Can nominal tense be fake?*

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Abstract:

The nominal past tense *-kue* of Mbya is used to express counterfactual (CF) modality in conditionals and in related constructions. This raises the question whether counterfactual uses of *-kue* are instances of a fake nominal tense.

Keywords: Nominal tense, fake tense, conditionals, counterfactuals, modality

1 Introduction

This paper discusses the interpretation of 'future under past' morphology in Mbya Guarani, a Tupi Guarani language spoken in Argentina, Brazil and Paraguay by about 27,000 speakers. I will analyze three construction types involving counterfactual modality: counterfactual conditionals (CFCs), stand alone counterfactual modals (SACFs), and counterfactual noun phrases (CFNPs).

(1) João o-ĩ rire ng-oo py agỹ oke '-rã-gue.
    João 3-be CF REFL-house in now 3-sleep NMLZ-FUT-PAST
    'If João were at home right now, he would be sleeping.'   **CFC**

(2) O-ky va'e-rã-gue agỹ.
    3-rain NMLZ-FUT-PAST now
    'It should be raining right now.'   **SACF**

(3) Xe-rembireko-rã-gue o-menda João re.
    1-wife-FUT-PAST 3-marry João with
    'The person who was to be my wife got married with João.'   **CFNP**

The expression of 'future under past' morphology is common across languages (Iatridou 2000). It is also well know that certain occurrences of the past tense in counterfactual conditionals appear to be temporally vacuous, although the real nature of this phenomenon is disputed (see Ippolito 2013; Schulz 2014). What is more surprising is the fact that the past marker *-kue* and the future marker *-rã* used in these constructions in Mbya are nominal tenses. This raises the question whether the occurrences of *-kue* in these examples are instances of fake nominal tense.

The paper is structured as follows. In the next section, I provide some background information on tense in Mbya. In section 3, I give an informal description of the main properties of counterfactual modals in the three constructions above. In section 4, I propose a unified analysis of all three constructions under the assumption that -*kue* is interpreted as a real past tense in CF modals. In section 5, I consider a mixed analysis according to which -*kue* is interpreted as a fake past tense in CFCFs and as a real tense in SACFs and CFNPs. I argue that this analysis minimizes semantic differences between Mbya and better studied Germanic and Romance languages.

2 Background on tense in Mbya

There is no tense and viewpoint aspect inflection on verbs in Mbya. Bare verbs have a non-future interpretation, and viewpoint aspect is underspecified:

(4) Juan i-ñembyayi agỹ/kuee/*ko'erã.
     Juan 3-hungry   now/yesterday/tomorrow
     'Juan is/was hungry now/yesterday/*tomorrow.'

(5) Juan o-mba'eapo agỹ/kuee/*ko'erã.
     Juan 3-work   now/yesterday/*ko'erã
     'Juan is/was working now/yesterday/*tomorrow.'

In the spirit of Tonhauser (2011b), I assume that the reference time of matrix clauses is provided by a covert temporal pronoun t_0, which is presupposed to overlap or precede the time of utterance t_c.

Like Paraguayan Guarani (Tonhauser 2006), Mbya has two nominal temporal markers (NTMs) -*kue* and -*rã*, which are attested on underived nouns and on nominalized clauses. Examples (6a) and (6b) illustrate their use on underived nouns.

(6) a. Agỹ Juan i-jayvu peteĩ **opygua-kue** reve.
         now Juan 3-talk   one   priest-PST   with
         'Right now, Juan is talking to an ex-priest.'

     b. Juan i-jayvu peteĩ **opygua-rã** reve.
         Juan 3-talk   one   priest-FUT with
         'Juan is talking to a future priest.'

Examples (7a) and (7b) illustrate the use of NTMs on nominalized complement clauses. Note that while these clauses are normally nominalized with the suffix -*a*, -*rã* may only be suffixed to the nominalizer *va'e*:

(7) a. A-ikuaa Juan o-mba'eapo-**a-gue** kuee.
         1-know Juan 3-work-NMLZ-PST yesterday
         'I know that Juan was working/worked yesterday.'

     b. A-ikuaa Juan o-mba'eapo **va'e-rã**   ko'erã.
         1-know Juan 3-work   NMLZ-FUT tomorrow
         'I know that Juan will work tomorrow.'

