

Mapudungun frustrative *-fu-*: a modal analysis

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Abstract

In Mapudungun, the suffix *-fu-* typically indicates the unsuccessful realization of either an event or its expected consequences. As is the case for frustrative morphemes in several unrelated languages, when applied to a stative VP, the interpretation tends to be linked to non-continuation. Interestingly, in addition to these core readings, *-fu-* also occurs in conditionals conveying counterfactuality, and in a large subclass of deontic and bouletic constructions, such as the ones that express weak necessity and unattainable desires. Following recent developments in the study of both frustratives and conditionals, this article shows how a modal analysis of *-fu-* can integrate these different readings into a unified account.

Keywords: frustrative, conditionals, modality, necessity, desire

Résumé

En mapudungun, le suffixe *-fu-* indique généralement la réalisation infructueuse d'un événement ou de ses conséquences attendues. Comme c'est le cas pour d'autres morphèmes frustratifs dans plusieurs langues non apparentées, lorsqu'il est appliqué à un VP statif, l'interprétation a tendance à être liée à la non-continuation. Un fait intéressant est que, en plus de ces lectures de base, *-fu-* apparaît également dans les conditionnels véhiculant la contrefactualité, et dans une large sous-classe de constructions déontiques et bouletiques, comme celles qui expriment une nécessité faible ou des désirs inaccessibles. Suite aux développements récents dans l'étude des frustratifs et des conditionnels, le présent article montre comment une analyse modale de *-fu-* peut intégrer ces différentes lectures dans un compte rendu unifié.

Mots clés: frustratif, conditionnel, modalité, nécessité, désir

I thank the editors of the *Canadian Journal of Linguistics* and two anonymous reviewers for their insightful comments and suggestions. I am also grateful to my main Mapudungun consultants, Héctor Mariano (HM) and Renan Vita (RV). HM is a native speaker of the Moluche dialect, the most widely used among Mapuche speakers; (RV) uses a more confined dialect, Chedungun-Pewenche, which shares a morphosemantic skeleton that allows mutual intelligibility with Moluche. Moluche being the more studied dialect, I present data as uttered or judged by HM, but entirely verified by RV.

1. INTRODUCTION

In Mapudungun (ISO 639-2 language code ‘arn’), the suffix *-fu-* behaves similarly to what several authors, for various unrelated languages, have labelled ‘frustratives’ (see Sparing-Chávez 2003 for Amahuaca, Copley 2005 for Tohono O’odham, Kroeger 2017 for Kimaragang, Carol and Salanova 2021 for Mebêngôkre and Chorote, Davis and Matthewson (2022) for St’át’imcets; see also Overall 2017’s study, based on 54 Amazonian languages).¹ A frustrative typically expresses the unsuccessful realization of either an event (1a) or its consequences (1b).² On the one hand, while consultants’ judgements with respect to (1a) confirmed that María did not arrive at her destination, what went wrong in (1b) had nothing to do with her arrival to town, but with the fact that the chief was not there. Example (1c), on the other hand, shows that when combined with a stative VP, the suffix tends to express non-continuation.³

(1) Frustrative: core meanings

- a. María amu-**fu**-y Pitril, welu wiño-tu-y
 María go-FRUST-IND.3S Pitril but return-RE-IND.3S
 ‘María was going to Pitril, but she came back.’
- b. María amu-**fu**-y Pitril, welu lonko müle-la-y ta-ñi ruka mew
 María go-FRUST-IND.3S. Pitril, but chief be-NEG-IND.3S PART-POSS.3 house INST
 ‘María went to Pitril, but the chief wasn’t home.’
- c. María nie-**fu**-y kiñe ruka, welu fende-fi-y
 María have-FRUST-IND.3S a house, but sell-OB-IND.3S
 ‘María had a house, but she sold it.’

As with frustratives in other languages, *-fu-* systematically occurs in the consequent of Mapudungun counterfactual conditional:

¹Glosses used: 1/2/3: 1st/2nd/3rd person, ACC: accusative; AUX: auxiliary; AV: active voice; COMP: complementizer; COND: conditional; DET: determiner; DS: dative subject; DU: dual; DV: dative voice; FRUST: frustrative; HH: hither; IND: indicative; INST: instrumental object; IOB: internal direct object; IMPF: imperfective; IRR: irrealis; MIN: minimal participants; MOM: momentary; NEG: negation; NMLZ: nominalizer; NOM: nominative; NVOL: non-volitive modality; OB: object; OV: objective voice; P: adposition; PART: particle; PFV: perfective; PLPF: pluperfect; POSS: possessive; PROS: prospective; PST: past; RE: iterative; REFL: reflexive; S: singular; ST: stative.

²As far as I am aware, the term ‘frustrative’ has not been used in the Mapudungun literature. Thus, in the case of Mapudungun data taken from other authors, the FRUST label in the interlinear glossing does not occur in the original analysis. For other categories in other authors’ glosses, I have incorporated changes to keep the set of conventions as compact as possible.

³Mapudungun data stem from my fieldwork at various locations in Chile from May 2018 to March 2020. The elicitation techniques included judgements and translation tasks in line with established standards in semantic methodology (Matthewson 2004, Bochnak and Matthewson 2015). Where the data are taken from other sources, this is indicated next to the data. See Fuentes (2023) for a description of the production of a great number of the discourse contexts used in this survey.

- (2) nie-(fu)-li kulliñ, ngilla-ya-**fu**-n mapu
 have-FRUST-COND.1s money buy-PROSP-FRUST-IND.1s land
 ‘If I had money, I would buy land.’

The suffix interacts with modals in interesting ways. Examples in 3 show that for deontic and bouletic constructions, *-fu-* effects the semantics shifts from (i) strong to weak necessity (3a–3b) and (ii) attainable to unattainable desires (3c–3d). As shown elsewhere (Fuentes 2020), these shifts follow the behaviour of so-called ‘OUGHT/WISH transparent languages’ (von Fintel and Iatridou 2008, 2023), a hypothesis that will be discussed in section 3.3.

- (3) a. Pedro müle-y ñi amu-a-el kolekio mew
 Pedro be-IND.3s POSS.3 go-PROSP-NMLZ school INST
 ‘Pedro has to go to school.’ (since school is obligatory by law)
- b. Pedro müle-**fu**-y ñi amu-a-el kolekio mew
 Pedro be-FRUST-IND.3s POSS.3 go-PROSP-NMLZ school INST
 ‘Pedro should/ought to go to school.’ (school is not obligatory by law, but advisable)
- c. Pedro küpá amu-y kolekio mew
 Pedro want go-IND.3s school INST
 ‘Pedro wants to go to school.’ (and he will)
- d. Pedro küpá amu-**fu**-y kolekio mew
 Pedro want go-FRUST-IND.3s school INST
 ‘Pedro wishes he would go to school.’ (but he won’t)

Note that in contrast to the core readings in (1), the examples in (3b) and (3d) do not have a past interpretation. This by no means implies that *-fu-* does not contribute pastness, since both readings may derive from the same semantic mechanism active in (2), which in turn may well possess a past (sub)component, as has been proposed for several languages (see Iatridou 2000 and Ippolito 2003 for two influential views). Thus, further independent evidence is necessary to prove the non-pastness of *-fu-*. As I will show, primary evidence of this type is available.

Recent approaches to *-fu-* are mostly centred on the core meanings displayed in (1a–1c). Smeets (2008: 232–233), who categorizes the suffix as an ‘impeditive’, describes its basic meaning in relative isolation from the counterfactual uses displayed in (2), but offers some supplementary comments on the suffix’s ‘special uses’. Golluscio (2000) adopts a pragmatic and more speculative approach, some aspects of which I will examine in section 4.1. Finally, Soto and Hasler (2015) characterize the suffix as an aspectual morpheme (what they label the *antiperfecto*); see section 4.2 for a critical review.

In this article, I offer a characterization of *-fu-* that attempts to integrate not only the core readings in (1) but also the counterfactual uses exemplified in (2) and the frustrative-modal interactions observed in (3b) and (3d). Following recent developments in the study of frustratives (Copley 2005, Kroeger 2017, Davis and Matthewson 2022), the proposed analysis is modal (but see Copley and Harley 2014 for interesting new directions).

Although some formalities, commonly applied in intensional semantics, will be necessary (namely, the ‘possible world’ framework), I will keep the technology as austere as possible. The general aim of the article is not to present a detailed compositional analysis of *-fu-*, but to discuss how a modal definition of the frustrative can fit into a unifying account some of the attested but under-described meanings mentioned above. This will naturally lead to ask whether the semantic patterns described here are attested in other frustrative languages. Collaborative work across languages should shed light on the under-described territory where frustratives meet conditional and modal meanings.

The article is organized as follows. Section 2 places *-fu-* in a wider crosslinguistic context by providing a more precise characterization of the different core readings made available by frustratives across languages (2.1), including counterfactuality (2.2). The section is supplemented with background information about the Mapudungun tense and modal system (2.3) and with some recent fieldwork data supporting non-past readings of *-fu-* (2.4). With this set of facts in view, the analysis of *-fu-* is presented in section 3, where I introduce the basic proposal for the core frustrative readings in 3.1 and its implementation to counterfactual meaning in 3.2. Section 3.3 focuses on the interactions between *-fu-* and deontic and bouletic modals. Section 4 discusses two topics: in 4.1, the occurrence of future and frustrative morphology in conditional environments, and in 4.2, the *antiperfecto* interpretation of *-fu-* defended by Soto and Hasler (2015). Concluding remarks are offered in Section 5.

2. FRUSTRATIVES ACROSS LANGUAGES

Over the past two decades, there has been an emergence of semantic research on frustratives, motivated by both typological and theoretical reasons.⁴ In this section, I will examine the characteristic uses of this type of morpheme across languages to attain a contextualized view of its different occurrences in Mapudungun. Although a detailed crosslinguistic examination is beyond the scope of this article, I will attempt to outline, if only in pre-theoretical terms, what seems to be frustratives’ most attested meanings.

