

At the same time, Freeman rejects two other features of Toulmin’s account: that the modals’ force operates at the illocutionary level, and that it modifies directly the claim.

Focusing, in particular, on the analysis of probability expressions, Freeman argues that modals are always relative to an explicit or implicit body of background evidence so that they have the underlying relational form ‘*Given evidence E, probably p*’ rather than the form of an unary operator ‘*Probably p*’. He follows Black’s (1967) idea that the “absolute” reading of *probably* emerges from the identification of E with “the relevant features of the state of the world at the moment of utterance”. Freeman (1991: 123-124) identifies “absolute” probability with *epistemic probability* “probability given all the known relevant evidence”. This is the kind of probability that “involves” assertion. In their non-epistemic uses, probability expressions are akin to conditional structures and are not assertive.

According to this view, the pragmatic role of ‘*Probably p*’ as a way of hedging the assertion of ‘p’ is rather an “emotive meaning” – I would rather say *implicature* – emerging

<sup>7</sup> Referred to Toulmin (1958) this terminology is obviously an anachronism.

from their “literal” relational meaning, when E is identified with all the known relevant evidence at the moment of utterance. What the literal meaning of the modal qualifier directly expresses is a description of “how weighty a case the premise or premises of an argument make for the conclusions they support” (Freeman 1991: 112). Consequently, Freeman argues, with respect to their role in arguments, modals are better treated as similar to *argumentative connectives* such as *therefore* or *because*, rather than to operators like negation, which take scope over a single proposition.

Francisca Snoeck-Henkemans (1997: 108-117) addresses linguistic expressions of modality as *indicators* in the task of argumentative reconstruction within the Pragma-Dialectic framework. In Pragma-Dialectics argumentative indicators are linguistic expressions, textual features or behavioral cues that “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” (Houtlosser 2002: 169-170). More precisely, they point to a number of aspects of the argumentative discourse that are relevant for evaluating the soundness of the argument. As observed by Houtlosser (2002: 169), this information includes, at least<sup>8</sup>:

- 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* or *argumentation scheme* is applied;
- e) What implicit premises need to be supplied by the audience in order to saturate the requirements of the *argumentation scheme*.

For Snoeck-Henkemans (1997: 109) modal words “can be 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”. This expression of the degree of commitment “enables the analyst to determine what degree of justificatory or refutatory potential the argumentation should have, in order to lend sufficient support to the standpoint” (Snoeck-Henkemans 1997: 113)<sup>9</sup>.

<sup>8</sup> Van Eemeren, Houtlosser & Snoeck Henkemans (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.

<sup>9</sup> In Houtlosser (2002) and van Eemeren, Houtlosser & Snoeck-Henkemans (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.

This equivalence between the expression of the “degree of certainty with which the standpoint is advanced” and the indication of the “degree of justificatory potential” can be established if we analyze the pragmatics of argumentation using the speech-act theoretic framework provided by Pragma-Dialectics. By advancing a standpoint an arguer commits himself to presenting adequate evidence in support of it in face of the expressed or implicit doubt of another party. By advancing a standpoint *with a certain degree of confidence*, the arguer *ipso facto* commits himself to providing evidence supporting the standpoint with a *matching degree of force or weight* (cf. Snoeck-Henkemans 1997: 112-113). In fact, this commitment to the proportionate matching of certainty and weight of evidence, can be considered part and parcel of the commitment to a critical discussion<sup>10</sup>.

Contrary to what is suggested in Toulmin’s first chapter, for Snoeck-Henkemans (1997: 109), only *epistemic modalities* are used to indicate degree of commitment to the truth or acceptability of a standpoint. Only these modalities 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 indeed *part of the proposition* and thus cannot play the role of *force* indicators.

In the following sections we will devote particular attention to non epistemic uses of the Italian modal *dovere* attested in the financial news corpus, including both deontic uses and what I will call “ontological causal” uses, examining their potential as argumentative indicators. The findings will confirm, on the one hand, that only truly epistemic uses can act as direct *force* indicators – an indication that does not exhaust, however, their meaning. On the other hand, it will turn out that non-epistemic modals do convey argumentatively relevant information but of a different kind.

### 3. *A basic framework for investigating the relationship between argumentation and modality*

Before proceeding with the analysis of the uses of the modals found in financial news articles, I need here to pick up some minimal theoretical baggage explaining what I mean by an argumentative discourse relation and presenting the general approach I follow in dealing with the semantics of the modals.

#### 3.1 A stratified account of arguing

In this paper I will deal with argumentative discourse relations following the general approach proposed by Congruity Theory, which is presented in detail in Rigotti (2005) and

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<sup>10</sup> This is not made, however, entirely explicit in the rules and commandments for the critical discussion (cf. van Eemeren & Grootendorst 2004). *Commandment 7*, in fact, only deals with one limit case of this matching, which concerns arguments presented as deductively conclusive, which need to be formally valid, without proposing an analogous matching justificatory force for lower levels of commitment.

in Rocci (2005). Argumentation, like other discourse relations, is represented as an abstract pragmatic predicate, also called *connective predicate*. A pragmatic predicate is an action predicate saying what the speaker does to the addressee with the utterance. Like ordinary predicates in Congruity Theory, pragmatic predicates are analysed in term of the presuppositions they impose on their argument frame and of the conditions (entailments) with which they update the common ground. Since pragmatic predicates not only represent but also realize social actions, their update conditions are *pragmatic effects*, involving the creation of commitments of the participants which become part of the common ground. A pragmatic predicate is thus a relational predicate which minimally takes as its arguments the speaker (Spk), the hearer (Hr) and an utterance ( $U_0$ ):

P (Spk, Hr,  $U_0$ )

Since many pragmatic predicates, including *arguing*, are relational also in the sense that they are logically dependent from the content of another utterance, the argument frame of the pragmatic predicate can also include other anaphorically recovered utterances ( $U_{-n}$ ) or inferred contextual propositions (X) as arguments – hence the term *connective predicate*:

C (Spk, Hr, X,  $U_{-n}$ ,  $U_0$ )

An argumentative discourse relation can be thus represented as a connective predicate frame where a Spk presents a standpoint  $U_0$  as supported by one or more co-textual arguments  $U_{-1} \dots U_{-n}$ , and unexpressed premises ( $X_1 \dots X_n$ ). In this framework the felicity conditions imposed by Searlian illocutions (Searle 1969) – which typically involve the speaker and hearer – are reinterpreted either as presuppositions imposed by the connective predicate on n-uples of argument places including for instance the speaker (*Spk*), the hearer (*Hr*) and the utterance  $U_0$  or as pragmatic effects of the predicate<sup>11</sup>. *Rhetorical relations* defined, as in Mann & Thompson (1987), in terms of conditions on the utterances involved, conditions on their combination, and effects of the combination are even more straightforwardly rendered in terms of presuppositions and effects of the pragmatic predicate.

Often pragmatic predicates receive little or no linguistic manifestation, and hearers have to infer them, in order to make sense of an utterance or discourse. There are however a number of linguistic items whose business is to impose quite detailed constraints on the pragmatic predicates to be established; discourse connectives such as *therefore*, *but* or *in fact* are perhaps among the most obvious candidates to this role. One of the guiding hypotheses of the present work, which is shared by Freeman (1991) is that modals behave similarly to connectives and impose constraints on the interpretation of argumentative pragmatic predicates at different levels.

In an insightful review of current linguistic approaches to discourse relations conducted from the viewpoint of argumentation theory Snoeck-Henkemans (2001) criticizes

<sup>11</sup> Consider, for instance, the preparatory conditions of the assertion as formulated by Searle (1969). One of them states that ‘It is not obvious to the *Speaker* that the *Hearer* knows (does not need to be reminded of) *p*’. This type of condition is treated as a (relational) presupposition imposed by any ‘assertive’ connective predicate on the argument places characterized by the roles of the *Speaker*, the *Hearer* and the asserted proposition.

theories such as Mann & Thompson (1987) or Sweetser (1990) for positing that discourse relations hold *either* at the pragmatic/epistemic level *or* at the propositional level. According to Snoeck-Henkemans (2001: 237) these theories do not recognize that “every illocutionary relation is by definition based on a subject matter (or ‘propositional’) relation. This recognition, she argues, is particularly important if we want to account for argumentation which holds at the speech act level, but inevitably rests on relations such as *causality*, *concomitance*, and *comparison* holding between the propositional contents of the standpoint and of the arguments.

In fact, an account of inference in ordinary discourse cannot just rest on a notion of *logical form* – which remains hollow until it is associated to a semantic interpretation – or worse be content of conceiving epistemic relations as *alternative* to content-level relations, as Sweetser (1990) does, holding in a world of belief objects whose relationship with real world causality is simply “metaphorical”.

The idea is that when I infer a proposition  $q$  from a set of propositions (premises)  $p_1 \dots p_n$  I do that thanks to some conceptual – semantico-ontological – relationship between  $q$  and these other propositions. The Ancient and Medieval rhetorical and dialectical tradition of the *Topics* called *topos* or *locus* a class of such content-level relationships. In the traditional view inferences in natural discourse are based on a variety of *loci* or *topoi* including relations such as *cause/effect*, *part/whole*, *genus/species*, as well as *means/ends* relations, *similarity* relations, and so on. Rigotti (forth. 2009) presents a detailed theory of argumentative *loci*, which, drawing on the *Topics* tradition, conceives a *locus* as a semantico-ontological relation<sup>12</sup> binding the propositional content of the standpoint to the propositional content of the premises<sup>13</sup>, in a way that warrants an implicative relation at the logical level. As we will see in the following sections, considering the specific *locus* supporting an argumentation will help us better understand the role of non-epistemic modals in arguments.