Relative clauses in Mbya are nominalized with the same clitic *va'e* and may also combine with NTMs:

(8) a. A-ikuaa ava pe Maria reve o-mba'eapo **va'e-kue** kuee.
1-know man DOM Maria with 3-work NMLZ-NMLZ yesterday
'I know the man who worked/was working with Maria yesterday.'

b. A-ikuaa ava pe Maria reve o-mba'eapo **va'e-rã** ko'erã.
1-know man DOM Maria with 3-work NMLZ-FUT tomorrow
'I know the man who will work with Maria tomorrow.'

NTMs are also attested in matrix clauses, where they are suffixed on the the nominalizer *va'e*. *Va'e* does not appear to have any effect on the interpretation of these clauses, which I assume to be instances of insubordination. I assume that *va'e* is inserted to provide a nominal host for the NTM. Indeed, NTMs cannot be suffixed to verbs, as illustrated in examples (11) and (12):

(9) A-a Posadas py **va'e-kue**.
1-go Posadas in NMLZ-kue
'I went to Posadas.'

(10) A-a Posadas py **va'e-rã**.
1-go Posadas in NMLZ-rã
'I went to Posadas.'

(11) Kuee, Juan o-mba'eapo-(*kue).
yesterday Juan 3-work-PST
'Yesterday, Juan worked/was working.'

(12) *Ko'erã, Juan o-mba'eapo-rã.
Tomorrow Juan 3-work-FUT
'Tomorrow, Juan will work.'

Note that while NTMs on underived nouns specify the time of evaluation of the nominal property, NTMs on nominalized clauses specify the reference time of the clause. As such, NTMs on nominalized clauses are morphologically nominal but semantically verbal. Following Thomas (2014), I analyze *-kue* as a relative past tense that selects a complement of category N.[1] By contrast, *-rã* is not a tense but a modal operator with a non-past orientation. I propose that the future orientation of *-rã* observed in the previous examples originates from the use of a metaphysical modal base, which blocks its present orientation (Condoravdi 2002). The present orientation of *-rã* resurfaces in its deontic interpretation, as illustrated in (13):

(13) Guavira ña-moatachi va'e-rã ja-'u aguã.
guavira 1PL-fumigate NMLZ-FUT 1PL-eat NMLZ
'Guavira must be fumigated in order to be eaten' (Cadogan 1959)

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[1]For an alternative analysis of NTMs in Paraguayan Guarani, see Tonhauser (2006), who argues that *-kue* is a terminative aspect.

3 Counterfactual modality in Mbya

3.1 Conditionals

3.1.1 Indicative conditionals

Before I discuss counterfactual conditionals, I would like to give some background on 'indicative' conditionals in Mbya. The antecedent of an indicative conditional is related to the consequent by a switch reference marker *vy* (same subject) or *ramo* (different subject):

(14) Context: it is late at night. If John is at home, then he is sleeping. But maybe he is not there.

   Juan o-ĩ   **vy** ng-oo   py o-ke.
   Juan 3-be SS REFL-house in 3-sleep
   'If Juan is at home, then he is sleeping.'

(15) Context: we don't know how the weather is like in Posadas and we are wondering whether Germino is at home.

   O-ky **ramo** Posadas py agỹ Germino o-ĩ   ngoo   py.
   3-rain DS   Posadas in now Germino 3-be REFL-house in
   'If it is raining in Posadas now, then Germino is at home.'

The temporal orientation of the antecedent is free. In particular, the antecedent may describe a future event. By contrast, the consequent is non-future unless a future marker is used:

(16) O-ky ramo Posadas py **agỹ** Germino **o-ĩ** ngoo   py.
   3-rain DS   Posadas in now Germino 3-be REFL-house in
   'If it is raining in Posadas now, then Germino is at home.'

(17) **Kuee**   o-ky   ramo Posadas py, Germino **o-ĩ** ngoo   py.
   Yesterday 3-rain DS   Posadas in, Germino 3-be REFL-house in
   'If it was raining in Posadas yesterday, Germino was at home.'