2.1 Core readings

I begin with a well-reported split: the combination of the frustrative with eventive and stative VPs. As shown below for duplets of languages (Mapudungun being the head example of each), when marking eventives, the meaning tends to be that an intention or expectation was impeded or frustrated. The ‘locus’ of the frustration varies: while in (4a–b) the marked clause implicates the non-culmination of the described event, in (4c–d) it concerns the non-realization of a contextually salient goal. To avoid a potentially bulky terminology, I follow Copley (2005) in referring to the following

⁴For a typological view, see Overall (2017); for more theoretical implications of the semantics of frustratives (and non-culminating accomplishments) see Copley and Harley (2014).

examples in (4) as ‘unachieved-goal’ interpretations. I have only added the superscript ‘c’ (for context), as in ‘unachieved-goal^c’ in (4c–d), to indicate those cases in which what ‘goes wrong’ can be identified by either the conversational context or (typically) an adversative clause following the marked sentence.

(4) Eventives

a. Mapudungun (unachieved-goal)

María amu-**fu**-y Pitril, welu wiño-tu-y
 María go-FRUST-IND.3S Pitril but return-RE-IND.3S
 ‘María was going to Pitril, but she came back.’

b. Mëbêngôkre (unachieved-goal)

Ba **bit** awÿr tê
 I FRUST 2.up_to go
 ‘I was going up to where you were.’ (but I never got there)
 (Carol and Salanova 2019: 26)

c. Mapudungun (unachieved-goal^c)

María amu-**fu**-y Pitril, welu lonko müle-la-y ta-ñi ruka mew
 María go-FRUST-IND.3S Pitril, but chief be-NEG-IND.3S PART-POSS.3 house INST
 ‘María went to Pitril, but the chief wasn’t home.’

d. Kimaragang (unachieved-goal^c)

Naka-sambat oku **dara** dit=orang.tua nga’ magaago yalo
 PST.NVOL.AV-meet 1S.NOM FRUST ACC=head.man but hurry 3S.NOM
 ‘I managed to meet with the village chief but he was in a hurry (so I didn’t get to talk with him much).’
 (Kroeger 2017: 18)

As for the interaction with stative VPs, frustratives show a tendency to denote the interruption or non-continuation of the denoted state (5a–5b), although unachieved-goal^c readings are also available (5c–5d):

(5) Statives

a. Mapudungun (non-continuation)

María nie-**fu**-y kiñe ruka, welu fende-fi-y
 María have-FRUST-IND.3S a house but sell-OB-IND.3S
 ‘María had a house, but she sold it.’

b. Tohono O’odham (non-continuation)

’O’ohona’o cem suam
 sign AUX-IMPF FRUST yellow
 ‘The sign was yellow.’ (speaker: “it’s no longer yellow”) (Copley 2005: 7)

c. Mapudungun (unachieved-goal^c).

María nie-**fu**-y mapu, welu wedá mapu.
 María have-FRUST-IND.3S. land but bad land
 ‘María has land, but it is unsuitable land.’ (for planting our orchard)

d. Chorote (unachieved-goal^c)

Po-ye-**ta**, ‘yina ti je isaj-k’i.
 [3]EXIST-MOM-FRUST but COMP NEG 3.wide-P
 ‘There used to be [a path to the river], but it wasn’t sufficiently wide.’
 (Drayson et al. 2000: 96–97; cited in Carol and Salanova 2019: 29)

An issue that has raised a great deal of interest is the interaction of frustratives with the aspectual sphere. For a language where aspect is marked (e.g., Tohono O’odham), Copley (2005) has described three patterns (see also Copley and Harley 2014, and Carol and Salanova 2021 for more recent assessments). The first pattern relates to the interaction between the frustrative and prospective meaning, which triggers an interpretation where the intended action is impeded before it gets started (6a). The implication seems to be that the event described by the preajcent never occurred. This interpretation in Mapudungun, originally reported in Smeets 2008 (6b), was confirmed by my main consultant (6c). As for the imperfective and perfective, Copley shows that while both convey unachieved-goal readings (6d–e), only the perfective triggers a non-continuation interpretation (6e) (i.e., the non-continuation of the result state of an event, whose occurrence is entailed). Interestingly, in languages that lack aspectual marking, this entailment can be triggered by pastness (6f), which in several Philippine languages is linked to realis mood (see Kroeger 2017: 17–20 for discussion).

- (6) a. Tohono O’odham FRUST + PROSP: unachieved-goal
 Huan ’at o cem kukpi’o g pualt.
 Juan AUX-PFV PROSP FRUST open DET door
 ‘Juan tried to/was going to open the door.’ (he tripped before he got there)
 (Copley and Harley 2014: 144)
- Mapudungun FRUST + PROSP: unachieved-goal
- b. eyimi amu-a-fu-lu España welu kutran-üy-mi
 you go-PROSP-FRUST-NMNLZ Spain but illness-IND-2s
 ‘You were going to go to Spain but you fell ill.’ (Smeets 2008: 242)
- c. Juan amu-a-fu-lu wariya mew fachantu, welu kutran-y wiyá
 Juan go-PROSP-FRUST-NMNLZ city INST today but illness-IND.3s yesterday
 ‘Juan was going to go to the city today, but he fell ill yesterday.’
- d. Tohono O’odham FRUST + IMPF: unachieved-goal
 Huan ’o cem kukpi’ok g pualt.
 Juan AUX-IMPF FRUST open DET door
 ‘Juan tried to open the door.’ (he pulled but couldn’t get it open)
 (Copley and Harley 2014: 144)
- e. Tohono O’odham FRUST + PFV: non-continuation / unachieved-goal^c
 Huan ’at cem ku:pi’o g pualt.
 Juan AUX-PFV FRUST open DET door
 ‘Juan opened the door in vain.’
 (Juan got the door open but it didn’t stay open / the door’s being open didn’t have the desired effect) (Copley and Harley 2014: 144)
- f. Kimaragang FRUST + PAST: unachieved-goal^c
 N-o-bobog-Ø ku dara it=tasu nga’, amu m <in> atay
 PST-NVOL-beat-OV 1s.GEN FRUST NOM=dog but NEG <PST> AV.die
 ‘I (managed to) beat the dog, but it didn’t die.’ (Kroeger 2017: 11)

Note that most of the ‘core frustrative’ examples above have a past interpretation. This raises the question as to whether pastness constitutes an analytic component of the frustrative.

2.2 The counterfactual reading

That some frustratives occur in the consequent of counterfactual conditionals has been observed for a number of languages (Copley 2005 for Tohono O’odham; Carol and Salanova 2021 for Chorote, Kroeger 2017 for Kimaragang). The examples below include data from three unrelated languages.

- (7) a. Mapudungun
 nie-(**fu**)-li kulliñ, ngilla-ya-**fu**-n mapu
 have- FRUST-COND.1S money buy-PROSP-FRUST-IND.1S land
 ‘If I had money, I would buy land.’
- b. Kimaragang
 Ong n-o-guring-Ø no koniab ino, a-tanam-an
 if PST-NVOL-plow-OV already yesterday that(NOM) NVOL-plant-DV
 no do=paray benoy **dara**.
 already ACC=rice today FRUST
 ‘if that (field) had been plowed yesterday, it could have been planted with rice today.’
 (Kroeger 2017: 22)
- c. Chorote
 ‘Nes-**ta** ka ‘esy-e ji-ka siwálak.
 [3SG]arrive-FRUST COMP [3S]good-IRR 3POSS-AL bicycle
 ‘S/he would have arrived if his/her bicycle had worked.’
 (Carol and Salanova 2021: 10)

As far as I know, no formal analysis of the occurrence of the frustrative in conditional environments has been offered in the Mapudungun literature (regardless of how the suffix is categorized). Kroeger (2017) offers a modal Kratzerian analysis of counterfactual uses of Kimaragang *dara*, which I will examine in section 3.2. For the distribution of *-fu-* and future marker *-a-* in conditional environments, see discussion in section 4.1.

2.3 Mapudungun *-fu-*: the interactions with modals

I will now provide some relevant background information on Mapudungun grammar, and introduce the frustrative-modals interactions that will be addressed in section 3.3.

As is well documented (Croese 1984, Golluscio 2000, Smeets 2008, Zúñiga 2006), Mapudungun possesses no temporal markers for the present and past; future interpretations, for their part, are conveyed by the verbal suffix *-a-* (8c). Thus, a clause that lacks *-a-* can be interpreted either as a present or a past, whereas one marked with *-a-* can only be interpreted as a future. There is no overt viewpoint aspect marker that conveys (im)perfectivity, but there is a tendency to interpret eventives as past (8a) and statives as present (8b).

- (8) Mapudungun temporal interpretations
- a. Eventive
 amu-n Traiguén.
 go-IND.1S Traiguén
 ‘I went > am going to Traiguén.’ / *‘I will go to Traiguén.’

- b. Stative
 nie-n mapu.
 have-IND.1S land
 'I have > had land.' / * 'I will have land.'
- c. Future
 amu-a-n Traiguén.
 go-PROS-IND.1S Traiguén
 'I will go to Traiguén.' / * 'I went/am going to Traiguén.'

Elsewhere (Fuentes 2020) I argue that *-a-* is a prospective aspect. This might lead to the impression that Mapudungun is a tenseless language since no past, present or (authentic) future marker can be identified. Following Matthewson's approach to Gitksan and St'át'imcets (Matthewson 2006, 2012), however, I take Mapudungun to be only superficially tenseless. In effect, by hypothesizing a covert non-future tense, one can account for future-to-the-past (9a) and future-to-the-present (9b) meanings when *-a-* occurs in embedded clauses.

- (9) a. Context: *Today is Friday. On Monday, you talked to María. She said to you that she was going to arrive on Wednesday. She never did.*
 Q: How would you say: 'María thought she was arriving on Wednesday.'?
 HM: María troki-w-fu-y ñi aku-a-el miércoles mew
 María opine-REFL-FRUST-IND.3S POSS.3 arrive-PROSP-NMLZ Wednesday INST
- b. Context: *Today is Wednesday, you just talked to María. She said she will arrive on Friday.*
 Q: How would you say: 'María thinks she will arrive on Friday.'?
 HM: María troki-w-küle-y ñi aku-a-el viernes mew
 María opine-REFL-ST-IND.3S POSS.3 arrive-PROSP-NMLZ Friday INST
 'María thinks she will arrive on Friday.'