Congruity Theory (Rigotti 2005: 85-86) implements this stratified conception of the argumentative discourse relation by considering the propositional level relation of the *locus* as a presupposition of the pragmatic predicate. The inventory of *loci* includes ontological relations such as cause-effect, part-whole, genus-species, means-ends, etc.

The stratified structure of an argumentative discourse relation can be therefore represented as follow:

$$C(\text{Spk}, \text{Hr}, X, U_{-n}, U_0):$$

Presuppositions:

- $p_1 \dots p_n$  being the propositional contents of  $U_{-1} \dots U_{-n}$  (and  $X_1 \dots X_n$ ),  $p_1 \dots p_n \in \text{CG}_{\text{Spk}, \text{Hr}}$  – that is belong to the common ground between Spk and Hr;

<sup>12</sup> Other authors that adopt a somewhat similar semantico-ontological take on argument schemes speak of “relations of conveyance” (Katzav & Reed 2004).

<sup>13</sup> Note that Rigotti (forth. 2009) presents a much more detailed internal analysis of the functioning of a *locus* in the inferential structure of an argument than what is retained for the purposes of this paper.

- $q$  being the propositional content of  $U_0$ ,  $q \notin CG_{Spk, Hr}$ ;  $\neg q \notin CG_{Spk, Hr}$
- There is some ontological-semantic relation  $L(\{p_1 \dots p_n\}, q)$  warranting  $\{p_1 \dots p_n\} \rightarrow q$

Pragmatic effects:

- With  $U_0$ , Spk presents  $q$  as *reasonably acceptable* by Hr thanks to the premises  $p_1 \dots p_n$  presented in  $U_{-1} \dots U_{-n}$  (and  $X_1 \dots X_n$ ).

A final remark needs to be made here on the relationship between pragmatic effects of the argumentative connective predicate as outlined above and the mental act of drawing an inference. Not every attempt to persuade the addressee counts as argumentation, arguments are appeals to reason, attempts at persuading of the standpoint *because* of the support offered by the premises. We can see arguing as trying to lead somebody to assent to a standpoint  $q$ , making it follow inferentially from arguments  $p_1 \dots p_n$  he/she already accepts. A similar approach is proposed by Pinto (1996), who treats arguments as “invitations to inference” and emphasizes that the specific goal of argumentation is “to effect an *inference* in the person to whom it’s addressed” and not simply “to effect acceptance of its conclusion” (Pinto 1996: 168).

Looking at the relationship between argumentation and inference helps us also to understand the relationship between *argumentation* and *inferential evidentiality*. Argumentation proposes an *inference to the addressee*, while inferential evidentiality signals an *inference of the speaker* as the source of knowledge of the utterance. The two may well go together – such as in example (1) – but we can also have evidentiality without argumentation (when the private premises of the speaker are not made available to the hearer) and argumentation without evidentiality. Consider, for instance, the classic alibi example. Suppose I say to the investigators: *Wednesday I was in Milan giving a talk. I couldn’t possibly rob a bank in Lugano on that day*. Here I am certainly trying to get the hearer to infer my innocence, but we cannot say that I am signaling that the source of *my own knowledge* of not having robbed a bank in Lugano is inferential! This distinction is relevant for some of the uses of the modals I will examine here.

### 3.2 A relational analysis of the semantics of the modals

As a conceptual category, modality relates to the very basic human cognitive ability of thinking that *things might be otherwise*, that is thinking of *alternatives*: states of affairs other than what is the case. The logico-philosophical tradition developed the theoretical notion of *possible worlds* to deal with reasoning about alternatives<sup>14</sup> (or different *possibilities*). Modality

<sup>14</sup> David Lewis (1973) work on counterfactuals is one of the most influential in-depth discussions of possible worlds in modern philosophical logic. The book is also noteworthy for the impact it had on the linguistic semantic analysis of modality and conditional constructions. An accessible introduction to possible worlds is Gärdenfors (2003). This work is recommended for its focus on the broader philosophical significance of possible worlds rather than on the technical details of their implementation in modal logic.

concerns, in a more restricted sense, a class of semantic notions – which include *possibility*, *necessity* and *probability* – involving the quantification over alternatives of a certain kind<sup>15</sup>.

The following sections will show how it is possible to claim, on the one side, that the semantics of Italian modal verbs *potere* and *dovere* is similar in important ways to that of discourse connectives and, on the other side, advocate a semantics of the modals that does not make the inherently tied to different kinds of argumentative speech acts, as originally suggested by Toulmin for the English modal verbs and the adverb *probably*.

Two key elements of the semantic analysis proposed that contribute to make modal verbs similar to connectives are (a) that modal verbs are seen as *relational* predicates, and (b) that their semantic structure is seen as structurally *context-dependent* and involving a *procedural* component.

A rich and flexible analysis of Italian modal verbs as *relational* and *context dependent* can be worked out building on the Theory of Relative Modality, a theory which was first introduced in formal linguistic semantics in the late 1970s.

### 3.2.1 Modal meanings are relational

The fundamentals of the theory stem from seminal papers by German linguist Angelika Kratzer (1977, 1981, 1991)<sup>16</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.

In other words, modal meanings in the theory of Relative Modality are treated as relations of the form R (B, p) that have two arguments, corresponding respectively to the proposition p falling in the scope of the modality and to a set of propositions, called the conversational background (B) that is to be saturated in the context of utterance. Thus modal markers encode *invariant logical relations* but are context dependent for the saturation of the conversational backgrounds.

Medieval philosophers 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 entailment (*necessitas consequentiae*) and they guarded against confusing it with *necessitas consequentis*, that is with the absolute necessity of the consequent.

The distinction between *necessitas consequentiae* (or *necessitas conditionata*) and *necessitas consequentis* (or *necessitas absoluta*) is discussed in several passages of the works of St.

<sup>15</sup> “At the heart of the technical and the philosophical use of possible worlds is the simple idea that something is possible if it is so in at least one possible world and something is necessary if it is so in all possible worlds” (Girle 2003: 3).

<sup>16</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).



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 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).

We can represent the two readings respectively as (7) and as (8):

(7) Necessitas consequentiae:  $\Box(p \rightarrow q)$

(8) Necessitas consequentis:  $p \rightarrow \Box q$

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

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

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

Superficially in (9.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 (8). In other words (9.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 (9.a) corresponds to the logical form in (7) 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 (9.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. Sometimes, the conversational background may be expressed, as Kratzer remarks, by adverbial prepositional phrases such as *in view of NP* – as in (10),

(10) 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.

Necessity modals are taken to indicate that the argument proposition is *necessarily entailed* by (that is *logically follows* from) the *conversational background* (B) of the modal:

$$(11) \textit{Must/ Necessarily} (B, \varphi) \Leftrightarrow \Box (B \rightarrow \varphi)^{17}$$

Or, alternatively:

$$(12) [[\textit{must/ necessarily} (B, \varphi)]] \Leftrightarrow [[\varphi]] \text{ is a logical consequence of } B$$

Likewise, the basic structure of relative possibility can be defined by (13) or (14) :

$$(13) \textit{May/ Can/ Possibly} (B, \varphi) \Leftrightarrow \neg \Box (B \rightarrow \neg \varphi) \Leftrightarrow \Diamond (B \wedge \varphi)$$

$$(14) [[\textit{Can/May/Possibly} (B, \varphi)]] \Leftrightarrow [[\varphi]] \text{ is logically compatible with } B$$

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.

### 3.2.2 Context dependency and procedurality of modal meanings

The multifarious interpretations of the modals and their finer nuances can be expressed in terms of the different conversational backgrounds restricting the modal operator. The major distinctions traditionally recognized in the realm of modality can be seen as broad classes of conversational backgrounds. I adopt here a tripartite distinction between *ontological*, *deontic* and *epistemic* conversational backgrounds, which is inspired, in part, by Kronning (1996, 2001). Portner (forth. 2009: 140 ff.) proposes a partially overlapping tripartite classification.

- An *ontological* conversational background is composed of propositions that are *facts* of a certain kind. Kratzer (1981) calls these conversational backgrounds *realistic*<sup>18</sup>. These “facts” can range from the basic ontology of the universe, both

<sup>17</sup> Actually, the formulas in (11) and (13) 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 (12) and (14), 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, p.: 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.

<sup>18</sup> For Kratzer (1981) a conversational background is realistic when there is no proposition in B which is false in the actual world *w*. That is: B is a set of facts in *w*. It may not be the set of *all* facts in B, but it does not con-

metaphysical and physical (*All humans must die*) to very specific sets circumstances, including both the external circumstances (*Even from city water sources, [...], the water must flow through miles of piping and can pick up dirt, chemicals, ...*) and the internal features of an agent (*John can lift 100 kg singlehandedly*). Interestingly, social reality can be treated much in the same way as physical reality and backgrounds including institutional facts or economic laws function largely in the same way as an ontological background. This class of conversational backgrounds corresponds only in part to what Kronning (2001) call *alethic* modalities. A closer match is represented by Lycan's (1994) notion of *restricted alethic modalities*.

- A *deontic* conversational background is composed of propositions corresponding to some sort of norm or ideal – states of affairs that are “good” with respect to some normative system or system of preferences. It can include values, laws and regulations, contracts, commitments as well as the simple desires, preferences and goals of an agent. This admittedly is a very extended sense of the term *deontic*. Portner (forth. 2009: 139) prefers to refer to this range with the term *priority modals*.
- Finally, an *epistemic* conversational background is composed by a set of beliefs of a subject. The proper term for this kind of background should be *doxastic*, as the term *epistemic* refers to knowledge rather than belief. I keep the term *epistemic* because its widespread use in linguistics. Often an epistemic background is interpreted deictically as referring to the belief set of the speaker at the moment of utterance. As observed by Papafragou (2000) epistemic uses of the modals involve the cognitive operation of *metarepresentation*, the speaker's own representation of the world is considered *qua* representation, and not simply as a set of facts.