(18) **Ko'erã**   o-ky   ramo Posadas py, Germino **o-ĩ-'-rã**
   Tomorrow 3-rain DS   Posadas in, Germino 3-be-NMLZ-FUT
      ngoo   py.
      REFL-house in
   'If it rains in Posadas tomorrow, Germino will be at home.'

3.1.2 Counterfactual conditionals

Temporal orientation The antecedent of counterfactual conditionals is marked by the particle *rire* rather than by a switch reference marker. The consequent is marked by a combination of past and future NTMs suffixed to the nominalizer

va'e or its reduced form (glottal stop). Counterfactual conditionals are felicitous when it is common ground that their antecedent is false, contrary to indicative conditionals:

(19) Context: we know it's sunny in Posadas today, and Germino is out there working, but . . .

    a. O-ky **rire** Posadas py agỹ Germino **o-ĩ** **'-rã-gue**
       3-rain CF Posadas in now Germino 3-be NMLZ-FUT-PAST
         ng-oo   py.
         REFL-house in
       'If it were raining in Posadas now, Germino would be at home.'

    b. #O-ky **ramo** Posadas py agỹ Germino **o-ĩ** ngoo   py.
       3-rain DS   Posadas in now Germino 3-be REFL-house in
       'If it is raining in Posadas now, then Germino is at home.'

Just as in indicative conditional, the temporal orientation of the antecedent is free. Counterfactual conditionals differ from indicative conditionals insofar as the temporal interpretation of their consequent is also free, rather than non-future:

(20) O-ky rire Posadas py **kuee** Germino **o-ĩ** **'-rã-gue**
     3-rain CF Posadas in yesterday Germino 3-be NMLZ-FUT-PAST
       ng-oo   py.
       REFL-house in
     'If had rained in Posadas yesterday, Germino would have been at home.'

(21) O-ky rire Posadas py **ko'erã** Germino **o-ĩ** **'-rã-gue**
     3-rain CF Posadas in tomorrow Germino 3-be NMLZ-FUT-PAST
       ng-oo   py.
       REFL-house in
     'If rained in Posadas tomorrow, Germino would be at home.'

Counterfactuality   Like English CFCs, Mbya CFCs do not entail the negation of their antecedent and/or prejacent. That is to say, the counterfactual inference triggered by these conditionals can be canceled, as shown by the following example:

(22) João o-juka rire Pedro pe   o-ĩ '-rã-gue   'uguy i-kamixa re.
     João 3-kill CD Pedro DOM 3-be NMLZ-FUT-PAST blood 3-shirt on
     'If João had killed Pedro, there would be blood on his shirt.'

     O-ĩ i-kamixa re 'uguy, ha'e ma o-juka ae   Pedro pe.
     3-be 3-shirt on blood CONJ TOP 3-kill certainly Pedro DOM
     'There is blood on his shirt, so he must have killed him.'

Simple and double past English counterfactual conditionals may be inflected in the simple past tense or in the past perfect. Following Ippolito (2013), we call these constructions Simple Past Counterfactual Conditionals and Double Past Counterfactual Conditionals:

(23) John hasn't arrived yet. If he arrived later today, he wouldn't miss the talk.

(24) John will arrive tomorrow. If he arrived later today (instead), he wouldn't miss the talk.

(25) John arrived yesterday. #If he arrived later today (instead), he wouldn't miss the talk.

(26) John arrived yesterday. If he had arrived later today (instead), he wouldn't have missed the talk.

English SPCFCs are infelicitous when their antecedent or its presuppositions are incompatible with known facts that have already taken place by the time of utterance, as illustrated by the contrast between (24) and (25).

There is no morphological contrast equivalent to that between SPCFCs and DPCFCs in Mbya. Mbya CFCs are felicitous in contexts that license English SFCFCs as well as in those that license English DPCFCs:

(27) Xe-ru   o-mano va'e-kue   o-axa va'e-kue   ara yma re...
      1-father 3-die   NMLZ-PAST 3-pass NMLZ-PAST day ago OBL
      My father died last year.

      O-mano **rire** ara pyau o-u-a   re, o-jou **'-rã-gue**
      3-die   CF   day new 3-come-NMLZ OBL 3-meet NMLZ-FUT-PAST
          xe-ra'ychy.
          1-wife
      If he had died next year, he would have met my wife.