As for Mapudungun modal clauses, I will focus on the expression of obligations and desires. Regarding the former, and in line with several unrelated languages (see Bhatt 1997 and references therein), Mapudungun expresses deontic necessity by means of an existential predicate. As shown in (10a), the predicate takes a non-finite nominalized complement, which is marked with the prospective suffix *-a-*. The same type of complement occurs in bouletic clauses with the attitude verb *pi-*, which typically expresses an attainable desire (10b). A synonymous bouletic construction can be built with the preverbal unit *kúpá* preceding a finite form (10c), in which case the prospective marker *-a-* is absent.

- (10) Mapudungun deontic HAVE TO
- a. Pedro müle-y ñi amu-a-el kolekio mew
 Pedro be-IND.3S POSS.3 go-PROSP-NMLZ school INST
 'Pedro has to go to school.' (school is obligatory by law)
- b. Mapudungun WANT (attitude verb)
 María pi-y ñi amu-a-el Pitril
 María want-IND.3S POSS.3 go-PROSP-NMLZ Pitril
 'María wants to go to Pitril.'

- c. Mapudungun WANT (preverbal unit)
 María küpá amu-y Pitril
 María want go-IND.3S Pitril
 ‘María wants to go to Pitril.’

The frustrative interacts in interesting ways with the modal constructions above. As shown elsewhere (Fuentes 2020, 2023) and illustrated below, the interactions match the behaviour of what has been called ‘transparent OUGHT/WISH languages’ (von Fintel and Iatridou 2008, 2023). An OUGHT transparent language expresses weak necessity (as in (11a)) by marking strong necessity (HAVE TO, as in (10a)) with what has been recently referred to as ‘X-morphology’ (that is, the morphology that appears in what is traditionally known as ‘subjunctive’ conditionals; see von Fintel and Iatridou (2023)). As the authors have shown, a related pattern can be traced in the bouletic domain (see also Iatridou 2000 for a first approach). As shown for Mapudungun below, when the X-morphology of a ‘transparent WISH language’ (*-fu-* in Mapudungun) combines with WANT (typically, the expression of a desire for something attainable (10b–c)), the statement shifts into WISH (typically, the expression of a desire for something unattainable (11b–c)).⁵

(11) Mapudungun transparency

- a. weak necessity (OUGHT)
 Pedro müle-**fu**-y ñi amu-a-el kolekio mew
 Pedro be-FRUST-IND.3S POSS.3S go-PROSP-NMLZ school INST
 ‘Pedro ought/should go to school.’ (school is not obligatory by law, but advisable)
- b. actual unattainable desire (WISH)
 María pi-**fu**-y ñi nie-a-el kiñe domo lamngen
 María want-FRUST-IND.3S POSS.3S have-PROSP-NMLZ a woman sibling
- c. actual unattainable desire (WISH)
 María küpá nie-**fu**-y kiñe domo lamngen
 María want have-FRUST-IND.3S a woman sibling
 ‘María wishes she had a sister.’ (she is the only daughter of her late parents)

2.4 The alleged link with a past tense

Traditional analyses of *-fu-* that link its meaning with a past component have been presented in the Mapudungun literature under different Spanish categories: ‘pretérito imperfecto’, ‘imperfecto’, ‘co-pretérito’, among others (see Croese 1984: 64–65 and Smeets 2008: 233–235 for a brief summary with several references). More recently, Soto and Hasler 2015 (which I examine in section 4.2), make pastness an essential definitional component of the suffix. This section will cast doubt on this general tendency.

⁵As will be shown in section 3.3; since X-morphology can also be used to express ‘true’ counterfactual obligations and desires, transparent languages report an ambiguity between OUGHT/WISH and WOULD HAVE TO/WOULD WANT correspondingly – a pattern also verified for Mapudungun.

That there is at least some non-past interpretation of *-fu-* clauses can be seen in the three sentences in (11). As mentioned in the introduction, this does not prove that *-fu-* cannot convey pastness as part of its meaning: the attested interpretations might derive from a semantic (sub)component which conveys genuine past in non-conditional environments, and another related meaning in conditional and modal environments (see Iatridou 2000 and Ippolito 2013 for two exemplary but contrasting views, and von Fintel and Iatridou 2023 for recent reassessments).

This may well be so. But I wish to point out that the case against the inherent pastness of *-fu-* can be made on independent grounds, considering data from non-conditional and non-modal environments. The following is primary data collected by the author in recent fieldwork. Examples (12a–b) are elicitations for stative VPs; (12c–d) for eventives. Crucially, these four examples have a present temporal perspective. Both judgements and voluntary translations into Mapudungun were used as elicitation techniques.

(12) Non-past readings of *-fu-* in non-modal and non-conditional environments

- a. Context. *Imagine you and your wife would like to start an orchard next spring and are looking for land. Your wife tells you that María has land and further suggests the idea of renting a small plot from her. But you know that María's land is bad.*

Q: Can you say: 'María nie-**fu**-y mapu, welu wedá mapu.?'

María have-FRUST-IND.3S land, but bad land

Intended: 'María has land, but it's bad land.'

HM: 'Yes'.

- b. *A friend of yours needs a horse to cultivate the land. He asks you whether your brother Juan has one to borrow. You know your brother has a horse, but you also know that the horse is ill.*

Q: How would you say 'Juan has a horse, but the horse is ill'?

HM: Juan nie-**fu**-y kiñe kawellu, welu kütran-küle-y

Juan have-FRUST-IND.3S a horse but ill-ST-IND.3S

- c. Context. *Imagine someone tells you that María is planning to go to Pitiril this afternoon, to talk to the community chief. As it happens, you know that the chief is out of town, so you immediately run to the bus stop to tell María. When you arrive at the bus stop, however, her mother is there and tells you that María just boarded the bus and is on her way to Pitiril. Back home, you tell your wife.*

Q: Can you say the following?

María amu-le-**fu**-y Pitiril, welu lonko müle-la-y tañi ruka mew.

María go-ST-FRUST-IND.3S Pitiril but chief be-NEG-IND.3S POS.3 house INST

Intended: 'María is going to Pitiril, but the chief is not home.'

HM: 'Yes'.

- d. *Imagine that a friend who lives down the valley calls you to tell you that the water from the stream is stagnant. He asks you how things are looking up here where you live.*

Q: How would you say: 'The water is running but with less strength'?

HM: witrü-le-**fu**-y ko, welu nie-la-y newen.

pour-ST-FRUST-IND.3S water but have-NEG-IND.3S strength

I take the above data to be solid evidence that there is no analytic link between *-fu-* and pastness. Past interpretations of frustrative clauses may only be a pragmatic tendency. And no matter how strong this tendency may be, the elicitation of *-fu-* clauses targeting present temporal interpretation struck me as very natural and productive – the four examples in (12) being only a small sample.

This productivity certainly contrasts with how prevalent the past temporal interpretations are in the Mapudungun literature (although see Golluscio 2000 for a view against the classical interpretation of *-fu-* as a past tense).⁶ This tendency was explained to me by the fact that the ‘something going wrong’ component expressed by *-fu-* clauses tends to be known only retrospectively. Arguably, that María’s land is not good for an orchard is only learned after (potentially many) failed attempts at planting an orchard. On the other hand, the anticipation of something going wrong with María’s journey to Pitril was only accessible to the epistemically advantaged asserter in (12c), who reports that María is going to Pitril in vain as he speaks. A much more frequent narrative in the real world, however, would be María’s own retrospective (and displeased) first-person account upon returning from Pitril.

3. A MODAL ANALYSIS OF *-FU-*

The characterization of *-fu-* that I offer in what follows does not present any technical innovation with respect to modal analyses previously implemented for other frustratives in other languages (Copley 2005, Kroeger 2017).⁷ In spite of any analytical novelty, the contribution of this section is to show how a modal conception of the morpheme can also account for the somewhat under-described territory where frustratives meet conditionals and (other) modals.

Section 3.1 presents the basic proposal and shows how it correctly predicts the core frustrative readings. Section 3.2 implements the analysis for the counterfactual uses of the frustrative. Section 3.3, in turn, addresses the issue of the frustrative-modal interactions.

3.1 The core frustrative meaning

As with ‘disappointment’, ‘frustration’ indicates that something has gone wrong with respect to some ideal standard or projection. Although the use of ‘frustrative’ in the linguistic literature only minimally evokes the ordinary notion of ‘frustration’, there is certainly something of this double-sided picture in the theoretical descriptions available. Modal analyses of frustratives (Copley 2005, Kroeger 2017), for instance, set forth a view which hinges on two basic claims, one ‘idealistic’ and the other ‘non-optimal’. The view is that a frustrative sentence conveys (i) that a contextually salient

⁶The author provides some examples of “unquestionable occurrences of *-Fi* [= *-fu-*] in linguistic or experiential contexts in the Present” (Golluscio 2000: 245).

⁷I will remain neutral with respect to many technical issues, such as whether an analysis based on the notion of force is better suited than one that relies on events. See Copley (2005) and Copley and Harley (2014) for theoretical motivations along these lines.

ideal is realized in some hypothetical scenarios in which nothing adverse interferes; and (ii) that the real world fails to satisfy such an ideal. The modal element of the view is introduced in the idealistic side of the picture: ideal scenarios can be largely translated into a possible-worlds framework through accessibility functions that calculate inertial/optimal worlds/situations. In very simple terms, that Mary is painting a vase at a certain point in time projects an inertial/optimal set of worlds/situations in which she culminates her task without interruption. When things go unexpectedly wrong with her painting, a frustrative statement expresses that the real state of things in the actual world does not belong to that ideal class of worlds/situations.

Modal approaches to grammatical features not traditionally categorized as ‘modals’ are not new to the discipline of semantics. Dowty (1979) introduced the notion of possible worlds in the analysis of the progressive and the so-called ‘imperfective paradox’. Roughly speaking, ‘Mary was painting a vase’ introduces a set of modal continuations in which Mary culminates her task, leaving open the possibility that in the actual world the event reaches completion or fails to do so. The truth conditions of the progressive will ascribe the culmination for the inertial worlds, without adding any specific claim about how things (eventually) turn(ed) out in the actual world.