These three broad categories can help defining the coordinates of range of interpretations that the modals acquire in context, but they are not to be considered as linguistically encoded distinct “meanings” of the modals. As we will see in the following pages, the contextual readings of the modals refer back to very specific sets of propositions as their backgrounds. These sets are often highly salient in the context and it is doubtful that the addressee must always pass through the quite abstract categories involved above in order to reconstruct them. Rather it seems appropriate to consider B as a sort of empty slot to be saturated in context (cf. Papafragou 2000: 43-47).

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tain propositions that are not facts in *w*. So, when I say that *John can lift 100 kg singlehandedly* I select as B a very specific set of facts in *w*: the physique of John, abstracting from external circumstances. Note that realism is a formal property and corresponds to the property of *reflexivity* in possible world semantics and to the axiom  $\Box\phi \rightarrow \phi$  in the syntactical characterization of a system of modal logic (cf. Kaufmann *et al.* 2006: 82-86). The fact that this axiom holds for ontological modalities plays an important role in determining their relationship with epistemic attitudes and with argumentation.

In the approach adopted here the linguistically encoded meaning of the modals is partly *procedural* or *instructional* in nature. Modals belong to a broader category of words and constructions “whose job is to characterize and index sometimes quite finely structured features of context and to bring those features formally into the interpretation process” (Charles Fillmore, preface to Kay 1997). These linguistic units behave like “a virtual instruction to the addressee to examine the common ground of the conversation (along with other interpretive content of the sentence) to fill in some partially specified part of the intended interpretation” (Kay 2003).

By treating the modals as context dependent allows us to account both for very specific interpretations of the modals, when the propositions that make up the conversational background are precisely identified, and for vague uses of the modals where the composition of the background remains underspecified. At the same time, this approach provides a framework for accounting for discourse relations associated with the use of modals, as one possible way of saturating the conversational background is identifying it anaphorically with propositions in the preceding co-text.

The linguistically encoded instruction associated with the different modal lexemes and constructions is not limited, however, to asking to the addressee to saturate B in context. The instructional component of a specific modal marker might include, for instance, restrictions on the types of admissible conversational backgrounds, default or preferential paths of saturation, and, in certain cases, additional semantic or pragmatic features conventionally associated with certain a given saturation of the background. In the following sections these additional instructional components will be examined for the modal construction formed by the combination of the modal verb *dovere* and the morpheme of the conditional mood.

### 3.3 Investigating the role of modality in arguments

With this double theoretical framework in place, consisting in the stratified account of argumentative discourse relations (§ 3.1) and of the relational and context dependent semantic analysis of the modals (§ 3.2), the central questions concerning the relationship between argumentation and modality can be formulated in a very straightforward manner, in terms of the approaches to modality and argumentation sketched above. These questions can be formulated in terms of a “mapping” between the two analyses, as shown diagrammatically in Figure 1, below:

- a) How do the logical relations expressed by modals relate to argumentative relations, considered at the 3 levels of the speech act of the arguer, of the inferential path proposed to the addressee, and of the *locus* relying premises and standpoint at the content level?
- b) To what extent, and under which conditions do modal conversational backgrounds map onto the set of premises supporting the standpoint?

c) When does the content of the modalized, preajcent, proposition count as an expressed standpoint?

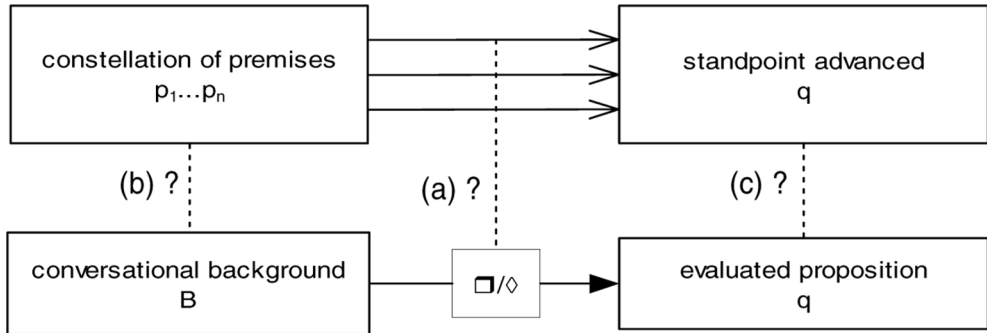


Figure 1: Mapping between the structure of argumentative discourse relations and the structure of modal meanings

With the help of this general framework, the second half of this paper will investigate the relationship between the semantics of the Italian modal verb *dovere* and the expression of argumentation in a corpus of Italian financial news articles.

#### 4. Modality and argumentation in financial news

There are certain striking socio-pragmatic features of the discourse genre of financial news that contribute to make it an ideal test bed for our investigation. It is worth devoting some space to illustrate them.

Finance has often made the headlines lately, and for all the wrong reasons. But even before the present crisis, the relatively few students of discourse that approached this sphere of human activity found much that goes far beyond the numbers: articles in financial newspapers are placed in a lush and tightly knit *genre system* (Bazerman 1994) of interrelated written and spoken financial discourse genres:

corporate annual reports, analysts' recommendations and notes, quarterly earnings announcements... ... and other price sensitive press releases analysts' and investors' conference calls,	shareholder meetings, Internet shareholder forums, letters to investors, other kinds of financial newsletters, open letters of activist shareholders, prospectuses produced by bidders in takeover attempts, ...
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Financial discourse, being oriented towards the decision making of investors, is, for the most part, overtly or covertly argumentative. Moreover, certain fundamental characteristics of the investment activity are reflected in the financial news genre in a way that places modality at the centre of its pragmatic and semantic functioning. It can be said that financial com-

munication is driven by the demand of information from investors who need to reduce the uncertainty surrounding investment opportunities – the uncertainty being due both to the intrinsic incompleteness of information concerning the occurrence of future events, and to private, undisclosed, information available only to “insiders”.

As a consequence, financial news – in contrast with other news genres – are as much about predicting the future and evaluating possible outcomes than about reporting past events. Indeed we can say that the investor is interested in learning what happened yesterday only inasmuch it can help him shape his vision of the future where the possibility of profit lies.

The economic-financial press displays a rich variety of predictive speech acts<sup>19</sup>. These obviously include *economic forecasting* proper (Coyle 2001) – that is the systematic, quantitative, model based extrapolations from the present situation and past events to future trends of the economy – but they are not limited to it. They also include particular forecasts concerning the stock market (and sometimes the value of individual stocks) apparently based on a variety of much less systematic and scientifically established techniques (including the various forms of *chartism* or *technical analysis*), as well as a large number of wholly unsystematic, largely qualitative, predictive statements inferring, the intentions and future behavior of companies or individual managers or investors from a variety of behavioral signs, or *signals* – as they are called in finance according to a loose use of the term introduced in economic theory (cf. Spence 2002) – from partial disclosures by corporations and rumors *Heard on the Street* – as the title of a regular feature in the *Wall Street Journal* testifies (cf. Pound & Zeckhauser 1990). In the newspapers the discussion of signals takes the form open-ended guesswork often contemplating alternative conditional scenarios.

The discourse community of the financial industry has created its own indigenous speech act label to deal with the pervasiveness of the reference to the future in financial discourse: the term *forward-looking statements* is routinely used by finance professionals to deal with all the above kinds of prediction and, additionally, to statements referring to the corporate plans, strategies and more or less generic *expectations*. One notable use of the meta-linguistic term *forward-looking statements*, which has attracted the attention of discourse analysts (McLaren-Hankin 2008), is represented by corporate press releases containing quarterly earnings announcements and other kinds of financially sensitive information. These texts are invariably appended by a legal disclaimer (Safe Harbour Statement) liberating the issuers from most of the commitments incurred in by performing the “forward-looking” speech-acts, as in the following example:

This press release contains statements that constitute forward-looking statements [...] Words such as “believes,” “anticipates,” “expects,” “intends” and “plans” and similar expressions are intended to identify forward-looking state-

<sup>19</sup> Here I assume the speech-act theoretic definition of *prediction* provided by Searle and Vanderveken. Searle & Vanderveken (1985): “To predict is to assert with the propositional content condition that the propositional content is future with respect to the time of the utterance and the preparatory condition that the speaker has evidence in support of the proposition. Evidence is a special kind of reason.”

ments but are not the exclusive means of identifying such statements. [...] By their very nature, forward-looking statements involve inherent risks and uncertainties, both general and specific, and risks exist that predictions, forecasts, projections and other outcomes described or implied in forward-looking statements will not be achieved. [...] (Excerpt from Safe Harbour statement accompanying a *Credit Suisse* press release.)

The predictive statements as they appear in the texts of the press-releases are themselves accompanied by a variety of “hedging” devices, which act as “linguistic disclaimers”, as noted by McLaren-Hankin (2008). These hedges include a variety of modal expressions (*should, could, possibly, potentially, likely*) as well as propositional attitude predicates such as *to expect, to believe, to feel, to hope, to be optimistic about*.

One can wonder whether journalistic predictions have any actual value for investors and, more generally, whether financial news media have an effect on the financial markets (cf. Dyck and Zingales 2003) or are merely a sideshow with no relationship to financial markets. Given the social prominence of this predictive activity these questions are far from irrelevant, and, in fact, they are deeply intertwined with fundamental issues in financial theory. The efficient market hypothesis predicts that new information relevant economic events is quickly incorporated into stock price. This makes predictions read in newspapers hardly profitable for investors. But the simplest and most devastating criticism of the idea of (freely available) profitable prediction is perhaps the one delivered by Mc Closkey (1990: 3):

The customer wants the economist to be an expert forecaster, telling that simplest and most charming of economic stories: Once upon a time there was a newspaper reader who was poor; then she read a column by a wise economist, who for some reason was giving his valuable advice to her and two million other readers; and now as a result she is rich.