(28) Xee a-jau   França py.
      1   1-born France in
      'I was born in France.'

      A-jau   rire Argentina py, xe-ayvu '-rã-gue   Espanhol py.
      1-born CF   Argentina in, 1-speak NMLZ-textscfut-PAST Spanish   in.
      'If I had been born in Argentina, I would have spoken Spanish.'

3.2   Stand alone counterfactual modals

CF marking is also attested outside of conditional constructions. CF marking is notably attested in simple independent clauses, where they convey that the event that is described by the sentence did not take place, is not taking place, or will not take place, contrary to earlier expectations:

(29) Context: there was a rainy weather forecast for today, but it has been a sunny day so far.

O-ky va'e-rã va'e-kue ange.
3-rain NMLZ-FUT NMLZ-PAST today
'It should be raining today.'

As in conditional sentences, the temporal orientation of SACF is free. That is to say, a SACF sentence can describe an event that was expected to take place in the past, in the present or in the future of the time of utterance:

(30) O-ky va'e-rã va'e-kue kuee.
3-rain NMLZ-FUT NMLZ-PAST yesterday
'It should have rained yesterday.'

(31) O-ky va'e-rã va'e-kue agỹ.
3-rain NMLZ-FUT NMLZ-PAST now
'It should be raining now.'

(32) Guillaume o-o va'e-rã va'e-kue Rio py ko'erã, ha'e
Guillaume 3-go NMLZ-FUT NMLZ-PAST Rio in tomorrow, it
    ramo ta'vy o-o-ta amboae semana.
    DS MIR 3-go other week
Guillaume should have gone to Rio tomorrow, but eventually he will go next week.

The present description of SACFs must actually be qualified, since SACFs do not entail the negation of their prejacent. They are similar to CFCs insofar as the counterfactual inference that they trigger can be canceled:

(33) Nd-a-ikuaa-i o-ky pa Rio py kuee, ha'e ramo o-ky
NEG-1-know-NEG 3-rain Q Rio in yesterday it DS 3-rain
    va'e-rã va'e-kue.
    NMLZ-FUT NMLZ-PAST
'I don't know if it rained in Rio yesterday, but it should have rained.'

3.3 Nominal counterfactuality

CF marking is also attested on noun phrases, where it conveys that the referent of the NP does not have the property described by the NP, contrary to earlier expectations:

(34) Context: João was supposed to become the new leader of the community tomorrow, but he died yesterday.

Nhande-ruvixa-rã-gue o-mano kuee.
1PL-leader-FUT-PAST 3-die yesterday
'The person who was going to be our leader died yesterday.'

(35) Context: I was supposed to get married to Elena, but she got married to
João instead.

Xe-rembireko-rã-gue o-menda João re.
1-wife-FUT-PAST 3-marry João OBL
'The person who was going to be my wife got married to João.'

In the same way that indicative conditionals are infelicitous in contexts that
license the use of CFCs, unmodified NPs are infelicitous in contexts that license
the use of CFNPs:

(36) Context: João was supposed to become the new leader of the community
tomorrow, but he died yesterday.

?Nhande-ruvixa o-mano kuee.
1PL-leader 3-die yesterday

(37) Context: I was supposed to get married to Elena, but she got married to
João instead.

?Xe-rembireko o-menda João re.
1-wife 3-marry João OBL

The counterfactual inference triggered by CFNPs can also be canceled:

(38) Context: I was supposed to get married to Elena. The wedding was almost
called off, but eventually we got married.

A-menda xe-rembireko-rã-gue re kuee.
1-marry 1-wife-FUT-PAST with yesterday.
'Yesterday, I married the person who was going to be my wife.'

4 Unified analysis: past as past

In this section, I explore the hypothesis that the NTM -*kue* is uniformly interpreted
as a relative past tense in CF constructions in Mbya.

4.1 Stand Alone Counterfactual Modals

I propose to analyze CF marking simply as a form of future in the past.[2] More
precisely, I propose that the future NTM -*rã* denotes a universal modal operator.

