Predictions and arguments in financial news

Modality in argumentation. A semantico-argumentative study of predictions in Italian economic-financial newspapers

Lugano – Amsterdam Colloquium 2008
0.1 The Project

- Supported by SNF Div. 1
- And later integrated in the Argupolis Pro*Doc school
- 3 years project
- Started on September 1, 2008
- Researchers
  - Andrea Rocci
  - Johanna Miecznikowski (post-doc researcher)
  - Gergana Zlatkova (PhD. Student)
0.2 Structure of this talk

1. The project in a nutshell
2. Central theoretical issues and hypotheses;
3. Predictions in the context of economic–financial news discourse;
4. Semantic features of predictions in economic–financial news texts;
5. Conditional predictions in argumentative reconstruction.
The project in a nutshell
1.1 Theoretical aim:

- A) to study the role of modalities (epistemic and non epistemic) in argumentation
  - Modal *expressions* as argumentative indicators for reconstruction.
    - What can they tell us?

- B) to ascertain the place of modal *categories* in the analytic overview of arguments and their role in critical evaluation.
  - Do they occupy a special functional slot (e.g. Toulmin’s *Qualifier*)?
    - What’s their relevance for evaluation?
1.2 Empirical object

- Predictions in economic-financial news articles (in Italian newspapers).
  - Predictions are widely recognized as the “central” speech act in economic-financial discourse;
  - They are (nearly always) explicitly modalized;
  - They are (nearly always) explicitly supported by arguments;
  - Financial news have lots of them;
  - (Italian is my native language).

- But there are (interesting) complications: financial news depart significantly from a prototypical – “well behaved” – argumentative text.
Central theoretical issues and hypotheses
2.1 Modals as indicators of force

- In the argumentation literature modals are treated often as indicators of the force with which standpoints are being put forth.
  - This treatment is mirrored by modal scales in discourse analysis. Modal meanings are represented as positions in a scale between the yes and no poles encompassing high, median and low modalities.

![Modal Scale Diagram]
2.1 Modals as indicators of force

Open questions:

- What is *force* exactly?
  - Like the *strength of premises* and the *weight of evidence* is a metaphor. What’s behind the metaphor?
  - What is its business in the evaluation of arguments? (Cf. the “proportional” idea found in Freeman and the *informal logic* movement.
  - The idea of degree of speech–act force comes up in other domains (e.g. mitigation) but is still a rather mysterious object.
  - How does it relate to statistical probability and other such dimensions that belong to the propositional content?
- What about non–epistemic modalities?
- Can modals tell us anything else?
2.2 A relational analysis of the modals

- According to this analysis modal meanings in are treated as two-place relations of the form $M(B, p)$
  - $M$: the modal operator
  - $p$: the proposition falling in the scope of the modal
  - $B$, *conversational background*: a set of propositions to be saturated in the context of utterance.
    - by propositions of various kinds – facts, norms, values, goals, desires, hypotheses, etc.

- Cf. Relative Modality Theory (RM) (Kratzer 1981)
Necessity modals indicate that the proposition $p$ is necessarily entailed by (that is \textit{logically follows from}) the conversational background ($B$), or equivalently that $p$ is true in all the worlds where all the propositions in $B$ are true.

Possibility:

$p$ is \textit{possible with respect to $B$}, means that $p$ is logically compatible with $B$

or, equivalently that $p$ is true in some of the worlds where all the propositions in $B$ are true.
One interesting feature of RM is that fosters a unified analysis of modals and conditionals.

In fact, it turns out that

- Modals have antecedents, which can be manifested in discourse or through syntax.
- All conditional constructions have unstated conversational backgrounds
  - If Mary comes to the party I will be ecstatic.
  - But I won’t … if she comes to the party armed with a katana intentioned to behead me with one fell blow.
2.2 Different conversational backgrounds for necessity and possibility

- **Ontological modality:**
  - (i) A possible state of affairs $\varphi$ is entailed by or compatible with facts of kind $B$.
  - John cannot sing. He's stuck in a traffic jam.

- **Deontic modality**
  - (ii) An action $\alpha$ is entailed by or compatible with norms or ideals of kind $B$.
  - John must leave the country. The new immigration law was voted by the parliament.