Frustratives across languages, on the other hand, do bring a specific nonoptimal addendum: that the actual world fails to be ideal with respect to the modal projection. In contrast to what one may initially think, though, frustratives are also (relatively) neutral regarding the culmination of what is described in the prejacent; as already mentioned for (4c–d), readings of frustrative clauses in which the described event is completely realized are regularly attested. Thus, despite their nonoptimal flavour, frustratives do not trigger a non-culmination entailment.

The definition we are after, then, needs to introduce a modal element that projects an ideal scenario (as with progressives), a nonoptimal addendum that precludes the actual world from being ideal, and an overall analytical arrangement that prevents the nonoptimal element from triggering a non-culmination entailment. This analytical challenge has been met with a very simple formulation.⁸

The following is an adaptation as neutral as possible of the leading thread of these types of analyses.

(13) *Meaning of FRUST(p)*

- (a) Assertion: For all $w' \in f(w)$, $R(w')$.
- (b) Presupposition: The actual world is not optimal with respect to R .

⁸Copley (2005) offered a definition of Tohono O’odham particle *cem* based on the idea of inertia: “*cem p* sentences presuppose that all inertia worlds for *s* are worlds in which *p(s)*, and assert that the actual world is not an inertial world for *s*”. (Copley 2005: 4)

This modal definition is very similar to Kroeger’s (2017) definition for Kimaragang frustrative *dara*: “*dara* indicates that: some salient proposition is true in all optimal (i.e., highest-ranked) accessible worlds; this salient proposition is not actualized in the real world at the time of speaking”. (Kroeger 2017: 15)

(where f is a modal function from worlds to ideal continuations; and R is equal to either p or a contextually salient proposition which is a (desired or expected) successor to p in some causal chain within $f(w)$).

Before we examine how this semi-formal definition can account for the attested readings in the previous section, it should be noted that nothing in (13) entails the non-realization (or non-continuation) of the event (or state) described in p in the actual world. In effect, the presupposition only says that the actual world fails with respect to the parameter proposition R . This proposition certainly can, but *need not*, be equated with p . Neither the assertion in (13a) nor the presupposition in (13b) forces us to do so. The definition allows R to stand for some other proposition, which can denote either a salient result that was expected to derive from p , a goal in virtue of which p is executed, a state of affairs that stands as an expected continuation of p , etc. Crucially, whenever R is equated with any of these related propositions, it is not the event/state described in p that fails to culminate/continue.

Let us see how this works for eventive VPs, starting with the case in which the denoted event does not culminate (example (4a), repeated here as (14)):

(14) Eventive: unachieved-goal

María amu-**fu**-y Pitril, welu wiño-tu-y
 María GO-FRUST-IND.3S Pitril but return-RE-IND.3S
 ‘María was going to Pitril, but she came back.’

If we equate R with p , the semantic contribution of the frustrative is accounted for by our definition in (13). In effect, according to (13a), $R (=p)$ holds in all optimal worlds accessible from the actual world; according to (13b), the actual world is not optimal for p . If we take the ideal continuations to be the natural expectations tacitly agreed to by participants, the accessible worlds are all those compatible with such expectations. The definitional clause (13a) asserts that in all those worlds, María goes to Pitril and nothing intervenes. *But* (the second nonoptimal element) the real world fails to satisfy that ideal. The implication is that María did not go to Pitril.⁹

Things are slightly different when another contextually salient goal is taken as the ideal parameter – say, that María went to Pitril to meet with the local chief. This is the circumstantial arrangement that was used for the elicitation of (1b), repeated as (15). Note that the same construction is now used to assert that María *went* to Pitril but something else (R , not p) went wrong.

(15) Eventive: unachieved-goal^c

María amu-**fu**-y Pitril, welu lonko müle-la-y ta-ñi ruka mew
 María GO-FRUST-IND.3S Pitril, but chief be-NEG-IND.3S PART-POSS.3 house INST
 ‘María went to Pitril, but the chief wasn’t home.’

⁹This informal explanation is not meant to account for the compositional underpinnings involved, which may be linked to the aspectual marking of p , as described in the literature for frustratives in unrelated languages (see Copley 2005, Copley and Harley 2014 and Carol and Salanova 2021). The aim here is to offer not a compositional analysis of *-fu-* clauses, but a discussion on how a modal definition of the frustrative can account for some of its attested but under-described readings, examined later in this section.

Since R is not equated to *p* but to another salient proposition (meeting with the chief), the fact that María arrived at Pitril does not contradict our definition, which leaves enough room for *p* to be realized in the actual world.

Turning now to stative predicates, the relevant expectation concerns the persistency of the described state in the prejacent. This renders accessible worlds in which *p* holds without any interference.¹⁰ In example (16) below, the state consists in the possession expressed by *p* (which, we will assume, stands for R).

(16) Stative: non-continuation

María nie-**fu**-y kiñe ruka, welu fende-fi-y
 María have-FRUST-IND.3S a house but sell-OB-IND.3S
 ‘María had a house, but she sold it.’

The presupposition contributed by the frustrative says that the world is not optimal for R (= *p*). This means that the state does not hold in the actual world anymore. The non-continuation reading is thus triggered.

Finally, that a stative VP marked with *-fu-* can also render unachieved-goal^c readings is also predicted by (13). Consider (12a), repeated below as (17):

(17) Stative: unachieved-goal^c

María nie-**fu**-y mapu, welu wedá mapu.
 María have-FRUST-IND.3S land, but bad land
 ‘María has land, but it’s bad land.’ (for the purpose of planting an orchard)

Given that *p* describes a state that currently holds in the actual world (María’s possession of land; see discourse context in (12a)), R must be linked to another salient proposition. In this particular case, the context provided in the elicitation signals the implicit goal (the intention of planting an orchard next spring). The assertion is that in all optimal worlds María’s land serves that purpose; the presupposition adds that the actual world is not optimal with respect to that ideal. Crucially, the occurrence of the frustrative does not imply that the denoted state is discontinued (or even threatened). The utterance only conveys that a salient related ideal does not obtain in the actual world. The modality provides the space of possibility for the idealization; the nonoptimal presupposition excludes the real world from that space.

3.2 Counterfactual readings

It is now time to examine those interpretations of *-fu-* clauses that are not *prima facie* predictable – starting with counterfactuality. As shown in (18a–c), the suffix appears in both the antecedent and the consequent of a counterfactual conditional, the latter of these being more systematically attested than the former. Crucially, the frustrative

¹⁰This is a simplistic assumption, since our expectations as to many natural states (a fruit being ripe) are not linked to persistence but to change (a fruit becoming overripe). Copley (2005) touches upon this issue when examining the Tohono O’odham frustrative string for ‘The banana was yellow’. Somewhat problematically, the elicited data suggest that a stative predication which is naturally expected to alter *is* marked with a frustrative when the change occurs. This is a fascinating topic which I cannot examine in detail here.

does not occur in all Mapudungun conditionals, as example (19) shows. This bare type of construction is often referred to as ‘indicative conditional’ in the philosophic and linguistic literature. This terminology is inadequate for Mapudungun, though, since conditionals that convey counterfactuality are also marked for the indicative. The split, then, will be one between conditionals that are marked with *-fu-* in the consequent (=marked conditionals) and those that are not (=bare conditionals).¹¹

(18) Mapudungun marked conditionals

- a. ñi pichi-che kutran-küle-le, ngüma-ya-**fu**-y
 POSS.1s little-person ill-ST-COND.3s cry-PROSP-FRUST-IND.3s
 ‘If my baby were ill, she would cry.’
- b. nie-(fu)-li kulliñ, ngilla-ya-**fu**-n mapu
 have-FRUST-COND.1s money buy-PROSP-FRUST-IND.1s land
 ‘If I had money, I would buy land.’

(19) Mapudungun bare conditionals

- eymi amu-l-mi, iñché ka amu-a-n
 you go-COND-2s I also go-PROSP-IND.1s
 ‘If you go, I will go too.’

(Smeets 2008: 360).

Before I sketch a tentative analysis, I will clear the ground with a couple of issues. First, the consequent of (18a–b) has the same form as (most) frustrative clauses previously examined in this article, except for the future marker *-(y)a-* preceding *-fu-*. I discuss the issue in section 4.1, but I do not have, at this point, a substantial explanation of this occurrence. In the present section, I will focus the attention on the occurrence of the frustrative in the consequent.

Second, it is worth mentioning that we are not dealing with an unachieved-goal or a non-continuation reading *in addition to* a counterfactual one. The utterance in (18a), for instance, does not express a failed or interrupted attempt to cry. Rather, the statement denotes a hypothetical event in a counterfactual scenario that meets the conditions stated in the antecedent. I point this out merely to delineate the general task ahead, which does not consist in clarifying how one of our attested core readings ‘pairs with’ a counterfactual yield. Rather, the task consists in determining how the meaning of the frustrative (defined in (13)) interacts with other components in the grammatical environment to render *a different reading*.

What are those other components? To begin with, a general grammatical form (if *p*, *q*), which hosts a frustrative component with sentential scope in the consequent, resulting in the form ‘if *p*, FRUST(*q*)’. This delineates a double task for an analysis of Mapudungun marked conditionals: (i) to determine the meaning of bare conditionals; and (ii) to explain what the frustrative adds to *that* meaning. As I will show, it is important to conceive of these as two different tasks.