But do financial news have any effect on the markets? Here some insights come from the camp of “behavioral finance”. These researchers find that the “efficient market hypothesis” underestimates the role of collective investor psychology in producing what they call “market sentiment”. They observed that reactions to news are not limited to instant adjustments to new hard information emerging and that price movement, downward or upward, may continue in the absence of new information when the investors get carried away by enthusiasm or stampede in a panic. Market sentiment seems to be determined, at least in part, by spin put on by the media, which, in turn, tends to follow the spin promoted by companies, which seem to reward friendly journalists with private information. So, predictions found in financial news may still be relevant to financial markets in the end, not because of their (dubious) intrinsic value but because of the effect they can have on “market sentiment”.

As for the predictions appearing in the financial news proper, they also typically take the form of modalized utterances. Contrary to the received self-portrait of journalists as eschewing uncertainty in the pursuit of newsworthiness (cf. the saying *If it's only worth a might, it probably isn't a story* quoted in Coyle 2001) bare possibility and “conditional” possibility modals are the most frequent.

Explicit argumentation supporting acts of prediction<sup>20</sup>, is also much more prominent than in other news genres. This supporting argumentation is largely attributed to expert sources (e.g. financial analysts) and sometimes accompanied by further indirect argumentation on the source's credibility. The (often reported) arguments on which the prediction is based can invoke different *loci*, but one can notice a certain prominence of *causal loci*, and in particular those *from cause to effect*. Predictions and causal relations are often expressed in *conditional* terms, relativized to plausible or merely possible scenarios (See Mc Closkey 1990 on conditional predictions in the discourse of economics). Consider, as a partial illustration of the features discussed above, the following English examples, taken from an article appearing in the *Wall Journal Europe* (WSJE) on September 14, 2006<sup>21</sup>:

- (15.a) Firm's fortunes **may** rise as commodity prices fall (Headline)  
 (15.b) Major airlines around the globe continue to see strong passenger demand, so profit **could** climb **if** they are able to raise prices while their own costs drop as fuel prices fall. (From the body text)

The headline in (15.a) consists of a modalized conclusion supported by an argument based on a form of "economic causality", while the passage in (15.b) presents a more developed form of the same argument where the modalized conclusion introduced by *could* holds only within a conditional frame (*if they are able to raise prices*). Explicit attribution to sources (financial analysts, rating agencies, etc.) creates another kind of shifted discourse domain, which interacts with conditional structures and epistemic modals, as illustrated by (16):

- (16) A reduction of that percentage to 30% **would likely** lead Standard & Poor's to raise the company's corporate credit rating to "stable" from "negative," **according to** primary credit analyst Mary Ellen Olson. (WSJE, February 13, 2007)

The above semantic features make this discourse genre an ideal – and largely unexploited – environment to explore the interaction between modals, evidentials and conditional structures and to evaluate the role of these structures as argumentative indicators. It is the latter issue, in particular, that I would like to explore here with respect to the Italian modal verb *dovere*.

### 5. Modal verbs and predictions in Italian financial news

As we have seen in the previous section, prediction statements appearing in economic financial news are regularly modalized; and the genre appears to be particularly rich in modal

<sup>20</sup> Merlini (1983) addresses predictions in economics papers from the viewpoints of Searlean Speech Act Theory. The analysis reveals an intimate connection between the nature of the illocutionary force of prediction and its role in argumentation. Merlini (1983) devotes particular attention to the *conditional* nature of predictions and the role of *epistemic modalities* in modifying the prediction along an epistemic gradient and an evidential-inferential one.

<sup>21</sup> The whole article contains 12 modal expressions (modal auxiliaries and modal adverbs).



words. Some quantitative data can be suggestive. For instance, in our large sample of the financial sections of the *Il Sole 24 Ore* the frequency the conditional forms of the modals *dovrebbe* (0.05%) and *potrebbe* (0.08%) is *more than double* than the frequency in a comparable reference corpus of generalist newspaper articles (*dovrebbe*: 0.02% and *potrebbe* 0.03%). But a qualitative examination of some representative texts is perhaps more revealing of their tone. Consider the following extract from an article dealing with the possible financial consequences of the indecisive outcome of the 2006 Italian political election:

(17) *Forse* qualche hedge fund che si muove sui dati macroeconomici *potrebbe* decidere di mettersi “corto” (vendere, anche allo scoperto) sui titoli del debito italiano. ‘*Forse* – aggiunge Ragazzi – perché le finanze italiane sono peggiorate e il prossimo Governo *potrebbe* trovarsi un buco peggiore di quello che è stato prospettato’. L’*ipotesi* che i nostri titoli di Stato *possano* essere messi sotto pressione non è infatti esclusa da Mattia Nocera, a.d. di Belgrave Capital. Ma sulla Borsa non *dovrebbe* succedere nulla di strano: né per l’*incertezza* legata a una maggioranza risicata, né a causa di un Governo di centro sinistra.

‘*Semmai* la maggior apertura di Prodi all’Europa *potrebbe* in qualche modo favorire il processo di aggregazione tra le banche e anche difendere gli interessi italiani nel Continente’, sottolinea Nocera.

Maybe some hedge fund that moves on the basis of macroeconomic data might decide to “go short” (to practice shortselling) on Italian debt securities. “Maybe – Ragazzi adds – since the finances have worsened and the next government might find a hole worse than what has been foreseen.” The hypothesis that our government bonds might be put under pressure is not, in fact, excluded by Mattia Nocera, CEO of Belgrave Capital.

But, as far as the Stock Exchange is concerned, nothing strange should happen: nor because of the uncertainty due to its very narrow majority, nor because of a Center-Left government.

“If anything, the greater openness of Prodi towards Europe could, in some way, favour the process of consolidation among the banks and also defend Italian interests in the Continent” Nocera stresses.

The passage is notable not only because of the abundance of modal verbs and adverbs, but also for the presence of nouns such as *incertezza* “uncertainty” and *ipotesi* “hypothesis”, which denounce, so to say, the embedded modality of the subject matter this passage is about. Epistemic concepts such as *uncertainty* and modal notions in general (*risk, opportunity, expectation*) become discourse topics commented upon. The reflexive nature of finance has much to do with this discourse phenomenon: the beliefs of the market, including those that are apparently not anchored to hard information (“market sentiment”) *do shape* the financial realities in the markets. So, the question of what the market believes may appear at times just as important as the question of how things are “in reality”. The English example reproduced below from the *Wall Street Journal* is particularly telling in this respect:

(18) Such concerns have helped limit the dollar's losses against the euro, despite the Fed's recent moves – which once might have produced a dramatic fall in the dollar. The euro is “still essentially where we were at the start of December,” *says* Simon Derrick, the London-based chief currency strategist for the Bank of New York Mellon. “That I find absolutely remarkable.”

Mr. Derrick believes investors may be focused more on the risks to growth than on those posed by inflation. They “may well believe that the ECB is not being reactive enough and the euro is too highly valued,” he says. (“Rate-policy shift could sap Euro”, *WSJ Europe* February 1, 2008).

(18.a) BELIEVE (Derrick, MAY (FOCUS (Investors, RISK ('Economy does not grow'))))

(18.b) BELIEVE (Derrick, MAY (BELIEVE (Investors, 'The Euro is too highly valued')))

The triple or quadruple embedding of modalities and epistemic attitudes displayed in (18.a,b) is “absolutely remarkable”, especially if one considers that the also the deeply embedded predicate *to be valued* in (18.b) can be analyzed in terms of a modal structure involving the “*willingness to pay a certain sum for something*”.

#### 6. *The predictive implications of future-oriented non-epistemic uses of Italian modal verbs*

The kind of modalities one finds in financial news is also shaped by the interaction between modality and future reference. As noted above, in financial decisions the *inherent uncertainty* of the future overlaps with the *uncertainty* due to incomplete knowledge<sup>22</sup>. According to a certain commonsense metaphysics we conceive of the future as not only epistemically uncertain, but also ontologically open, unsettled. Medieval philosophers (cf. Knuuttila 2008) reserved the term *real possibility* (*possibilitas realis*) for future possibilities, distinguishing them from the purely metaphysical, logical or epistemic possibilities – the latter, in particular, were possibilities only *a parte nostra* “from our viewpoint” (cf. Rocci 2005a, p. 79). With respect to the settled past no real possibilities are open: only epistemic possibilities remain open due to the incompleteness of our knowledge. This experiential asymmetry is reflected linguistically in the functioning of modal verbs. With respect to the ontologically settled past, where only epistemic possibilities are open: modal verbs show a very clear cut distinction between epistemic readings and non epistemic ones, and a second clear cut distinction within the non-epistemic area between factual and counterfactual readings. With the verb *potere* this threefold distinction is marked formally by the use of tenses:

<sup>22</sup> Interestingly, the two sources of uncertainty in investment activities – the inherent uncertainty of future events and the incompleteness of the information on the current situation – correspond to a distinction which is well known by semanticists working on the interaction between time and modality: namely the distinction between the ontological “unsettledness” of future events and the epistemic / doxastic uncertainty which characterizes our mental representations of events, be they past, present or future (Cf. Kaufmann *et al.* 2006: 99-100).