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[2]For a similar analysis of Paraguayan Guarani -*ta*, see Tonhauser (2011a)

In CF constructions, *-rã* is given a metaphysical modal base, which forces a future orientation (for a discussion of the temporal orientation of metaphysical modals, see Condoravdi 2002). In SACFs, *-rã* is interpreted with a stereotypical ordering source. The past NTM is interpreted as a relative past tense. *-Kue* is anchored in the time of the sentence t_0, which is a contextually salient non-future time:

(39) $[\![\text{rã}]\!]^{g,c} = \lambda f.\lambda g.\lambda P.\lambda t.\lambda w.\forall w'[w' \in Max_{g(w)(t)}(f(w)(t)) \rightarrow \exists t'[t' \geq t \wedge P(t')(w')]]$

(40) $[\![\text{-kue}]\!]^{g,c} = \lambda P.\lambda t.\lambda w.\exists t'[t' < t \wedge P(t')(w)]]$

(41) $[\![\text{VP va'e-rã}_{f,g} \text{ va'e-kue}]\!]^{g,c} = \lambda t.\lambda w.\exists t'[t' < t \wedge \forall w'[w' \in Max_{g(w)(t')}(f(w)(t')) \rightarrow \exists t''[t'' \geq t' \wedge [\![\text{VP}]\!]^{g,c}(t'')(w')]$

(42) $[\![\text{O-ky } t_0 \text{ va'e-rã}_{f,g} \text{ va'e-kue ange}]\!]^{g,c}(w) = \exists t[t < g(0) \wedge \forall w'[w' \in Max_{g(w)(t)}(f(w)(t)) \rightarrow \exists t'[t' \geq t \wedge \mathbf{rain}(w')(t') \wedge \mathbf{today}(t')]$
    True in w at t_0 iff there was a time t before t_0 such that all the normal continuations of w after t lead to an event of raining at some sub-interval t' of the day of utterance.

Because of the use of a stereotypical ordering source, *VP va'e-rã va'e-kue* does not entail that the event described by the VP happens in the actual world. However, *VP va'e-rã va'e-kue* does entail that there is a time in the past of t_0 at which it was expected that this event would happen.

Note that it is unclear whether *va'erã va'ekue* triggers a counterfactual implicature, and how this implicature could arise. In the proposed analysis, such an implicature could not arise by exploiting the maxim of quantity (*pace* Tonhauser 2011a). Such an implicature would arise if $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$ were entailed by its prejacent p. Assuming that the prejacent of a modal sentence is one of its alternatives, an assertion of $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$ would then trigger a Gricean quantity implicature (Grice 1975) leading to the conclusion that the speaker does not believe that p. However, p does not entail $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$, since the actual world may not be one of the most 'normal' worlds in the domain of $[\![\text{va'erã va'ekue}]\!]^{g,c}$. For the same reason, $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$ does not entail p.

It is easier to derive an ignorance implicature from an assertion of $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$, using the Gricean maxim of relevance. Assume that the question under discussion (QUD) that is addressed by an assertion of $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$ is the question $?p$ whether p is true or false. The most relevant answers to this question are p and $\neg p$, but other answers may be relevant, to the extent that they make it more of less likely that p or $\neg p$.[3] In particular, learning that $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$ raises the likelihood that p is true and decreases the likelihood that $\neg p$, therefore $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$ is positively relevant to p and negatively relevant to $\neg p$. As a consequence, if the QUD is $?p$, $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$ is not as relevant an answer as either p or $\neg p$. Under the assumption that the speaker is

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[3]See Russell (2012) for a discussion of probabilistic relevance that could be used to formalize this reasoning.

cooperative, her assertion should therefore trigger an implicature that she is not in a position to assert either p or $\neg p$, which most likely means that she doesn't know whether p or $\neg p$.

I would like to suggest that $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$ never triggers an implicature that $\neg p$. At best, it triggers an ignorance implicature. The impression that it triggers a counterfactual implicature may be due to the fact that an assertion of $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$ is less informative when it is believed that p than when it is believed that $\neg p$, since $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$ raises the likelihood that p. It is even less informative given p if we hypothesize that speakers assume by default that the actual world follows a perfectly normal course of events, for under this assumption p entails $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$. Therefore, we expect that $[\![\text{va'erã va'ekue}]\!]^{g,c}(p)$ will rarely if at all be uttered in a context where p is common ground, while it may be uttered in a context where $\neg p$ is common ground.