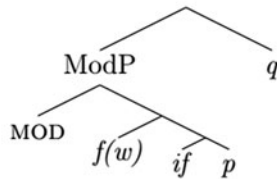
For the former task (to determine the meaning of bare conditionals), I will rely on a conception of conditionals that is in common use in possible world semantics,

¹¹As we shall presently see, in several languages marked conditionals can but need not convey counterfactuality, as Anderson-type conditionals show (Anderson 1951; see von Fintel 1999 and 2011 for discussion).

called the ‘restrictor analysis’ (Heim 1982, Kratzer 1986). Basically, the analysis conceives of the antecedent *if*-clause as encoding a restriction to a modal operator elsewhere. More specifically, the idea is that the *if*-clause functions as a restrictive modifier of the domain that a modal operator in the consequent quantifies over. This modal operator may vary in nature. When not explicit, it tends to convey epistemic necessity (‘if John left before 10 am, he is at the station now’), although generic interpretations can also be attested (‘if it rains during cherry season, the fruit splits’). When the occurrence is overt, the modal operator has a broader range of possibilities, including deontic (‘if John killed the cat, he must confess’) and epistemic possibility (‘if John left before 10 am, he might be at the station now’), among others. Crucially, whatever its type, the modal operator hosted in the consequent quantifies over a domain restricted by the *if*-clause. Thus, in a sentence of the form *if p, then q*, the covert modal element in the consequent quantifies over the accessible worlds that are provided by its modal base and the intersection with *p*. It is only regarding this narrower domain of worlds that the proposition in the consequent (*q*) is asserted. The tree in (20) gives a rough idea of the general structure that results from this conception:

(20) Bare conditionals: restrictor analysis

If p, q



As the tree shows, the basic conditional form *if p, then q* constitutes a modalized proposition. The modal quantifies over a domain that intersects with the proposition introduced by the *if*-clause. It is for this domain that the conditional asserts *q*. The contribution of the *if*-clause, then, is simply that of a modifier: it restricts the quantificational domain that is above in the structure.

Now the question arises as to how this type of analysis can be implemented for conditional clauses marked with a frustrative – that is to say, clauses of the form ‘if *p*, FRUST (*q*)’. As far as I know, Kroeger (2017) was the first to attempt this. Although sketchy, the proposal illuminates some essential aspects of the clauses at issue. Interestingly, Kroeger’s modal approach to Kimaragang frustrative fits very well with the basic structure implicit in the restrictor analysis, since the frustrative can be hosted as the modal operator (in Kroeger’s view, of the epistemic type) represented in (20).

As a first approximation to Mapudungun marked conditionals, this general strategy seems to point in the right direction. But to reach a comprehensive account of the counterfactual readings triggered by frustrative clauses, it needs additional specifications. For one thing, as described in Kroeger’s analysis, the resultant quantificational domain is entirely realistic (since in his conception, the relevant modal base is epistemic). In effect, the rendered worlds we are transported to are not counter-to-fact worlds, but possible worlds in the intersection of *p* (provided by the antecedent)

and what is known in w . These are not yet worlds that the participants take to be counter-to-facts (that is, worlds that lie beyond the participants’ shared assumptions).

That Kroeger is aware of this problem can be seen in the fact that the author explicitly supplements his analysis with a seemingly innocuous presupposition – that the antecedent is false: “the real world does not count as an accessible world because [the antecedent p] is presupposed not to be true in the real world” (Kroeger 2017: 23). Puzzlingly, though, Kroeger does not specify where this presupposition comes from. As it stands, it is a mere ad hoc stipulation, leaving the essential question (how does a frustrative trigger the falsity of the antecedent?) unanswered.

So where exactly does this key presupposition come from? That the falsity of the antecedent does not come wired as a presupposition in the *if*-clause is made evident by the fact that bare conditionals do not have a counterfactual yield. From here, the only option that seems available is that the presupposition comes wired in the frustrative. Naturally, if it is the addition of some special morphology (*would* in English, frustrative in Kimaragang and Mapudungun) that takes us from the meaning of a bare conditional to a counterfactual yield, the presupposition may come wired in the frustrative. But there is the flaw: the presupposition in (13) does not concern the falsity of any antecedent. What the presupposition says, instead, is that the actual world is not optimal for R.

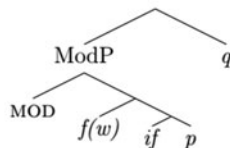
If the falsity of the antecedent comes about by a presupposition wired in the frustrative, then, it seems that it would have to be added to the one already active in core non-conditional environments... *unless* one proves that the definition in (13) brings about the falsity of the antecedent *on its own* – dispensing with any ad hoc presupposition.

This latter move seems more aligned with the relevant task pointed out above: to explain what the meaning of the frustrative contributes when it interacts with conditionals. Put this way, my aim here is to derive the falsity of the antecedent in ‘if p , FRUST(q)’, by combining the definition of the frustrative in (13) with the restrictor analysis of conditionals of the form ‘if p , then (q)’.

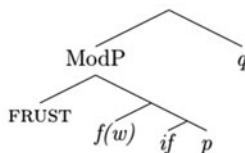
In structural terms, the first natural step would be to assume that the frustrative plays the role that the restrictor analysis assigns to the modal operator. This yields a minimal but discernible difference between the trees of marked and unmarked conditionals, as shown below.

(21)

a. *If p, q*



b. *If p, FRUST q*



Now I show how the counterfactual reading attested in (18a–c) can be derived from the definition in (13). Let us start with the first clause in our definition: the assertion that for all the worlds in the domain of $f(w)$, R holds. Let us further assume that R corresponds to the marked sentence (that is, to the consequent q).¹² Thus, the basic assertion is that in all the optimal worlds, q holds.

What are those optimal worlds, according to our definition? The worlds that are projected as ideal continuations from the modal function $f(w)$. In Kroeger's (2017) analysis of Kimaragang frustrative, this modal function is epistemic, which the author explicitly links with 'expectations' readings. Kroeger's basic idea seems to be that in counterfactual conditionals, expectations are projected from what is known about the actual world, in addition to some stereotypical order. This may well be so (as far as I can see, epistemic states can be thought of as projecting ideal continuations in the same way as desires, intentions and such), although I doubt that this type of modal base can exhaust the wide range of materials involved in counterfactual interpretations.¹³ Abstracting away from these and other difficulties, the central point here is that according to the assertion in the first clause of (13), the accessible worlds are all q -worlds.

Note how the grammatical environment impinges upon the assertion of the first clause. As the restrictor analysis posited, the contribution of the *if*-clause to the meaning of a conditional is to restrict the quantifier to p -worlds. Taken together with the first clause in the definition, this is what the assertion says: that all the p -worlds that intersect the domain of quantification $f(w)$ are q -worlds. Crucially, the first clause of the definition says nothing about the truth or falsity of p in the actual world. Thus, regardless of how the ideal continuations of the frustrative are projected (from knowledge, desires, intentions, stereotypes, or what have you), the assertion clause in the definition of the frustrative leaves completely underspecified the truth-value of the antecedent in the actual world.

In effect, the falsity of the antecedent is derived, in my analysis, with the aid of the second clause in (13): the presupposition that the actual world is not optimal. Notice, however, that this is not a one-step derivation. For one thing, what the

¹²An anonymous reviewer commented that nothing forces this assumption, since in non-conditional cases, R can be some consequence of the prejacent (rather than the prejacent itself). I agree – the assumption is meant to elaborate on a basic model with explanatory power, but potential interpretations of marked conditionals in which other salient proposition equates with R may or may not be accommodated within this basic model. I leave this issue for future research.

¹³Frustratives show great variability of interpretations in non-conditional environments, which suggests that their modal function is fairly context-sensitive. Conditional environments should be no exception. In (18a), the speaker's knowledge of the world, plus some stereotypical projection, creates the expectation of causality between p and q . In (18b), however, the declared (hypothetical) intention of the speaker seems the prime source of the ideal continuation. Should we analyze this intention in terms of the knowledge (or perhaps preferences) of the speaker? Hard to say. The relevant task here is not to derive a core reading that 'pairs with' a counterfactual yield, but to explain how the meaning of the frustrative renders a *different reading* in conditional environments.

second clause of the definition entails, in the first place, is that the consequent q is false. In effect, as with many (but not all) of the core readings examined in the previous sections, if we assume that (i) the optimal worlds are q -worlds (the assertion of the first clause) and (ii) that the actual world is not optimal (the presupposition in the second clause), the falsity of the consequent q follows. From here, we can derive the falsity of the antecedent by *modus tollens*: from the assumption that *if p , then q* (the bare conditional) and the negation of q (entailed by the presupposition clause in the definition), the negation of the antecedent p obtains. The conveyed meaning is counterfactual.

Perhaps this step-by-step derivation is just a more intricate version of what is implicitly sketched in Kroeger (2017). But I think it is important to stress that the falsity of the antecedent does not come wired either in the *if*-clause, nor in *-fu-*. It is the usual semantic contribution of the frustrative to the meaning of the bare conditional that triggers the falsity of the antecedent.

The proposed analysis defends the view that despite the divergence of interpretations in conditional and non-conditional *-fu-* clauses, the semantic contribution of the morpheme is one and the same. This should not surprise us – after all, the core modality inherent to the meaning of the frustrative would most naturally yield different interpretations in different environments. Combined with the fact that there is no analytical link to the past in the definition (as shown in section 2.4), the result is not trivial: unlike ‘fake past’ conceptions of counterfactuality (Iatridou 2000), the Mapudungun morphology responsible for such readings seems to play an ‘authentic’ role. This behaviour leaves considerable space for the second of the three strategies identified by Iatridou with respect to the expression of counterfactual meanings across languages: that the relevant morpheme “*does* mean what it always does, but that other interpretative parts of the environment contribute to the final interpretation” (Iatridou 2000: 245).

3.3 The frustrative-modal interactions

I now turn to the interactions between *-fu-* and deontic and bouletic modals.

3.3.1 Transparency: *endo-X* and *exo-X*

As far as I know, the notion of ‘transparent language’ was first introduced in the seminal article by von Fintel and Iatridou (2008) with respect to weak necessity. According to the view sketched by the authors, a transparent language uses *X*-morphology (that is, the special morphology that appears in marked conditionals) to mark strong necessity constructions (HAVE TO) and denote, by these means, either weak necessity (OUGHT) or counterfactual necessity (WOULD HAVE TO).¹⁴ Spanish offers a clear example: the conditional mood morphology that occurs in the consequent of Spanish marked conditionals (*X*-conditionals, in the authors’

¹⁴The ‘*X*’ terminology was only introduced in the authors’ most recent work (von Fintel and Iatridou 2023).

terminology), marks strong necessity *tener que* (HAVE TO_{IND}) to obtain *tendría que* (HAVE TO_{COND}), a form that is ambiguous between weak and counterfactual necessity. A language like English, on the other hand, lexicalizes the former of these shifts with *ought* (while *would* (in *would have to*) occurs as predicted, since it is *would* that appears in the consequent of English marked conditionals). The observed pattern has been attested in a significant number of Indo-European languages (see von Fintel and Iatridou 2008 for crosslinguistic examples).

