COUNTERFACTUALITY, AGNOSTICISM AND MODAL IMPERFECTS

Modal imperfects and epistemic modals in the past. In some Romance languages, the past imperfect can be used to express future-oriented modal contents (Giorgi & Pianesi 2004, Bonomi 2010, Ippolito 2004). Take (1) from Italian:

(1)

– Frida viene con noi domani?

Is Frida coming with us tomorrow?

– Non credo. Frida suonava al Magnolia domani.

I don’t think so. Frida play (PAST-IMPF) at the Magnolia tomorrow.

Ippolito (2004) and Giorgi and Pianesi (2004) claimed that modal imperfects can be treated as epistemic modals in the past. They showed that the imperfect has a past tense component, even when it receives a modal future-oriented interpretation. In particular, the past component of the modal imperfect is meant to trigger a time-perspective shifting in the past:

(2)

\[ \text{IMPFL}(\text{Frida play}) = \lambda w \exists w' \exists t' [w' \in \text{MB} (w,t') & t' < ut & \exists e,w' [\text{Frida play}](w')(e) & \tau (e,w') \subseteq t'] \]

A very similar configuration is found with overt epistemic modals in the past:

(3)

Frida avrebbe potuto vincere domani.

‘Frida might have won tomorrow’.

Condoravdi (2002) argued that when an element providing a past tense content takes scope over the modal, epistemic and metaphysical modals display future orientation from a past perspective. In (3), PERF takes scope over MIGHT, triggering a time shifting of the modal’s evaluation time:

(4)

\[ \text{PRES(PERF(MIGHT_{\text{MB}}(\text{Frida win}))): } \lambda w \exists w' \exists t' [w' \in \text{MB} (w,t') & t' < ut & \exists e,w' [\text{Frida win}(w')(e) & \tau (e,w') \subseteq (t'_,\_)] \]

According to (2) and (4), there is a time \( t' \) such that \( t' \) precedes the utterance time \( ut \), and there is a world \( w' \) which belongs to an epistemic modal base \( \text{MB} \) accessible from the base world \( w \), at \( t' \), and an there is an event \( e \) in \( w' \), whose temporal projection \( \tau (e,w') \) in \( w \) is included in a time interval which is future-oriented with respect to \( t' \). The analyses proposed for the modal imperfect and epistemic/metaphysical modals in the past are very similar, in that the temporal interpretation is carried out by means of a two-steps derivation: (i) the modal’s evaluation time is shifted in the past and (ii) the eventuality inside the modal scope receive a future-oriented interpretation with respect to the shifted evaluation time.

The problem: counterfactuality vs. agnosticism. Future oriented epistemic/metaphysical modals in the past, as the one in (3), carry a strong counterfactual implicature. Condoravdi (2002) suggests that this follows from pragmatic competition between (3) and (5), given the scope configuration between the modal and temporal component in (3) and the general properties of alternatives in a realistic branching-time model:

(5)

Frida potrebbe vincere.

‘Frida might win’.

in a \( T \times W \) realistic branching-time model, the set of times is a linear structure and there is a 3-place relation on \( T \times W \times W \), \( \equiv \) such that for all \( t \equiv t' \) is an equivalence relation and for any \( w, w' \in W \) and \( t, t' \in T \) if \( w' \equiv t \equiv t' \) and \( t' < t \) then \( w' \equiv t' \equiv w' \). Defining a common ground \( cg \) to be the set of union of equivalence classes of worlds relativized to the utterance time, for any world \( w \) in the common ground, and any time \( t' < ut \) the set of realistic alternatives of \( w \) at \( t \), \( \{w': w \equiv_{ut} w'\} \) is a subset of the set of alternatives of \( w \) at \( t' \) \( \{w': w \equiv_{t'} w'\} \) given the monotonicity of ‘\( \equiv \)’. These sets constitute the domain of quantification for the modal evaluating the truth of (3) and (5) in \( w \). So a world in \( \{w': w \equiv_{ut} w'\} \) (the domain of quantification of (3)) but not in \( \{w': w \equiv_{t'} w'\} \) (the domain of quantification of (5)) is outside
cg. By using an expression that widens the domain of quantification for the modal so that it is partially outside the common ground, the speakers indicates that he/she cannot verify the relevant state of affair in a subset of cg. It follows that the speaker probably would intend to communicate that he/she has direct evidence that the past possibility was a non-actualized one at the utterance time.

On the other hand, modal imperfects does not carry a strong counterfactual implicature. They rather carry a weaker implicature about the agnosticism of the speaker.

The proposal. Differently from epistemic modals, modal imperfects appear to be sensitive to the distinction between plannable and non-plannable eventualities:

(5) Frida suonava al Magnolia domani, #(però non suonerà)/(però non ci giurerei).

\[
Frida \text{ play} (PAST-I M PF) \text{ tomorrow},\#(\text{but she won't})/ (\text{but I'm not willing to bet on it}).
\]

Given the definition in (2), this contrast is unexpected.

We propose that modal imperfects should be treated as futurates in the past in the sense of Copley (2009), instead of epistemic modals. According to Copley (2009), futurates need a presupposed-capable entity called the director \(d\), which is committed to and has the ability to ensure the realization of the proposition expressed in the sentence. Futurates can be treated as a highly constrained class of circumstantial modals (Abusch 2012), in which the modal base is the set of relevant circumstances chosen with respect with the director’s commitments and abilities. Imperfect modals are thus defined as follows:

\[
\text{IMPF(FUTURATE} \text{ } \text{MD} (\text{Frida play})) = \lambda w \lambda t \lambda d \forall v \forall v' \exists \tau \left[ w' \in \text{MB} (w,t',d) \& w < u t \& \exists \tau' \exists \tau \left[ t' > \tau' \& \exists \tau' \exists \tau \left[ \text{Frida play} (w') (e) \& \tau (e,w') \subseteq t' \right] \right] \right].
\]

This analysis allows an explanation for the lack of strong counterfactual implicature with modal imperfects. Given (8), a sentence with the modal imperfect enters a pragmatic competition with the corresponding present tense futurate modal sentence:

(9) Frida suona al Magnolia domani.

\[\text{Frida plays at the Magnolia tomorrow}.\]

Crucially the modal base of a futurate is a set of world compatible with the director’s commitments, not necessarily with the speaker’s commitments. By quantifying over worlds compatible with the director’s commitment in the past, instead of quantifying over worlds compatible with the director’s commitment at the utterance time, the speaker wants to intend that he/she cannot verify the plan in a subset of the common ground. However, the function that picks up the relevant circumstances is relativized to the director and not the speaker. Therefore, the speaker cannot be sure of which words in the past are the worlds compatible with the director’s commitments and abilities. Thus concluding that the speaker has direct evidences that the plan is not holding at the utterance time is too strong. It follows that the speaker probably wants to communicate his/her agnosticism about the plan at the utterance time, rather than counterfactuality.