4.2 Nominal counterfactuality

This analysis of CF marking in SACFs carries over straightforwardly to CFNPs. The NP *tuvixarãgue* ('leader-CF') denotes the set of individuals who became leaders in the most normal continuations of the world of evaluation, where the branching point is some time that precedes the time of evaluation of the NP. Accordingly, the NP may be used to describe individuals who are not leaders at its time of evaluation:

(43) $[\![\text{tuvixa}]\!]^{g,c} = \lambda x.\lambda t.\lambda w.\mathbf{leader}(x)(t)(w)$

(44) $[\![\text{'rã}_{f,g}\text{ gue}]\!]^{g,c} =$
$\lambda P.\lambda t.\lambda w.\exists t'[t' < t \land \forall w'[w' \in Max_{g(w)(t')}(f(w)(t')) \rightarrow \exists t''[t'' \geq t' \land P(t'')(w')]]]$

(45) $[\![1\ [[[\text{tuvixa } t_1]\ \text{rã}]\ \text{gue}]]\!]^{g,c}(t)(w) =$
$\lambda x.\exists t'[t' < t \land \forall w'[w' \in Max_{g(w)(t')}(f(w)(t')) \rightarrow \exists t''[t'' \geq t' \land \mathbf{leader}(x)(t'')(w')]]]$

4.3 Counterfactual Conditionals

This analysis of CF marking can also be extended to counterfactual conditionals. Following Kratzer (1981, 1991), I assume that antecedents of conditionals restrict a modal operator in the matrix clause. In the spirit of von Fintel (1994), I assume that the antecedent is a sentential adjunct that is co-indexed with the modal base variable of the matrix modal. In order to account for the free temporal orientation of both clauses, I will assume that the evaluation time of the antecedent is bound by a covert non-past-operator, while the evaluation time of the consequent is bound by the modal operator. Both operators are anchored to the reference time of the sentence (remember that the interval $g(0)$ denoted by t_0 must precede or overlap with the time of utterance).

(46) $[\![\text{rire}_i \text{ S, S}']\!]^{g,c}(w)(t) = [\![\text{S}']\!]^{c,g[\lambda w.g(i)(w)(t) \cup \{\lambda w.[\![S]\!](w)(t)\}/i]}$

(47) $[\![\text{Op}]\!]^{g,c} = \lambda P.\lambda t.\lambda w.\exists t'[t' \geq t \wedge P(t')(w)]$

The counterfactual conditional (48) is parsed as in (49) and interpreted as in (50):

(48) O-ky **rire** Posadas py agỹ Germino **o-ĩ** **'-rã-gue**
     3-rain CF Posadas in now Germino 3-be NMLZ-FUT-PAST
          ng-oo   py.
          REFL-house in
     'If it were raining in Posadas now, Germino would be at home.'

(49) [t_0 [rire$_i$ Op oky Posadas py agỹ] [-kue [-rã$_{i,j}$ [NLZ [Germino oĩ ngoo py]]]]]

(50) $[\![(48)]\!]^{g,c} = \lambda w.\exists t'[t' < g(0) \wedge \forall w'[w' \in Max_{g(w)(t')}(f(w)(t') \cup \{\lambda w.\exists t''[t'' \geq t' \wedge \mathbf{rain}(w)(t'')]\}) \rightarrow \exists t''[t'' \geq t' \wedge \mathbf{at\_home}(t'')(w')(\mathbf{Germino})]]$

I assume that $g(w)(t)$ orders possible worlds with respect to their similarity to the evaluation world w, and that the modal base $f(w)(t)$ is historical, i.e. consists of all worlds that are identical to w up to t. In (50), the restriction of the modal quantifier is included in the set of worlds that are identical to the evaluation world up to some time t' before the reference time $g(0)$, and in which it is raining at t' or afterwards. Therefore, the antecedent is not required to be true in the world of evaluation.

