

## Counterfactuals in a future vs. non-future language

Luiz Fernando Ferreira & Ana Muller

Universidade de São Paulo, Brazil

**Focus.** This talk focusses on the semantics of tense in counterfactual constructions (CFs) of a future vs. non-future language – Karitiana (Amazonian, Tupi). In future vs. non-future languages, non-future tense may refer to either the present or the past; whereas the future tense just refers to the future (1-2).

(1)	João	Ø-na-oky-t	boroja	(2)	João	Ø-na-oky-t	boroja
	João	3-DECL-kill-NFT	snake		João	3-DECL-kill-NFT	snake
	'João kills/killed snakes.'				'João will kill snakes.'		

Cross-linguistically, it is well-known that most languages that have tense make use of the past tense (and of imperfective aspect) in CFs (van Linden and Verstraete 2008, Iatridou 2000, among others). The phenomenon has been observed across a varied array of language families. The puzzling fact about it is that the past tense does not seem to instantiate its canonical meaning, and has thus been called *fake*. The literature on CFs is anchored on the study of languages that belong to past vs. non-past or past vs. present vs. future tense systems (James, 1982; Fleischmann, 1989; Iatridou, 2000; Palmer, 2001; Ippolito, 2002, 2003; Arregui, 2005, van Linden & Verstraete, 2008). We bring data from a typologically distinctly tense oriented language to bear on the current debate.

**Questions.** In this work we tackle the following questions: (i) Does Karitiana allow for fake tense in its CFs?; (ii) Can the available current theories account for its behaviour?

**Thesis.** We show that fake tense occurs in Karitiana, and that its behaviour supports an approach that takes tense to be legitimate, not fake, in CFs.

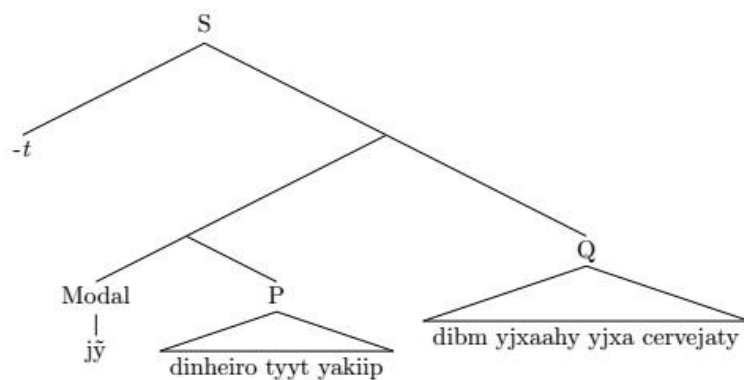
**Background facts.** A sentence is considered counterfactual when the proposition it denotes goes against the actual facts (Iatridou, 2000). Karitiana has legitimate CFs, which contrast as far as grammar and meaning, with other conditional sentences in the language. Compare (3), a CF, to (4), an indicative conditional sentence. Sentence (3) conveys that the situations of 'Speaker having money' and of 'Speaker+Hearer drinking beer' don't hold. Sentence (4), on the other hand, states a general fact, which holds in the actual world.

(3)	[dinheiro tyt	y-akiip]	[yjxa-jy-ahy-t	yjxa	cerveja-ty]
	[money big	1SG-COP]	[1PL.INCL-CF-drink-NFUT	1PL.INCL	beer-OBL]
	'If I had money, we would drink beer.'				
(4)	Y-'it	['e	ryt tykiri]	[Ø-naka-kerep-i	ese]
	1S-son	[rain	arrive when/if]	3-DECL-grow-FUT	river
	'My son, when it rains, the river level rises.'				

In Karitiana, the consequent clause of a CF is obligatorily marked by the modal suffix *jy-* and by the non-future morpheme *-t/Ø*; whereas its antecedent, as all other subordinate clauses in the language, is never marked for tense (or mood). We claim that *fake tense* also occurs in Karitiana CFs, since non-future inflexion in CFs can cooccur with future adverbs in Future Less Vivid conditionals (Iatridou, 2000).

**Theoretical approaches.** There are two main approaches to the behavior of tense and its contribution in CFs. The **Past as Modal Approach** (PM) claims that tense in CFs does not have a temporal interpretation, but a modal one (Iatridou, 2000; Palmer, 2001; among others). Iatridou (2000) claims that the difference between past and non-past tense morphology is that the past has an exclusion feature for times or worlds. This exclusion feature, in CFs, excludes the Utterance World from the Topic Worlds. Note that non-future tense includes the UttTime/UttWorld in Karitiana. Thus, it cannot be the bearer of the proposed exclusion feature. Based on this fact, we will assume that the PM approach is not appropriate to account for *fake tense* in Karitiana.

The other approach - the **Past as Tense Approach** (PT) – claims that tense does have a temporal interpretation in CFs (Ippolito, 2002, 2003; Arregui, 2005). It is, nevertheless, interpreted as dislocated from its canonical position. We will adopt Arregui's (2005) proposal, which claims that tense in CFs is an argument of the modal CF operator, as in the structure below. We follow Kratzer (2012) in analyzing conditionals as stating that the set of worlds in which the antecedent is true is a subset of the set of worlds in which the consequent is true. Following Arregui (2005), we take it the suffix *jy-* to denote the modal operator of Karitiana CF-sentences (5).



- (5)  $[[j\tilde{y} - t_i]]^g = \lambda P_{\langle i, \langle s, t \rangle \rangle}. \lambda Q_{\langle i, \langle s, t \rangle \rangle}. \lambda t_i. t < t_c \ \& \ \forall w [t < w \ \& \ P(g(t_i))(w) \rightarrow Q(g(t_i))(w)]$ .  
Where: P:antecedent; Q:consequent; t:time; w:world; g: assignment function; c:context; i:time index.

In words: *jy* takes the antecedent *P*, the consequent *Q*, and a time *t* as its arguments and yields a proposition that is true if *t* is before UttTime ( $t_c$ ), and in if every possible world *w* in which *t* is part of *w*, if *w* is a world in which  $P(t_i)$  is true, it is also a world in which  $Q(t_i)$  is true.

As with *would*, the past must be part of the worlds quantified by *jy-*. As mentioned above, the use of the past in CFs seems to be a general trait of all languages that belong to fut vs. non-fut systems and bear tense morphology. We have shown that this is also true for Karitiana, a language that has a future vs non-future temporal system. Based on these facts, we suggest that it might be possible that the use of the past in CFs is a universal property of human languages. This is so possibly because the worlds to be quantified over in CFs need to be strictly similar to the past of the actual world.

**Abbreviations:** 1SG: 1<sup>st</sup> person singular; 1PL.INCL: 1<sup>st</sup> person plural inclusive; COP: copula; DECL: declarative; FUT: future; NFUT: non-future; OBL: oblique.

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