On the unavailability of (some) future-of-past readings
Jéssica Mendes (Georg-August Universität Göttingen)

Overview. Future-of-past (FoP) readings are disallowed for some predictive expressions in matrix clauses (1a)/(1b), but become accessible in sequence-of-tense (SOT) environments (2) and narratives (4). This is puzzling: predictive expressions are typically analyzed as modals or as aspectual morphemes; all else equal they should combine freely with different tenses and temporal adverbials. To add complexity to the puzzle, notice that some predictive expressions, like *be going to*, readily give rise to FoP readings in matrix clauses (3). Previous work has tied the unavailability of FoP readings to the absence of tense in a language [10; 13]. However, as shown in these examples, the same pattern is found both in tensed languages, like English, and in languages traditionally analyzed as tenseless, like Cantonese. I propose instead that FoP readings are ruled out by the interplay of (i) pragmatic competition, (ii) an asymmetry in the assertability conditions of past- and future-oriented sentences, and (iii) the particular semantics of different predictive expressions.

(1) a. #John **would** travel to Germany.

   b. #Aaming camjat **wui** coenggo.
      Aaming yesterday will sing
    #'Aaming would sing yesterday.'
        [10, ex. 23, Cantonese]

(2) John said he **would** travel to Germany.

(3) John **was going to** move to Germany.

(4) On September 10 2015, John left the house to go on a hike. He **would** never be seen again.

Background. Following [3; 4], I treat WOLL as a selection modal: instead of quantifying over worlds in its domain, WOLL picks out a single world. The lexical entry for WOLL includes a selection function, *sel*; this function takes as its input a possible world and a proposition, which serves as the modal base of WOLL, and returns a possible world (5). For the purposes of this abstract, I assume WOLL has a historical modal base:

(5) $\llbracket\text{WOLL}\rrbracket^{g,c} = \lambda Q_{\langle i,st\rangle}.\lambda t_i.\lambda w_s.Q[t, \_](sel(w, hist_{w,t}))$

Sel obeys two constraints: *Inclusion* requires that, if $hist_{w,t} \neq \emptyset$, *sel* must pick out a world from this set; *Centering* requires that, if the input world w is in $hist_{w,t}$, then *sel* must select w itself. Since a world is one of its own historical alternatives, *Centering* guarantees that the modal contribution of WOLL is trivialized in matrix clauses; *sel* simply selects w_c. In line with [2], I posit that WOLL scopes above the perfective. I assume a referential semantics for tense and a standard semantics for the perfective. The truth conditions for *will*- and *would*-sentences are given below.

(6) John will graduate.

   $\llbracket(6)\rrbracket^{c,g}(w_c) = 1$ iff $\exists e[\tau(e) \subseteq [t_c, \_] \wedge \text{graduate}(j, e) \wedge e \leq sel(w_c, hist_{w_c,t_c})]$

(7) #John would graduate.
                             a. $\llbracket(7)\rrbracket^{c,g}(w_c)$ is defined only if $g_c(2) \prec t_c$

   b. if defined, $\llbracket(7)\rrbracket^{c,g}(w_c) = 1$ iff $\exists e[\tau(e) \subseteq [g_c(2), \_] \wedge \text{grad.}(j, e) \wedge e \leq sel(w_c, hist_{w_c,g_c(2)})]$

Since *sel* selects w_c in both cases, these sentences have very similar truth conditions. The difference between them boils down to their temporal profile: (6) asymmetrically entails (7).

Proposal. A priori, a sentence like (7) should be felicitous in contexts in which the speaker expects John to graduate after a certain past interval, but does not know if he has yet. I argue that the use of (7) in scenarios like this is ruled out by the interplay of pragmatic competition and an asymmetry in the assertability of past and future-oriented sentences. [11] proposes that when asserting the occurrence of a future event e, speakers are entitled to assume that history will unfold in a normal way between the utterance time and $\tau(e)$. [11] calls this principle *Future Normality*. When asserting the occurrence of a past event in w_c, however, speakers must have decisive evidence to rule out the possibility that e did not happen. In the absence of such evidence, speakers must

use expressions that introduce modal *displacement* to hedge their discourse. Contexts in which the speaker is unable to locate the running time of an event with respect to t_c are, *par excellence*, contexts in which the speaker does not have decisive evidence to guarantee the occurrence of *e*. Thus, given the selection semantics adopted for WOLL, (7) can only be uttered in these scenarios if $\tau(e) \succ t_c$. Therefore, whenever (7) can be asserted, it contextually entails the stronger alternative (6). I argue that, in these cases, (7) is ruled out by *Logical Integrity*:

(8) **Logical Integrity (LI):** Let S be a sentence and S' be one of its alternatives. S is infelicitous in context C if the following two conditions hold: (i) S does not logically entail S'; (ii) S contextually entails S' in C. [1]

Be going to. I argue *be going to* is compatible with a FoP reading because it selects from a different domain than WOLL. Following [5; 8; 12], I assume *be going to* has an inertial ordering source [14; 6], which ranks historical alternatives according to how normal they are from the perspective of w at t. It follows that *sel* need not select w_c, as w_c may not be an inertially optimal world: *would* is veridical, *was going to* is not [8]. As a result, *was going to* does not commit the speaker to the occurrence of an event in w_c, and hence can be used to refer to a past interval of time, which prevents competition with *is going to*.

(9) $[\![\text{be going to}]\!]^{c,g} = \lambda Q_{\langle i,st \rangle}.\lambda t_i.\lambda w_s.Q[t, \_](sel(w, Best_{int_{w,t}}(hist_{w,t})))$ [8]

SOT environments. I assume that SOT environments like (2) may contain a zero tense, which carries no presupposition and needs to be bound by a higher tense [9]; in this case, PAST. That gives rise to a simultaneous reading, which means that the left boundary of the interval introduced by WOLL is the *now* of the attitude holder. This construal is equivalent to a *will*-sentence from the perspective of the attitude now, and hence is not ruled out by LI. A similar reasoning explains why FoP readings are available in narrative contexts, not covered here for reasons of space.

Outlook and implications. I have argued that the unavailability of FoP readings for *would* results from a tension between its modal and temporal semantics. The modal contribution of *would* is strong, committing the speaker to the occurrence of an event in w_c. The temporal contribution of *would* is weak; it introduces an interval of time that starts before t_c and extends indefinitely into the future. Since speakers cannot assert the occurrence of past events in w_c without decisive evidence, *would* can only be used when $\tau(e) \succ t_c$. But in these cases, *would* is ruled out by competition with *will*. Since my proposal relies on general pragmatic principles, it predicts that the unavailability of FoP readings for veridical future markers should be widespread. In the presentation, I bring typological evidence corroborating this prediction: based on existing descriptions and elicitation, I show that in 14 languages, from 10 geographically and genetically-distant families, veridical future markers are incompatible with a FoP reading. If this proposal is on the right track, it suggests that (i) the lack of FoP readings is not a reliable diagnostic for tenselessness, contra [10; 13]; (ii) *would* does not have an inherently non-veridical semantics, contra [7].

References

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