This analysis predicts that the same logical form could be translated into English as a SPCF or as a DPCF. Indeed, let us assume with von Stechow and Grønn (2008) that the reason for the unacceptability of (51), repeated from (25), is that the event of John's arrival that is under discussion took place before the day of utterance in all the worlds in the modal base of *would*. As a consequence, the intersection of the modal base with the antecedent of the conditional is empty, which explains the unacceptability of the sentence. Note that the inclusion in the modal base of the proposition that John arrived yesterday follows from the assumption that the modal base of *would* is metaphysical and is interpreted at the time of utterance:

(51) John arrived yesterday. #If he arrived later today (instead), he wouldn't miss the talk.

By contrast, in the proposed analysis of CF marking in Mbya, the time of evaluation of *-rã* is some interval in the past of the evaluation time $g(0)$, which is itself a time that precedes the time of utterance or overlaps it. As a consequence, we can evaluate the modal base of *-rã* in (52) with respect to a time that precedes the death of the speaker's father, which explains the felicity of the sentence:

(52) Xe-ru   o-mano va'e-kue   o-axa va'e-kue   ara yma re...
     1-father 3-die   NMLZ-PAST 3-pass NMLZ-PAST day ago OBL
     'My father died last year.'

     O-mano rire ara pyau o-u-a   re, o-jou '-rã-gue
     3-die   CF day new 3-come-NMLZ OBL 3-meet NMLZ-FUT-PAST
         xe-ra'ychy.
         1-wife
     'If he$_4$ had died next year, he$_4$ would have met my wife.'

(53) $[\![(51)]\!]^{g,c} = \lambda w.\exists t'[t' < g(0) \wedge \forall w'[w' \in Max_{g(w)(t')}(f(w)(t') \cup \{\lambda w.\exists t''[t'' \geq t' \wedge \mathbf{died}(w)(t'')(g(4)) \wedge t'' \subseteq \mathbf{next\text{-}year}(c)]\}) \rightarrow \exists t''[t'' \geq t' \wedge \mathbf{meet}(t'')(w')(\iota x.\mathbf{wife}(x)(s_c))(g(4))]]]$

4.4 Taking stock

We have arrived at a unified analysis of CFCs, SAFCs, and CFNPs, in which 'counterfactual marking' is analyzed as future oriented modality whose evaluation time is shifted in the past by *-kue*. Although this analysis is adequate for Mbya, it cannot be extended to English (and more generally Germanic and Romance languages).

5 Alternative analysis

5.1 English CFCs

The analysis of CFCs presented in the previous section over-generates in English. Firstly, 'simple past' CFs are incorrectly predicted to be felicitous in the same contexts as 'double past' CFs. Indeed, since the analysis posits that the past tense in the consequent is interpreted temporally and shifts the time of evaluation of the modal operator in the past of the reference time, it should be possible to interpret the modal base with respect to a time that precedes the death of the speaker's father in example (54):

(54) Context: the speaker's father died last year.
     #If he$_4$ died next year, he$_4$ would meet my wife.

(55) PRES [[if he died next year] PAST WOLL [he meet my wife]]

(56) $[\![(55)]\!]^{g,c} =$
     $\lambda w.\exists t'[t' < t_c \wedge \forall w'[w' \in Max_{g(w)(t')}(f(w)(t') \cup \{\lambda w.\exists t''[t'' \geq t' \wedge \mathbf{died}(w)(t'')(g(4)) \wedge t'' \subseteq \mathbf{next\text{-}year}(c)]\}) \rightarrow \exists t''[t'' \geq t' \wedge \mathbf{meet}(t'')(w')(\iota x.\mathbf{wife}(x)(s_c))(g(4))]]]$

Ippolito (2013) demonstrates that this issue can be addressed without adopting a fake tense analysis. However, it is important to note that this problem does not arise in Mbya.

Secondly, since the time of evaluation of the matrix VP is bound by a future oriented operator whose time of evaluation is itself shifted in the past of the time of utterance, we predict incorrectly that it should be possible to describe past events in the consequent of simple past CFs:

(57)   *If John left tomorrow, he would visit us yesterday.

(58)   PRES [[if John leave tomorrow] PAST WOLL [he visit us yesterdat]]

(59)   If John had left tomorrow, he would have visited us yesterday.