- (19.a) *Può aver visto*. ‘She may have seen’ (epistemic uses only)  
 (19.b) *Potrebbe aver visto* ‘She might have seen’ (epistemic uses only)  
 (19.c) *Ha potuto vedere* ‘She was able to see / It was possible for her to see’  
 (factual non epistemic uses only)  
 (19.d) *Avrebbe potuto vedere* ‘She could have seen’ (counterfactual epistemic  
 uses only)

In the area of the future, where epistemic uncertainty overlaps with ontological openness, the distinction between epistemic and non epistemic readings becomes much less clear cut. This is particularly evident in the area of possibility, where so-called cases of *merger* (Coates 1983, 1995) between ontological or deontic possibility and epistemic possibility abound:

- (20) Gli altri rischi che gravano sull'evoluzione del commercio internazionale sono di natura macroeconomica: prezzo del petrolio e rialzo dei tassi d'interesse *possono* influire sui consumi. (*Il Sole-24 Ore*, April 12, 2006).  
 “The other risks that loom on the evolution of International trade are macroeconomic in nature: oil price and rising interest rates can influence consumer spending”.

In (20) *potere* selects an ontological conversational background of economic facts including *oil price* and *rising interest rates* and relates them with *consumer spending* in a temporally generic statement. The reading is close to the so-called “sporadic” reading of possibility modals (Kleiber 1983) and not directly an epistemic one. It expresses an inductive generalization over similar cases (*Lions can be dangerous* or *This lion can be dangerous (on occasion)*) and not an epistemic evaluation of a single case (*This lion may be dangerous (in the context of utterance)*). The epistemic evaluation that interest rates and oil price may well influence consumer spending in the immediate future is made available as a very strong implicature, based on Grice’s maxim of quantity (had the author known about present circumstances ruling out this general possibility she would have been more informative) and helped by the context provided by the immediately preceding clause.

The derivation of epistemic implications from a non epistemic modality with respect to a future event is possible also with the necessity modal *dovere*. Here, however, the term *merger* seems less appropriate as one can perceive a clear cut distinction between the non-epistemic meaning of the modal and the epistemic implicatures that arise from it in context. In the corpus one finds two different readings of *dovere* that are not based on an epistemic conversational background but give rise to the implicature that the future event in the subjacent proposition is predictable with a certain degree of confidence. I will first examine these readings when they arise in the indicative forms of *dovere* – in the present tense and, more often, in the future. In both cases one can find a closely related corresponding readings in the *conditional* mood. I will discuss the conditional versions separately in the following sections (§ 8 and § 9).

The first group of uses of *dovere* which gives rise to an epistemic implicature of prediction consists of occurrences where the modal selects different kinds of *deontic* conversational backgrounds. Consider examples (21), (22) and (23) below:

(21) Slovenske Elektrarne dispone di 7 mila MW fra centrali idroelettriche, a carbone e nucleari; in tutto si tratta di sei reattori dei quali due – Mochovce e Bohunice – sono stati al centro di molte denunce delle associazioni ambientaliste e *devono* essere spenti per motivi di sicurezza, nell'ambito degli accordi per l'ingresso della Slovacchia nella Ue.

'Slovenske Elektrarne disposes of 7 thousand MW from hydroelectric, coal and nuclear power plants; there are in all six reactors, two of which – Mochovce and Bohunice – have been at the center of many complaints of environmentalist associations and must be turned off because of security concerns, in the context of the agreements for the admission of Slovakia in the EU'  
{agreements for the admission of Slovakia in the EU'} ⇒ 'Mochovce and Bohunice reactors are turned off'

(22) Gli statunitensi posseggono il 15% di Lukoil, precisa il gestore, e in base agli accordi con i russi *devono* salire al 20% acquistando titoli sul mercato.

'The Americans hold 15% of Lukoil – the money manager elaborates – and according to the agreement with the Russians they are to climb up to 20% buying stocks on the market'  
{agreement with the Russians'} ⇒ 'Americans buy up to 20% of Lukoil'

(23) Il prossimo 20 aprile gli azionisti *dovranno* votare sul fatto che sussistano ancora o meno i requisiti di onorabilità richiesti al manager per presiedere una banca.

'On April 20 the shareholders are to vote on whether the manager still satisfies the requirements of honorability necessary to chair a bank'  
{the scheduling of an extraordinary shareholder meeting'} ⇒ 'Shareholders vote on honorability on April 20'

In (21) and (22) the deontic conversational background of the modal is easily identified with different legally binding agreements mentioned in the co-text (an international treaty and a contract, respectively). In (23) the deontic conversational background is not mentioned in the co-text but it seems to coincide simply with the decision by the board of scheduling a shareholder meeting. In the three examples the backgrounds contain an element of *scheduling*, which allows the reader to infer that the scheduled events will quite probably take place. Such a background does not warrant an attitude of absolute certainty: Slovakia might denounce the treaty with the EU, the Americans might pull out from the deal with the Russians by paying a penalty, the board of the Bank might just cancel the shareholder meeting. Interestingly, while the addressee may well assess the degree of certainty of the prediction on the basis of the nature of the deontic background involved, the writer, by using a deontic modality, does not commit himself directly to a given degree of epistemic certainty towards the prediction. Should the implicated prediction turn out to be false, the speaker could always claim that the deontic modality was correct.

Indicative *dovere* can give rise to an epistemic implication also when the modal selects an *ontological background* consisting of facts of a certain kind that necessitate causally the occurrence of a future event. In our discourse genre the causality involved is seldom purely

physical. Most of the times we have economic events that exert their causal power on other events in the economic realm. Examples (24) and (25) from the same article in my sample are clear instances of this phenomenon. When a proposition is presented as a necessary consequence of a factual background, the epistemic evaluation indirectly conveyed through the modal is one of *certainty*<sup>23</sup>:

(24) Giovedì si è passata per la prima volta in quattro anni la soglia del 5% per i tassi a dieci anni. La conseguenza più immediata di questo aumento ricade sui tassi per i mutui immobiliari. Chi aveva contratto mutui a tassi variabili – e sono stati in molti – si trova alla scadenza del primo periodo e *dovrà* rinegoziare tassi di 200 o 300 punti superiori a quelli di un paio di anni fa. Questo significa che una famiglia media con un mutuo di 400mila dollari potrebbe trovarsi a dover pagare anche fino a mille dollari in più al mese.

‘On Tuesday the threshold of 5% for ten years interest rates was passed for the first time in four years. The most immediate consequence of this increase will fall on mortgage rates. Those who had subscribed adjustable-rate mortgages – and there are many – are at the end of the first period and will have to renegotiate rates of 200 or 300 points higher than a couple of years ago. This means that an average family with a loan of 400 thousand U.S. dollars could have to pay even up to a thousand dollars more a month.’

{‘Ten years interest rates have climbed over the 5% threshold’, ‘Those who had subscribed adjustable-rate mortgages are at the end of the first period’} ⇒ ‘They renegotiate rates of 200 or 300 points higher than a couple of years ago’

(25) Un aumento dei tassi a lunga inoltre potrebbe scoraggiare gli investimenti, l’unico vero supporto alla crescita rimasto nel contesto macroeconomico americano. Il mercato immobiliare che negli ultimi anni ha offerto performance stellari, si è già leggermente indebolito. Ma il cuore del problema è il pericolo di un indebolimento della domanda interna. Questo capiterà nel momento in cui il consumatore dovrà già destinare una parte crescente del suo reddito disponibile alla copertura degli aumenti del prezzo del greggio. Le stime per il costo della benzina nel corso dell’estate sono di circa il 20% superiori rispetto all’estate dell’anno scorso. L’auspicio è che l’aumento dell’occupazione compenserà le diminuzioni dei consumi.

‘A raise in long term interest rates, moreover, might discourage investments, the only true support to growth left in the American macro-economic context. The real estate market, which offered stellar performances during the last few years, is already slightly weakened. But the heart of the matter is the danger of a weakening of internal demand. This will happen when consumers *will have to* devote an increasing share of their available income to cover raising [crude] oil prices. The estimates for the cost of gasoline are about 20% higher

<sup>23</sup> This is a direct consequence of the axiom  $\Box\phi \rightarrow\phi$ , which applies to all *realistic* conversational backgrounds. See note n. 18 above.

compared to the summer of last year. The hope is that the increase in the rate of employment will compensate the decrease in consumption’  
{‘The estimates for the cost of gasoline are about 20% higher compared to the summer of last year.’} ⇒ ‘Americans devote an increasing share of their available income to buying fuel’

As shown in the analyses in both examples the factual conversational background causally necessitating the subjacent proposition is easily recoverable and identifiable with propositions in the preceding or following co-text. Even more clearly than in the case of the deontic readings above, the relation between the subjacent proposition *p* and the background *B* maps onto an actual discourse relation in the text. In the following section we will further explore the nature of this relation.

Examples like (24) and (25), with indicative *dovere* acquiring an ontological, circumstantial, reading, are not frequent in our sample. It is however important to discuss them because their conditional counterpart plays a prominent role in these texts.

To conclude our discussion it is important to say that in the sample there aren’t other future oriented uses of indicative *dovere* with epistemic implications apart from the two types discussed above. In particular, there isn’t anything resembling the epistemic-inferential reading of *dovere* and referring to future events. As I have shown elsewhere (Rocci 2005 a,b), the epistemic-inferential reading of indicative *dovere* and future reference of the modalized proposition are mutually exclusive.

The few instance of epistemic-inferential *dovere* in the indicative that are found in the sample refer firmly either to past events (26) or to present stative eventualities (27):

(26) Ritirata strategica prima di un nuovo attacco. Il management del Nasdaq *deve* aver trovato spunto nell’*Arte della Guerra* di Sun Tzu per la strategia di conquista del London Stock Exchange (Lse). A fine marzo la società, che gestisce la Borsa americana dei titoli ad alta tecnologia, ha ritirato l’offerta da 950 pence per azione sull’Lse senza tante spiegazioni. Ieri la notizia che il Nasdaq controlla una quota pari al 14,99% della società-mercato britannica. (*Il Sole 24 Ore*, 12/4/2006).