- **Anankastic modality**
  - (iii) A social/institutional fact $\varphi$ is entailed by or compatible with the set of social/institutional facts of the relevant kind $B$.
  - To be elected in the Italian Senate, you must be at least 35 years old

- **Epistemic–doxastic modality**
  - (iv) A (meta-represented) hypothesis $\varphi$ is entailed by or compatible with a relevant set of beliefs $B$ held by the speaker at the moment of utterance.
  - I don’t see John’s car in the parking lot. *He must have already left the University.*
Argumentation can be considered at different levels:

- **Socio–pragmatically:** is a complex relational speech act consisting in putting forward constellation of propositions $p_1...p_n$ in order to convince the listener of the acceptability of a standpoint $q$

- **Cognitively:** $q$ is inferred from the premises $p_1...p_n$

- **Semantically:** the inferential relation presupposes a content-level relation between $p_1...p_n$ and $q$ such that the inference satisfies the requirement of a valid argumentation scheme
The main research question can be formulated in terms of a mapping between the two structures

a) how do the logical relations expressed by modals relate to argumentative relations at different levels?
b) to what extend, and under which conditions do conversational backgrounds map onto the constellations of premises?
c) when does the content of the evaluated proposition count as an expressed standpoint?
2.2 Two hypotheses

- H1: An epistemic modal indicates a relationship between a proposition and the evidence available at the moment of utterance.
  - They are similar to argumentative connectives
- H2: Non-epistemic modals can function as markers of content level relations that can form the basis of an argument according to specific topoi.
  - Ontological modality > causal schemes
  - Deontic–practical modality > practical reasoning
Predictions in the context of economic–financial news discourse
3.1 The context of financial news

- Financial communication (Barone Adesi 2002) is seen as driven by the demand of information from investors who need to reduce the uncertainty surrounding investment opportunities.

- Uncertainty is due to
  - “intrinsic” incompleteness of information concerning the occurrence of future events
  - Information asymmetry: private, undisclosed, information available only to “insiders”.
3.2 Information, future events and price

- Theory of market efficiency: according to which “prices of securities fully reflect all available information” (Fama, 1970).
- This notably includes information about future events:
  
  On 12 March 2007 Swisscom announced the acquisition of the Italian Fastweb which was actually realized last 15 May 2007. The same day of the announcement Fastweb stock price rose of 15%

- Not surprisingly, the interaction field of financial markets is (increasingly) heavily regulated as regards the release of price-sensitive information, which can be compulsory and regulated in its timing and textual form.
  - E.g. Price sensitive press releases, for instance, are a normatively defined kind of text in various financial markets. Issuing this kind of press releases can be compulsory.
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 statements 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. [...] From the Cautionary statement regarding forward-looking information which accompanies a Credit Suisse press release.
3.4 Firms and investors’ information demand

• For firms the stakes of the disclosure of information to investors are extremely high:
  ▫ early disclosure could destroy the competitive advantage of innovative products and services;
  ▫ while withholding information could lead to under investment and “exposes the firm to a higher cost of capital and to charges of insiders’ manipulation” (Barone Adesi 2002: 65).

• Interestingly, a specific topos of financial argumentation is the allegation of being a black box (Palmieri 2008), an opaque company and therefore a risky investment.
  ▫ "Enron is a big black box," gripes another analyst. [...] Enron vehemently disagrees with any characterization of its business as black box–like.” (B. McLean “Is Enron Overpriced?”, Fortune, March 2001)

• In this perspective financial newspapers can be seen as one of several mediators and “multipliers” of this communication flow between firms and investors (Drill 1995).
3.5 The place of financial newspapers

- Communicating the *uncertainty* and the *conditions* of validity of predictions is particularly problematic in journalistic texts.
- Newspapers address a public of semi—expert and lay people.
- Not only the communication, but also the argumentative support of predictions turns out to be problematic because of the highly technical nature of economic forecasting.
Semantic features of predictions in economic-financial news texts
Firm's fortunes may rise as commodity prices fall (Headline)
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)
- Wall Street Journal Europe (WSJE) on September 14, 2006

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)
4.2 Features of predictions in financial news

- A preliminary exploration of the Italian corpus and the exploration of smaller English corpora has confirmed that
  - Predictions are most of the time modalized
    - But the modals used are not exactly those expected
  - Predictions are very often attributed to *expert* or *inside* sources
  - Predictions are supported by arguments
    - Arguments attributed to the source
    - Arguments bolstering the credibility of the source
  - Predictions are most of the time *conditional*
    - They are the consequent of an explicit or implicit antecedent or ‘If –part’.
4.3 Modality of prediction

- The most frequent modalization was expected to be in the area of *probability*.
  - This would have been consistent with an existing literature concerned with the translation from verbal to numeric probabilities.

- In fact, it appears that financial news shun qualifications that directly express *probability*.
  - In the Italian corpus *probabilmente* ‘probably’ and *probabile* are extremely rare!

- The most frequent markers in Italian are modals in the conditional form
  - *Potrebbe*: conditional possibility, which is the most frequent
  - *Dovrebbe*: conditional necessity
Conditional predictions in argumentative reconstruction
Several structures can be interpreted as “conditional” in financial news discourse.