Current analyses of English CFCs do not face these problems, because they assume that the past tense in SPCFs is not interpreted standardly. Ippolito (2013) assumes that the past tense shifts the time of accessibility of a modal WOLL in the past without affecting the time of evaluation of the antecedent and the consequent of the conditional. Others assume that the past tense is uninterpreted or else interpreted in the modal domain (see a.o. Iatridou 2000; Schulz 2014; von Stechow and Grønn 2008). In the rest of the paper, I will discuss the possibility to adopt a fake tense analysis in Mbya.

5.2   Fake past tense in CFC

For simplicity, I will assume with von Stechow and Grønn (2008) that the past tense in CFCs is uninterpreted. An analysis of *-kue* as a modal remoteness marker would add a presupposition that the speaker does not expect the antecedent worlds to be real (Schulz 2014). This is not relevant for our current purposes. Assuming that *-kue* is uninterpreted, Mbya CFCs are interpreted as follows:

(60)   O-ky **rire** Posadas py agỹ Germino **o-ĩ** **'-rã-gue**
       3-rain CF   Posadas in now Germino 3-be NMLZ-FUT-PAST
          ng-oo   py.
          REFL-house in
       'If it were/had been raining in Posadas now, Germino would be/would have been at home.'

(61)   [t_0 [rire$_i$ Op oky Posadas py agỹ] [-kue [-rã$_{i,j}$ [NLZ [Germino oĩ ngoo py]]]]

(62) $[\![(61)]\!]^{g,c} = \lambda w.\forall w'[w' \in Max_{g(w)(g(0))}(f(w)(g(0)) \cup \{\lambda w.\exists t'[t' \geq g(0) \wedge \mathbf{rain}(w)(t')]\}) \rightarrow \exists t'[t' \geq g(0) \wedge \mathbf{at\_home}(t')(w')(\mathbf{Germino})]]$

Whether this sentence is interpreted like a SPCFC or like a DPCFC depends on the value of $g(0)$. Indeed, the antecedent and its presupposition must be consistent with the modal base of *-rã*, which contains all the worlds that are identical to the world of evaluation up to $g(0)$. As a consequence, we predict that it is

possible to use a CFCs in a context that would require the use of a DPCFC in English, whenever $g(0)$ precedes the time of utterance. In English, this would require embedding the CFC under a second layer of past tense. This is not necessary in Mbya, even if we assume that *-kue* is uninterpreted in CFCs, since the reference time $g(0)$ of matrix sentences may be a past time. In other words, it is the fact that tenseless sentences have a non-future interpretation in Mbya that explains the absence of contrast between SPCFCs and DPCFCs.

5.3 Fake tense outside conditionals?

While it is possible to assume that *-kue* is uninterpreted in CFCs, it is not obvious how to extend this analysis to SACFs. The analysis does not raise any issue with matrix SACFs, as illustrated by the following example:

(63) $[\![\text{O-ky } t_0 \text{ va'e-rã}_{f,g} \text{ va'e-kue ange}]\!]^{g,c}(w_1) = \forall w[w \in Max_{g(g(1))(g(0))}(f(g(1))(g(0))) \rightarrow \exists t'[t' \geq g(0) \wedge [\![\mathbf{rain}]\!]^{g,c}(t')(w) \wedge \mathbf{today}(t')]]$
True in w at t_0 iff all the normal continuations of w after t_0 lead to an event of raining at some sub-interval t' of the day of utterance.

However, it makes incorrect predictions for embedded SACFs. To see this, note first that the reference time of embedded sentences is always bound by the embedding verb (see Thomas 2014). A consequence, we predict that the future oriented modal *-rã* in an embedded SACFs locates the embedded event time in the future of the matrix event time. Therefore, it should be impossible to use a SACF to describe events that should have occurred before the matrix event time, contrary to facts:

(64) Ange, Maria o-exa ra'u o-ky va'e-rã va'e-kue kuee.
Today, Maria 3-see sleep 3-rain NMLZ-FUT NMLZ-PAST yesterday
'Maria dreamed today that it should have rained yesterday.'

I conclude that *-kue* ought to be interpreted as a (real) past tense in SACFs. In sum, unifying the analysis of CFCs in Mbya and English comes at the cost of losing the uniformity of analysis of CFCs, CFNPs and SACFs in Mbyá.

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