‘A strategic retreat before a new attack. The management of the Nasdaq must have found inspiration in the *Art of War* by Sun Tzu for their strategy for conquering the London Stock Exchange (LSE). In late March, the company, which operates the American Stock Exchange of high-tech securities, has withdrawn its bid of 950 pence per share on LSA without much of an explanation. Yesterday the news that the Nasdaq owns a share of 14.99% in the UK market-company.’

(27) Bravo e capace, Massimo Faenza, lo *deve* essere senz’altro. In fondo, si deve a lui la profonda metamorfosi di Banca Italease. Ieri sonnacchiosa e negletta compagnia di leasing, oggi una delle stelle del listino con quel poderoso rialzo di oltre il 400% in soli dieci mesi di Borsa. (*Il Sole 24 Ore*, 13/4/2006).

‘Talented and skilled, Massimo Faenza must be for sure. After all, the profound transformation of Banca Italease is due to him. Yesterday sleepy and neglected leasing company, today one of the stars of the list with that massive rise of more than 400% in just ten months in the stock market.’

### 7. *Non-epistemic uses of dovere and argumentative loci in Italian financial news*

The ontological uses of indicative *dovere* in (24) and (25) are particularly interesting because in these examples the causal relationship between the facts in the conversational background and the prejacent proposition is clearly matched by an argumentative relation. The reader is implicitly invited to assent to the predicted proposition because the event is inferable from co-textually and contextually available premises. The inferential relationship is parallel here to the causal one. We have here a causal *locus*, with an inference *from the cause to the effect*.

The examples (1), (26) and (27) with epistemic-inferential *deve* are also clearly argumentative, but they are very different. If we look at (1), (26) and (27) in the context of the article in which they appear we find that they have a peripheral role in their prediction centered argumentation. Examples such as (26) and (27) are attention catching *exordia* written in a lighthearted tone, where the journalist takes the liberty of drawing *subjective* non-predictive inferences on matters of marginal import, which do not lend themselves to future verification (who’s going to check whether Nasdaq’s managers took inspiration from Sun Tzu?). This impression of relatively high subjectivity is consistent with the analysis of epistemic-inferential *deve* as based on a form of “doxastic deixis”, where the conversational background is taken to refer to *a set of relevant beliefs of the speaker at the moment of utterance*<sup>24</sup>, which I have defended elsewhere (Rocci 2005b).

A second consideration concern the kinds of *loci* that underlie the argumentative relations expressed by indicative epistemic-inferential *dovere*. In (26) the inference goes from a behavior to the philosophy that *must* (at least in the writer’s pretence) have inspired it, in (27) the inference goes from the quality of the results of the activity to the capability of the agent. These inferences belong too to the broad family of causal *loci*, but work *from the effect to the cause*. Inferences *from the effect to the cause* and the related *symptomatic* inferences

<sup>24</sup> Epistemic-inferential *dovere* is subjective if compared with the other uses of *dovere* in the indicative and in the conditional that lend themselves expressing argumentative links and (indirectly) epistemic probability. It should be noted that this is not in contradiction with analyses, such as the one proposed by Nuyts (2001 a,b), where the inferential readings of the modals are considered to have a greater degree of objectivity, or better *intersubjectivity* if compared with mental predicates constructions such as *I think / I believe*. In epistemic-inferential *dovere* the instructional part of the meaning of the modal invites us to examine the context and co-text to saturate the conversational background, which often leads to locating co-textual premises and establishing argumentative discourse relations. Nothing similar happens with the more conceptual mental predicates, which lack this instructional component and refer to the thoughts of the speaker as an unanalyzed whole.

seem to be particularly favored *loci* with epistemic-inferential *deve*, as observed also with similar modals in other languages (cf. French epistemic *devoir*, or English *must*). Only an extensive investigation could ascertain the extent of this preference. In the meantime, however, it is important to stress that this is just a preference. Epistemic *deve* is possible both with inferences from *effect to cause*, with inferences from *cause to effect*, as shown in (28 a-b):

(28.a) Giovanni ha lavorato molto. **Dev'**essere stanco.

'John worked a lot. He **must** be tired'

(28.b) Giovanni è stanco. **Deve** aver lavorato molto.

'John is tired. He **must** have worked a lot.'

It is also possible with inferences that involve no causality at all, such as those from a distinctive feature to a species or class:

(29) Bella la prima, ma non è una vipera, giusto? La vipera ha una testa triangolare, questo **dev'**essere un serpentello data la forma tondeggiante del musetto.

'Nice the first one, but it isn't a viper. The viper has a triangular head, this must be a grass snake because of the rounded shape of the nose.' (Forum post recovered through *Google*. The poster is commenting a photograph.)

The deontic uses considered such as those in (21), (22) and (23) can be also considered argumentative: the prediction that an action will occur is supported by the existence of agreements, commitments, plans or schedules involving the occurrence of such an action. Interestingly, since agreements, commitments, plans or schedules enter social reality as written or oral discourses this kind of modality has an affinity with reportive evidentiality. Predictions based on the authority of plans of action to which certain individual or corporate agents are committed, are *ipso facto* predictions based on the authority of the documents or discourses that realize these commitments. It is this kind of affinity, I believe, that led some researchers (cf. Squartini 2004) to postulate the existence of a reportive evidential reading of *dovere* both in the indicative and in the conditional, on the basis of similar examples. Here I maintain that indicative occurrences are fundamentally deontic in nature. Conditional occurrences, discussed below, present a more complex situation.

#### 8. *The conditional form of dovere and the expression of argumentative discourse relations in financial news*

Several students of economic discourse have observed that most often the predictions that economists formulate are conditional ones (See, for instance, Merlini 1983, Mc Closkey 1990, Walsh 2006). It often happens, like in (30), that the proposition p is predicted to turn out to be true only if certain conditions or antecedents are met. Alternatively, the author might just envisage possibilities, that become relevant only in case certain possible scenarios are realized, as it happens in (31):



(30) E per quanto riguarda i rapporti con Finmeccanica? Niente paura. Il gruppo italiano, forte della sua sofisticata tecnologia, ha da sempre eccellenti relazioni e stretti contatti di lavoro sia con Alcatel, sia con Thales. Questo nuovo assetto nei satelliti non *dovrebbe* dunque cambiare il quadro generale degli accordi, sempre che naturalmente la quota e la posizione di Finmeccanica non vengano diluite o messe in secondo piano. Uno scenario, quest'ultimo, che il gruppo italiano non potrebbe certo accettare. (*Il Sole 24 Ore*, 5/04/2006)

'What about the relationship with Finmeccanica? Nothing to fear. The Italian group, thanks to its sophisticated technology, has always had excellent relations and close working contacts with both Alcatel and with Thales. The new arrangement in satellites should not therefore change the broad framework of the agreement, provided, of course, that the share and the position of Finmeccanica will not be diluted or overshadowed. But this is a scenario that the Italian group could never accept.'

(31) Sul mercato, tuttavia, sono corse voci che hanno messo in chiaro come la riscossa di Citigroup possa far tremare anche mercati più maturi: in Francia potrebbero affiorare "avance" per Société Générale o Bnp Paribas. Simili offerte, qualora avvenissero, *potrebbero* essere difficili da respingere, dopo che gli Usa non hanno obiettato alla fusione nelle tlc della Lucent con la transalpina Alcatel. (*Il Sole 24 Ore* 5/4/2006).

'In the market, however, there are rumors circulating that have made it clear that the comeback of Citigroup can shake even the more mature markets: in France approaches could emerge to Societe Generale and BNP Paribas. Such offers, if they were to happen, could be difficult to reject, after the U.S. did not object to the merger of French Alcatel with Lucent in the telecom industry.'

In fact, financial news seem a privileged vantage point to observe the interaction of basic conditional constructions, modal lexicon and tense-mood morphology to give rise to complex conditional semantic structures, often spanning several sentences in discourse. A full discussion of the semantics of conditionals is well beyond the limits of this paper<sup>25</sup>. I will limit myself to mentioning two semantic features of natural language conditional constructions that are relevant for understanding their interaction with modal verbs and with argumentative discourse relations.

A. *Conditionals have conversational backgrounds like modals.* In ordinary discourse the protasis of a conditional is actually added to a conversational background, which, in indicative conditionals, is often identified with normal, or expected conditions. An sentence like (32):

<sup>25</sup> That a purely extensional account of conditionals based on material implication (entailment) cannot explain how conditional construction work in natural language is rather uncontroversial, and most analysis of conditionals treat them as inherently modal, assigning them an analysis which is very close to the one proposed for necessity modals.

(32) If you show up on time, you will find plenty of room to park near the hotel.

is usually uttered on an assumed and *vague* backdrop of *normal conditions*, and it is not meant as stating that the condition of showing up on time is sufficient for finding parking *no matter what else could happen in the world*, but only *under normal conditions*. Truly exceptional situations – like those where an old Russian space station has just crashed on the hotel parking lot destroying it – are not considered in evaluating the conditionals. Counterfactual conditionals pose more complex problems, but they also involve conversational backgrounds approximating normal conditions.

B. *Antecedents are epistemically evaluated*. According to the classic logical interpretation of conditionals, someone asserting a conditional of the form *if p then q* commits to the truth of the conditional but remains uncommitted with respect of the truth of the propositions *p* and *q*. The various natural language conditional construction differ, however, in that they typically convey an epistemic evaluation of the antecedent, which may be further enriched pragmatically in context. The epistemic evaluation of the antecedent provides a minor premise that allows the conditional construction to function as an argument from which a certain evaluation of the consequent can be derived. This happens, for instance, in the so-called “epistemic conditionals” studied by Sweetser (1990), where it is clear from the context that the antecedent is a fact, and the conditional functions as an argument supporting a certain conclusion:

(33) If he was a bad governor, he’ll be a worse president.