- Syntactically explicit “If …then” sentences;
- Explicit restrictors such as “Under normal conditions”
- Discourse antecedents introduced by a modal word (modal subordination)
- Uses of the modals in the conditional form where an implicit antecedent is easily inferred.
5.2 Discourse antecedents


- ‘There are in fact three of us: Edisontel, Atlanet and Albacom. Notwithstanding the different size, I think it would be a good opportunity to manage to merge these activities, which are, in part, complementary. A strong telephony group would be born that could create value and satisfy shareholders’
5.2 Discourse antecedents

- E, sempre da Londra, si viene a sapere che 'tali richieste fanno riferimento a un periodo temporale relativo a tutto il 2004 e 2005 e potrebbero, talvolta, anche riguardare periodi antecedenti. Ciò potrebbe comportare, se validate, la modifica di valori di bilancio già approvati'. (MF, April 18, 2006)

- And, again from London, transpires that these requests refer to a time span including the whole years 2004 and 2005, and might in certain cases concern even earlier periods. This might entail, if confirmed, the modification of values in the already approved financial statement.

- The second potrebbe depends from the first potrebbe as one of its antecedents.
5.3 Consequences for argumentative reconstruction

- In principle in a conditional with the form
  - If p, then q
- The speaker does not commit to the truth of q, let alone present q as a standpoint. Asserting a conditional does not amount to presenting an argument.
- In order to have an argument one should have something like a *modus ponens*:
  - If p then q
  - p
  - Therefore q
But natural language conditional constructions encode more information than the conditionals of logic (be they material or strict).
- The form of the prothasis encodes different epistemic evaluations of the antecedents
- Discourse antecedents introduced by modal words carry even richer information on the epistemic status of the antecedent.
- The epistemic evaluation of the antecedent could be inferable pragmatically from a variety of contextual clues (e.g. perceptual evidence).

When combined with the epistemic evaluation of the antecedent the conditional expresses an argument.
The so-called “epistemic conditional” is usually employed when the prothasis is certain:

- *If Mary is wearing a wedding ring, she and Bob finally got married.*

- The context provides an implicit “as she is”
5.5 A more complex case

- [...] secondo stime autorevoli, a fronte di consumi per 77,5 milioni di barili/giorno (mbg), l'offerta ora è di 79,9 mbg, con uno sbilancio che, in condizioni normali, dovrebbe far precipitare le quotazioni. (IL SOLE 24 ORE 05/12/2002)
- ‘According to authoritative estimates, with a consumption of 77.5 million barrel per day (MBD), the offer is now of 79.9 MBD with an unbalance that, under normal conditions, ought/would/should make the price fall’
5.6 Analysis of the example

- The basic conversational background of dovrebbe is contextually identified to the current situation of the economy, which notably includes the following two propositions:
  - Oil consumption is 77.5 MBD
  - Oil offer is now of 79.9 MBD
- The conditional restriction is identified with
  - Under normal conditions
- The 'fall of the price' p is a logical consequence of the compatibility restricted union of the propositions in the modal base and the set of propositions making up the 'normal conditions'.
- This means that the basic conversational background alone might not be enough to license p as a consequence.
Rough representation of the argumentative relations inferred

dovrebbe far precipitare le quotazioni.

a fronte di consumi per 77,5 milioni di barili/giorno (mbg), l'offerta ora di 79,9 mbg, con uno sbilancio che secondo stime autorevoli

in condizioni normali
Rough representation of the argumentative relations inferred

- dovrebbe far precipitare le quotazioni.

- a fronte di consumi per 77,5 milioni di barili/giorno (mbg), l'offerta ora di 79,9 mbg, con uno sbilancio che

- in condizioni normali

- secondo stime autorevoli
Evaluation of the antecedent

- It can be observed that economic causality is treated much like physical causality (the human agency involved is not 'visible'). This is in accordance with the ontology assumed by classical models of market economy (market forces like physical forces).

- The existence of the causal relation can be taken as an argument for p, to the extent that normal condition do indeed apply in w₀.

- Obviously, 'Normal conditions' apply to most of the worlds most of the times, hence the frequent probability reading of dovrebbe. This is an implicature and can be cancelled.

- The preceding text in the example hints that in the specific situation 'normal conditions' may well not apply in w₀.
The broader co-text of the example

- In fact, in the preceding text, the article, written shortly before the US invasion of Irak, mentions
  - The work of UN weapons inspectors in Irak
  - Strikes in Venezuela

- Then the author introduces the discussion of oil surplus with
  - Se però dimentichiamo i rischi “politici”...
  - 'However, if we forget about political risks...'

- So, the necessity applies in a 'normal scenario' where we ignore political risks and we reason from a purely economical viewpoint.

- But **risks are not facts**. Interestingly, the noun *risk* itself hides a modal component... so, in the end, the simplified scenario might still apply...