THE FUTURE: HOW TO DERIVE THE TEMPORAL INTERPRETATION

Alda Mari
Institut Jean Nicod /CNRS/ENS/EHESS

1. Overview. It is a recent but robust observation across languages of different families that in some (but not unrelated) contexts the description of eventive predicates is located after the utterance time t_0, whereas with statives it is located at t_0: *if* clauses (see Copley, 2006), subjunctive embedded under attitude verbs (*eg*. Laca, 2008), and future sentences (*eg*. Bertinetto, 1979; Condoravdi, 2001; Werner, 2006). The pattern is observed in Italian.

(1) a. Se si ammala$_{PRES}$, non viene / *If he gets sick* (in the future)*, he does not come*
    b. Se sta male$_{PRES}$,non viene / *If he is sick* (now)*, he does not come*
(2) a. Credo che venga$_{PRES-subj}$ / *I believe that he comes* (in the future)
    b.Credo che sia malato$_{PRES-subj}$ / *I believe that he is sick* (now)
(3) a. Verrà / *He will come*   (temporal interpretation)
    b. Sarà malato / *He will be sick*   (non-temporal interpretation)

The paper focuses on Italian future and after refining the observations it provides an explanation of the phenomena arguing for a unique underspecified evidential/epsitemic interpretation of the future involving (i) a universal within existential quantification over possible worlds (*à la* Klinedinst, 2005; Matthewson, Rullman & Davis, forthcoming) and (ii) judges (Stephenson, 2006). This allows us to recast a 'diversity principle' (cf. *infra*; Condoravdi, 2003; Werner, 2006) in the evidential mechanism itself. We then show under what conditions the description of eventive predicates is forward-shifted w.r.t. t_0, deriving the temporal interpretation of the future (3a) from the evidential one (3b). The paper strongly suggests that the evidentiality mechanism is responsible for the pattern observed in (1)-(3).

2. Some pieces of new evidence. A non-temporal interpretation of eventive predicates in future sentences can be obtained in context where *habits* are under discussion. Talking about their son who is at school, B's reply in (4) has a modal flavor.

(4)   A: Cosa farà Gianni adesso ? / *What is Gianni doing right now?*
       B: Mangerà / *He will eat*

Similarly, B's reply in (5) has a modal flavor in the presence of *clues*. There is noise outside:

(5)   A: Che cosa succede ? / *What is going on?*
       B: Arriverà Giovannni / *Giovanni will arrive*

Also, as noted by Laca (ibid.), in romance languages, atelic events are more likely to have a modal-like interpretation than telic ones in the above-mentioned context.

3. The evidential use of the future. The recent account of Bonomi and del Prete (2008) assumes that one can distinguish between a truly temporal interpretation of the future (6b) and a modal interpretation (6a) and appeal to *settledness*. They claim that being settled means to be true in all the courses of events that are compatible with the background assumptions in the *context of use* (t_0). For (6b) one must wait until the die falls to evaluate the sentences. The context where settledness is verified is in the future with respect to t_0 and is located in one of the metaphysical branches dividing at t_0. Under the 'modalist' interpretation, the context where the issue is settled is t_0 (for (6a) in all worlds recorded in the schedule, the train leaves at 6pm).

(6) a. Secondo la tabella, il treno partirà alle 6pm / *According to the schedule the train will leave at 6pm*
    b. Il dado cadrà sul 6 \#ma non ne sono sicuro. /*The die will come up 6 \#but I am not sure*

Two facts plead for a unified view of the future as *evidential*.

First, even the temporal use does not allow the expression uncertainty as the metaphysical temporal interpretation requires. (6b) cannot be continued with "I am not sure" (*eg* Condoravdi, 2003). The sentence can be truly uttered by anybody in *possession of reasons* for believing that the die will

come up six. Second, as well-known (*eg* Bertinetto 1979) future and non-root *dovere* (*must*) are synonymous.

(7) A. Gianni non c'è / *Gianni is not here.*
     B. Deve essere malato - B.' Sarà malato. / B. *He must be sick* – B'. *He will be sick*

Moreover, the difference between (6a) and (6b) can be seen as the one between 'objective'-'subjective' evidence: even for (6a) one has to wait until the trains departs for assigning a truth condition to the sentence (see *eg* von Fintel and Gillies 2007).

The observation is then that the Italian future is used whenever the speaker can assert with a high degree of certainty that a certain state of affairs is likely to occur (see Copley, 2002; Kissine 2008 on related notions of commitment to be discussed in a longer version). We do not consider that it is ambiguous *à la* Bonomi and del Prete (ibid.) (see also Condoravdi 2003 arguing that the English future is disambiguated according to the eventive or stative nature of the predicate). We argue that it has an evidential interpretation and, remarkably, that a forward-shifting of the event description occurs when the evidential mechanism has to be saved, on the basis of a pragmatic mechanism (see point 4).