In the proper context a sentence like (33) can function as an argument:

Major premise: If he was a bad governor, he’ll be a worse president. (from the conditional)

Minor premise: He was a bad governor (from the epistemic evaluation of the antecedent)

Conclusion: He will be a worse president.

What is interesting for the present discussion is that conditionals can function as arguments also with weaker epistemic evaluations (for instance one of mere possibility) of the antecedent, giving rise to epistemically weak conclusions. This happens both in example (32) and (33). Where the reader can infer that the writer draws a conclusion to which he commits with a weak degree of certainty depending on the weak epistemic evaluation of the antecedent. Interestingly, while the use of tense-mood in the construction and various contextual cues can contribute to expressing the epistemic evaluation of the protasis, such an evaluation remains most of the times considerably vague.

Thus, from an argumentative point of view, antecedents in conditional structures often remain ambiguous between two different discursive roles: (A) the role of an epistemically

weak premise or (B) the role that Stephen Toulmin (1958) called of “rebuttal”, that is of specifying the limits of validity of a non demonstrative argument.

This ambiguous relationship between conditionality and argumentation plays an important role also in understanding the role of modal verbs in the conditional mood in argumentation. The conditional form of *dovere* (henceforth *dovrebbe*) – found in example (30) – is much more frequent than its indicative counterpart in financial news articles. Together with the even more frequent conditional form of *potere* (*potrebbe*), it greatly outnumbers the all the other lexical markers of modality in financial news articles, where it is regularly used to introduce predictions and it is interpreted as conveying an epistemic evaluation. By looking closely at a sample of the corpus one can recognize two rather distinct uses of *dovrebbe* where the modal conveys an epistemic evaluation of a prediction. In the following pages I will argue that these two uses are not directly related to indicative epistemic *dovere* but represent “conditional versions” of the two non-epistemic uses of future reference indicative *dovere* which we have examined in the preceding sections. Consider example (30) above, together with the example (34) below:

(34) Il dato relativo alla vendita di nuove case negli Usa a febbraio ha fatto registrare un vero e proprio crollo (–10,5%, a 1,08 milioni di unità), il calo più forte da nove anni. Aumenta anche il numero degli alloggi invenduti, un fatto che – se confermato in futuro – *dovrebbe* riflettersi in una riduzione dei prezzi degli immobili, con effetti di raffreddamento sulla crescita dell’inflazione. Questa statistica ha sostanzialmente ribaltato quella relativa alle case esistenti, che aveva messo in mostra una crescita del 5,2% a febbraio. (*Il Sole 24 Ore* 3/4/2006)

‘The sale figures new homes in the U.S. in February showed a real slump (–10.5% to 1.08 million units), the strongest decline in nine years. The number of unsold housing increases, a fact that – if confirmed in the future – should be reflected in reduced house prices, with cooling effect on the growth of inflation. This statistic has essentially reversed that relating to existing homes, which had exposed a growth of 5.2% in February.’

In (34) *dovrebbe* signals a consequence based on economic causality, and can be therefore interpreted as based on an ontological conversational background similar to the causal uses of *dovere* in the indicative examined in the previous section. Here, however, the causal necessity is conditional to the continuation of the slump – which would be, by the way, normal, or expected. In (30) *dovrebbe* signals again a causal consequence: Finmeccanica’s sophisticated technology, long standing excellent relations and close working contacts with Alcatel and Thales are enough to ensure that nothing substantial changes in the relationship between Finmeccanica and Thales when Thales increases its participation in Alcatel’s satellite business, *unless* Finmeccanica’s share in the same business is “diluted or overshadowed”. The latter possibility is explicitly considered exceptional in the following co-text.

In Rocci (2006a) I have defended the idea that the conditional of *dovere* is to be understood as a partially non-compositional construction, whose semantics – motivated by the modal semantics of the conditional mood<sup>26</sup> and by the semantics of *dovere* – involves a double conversational background consisting of the conjunction – in more precise set theoretic terms the “compatibility restricted union” – of a *modal base* (M) and a *conditional restriction* (R). The procedural component of the meaning of *dovrebbe* selects *deontic* or *ontologic* backgrounds for M and indicates that the conditional restriction is to be saturated by a set of *non-factual propositions*, which can be partially identified with a protasis or with other syntactic or discursive elements. The semantics of *dovrebbe* seems to contain also a further procedural element indicating a preference for identifying the restriction with a set of *normal conditions* in the absence of prominent sets of conditions recoverable from the co-text or context. The linguistic semantics of the *dovrebbe* construction can be summarized as follows:

*dovrebbe* (B, p):  
 p is a logical consequence of B  
 where  
 B = { M  $\cup$ ! R }

Procedural restrictions:

- Identify M with an *ontological* (facts) or *deontic* (norms) background
- Identify R with a set of salient *non-factual propositions*;
- By default, identify R with *normal conditions*.

According to this analysis, *dovrebbe* in examples such as (30) and (34) works indirectly as an indicator of an argumentative discourse relation by manifesting the underlying causal relation providing the *locus* for the argument. Moreover, it indirectly expresses *epistemic probability* thanks to the conditional restriction. Such a condition is *non factual*, but *normal* and then expected to hold true most of the times. Interestingly, we can find counterfactual uses of *dovrebbe* in the corpus, where the co-text makes it explicit that the real situation is *non normal*:

(35) Quanto inciderà l'esito delle elezioni politiche di domani e lunedì sul prossimo risiko bancario? In un sistema totalmente privatizzato come quello italiano (a differenza degli altri Paesi europei), in teoria la politica non *dovrebbe* avere alcuna influenza. La realtà, malgrado la crescente spinta del mercato, è ben diversa. Tanto che tutte le partite finanziarie di rilievo sono rimaste in sospenso, a partire dal dossier Intesa-Capitalia, proprio in attesa del voto. (*Il Sole 24 Ore*, 8/4/2006)  
 ‘How much will the outcome of tomorrow’s and Monday’s polls affect the incoming “banking Risiko”? In a completely privatized such as the Italian

<sup>26</sup> On the partially non-compositional semantics of the conditional see also Miecznikowski and Bazzanella (2007), who propose a semantic analysis which is largely compatible with the one presented in Rocci (2006a).

one (unlike other European countries), *in theory*, politics should not have any influence. Reality, despite the increasing pressure of the market, is very different. So much that all significant financial matches – starting with the Intesa-Capitalia affair – are on hold waiting for election results.’

Here the modality expresses a causal relation between the private property of a banking system and its independence from politics, R is identified with the prepositional phrase *in teoria* “in theory”. But the following co-text makes it clear that the reality in Italy does not obey to theory, so that the conditional restriction is interpreted as counterfactual. As a consequence *dovrebbe* does not convey anymore an implication of epistemic probability. Yet, it expresses polyphonically a possible argumentation that someone – not well acquainted with Italy’s strange realities – could put forth.

These causal argumentative uses of *dovrebbe* always appear to follow the direction of causation. Unlike epistemic *deve*, *dovrebbe* is extremely awkward in arguments based on inferences from the effect to the cause.

Consider the following examples:

(36.a) Giovanni ha lavorato molto. **Dev**’essere stanco.

‘John worked a lot. He **must** be tired’

(36.b) Giovanni è stanco. **Deve** aver lavorato molto.

‘John is tired. He **must** have worked a lot.’

(36.c) È tutto rosso in faccia. **Deve** essere fuori di sé.

‘He’s all red on his face. He **must** be out of his mind’

Epistemic *deve* can be used to manifest inferential relations both co-oriented with the direction of time-causation (inference from cause to effect), as in (36.a), and anti-oriented (inference from effect to cause) as in (36.b). It can also be employed to manifest inferences corresponding to temporal concomitance, like (36.c). As we have seen in (29) above, epistemic *deve* is also possible where temporality and causality are not at issue. Let us compare these sentences with their equivalents containing the conditional *dovrebbe* in (37):

(37.a) Giovanni ha lavorato molto. **Dovrebbe** essere stanco.

‘John worked a lot. He **should** be tired’

(37.b) Giovanni è stanco. \***Dovrebbe** aver lavorato molto.

‘John is tired. He **should** have worked a lot’

(37.c) È tutto rosso in faccia. \***Dovrebbe** essere fuori di sé.

‘He’s all red on his face. He **should** be out of his mind’

We find that *dovrebbe* cannot occur in temporally anti-oriented inferences from the effect to the cause (37.b), and is also clearly excluded in certain cases of concomitance like, for instance the symptomatic argument in (37.c).

The diverging behaviour of *deve* and *dovrebbe* with respect to argumentative discourse relations can find an explanation in the context of the hypothesis I have been progressively developing in the previous sections.

Epistemic *deve*, selecting a meta-representational epistemic-doxastic conversational background – corresponding to *a set of beliefs held by the speaker at the moment of utterance* – concerns the properly argumentative level, the *form* of argumentation, and can convey any kind of deduction (from cause to effect, from effect to cause, and many non-causal schemes): it is sensitive only to the *form* of the major premise that supports the deduction, and disregards its specific contents.

In the examples considered above *dovrebbe*, on the other hand, primarily conveys a *causal* relationship of a *natural* or *social* kind. As a further implicature, the assertion of this relationship may be taken as manifesting the major premise of an argument based on direct causality.

### 9. *The interaction between deontic modality and reportative evidentiality with dovrebbe*

Not all epistemic uses of *dovrebbe* found in financial news, however, seem to correspond to hypothetical causal arguments. Some uses of *dovrebbe* appear in contexts where reportative evidentiality would be expected.

In financial news the predictions and their supporting arguments are routinely attributed to expert sources – sometimes named, sometimes unnamed – giving rise to complex combinations of inferential and reportative evidentiality. Unnamed insider sources and simple *rumors* (Pound & Zeckhauser 1990) also feature prominently in financial news providing contexts where hearsay evidentiality would be relevant – see, for instance, example (31) above.