A more recent contribution of the same authors (von Fintel and Iatridou 2023) shows that the attested pattern is somewhat paralleled in the bouletic domain (see also Iatridou 2000 for an earlier approach). When X-marking is applied to WANT (typically, the expression of a desire for something attainable, like Spanish *querer* (WANT_{IND})), the ascription turns into a WISH (typically, the expression of a desire for something unattainable, like Spanish *querría* (WANT_{COND})). As expected, the resulting construction is also used to express counterfactual desires (typically, a desire in a hypothetical situation). Again, a language like English lexicalizes these shifts with *wish* (while *would* in *would want to* occurs as predicted, for the same reason pointed out above).

As shown in section 2.3 and recast below, Mapudungun follows this pattern systematically. Example (22) shows a Mapudungun marked conditional. Example (23) illustrates Mapudungun deontic transparency, and example (24) does the same for the bouletic domain. As can be seen, the morphology that occurs in the language's marked conditionals (*-fu-* in (22)), serves to turn (i) a strong necessity (23a) into either a weak necessity (23b) or a counterfactual one (23c), and (ii) an attainable desire (24a–b) into either an unattainable desire (24c–d) or a counterfactual one (24e–f).

- (22) Mapudungun marked conditional (repeated from (18b))

nie-(fu)-li	kulliñ,	ngilla-ya- fu -n	mapu
have- FRUST-COND.1s	money	buy-PROSP-FRUST-IND.1s	land

'If I had money, I would buy land.'

- (23) Mapudungun deontic transparency

- a. Mapudungun strong necessity (repeated from (3a)).

Pedro müle-y	ñi	amu-a-el	kolekio	mew
Pedro be.IND.3s	POSS.3s	go-PROSP-NMLZ	school	INST

'Pedro has to go to school.' (since school is obligatory by law).

- b. Mapudungun weak necessity (repeated from (3b)).

Pedro müle- fu -y	ñi	amu-a-el	kolekio	mew
Pedro be-FRUST-IND.3s	POSS.3s	go-PROSP-NMLZ	school	INST

'Pedro should go to school.' (school is not obligatory by law, but advisable)

- c. Mapudungun counterfactual necessity

müle- fu -le	wariya	mew,	Pedro müle- fu -y	ñi	amu-a-el
live-FRUST-COND.3s	city	INST	Pedro be-FRUST-IND.3s	POSS.3s	go-PROSP-NMLZ

kolekio mew
school INST
'If he lived in the city, Pedro would have to attend school.'

(24) Mapudungun bouletic transparency

Mapudungun attainable desire

- a. María pi-y ñi nie-a-el kiñe domo lamngen
 María want-IND.3s POSS.3 have-PROSP-NMLZ a woman sibling
- b. María kúpá nie-y kiñe domo lamngen
 María want have-IND.3s a woman sibling
 ‘María wants to have a sister.’ (her parents are also keen on the idea)

Mapudungun unattainable desire

- c. María pi-**fu**-y ñi nie-a-el kiñe domo lamngen
 María want-FRUST-IND.3s POSS.3 have-PROSP-NMLZ a woman sibling
- d. María kúpá nie-**fu**-y kiñe domo lamngen
 María want have-FRUST-IND.3s a woman sibling
 ‘María wishes she had a sister.’ (she is the only daughter of her late parents)

Mapudungun counterfactual desire

Context. *If there was a festival in the city...*

- e. María pi-**fu**-y ñi amu-a-el wariya
 María want-FRUST-IND.3s POSS.3 go-PROSP-NMLZ city
- f. María kúpá amu-**fu**-y wariya
 María want go-FRUST-IND.3s city
 ‘María would want to go to the city.’

Table 1 summarizes the previous facts. I adopt the endo-X/exo-X distinction (von Fintel and Iatridou (2023: 21)), according to which endo-X constructions correspond to modalized claims about the actual world (namely, OUGHT and WISH), while exo-X readings constructions are about hypothetical scenarios (namely, WOULD HAVE TO and WOULD WANT TO). The attested ambiguities run horizontally for each of the domains: modal constructions marked with *-fu-* trigger either endo-X or exo-X readings.

	endo-X	exo-X
deontic	weak necessity (23b) (OUGHT)	counterfactual necessity (23c) (WOULD HAVE TO)
bouletic	unattainable desires (24c–d) (WISH)	counterfactual desires (24e–f) (WOULD WANT TO)

Table 1: Transparency

Three tasks emerge from these facts. The first relates to the empirical question as to whether the attested semantic patterns can be verified in other ‘frustrative languages’. The second, more theoretical task, is to determine whether the attested

semantic shifts (in transparent-via-frustrative languages) can be accounted for by a unifying modal conception of the frustrative. Finally, a third and more abstract enterprise is to reflect on what a semantic theory of the frustrative (potentially resulting from the second task) can tell us about X-marking more generally. This section addresses only the second of these three questions.

3.3.2 *And yet another ambiguity: (core) unachieved readings*

Before we proceed, it should be said that in contrast to other transparent languages, Mapudungun deontic and bouletic constructions that are marked with *-fu-* make available an additional interpretation. In effect, since the language does not mark either past or present, a past unachieved obligation/desire is expressed with the same constructions exemplified above. Thus, while (25a) expresses an unachieved obligation (in contrast to (25b), which is specifically used for achieved ones), (25c–d) exemplify unachieved desire statements. Note that in contrast to weak necessity (23b) and unattainable desires (24c–d), unachieved obligations/desires have a past temporal perspective (HAD TO/WANTED BUT...).

(25) Mapudungun: unachieved obligations and desires¹⁵

- a. Pedro müle-**fu**-y ñi amu-a-el kolekio mew
 Pedro be-FRUST-IND.3S POSS.3S go-PROSP-NMLZ school INST
 ‘Pedro had to go to school.’ (but he overslept)
- b. Pedro müle-y ñi amu-n kolekio mew
 Pedro be-IND.3S POSS.3S go-NMLZ school INST
 ‘Pedro had to go to school.’ (and he was there on time)
- c. María pi-**fu**-y ñi amu-a-el Pitril
 María want-FRUST-IND.3S POSS.3 go-PROSP-NMLZ Pitril
 ‘María wanted to go to Pitril.’ (but couldn’t).
- d. María kúpá amu-**fu**-y Pitril
 María want-IND.3S go-FRUST-IND.3S Pitril
 ‘María wanted to go to Pitril.’ (but couldn’t.)

These constructions share the same form as their (deontic/bouletic) matches in Table 1. Since they denote obligations/desires in the actual world, one would naturally be tempted to categorize them as an endo-X type of construction. This is misleading, however. Although past unachieved statements are about the actual

¹⁵Achieved desires were also elicited:

- (i) *ĩnché kúpá amu-n wariya mew.*
 I want go-IND.1S town INST
 ‘I wanted to go to town.’ (and I did).

My main consultant manifested some hesitation; perhaps ‘I wanted to go to town (and I did)’ competes with the more natural ‘I went to town’ (voluntarily). Indeed, on one occasion, after judging (i) as acceptable, HM manifestly commented in Spanish: “Or just ‘I went to town’”.

world (the *endo* aspect of things), the link between unachieved obligations/desires and X-readings seems only incidental. For one thing, the ambiguity that these constructions generate is not attested in transparent languages. In Spanish, for instance, past unachieved desires/obligations are conveyed using the imperfective aspect, not X-morphology. Accordingly, I will set these readings aside and treat them not as transparent but as *core* readings. Although I still have not shown how core and transparent readings differ semantically, setting apart these interpretations right from the outset will clear the ground for the central hypothesis about the frustrative-modal interactions that I defend in this section – namely, that there are three possible interpretations: (i) a *core* interpretation (unachieved obligations/desires); (ii) an *endo-X* interpretation (weak necessity and unattainable desires), and (iii) an *exo-X* interpretation (counterfactual obligations/desires). Whereas (i) and (ii) constitute claims about the actual world, (iii) is about hypothetical worlds beyond the actual.

Let us rearrange Table 1 into Table 2, then, to have a full preview of the semantic landscape.

	Core	endo-X	exo-X
deontic	unachieved necessity (25a) (HAD TO BUT...)	weak necessity (23b) (OUGHT)	counterfactual necessity (23c) (WOULD HAVE TO)
bouletic	unachieved desire (25c–d) (WANTED BUT...)	unattainable desire (24c–d) (WISH)	counterfactual desire (24e–f) (WOULD WANT TO)
	actual		hypothetical

Table 2: Mapudungun frustrative-modal interactions

3.3.3 An informal sketch

I will proceed by first examining the *core* column in Table 2: past unachieved readings (both for obligations and desires). I will then address the (more problematic) second column: *endo-X* readings (OUGHT and WISH). This will be done by first showing that these interpretations cannot be reduced to the core reading, to then speculate on other options. As for the third column (that is, *exo-X* constructions denoting counterfactual obligations and desires), the analysis should proceed in the same way as it was proposed for marked conditionals in section 3.2, so I will leave it aside here.¹⁶

¹⁶This latter point is in line with the assumption that the meaning of *exo-X* can be reduced to the meaning of marked conditionals (von Fintel and Iatridou 2023).

For concreteness, (26) identifies two types of discourse contexts used in the elicitations for the core column: past unachieved obligations (26a) and desires (26b).

- (26) a. FRUST(*p*), where *p* = María had to go to Pitril
 Context: *María had to go to Pitril this morning for an appointment with the doctor, but she overslept.*
María müle-fu-y ñi *amu-a-el* Pitril.
 María be-FRUST-IND.3S POSS.3 go-PROSP-NMLZ Pitril
 ‘María had to go to Pitril.’
- b. FRUST(*p*), where *p* = María wanted to go to Pitril
 Context: *María wanted to go to Pitril for a friendly meeting, but she had work to do.*
María pi-fu-y ñi *amu-a-el* Pitril.
 María want-FRUST-IND.3S POSS.3 go-PROS-NMLZ Pitril
María küipá *amu-fu-y* Pitril.
 María want go-FRUST-IND.3SG Pitril
 ‘María wanted to go to Pitril.’