In the light of the recent literature on evidentials we then begin with two pieces of analysis (we very slightly adapt Matthewson *et al.*'s claim): (i) universal quantification over a subset of worlds in the metaphysical modal basis, *ie* over the worlds which are (ii) *most normal according to a source of evidence*. For a set of worlds W in a metaphysical modal basis, a judge i and an accessibility relation R, at the utterance time t_0 at world w, the denotation of a future sentence is:

(8) $\exists W' \subset W$ ($\forall w' \in W'$, $w'Rw$ & w' are the most normal according to a source of evidence available to i) $P(w', t_0)$

The judge parameter explains a variety of modal interpretations. 'Evidential': $i = speaker$. 'Concessive' (*Sarò stupido, ma non capisco / I might be stupid but I do not understand*): $i = hearer$. 'Performative' (*Questo segno si chiamerà A / This sign will be called 'A'*): $i = audience$ including the speaker. Furthermore:

(**a**) since normalcy conditions are appealed to, a proposition can be both true (in most normal worlds according to the evidence – ie the set of worlds W) and false (in less normal world) ('diversity principle')

(**b**) The basis is circumstantial and the order is established according to what the judge consider as 'normal'; ie according to the way she interprets the evidence (vs. *eg* Copley, 2002 for a generic view of normality conditions, but more has to be said in the extended version).

This leads to the intended interpretations. For (6a) while the 'modalist' interpretation states that in the schedule - as a body of knowledge - it is settled that the train must leave at 6pm and is silent on the fact that it might turn not to be so, our account states that the speaker has evidence (the schedule) to assert that train will leave at 6pm (ie if the actual world is normal ie behaves as expected by the evidence), but it can leave later (if the world is not normal). The question remains why and under what conditions event descriptions are forward-shifted.

4. The conditions for forward-shifting. Let us make clear that, in cases such as (6a) we assume that the temporal adverb is responsible for fixing the event description. Remarkably, in fact, in the absence of such adverbs, the event description is not necessarily forward-shifted (4-B)-(5-B). Since using the future the speaker asserts that a certain event is (very) likely to occur (according to the way she interprets the evidence), she can reliably guarantee that a punctual event occurs *exactly at the time of the utterance* only if she has evidence for this, as when talking about habits (4-B) and when clues are available (the noise justifies (5-B)). Since it is unlikely that a bounded, unscheduled event occurs exactly at the utterance time, forward-shifting allows the speaker to guarantee its realization with a higher degree of certainty: if located at a future time t_1, it is still an option at t_0 that the event is realized and the most normal set of possible futures for i, is the one in which it is realized. Letting '<' be the temporal precedence relation, the logical form for a future sentence where the event is bounded and unscheduled is:

(9) $\exists W' \subset W \exists t_0 < t_1$ ($\forall w' \in W'$, $w'Rw$ & w' are the most normal ….) $P(w', t_1)$

References. Bertinetto, P.M. 1979. 'Alcune Ipotesi sul nostro futuro (con alcune osservazioni su *potere* e *dovere*)'. *Rivista di grammatica generativa 4*: 77-138. * Bonomi, A. and Del Prete, F. 2008. Evaluating future-tensed sentences in changing contexts. *Ms. Univ. of Milan*. * Copley, B. 2002. The semantics of the future. PhD MIT. * Copley, B. 2006. 'Temporal orientation in conditionals'. Workshop Time and Modality. * Condoravdi, C. 2003. 'Moods and Modalities for Will and Would'. *Invited comm. at AC*. * Von Fintel, K. and Gillies, A. 2007. 'CIA leaks', *Philosophical review 117(1)*: 77-98 * Kissine, M. 2008. From predictions to promises. *Pragmatics and Cognition 16*:169-189. * Klinedinst, N. 2005. 'Plurals, possibilities, and conjunctive disjunction'. *Sinn und Bedeutung 10.* * Kratzer, A. 1991. 'Modality'. in A. von Stechow, and D. Wunderlich (eds.). *Semantik. Ein internationales Handbuch der zeitgenössichen Forschung.* Berlin, 639-659. * Laca, B. 2008 'The puzzle of subjunctive tense'. *Invited comm. Going Romance*. * Matthewson, L., Rullmann, H., and Davis, H. forthcoming. 'Evidentials as Epistemic Modals: Evidence from St'at'imcets'. *The Linguistic Variation Yearbook 7.* * Stephenson, T., 2006. Towards a unified theory of subjective meanings. PhD MIT. * Werner, T. 2006. 'Future and non-future modal sentences'. *Nat. Lang. Semantics 14*: 235-255.