A first remark with respect to these reportative or hearsay contexts is that they often embed whole stretches of argumentation. Sometimes the whole reasoning is clearly attributed through (free) indirect speech to experts such as bankers, economists, financial analysts, while in other cases such as (30) the reasoning is not attributed but presented through polyphonic devices, such as the dialogue pretense (*sermocinatio*) in (30) – *What about...? Nothing to fear* – in an article where the main source of the news is identified at the beginning to the text with an anonymous insider (“secondo fonti vicine alla società” *according to sources close to the firm*). These phenomena of global reportative embedding or polyphony contribute to distinguish these argumentative uses of *dovrebbe* from the epistemic-inferential indicative *dovere*, which is used to point to a sort of “on-line” inference of the speaker. According to my analysis, ontological circumstantial *dovrebbe* tolerates well this embedding because it refers first of all to the underlying causal relation and not directly to an inferential operation of the subject. Sometimes, like in (38) the structure of the reasoning of the experts is only hinted at, so that the addressee cannot really follow the inferential path. In this case the modality remains causal and ontological, but the argumentation proposed to the addressee changes in nature: it becomes an argument from expert opinion (*argumentum ex auctoritate*).

(38) Al momento gli analisti non vedono catalizzatori di crescita: nel triennio 2006-2008 il mercato pubblicitario, secondo Zenith, *dovrebbe* crescere nel nostro Paese a un tasso medio annuo composto del 2,7% contro una media europea del 4,4 per cento. Con la stasi perdurante dell'economia italiana e con le Tv che si ritagliano una fetta (circa il 55%) crescente della torta pubblicitaria, gli analisti ritengono che le prospettive di sviluppo su media come le radio e Internet siano insufficienti e che gli editori della carta stampata debbano puntare di più sull'integrazione multimediale. In particolare sulle televisioni, il cui assetto potrebbe essere rimesso in discussione da un'eventuale riforma del governo di Centro-sinistra, qualora vincessero le elezioni. (*Il Sole 24 Ore* 3/4/2006)

'Currently, analysts see no catalysts for growth: in the 2006-2008 period the advertising market, according to Zenith, is expected to grow in our country at a compound annual average rate of 2.7% against a European average of 4.4 percent. With the continuing stagnation of the Italian economy and the TVs that carve out an increasing a slice (about 55%) of the advertising pie, analysts believe that the prospects of development on media such as radio and Internet services are insufficient and that the publishers of print media should focus more on multimedia integration. Particularly with respect to televisions, whose arrangement could be reshaped by a possible reform by the Center-Left coalition, should they win the election.'

When we move to the deontic uses of *dovrebbe* – which are typically based, like their indicative counterparts, on agreements, commitments, plans and schedules – the relationship between the modal and the reportative environment is not one of simple embedding, but rather of integration. Consider examples such as (39) and (40).

(39) Stando a quanto emerso ieri nella riunione del cda Bnl, Bnp *sarebbe* orientata a lanciare la prossima settimana l'Opa, che *dovrebbe* concludersi tra il 15 e il 20 maggio. Secondo indiscrezioni la banca di Parigi *avrebbe predispeso* tutto per annunciare già stasera l'ok della Consob e i dettagli dell'operazione, con le date di inizio e di conclusione. (*Il Sole 24 Ore*, 13/4/2006)

'According to what transpired from yesterday's meeting of the board of BNL, BNP would be inclined to launch next week the takeover bid, to be completed between the 15<sup>th</sup> and 20<sup>th</sup> of May. According to rumors, the Paris bank prepared everything to announce this evening the OK of Consob and the details of the transaction, with the dates of commencement and conclusion.'

(40) La situazione appare comunque fluida, tanto più che il presidente di Euronext, Jean-François Theodore, non ha ancora preso alcuna decisione e "gioca" su questa suspense per tenere gli azionisti della Borsa e i concorrenti sulla corda. Ad ogni modo qualche dettaglio in più si *dovrebbe* avere già con il 23 di maggio, giorno in cui è stata convocata l'assemblea dei soci di Euronext e *dovrebbe* essere fatto il punto sulla vicenda. Soprattutto si *dovrebbe* sapere se la soluzione Deutsche Börse è quella valida o meno. (*Il Sole 24 Ore*, 13/4/2006)

‘The situation is still fluid, especially as the chairman of Euronext, Jean-François Theodore, has not yet taken any decision and “plays” on this suspense to keep the shareholders of the stock market and the competitors on their toes. Anyway, a few more details should already be available on May 23, when the shareholder meeting of Euronext is convened and the matter should be discussed. In particular, we should get to know if the Deutsche Börse solution is the valid one or not.’

These uses can be accounted for by considering them as a merger of the *dovrebbe* construction analysed above and of the reportative conditional construction. Basically, they inherit all the semantic features of the *dovrebbe* construction, saturate M with a deontic background of the scheduling or planning type, identify the non-factual conditional restriction R with “if what sources/ rumors say is true” and considering the truthfulness of what is said the (Gricean) *normal* condition of communication.

However, by looking at examples such as (39) – and, even more – (40) one has the impression that the deontic origin of these uses has been considerably “bleached” and that this *dovrebbe* is undergoing a process of grammaticalization, perhaps limited to the genre of financial news, where the modal verb is assuming purely the function of a futurity marker of the evidential conditional. This would compare with the fully grammaticalized use of subjunctive *dovere* as a pure futurity marker in the protasis of weak possibility conditionals:

(41) In precedenza era entrata in sciopero la miniera messicana La Caridad, la cui proprietà sta chiedendo al governo locale di dichiarare illegali i picchetti che impediscono l’ingresso ai lavoratori che potrebbero voler entrare, mentre la produzione di rame raffinato dovrebbe cominciare a essere ridotta da oggi se l’interruzione *dovesse* continuare.

‘Previously, La Caridad mine in Mexico had gone on strike. The owners are asking the Government to outlaw the blockade that prevents entry to workers who may wish to enter, while production of refined copper should begin to be reduced from today, should the disruption persist.’

## 10. *Conclusions*

It is now time to make a provisional inventory of the findings of this investigation of epistemic and non-epistemic modals as possible argumentative indicators.

Certain general findings appear *prima facie* to be safely extensible to a plethora of relational, context-dependent markers of modality that are found in several languages. Other argumentatively relevant results, however, concern specifically the interpretation of the Italian modal verb *dovere* and may or may not be extended to similar linguistic structures in other languages.

It has to be said, however, that both the general results and those specific to *dovere* seem to confirm the productivity of investigating the mapping between a relational and



context dependent semantic analysis of the modals and a layered account of the argumentative discourse relations considering the properly pragmatic level, the inferential processes attached to it and the content-level relations (*loci*) warranting the inferential step.

As far as the general results are concerned, it is useful to go back to the list of types of information needed for reconstruction, which I reproduced from Houtlosser (2002) in § 2.2.

We can conclude that epistemically interpreted context-dependent modals help us (a) to recognize the standpoints being advanced, (b) to make (to some extent) explicit the force of the commitment towards the standpoints, but also, at the same time, they prompt the anaphorical recovery of premises from the co-text or situational context (c).

This function of pointers to premises seems to be associated both to the context dependent nature of the modals, and to the *evidential* meaning they may acquire when interpreted epistemically: in this case they become signals of acts of inferences on the part of the speaker (§ 3.1).

Non-epistemic modals, on the other hand, refer to content level relations (such as for instance *causality*) and therefore can convey information on the *loci*, or argumentation schemes, being used (d). Being themselves context-dependent they too can act as pointers in the cotextual or contextual recovery of premises, even if they do not directly signal an act of inference of the speaker.

With respect to the case study of the argumentatively relevant uses of *dovere* in the corpus of Italian financial news my findings can be summarized as follows.

The epistemic use of indicative *dovere* (*deve<sub>E</sub>*) behaves as an inferential evidential directly indicating an act of inference of the speaker and pointing to co-textual or contextual premises. *Deve<sub>E</sub>*, referring deictically to the on-line inferential processes of the arguer conveys a relatively high level of subjectivity. It can introduce standpoints whose propositional content refers to past events or present eventualities, but it cannot be used to introduce predictive standpoints. While it appears to be compatible with a wide variety of *loci*, *deve<sub>E</sub>* seems to manifest a preference for inferences *from the effect to the cause*, and for symptomatic arguments in general.

Future oriented *ontologic* and *deontic* uses of indicative *dovere* can introduce predictive standpoints *indirectly*. When they do that, they manifest arguments *from causes to effects* or, weaker ones, from the existence of an obligation to its probable fulfillment. Being indirect means of presenting a standpoint and of qualifying its epistemic probability, they present a low level of subjectivity and speaker involvement.

Finally, conditional mood *dovrebbe* presents conditional variants of *ontologic* and *deontic* uses of *dovere*, which are connected to the same *loci* of their indicative counterparts. The inference, however, is dependent from an additional explicit or implicit premise, corresponding to the conditional restriction. This premise is conventionally associated with a weak positive presumption, corresponding to what is *normally* the case, or what is to be expected as a default (that a trend continues, that a general tendency is verified, that a theory corresponds to fact, that agents fulfill their obligations/commitments/plans, that what is as-

served is true, etc.). These weakly plausible premises, however, aren't directly associated with an epistemic evaluation of the arguer, and on occasion they can be implicitly associated with the voice of a real or virtual antagonist in the discussion. Furthermore, certain deontic uses of *dovrebbe* have begun evolving towards a form of reportative evidentiality, bringing the issue of testimony and authority into the epistemic evaluation of the standpoint expressed.

Many of these conclusions are still tentative and would require to be substantiated by a broader corpus investigation, but the overall picture emerging from them looks promising, so that it casts a new light on Toulmin's original intuition of the centrality of modality in the structure of arguments.

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