How can our definition of the frustrative in (13) account for these attested readings? A natural move would be to take the modalized sentence *p* as R. However, this does not take us very far, since we end up with the real world not being optimal with respect to that proposition. What would this mean? The modalized sentence *p* expresses an obligation/desire. Since obligations and desires are states, we have two interpretative possibilities open: either a non-continuation or an unachieved-goal^c reading. The non-continuation interpretation can be easily discarded, since neither of the sentences elicited by (26a) and (26b) expresses the discontinuation of an obligation or desire. In effect, in the same way that María’s missing an appointment does not entail that María does not have to go to the doctor (anymore), her not being able to go to a friendly meeting does not entail that her desire to do so has vanished. The intended meaning is much more conservative: that María was under the obligation/had the desire of going to Pitril but *failed to do so*.

So we need to consider the other possibility: an unachieved-goal^c reading. As shown in section 3.1, unachieved-goal^c readings for statives are accounted for by equating R not with the marked sentence *p* but with a contextually salient proposition causally linked to *p*. Since *p* is a modalized sentence, a reasonable alternative is to conceive of the relevant facts in the contexts above (an appointment with the doctor, a friendly meeting) as causally generating not only the relevant obligatory/bouletic state but also the intention that the obligation/desire is fulfilled. After all, it is expected of human agents having obligations or desires that they intend to satisfy them, and it comes naturally to model our optimal continuations on this ground. If we take the projected satisfaction of the obligation/desire to stand for R, we then generate accessible worlds in which María complies with her obligation/desire of going to Pitril. Then the presupposition clause in the definition in (13) states that the actual world is not optimal in that particular respect – pretty much what these sentences are all about. The interpretation follows the same pattern as unachieved-goal^c readings.

(27) Past unachieved obligation/desires

FRUST (p), where p = María had to/wanted to q

- (a) Assertion: For all $w' \in f(w)$, $R(w')$.
- (b) Presupposition: The actual world is not optimal with respect to R
(where $R = q$)

Let us now consider the endo-X column in Table 2 (that is, weak necessity and unattainable desires). Without a compositional analysis, most of the fine details will remain unclear. But I would like to assess, at least tentatively, two issues: (i) why a core reading of these statements is not available and (ii) how can we make sense of an alternative interpretative path.

Let us start, then, by showing why the attempt to reduce the endo-X cell to a core reading fails. A non-continuation reading can be immediately discarded for the same reasons exposed above: neither weak necessity nor unattainable desire statements (necessarily) express the non-continuation of a state. On the contrary, when these modal claims convey a present temporal perspective, the assertion is precisely the opposite: that an obligation/desire state obtains.

What about the other core reading: unachieved-goal? Can this be the natural interpretation of endo-X statements? Consider weak necessity first. Two key aspects of these types of statements deserve attention. First, unlike the case of transparent WISH, the complement of a weak necessity clause does not denote a counter-to-facts situation. On the contrary, it is arguable that ‘María should/ought to p ’ actually presupposes that p is attainable for María. This attainability is made evident by a second related aspect: as has been observed in the literature, an OUGHT p claim promotes p among other alternative competitors (Rubinstein 2014). A clear indication of this is that weak necessity statements commonly possess an ‘advisory’ flavour to them: ‘You should go by bus (although you may also take two hours walk to get there)’. And here is the central problematic point: it would certainly be counter-intuitive that the construction used by speakers for advisory purposes bears an unachieved-goal interpretation.

What about unattainable desires (=WISH)? Can they have an unachieved-goal reading? Since *unachieved* has an obvious link with *unattainable*, the question arises as to whether the unattainable desire interpretation (WISH) is, simply put, a temporal variant of the past unachieved one (WANTED, BUT).

The problem with the ‘core reading’ of WISH, however, is how to model the ideal projection that is characteristic of such readings. As I have shown, one can certainly model an unachieved desire statement (‘María wanted to go to Pitiril, but...’) by invoking the idea of a failed intention: insofar as the subject’s aim to satisfy the ascribed desire configures an optimal standard, the frustrative can be thought to encode the failure of the actual world with respect to that standard. But in the case of ‘María wishes she had a sister’ in a context in which having a sister is unattainable for María, the subject’s relevant beliefs do not *only* include that she does not have a sister: it is also that she cannot have one. And the crucial point here is that María’s belief that having a sister is unattainable impedes any real intention (or expectation) in this respect. In other words, if the subject holds a belief that contradicts the very

idea of intending (or expecting), the ‘core model’ does not seem to have a starter. What we need is to reach worlds *beyond* María’s beliefs.

These considerations suggest that neither weak necessity nor unattainable desire statements deliver a core-type interpretation of *-fu-* clauses. With this possibility out of the way, the hypothesis that endo-X constructions derive their interpretation from the meaning that is attested in conditional environments becomes more plausible. But how to conceive of such a derivation, exactly? Although I cannot offer a complete compositional model at this point, I would like to suggest some basic ideas to develop in future research.

A plausible path to explore would be to assume that the contribution of the morphology that marks endo-X constructions is not linked to the expression of counterfactuality itself, but to a more general meaning that is active in conditional environments.¹⁷ This hypothesis comes hand in hand with the fact, verified in some languages, that such morphology does not always convey counterfactuality when occurring in conditional environments. As is well known, so-called ‘Anderson conditionals’ (*if Jones had taken arsenic, he would show exactly the symptoms he is in fact showing*) provide a clear case in which X-marking does not presuppose the falsity of the antecedent. From here, the reasoning seems to be the following: if the morphology that appears in marked conditionals does not always convey counterfactual meaning, perhaps the semantic contribution of X-marking is not directly related to the falsity of the antecedent, but to something else that is compatible, but not analytically linked, to a counterfactual yield. And it is plausible that it is this meaning (and not counterfactuality) that occurs in endo-X statements.

A classic formal representation of this alternative meaning can be summarized in the two clauses below:¹⁸

(28) Bare conditional: $p \cap f(w) \subseteq q$.

(29) Added presupposition of marked conditionals: $p \cap C = \emptyset$.

According to the traditional view sketched in (28), bare conditionals of the form *if p, then q* express that all the worlds in the intersection of $f(w)$ and p are worlds in which q obtains, where f is the modal function that assigns a set of accessible worlds to the evaluation world w . This view is supplemented with (29): marked conditionals add a presupposition to (28), namely, that the context set C (the set of the common ground beliefs shared by participants in conversation) contains no

¹⁷One might propose to link the strictly counterfactual meaning of exo-X to endo-X constructions (i.e., to link the meaning of conditional sentences to the meaning of non-conditional sentences). This idea was originally proposed by von Fintel and Iatridou (2008) for weak necessity, although in more recent work the authors have quite explicitly withdrawn it (see von Fintel and Iatridou 2020: 24–25). In the absence of any prospect of my own, I will simply discard it at this point.

¹⁸I follow von Fintel’s representation of these ideas (see von Fintel 1998 for a full insightful critical revision). The author critically examines a much wider range of options than I do here. For illustrative purposes, I will focus on a very basic version of the traditional view.

p-worlds. This basically means that marked conditionals presuppose that the antecedent p is false.

This view is of course challenged by Anderson conditionals, precisely because the utility of such constructions is to argue for the *truth* of the antecedent p . Thus, the added presupposition cannot be that p is false. Granted that some marked conditionals do not add the presupposition in (29), then, the challenge is to (re)define the contribution of X-morphology so as to account for the possibility of a non-counterfactual yield. According to von Stechow (1998), an appealing way to do this is by assuming that the presupposition at play in marked conditionals does not concern the falsity of the antecedent, but the domain of quantification $f(w)$. More concretely, the basic idea is that the relevant morphology indicates that “the domain of quantification is partly outside the context set” (von Stechow and Iatridou 1998:7), as stipulated in (30):

(30) X-marking: $f(w) \not\subseteq C$

The proposal relies on some ideas originally presented in the philosophical work of Stalnaker (1975, 2014). Note that the presupposition of marked conditionals thus conceived does not make any claim about the truth-value of the antecedent p . Crucially, this omission results in a more general meaning that can account for both counterfactual and non-counterfactual interpretations of marked conditionals. In effect, every time the antecedent is false (as in strictly counterfactual conditionals), we will need to access worlds beyond C to find the p-worlds. If, on the other hand, p is (possibly) true (as in Anderson conditionals), p-worlds may all be located within C , but the access to non-actual worlds beyond the C is motivated for some other reason (according to von Stechow, to deal with the triviality of the conditional in its indicative form; see von Stechow 1998: 9).

The basic claim, then, is that the morphology that appears in the consequent of a marked conditional signals that the domain the modal operator quantifies over is not entirely contained within the common ground beliefs shared by participants. In a more recent contribution, von Stechow and Iatridou (2023: 39) admit the difficulties this idea faces when one attempts to account for endo-X meanings in a unified way: “The only way towards unification that we see is to recast what X-marking signals to encompass both domain widening (in conditionals and desires) and ordering source addition (in necessity constructions). The common denominator is that in all three cases, there is a certain kind of departure from a default setting.”

How to understand the away-from-default meaning referred to in the passage above with respect to weak necessity? To recall, one crucial aspect of weak necessity is that it does not seem to convey a counter-to-facts meaning. On the contrary, the advisory aspect commonly attested in these statements runs against the supposition that the promoted event has no possibilities of being materialized in the actual world. More concretely, the speaker of a statement like ‘Pedro SHOULD/ OUGHT TO go to a Mapuche school’ can be described as promoting a non-compulsory course of action that fulfils a salient ideal among many other competing and *attainable* possibilities. That is to say, instead of ascribing an inflexible duty (‘attending primary school’) derived from a non-negotiable ideal (‘obeying the law’), weak necessity

statements promote one negotiable ideal ('attending a bilingual primary school') that competes with others ('attending the school that is closer to home'). Consider:¹⁹

- (31) Context. *Imagine that Pedro has just turned five and he will start attending school next month. There are two options: a Chilean-oriented school (closer to home) where everything is taught exclusively in Spanish; or a Mapuche-oriented school (15 kilometres from town) where most of the classes are imparted in Mapudungun. His mother, Victoria, asks for your advice. Although you understand the practical issue of the distance from home, your own opinion is that Pedro's learning the language of his ancestors is most important.*

Q: How would you say: 'Pedro should go to the Mapuche school.'

HM: *Pedro müle-fu-y ñi amu-a-el kolekio Mapuche.*
 Pedro be-FRUS-IND.3S POSS.3S go-PROSP-NMLZ school Mapuche

How is the data in (31) linked to an away-from-default meaning? Consider what the speaker acknowledges as normative ideals and possible courses of action. According to one plausible characterization of the situation, by asserting 'Pedro *should* go to the Mapuche school' (instead of 'Pedro *must* go to the Mapuche school') the speaker implicitly acknowledges (not one but) a bundle of salient competing ideals ('going to the school closer to home', 'prioritize Spanish over Mapudungun', 'learning the language of one's ancestors', etc.), to then promote one of them ('learning the language of one's ancestors'). One way to understand this (although, perhaps, not the only one) is to conceive of weak necessity statements as qualifying a seemingly undisputed background ideal ('providing the best for Pedro's upbringing') with some secondary considerations ('attending the school closer to home', 'speaking the language of one's ancestors', 'learning exclusively Spanish', etc.). As the relevant context reveals potential conflicts of opinion about which ideal best fulfils the default ideal (that is why Victoria asks for advice), 'speaking the language of one's ancestors' operates only as a secondary standard of what is optimal in the speaker's opinion. Crucially, the speaker does not impose his standard as an undisputed default ideal but acknowledges other potential perspectives on the issue.

As for unattainable desires, the away-from-default model can be implemented in a more obvious way. To recall, we are considering actual desires for unattainable precursors. For concreteness, consider a current desire for something strictly counterfactual:

- (32) Context. *María is the only daughter of her late parents. On lonely days like today, she thinks that a sister would have been great company.*

Q: How would you say: 'María wishes she had a sister'?

HM: *María kúpá nie-fu-y kiñe domo lamngen*
 María want have-FRUST-IND.3S a woman sibling

The context makes clear that: (i) María's desire is *actual* and (ii) that María's beliefs include that she *cannot* have a sister. Since intentions and expectations are

¹⁹The consultant also recommended the Mapudungun expression *küme-a-fu-y* (be.good-PROS-FRUST-IND.3S), which makes the advisory aspect even more salient.

realistically linked to beliefs, there are no possible intentions or expectations in the topic situation (Maria's beliefs simply impede any real intention or expectation of having a sister). This gives us a clear indication of what *-fu-* expresses in these types of contexts: that the modal quantification reaches beyond the default domain, which in the case of bouletic expressions coincides with the agent's doxastic set (see Heim 1992, von Fintel 1999, Villalta 2008, Rubinstein 2017). Very schematically, then, the claim is that the domain expands beyond the agent's beliefs so as to include (some) *p*-world(s), where *p* is the (presumably unattainable) desired proposition. Under a best worlds analysis, the semantics of a WISH statement says that the best worlds in this expanded domain are all *p*-worlds.²⁰

If this descriptive overview is on the right track, the frustrative-modal interactions open three possible paths: core readings (for unachieved obligations/desires), endo-X readings (for weak necessity and unattainable desires) and exo-X readings (for counterfactual obligations and desires). While the first of these paths conveys a meaning that mirrors the unachieved-goal interpretation described in section 3.1, the exo-X path can be reduced to the strictly counterfactual interpretation described in section 3.2. As for Mapudungun endo-X statements (OUGHT and WISH), this section suggests that they do not seem reducible to either core or exo-X readings. The suggestion is that an away-from-default analysis may be a reasonable idea to explore in future research. Table 3 summarizes these results.

As a concluding remark, I would like to point out a (perhaps too) obvious theoretical concern, one related to the unifying potential of the away-from-default view that seems to be dismissed in Table 3. In effect, von Fintel and Iatridou's away-from-default view seems to be a working proposal for a unifying account of the semantic contribution of the X-morphology in three different environments: conditionals, endo-X and exo-X. To stress, the away-from-default view is not circumscribed, in the authors' view, to endo-X environments, but applies to conditionals (including exo-X constructions). In the view sketched in Table 3, however, the away-from-default interpretation is circumscribed to endo-X constructions, while exo-X (on a par with the Mapudungun marked conditionals examined in section 3.2) are classed as 'strictly counterfactual' interpretations.

For the purpose of reaching a unifying account of *-fu-*, this may seem a dubious strategy. A more integrating option would be to reduce the contribution of *-fu-* in the three environments (conditionals, endo-X and exo-X) to the same meaning (away-from-default), leaving only core readings as a different interpretative path.

The reason for the mosaic-like (instead of unifying) overview of Mapudungun frustrative semantics is very simple: as shown in section 3.2, counterfactuality is strictly derived from the semantics of *-fu-* in conditional environments, leaving no

²⁰As von Fintel and Iatridou (2023) point out, this potential analysis is not free of difficulties, but I will skirt the details here. At least as a preliminary sketch, the frustrative morphology in (32) seems to effect the type of operation described in the away-from-default view.

	core	endo-X	exo-X
deontic	unachieved necessity (HAD TO BUT...)	weak necessity (OUGHT)	counterfactual necessity (WOULD HAVE TO)
bouletic	unachieved desire (WANTED BUT...)	unattainable desire (WISH)	counterfactual desire (WOULD WANT TO)
interpretation	unachieved-goal ^c	away-from-default	strictly counterfactual

Table 3: Mapudungun frustrative-modal interactions

apparent space for ‘marked-yet-not-counterfactual’ readings. This has been confirmed for me by the fact that my consultants have systematically rejected Anderson conditionals. I have tried different variants and the result is recurring: the construction does not seem to overcome its contradictory flavour.²¹

These results, although preliminary, delineate an interesting case: the X-morphology that surfaces in Mapudungun marked conditionals is neither dedicated (as in languages like Hungarian; see von Fintel and Iatridou 2023 for data) nor ‘fake’ (as in English). Rather, the same ‘authentic’ frustrative semantics that is operative in (core) *-fu-* clauses conveys counterfactuality in conditional environments. From here, one would expect that the morpheme could not occur in modal environments in which, crosslinguistically, no counterfactual meaning is attested (namely, endo-X statements). This is not the case, however. As the data examined in this article show, Mapudungun is a transparent language in a quite systematic way: weak necessity and unattainable desires are expressed with modal clauses marked with *-fu-*. This suggests that transparency constitutes a morphosemantic pattern that surfaces even in languages wherein counterfactuality is necessarily derived by the occurrence of X-morphology in conditional environments. Whether this is a pattern that can be confirmed for other frustrative languages is an interesting empirical question. Further research is needed.

4. DISCUSSION

In this section I discuss two issues: (i) the occurrence of both the prospective marker *-a-* and the frustrative *-fu-* in conditional environments (4.1) and (ii) the ‘antiperfect’ interpretation of *-fu-* proposed by Soto and Hasler 2015 (4.2). The discussion aims to point out both the problematic aspects in recent analyses of *-fu-*, and some challenging tasks for future research.

²¹Granted, the situation described in Anderson’s conditional is not always intuitive for speakers of any language. I was careful in choosing a discourse context that was culturally relevant to the consultant’s world: a poison, some visible skin hives, a disbeliever and someone trying to argue for the truth of ‘John has drunk the poison’. The sessions have always ended in the same point: if *-fu-* occurs, then John didn’t drink the poison. It is of great interest whether this pattern is confirmed or unattested in other frustrative languages.

4.1 *-fu-* in the antecedent and *-a-* in the consequent

That *-fu-* does not have a systematic occurrence in the antecedent of Mapudungun counterfactual conditionals is shown in (33). While Golluscio's data suggest that speakers can dispense with *-fu-* in the antecedent of present counterfactuals (33a), Smeets' data show that this can also apply to past readings (33c).²² It should be emphasized that in all three examples, *-fu-* occurs in the consequent.

- (33) a. *pe-e-l-i* *ngütrim-a-fi-e-i-yu*
 see-MIN-COND-1SG call-FUT-FRUST-MIN-IND-2DU
 'If I saw you, I would call you.' (Golluscio 2000: 255)
- b. *profe-le-l-e* *rüme,* *elu-a-fe-n-ew*
 poor-ST-COND-3SG ever give-PROS-FRUST.IOB-IND.1SG-DS
 'even if he were poor, he would give [it] to me.' (Smeets 2008: 360)
- c. *aku-wye-l-m-i,* *pe-pa-ya-fwi-y-m-i*
 arrive-PLPF-COND-2-SG see-HH-PROS-FRUST.OB-IND-2-SG
 'if you had arrived, you would have seen him here.' (Smeets 2008: 254)

Fasola (2015) offers a careful evaluation, considering data from different sources, including his own. The author concludes "that further study is required to confirm a template for Mapudungun counterfactuals" (Fasola 2015: 172). My own conclusion is no more optimistic. It seems that some consultants naturally dispense with *-fu-* in the antecedent of the present, although (for me at least) its occurrence is systematically elicited for past counterfactuals. In my mind, there is little hope in extracting a generalizable pattern from existing data.

From a more theoretical standpoint, section 3 of this article presented a modal analysis of Mapudungun marked conditionals which derived their counterfactual yield from the systematic occurrence of *-fu-* in the consequent. Under such an analysis, no contribution of *-fu-* in the antecedent was detectable or required for the derivation of its falsity.

One may wonder, on the other hand, whether the prospective suffix *-a-* can be thought to have any direct contribution to the derivation at issue. As is well known, several languages exhibit future markers in their counterfactual morphology. Iatridou 2000 contends that despite not being an essential semantic ingredient of counterfactuality, in some languages the future combines with the past in these constructions. No matter how inessential to counterfactuality the contribution of *-a-* can turn out to be, the question still arises as to how much of this combinatorial picture should be transposed into Mapudungun.

I would like to suggest that the answer is: not much. The reason is very simple: we are missing an essential ingredient – the past. In effect, as Golluscio (2000: 245–246) and section 2.4 of this article show, primary data strongly suggest that *-fu-* does not have an analytic link to pastness. Added to the fact that the Mapudungun tense system exhibits a future/non-future split (instead of a past/non-past one), and that

²²It should be said that most of Smeets' data do exhibit *-fu-* antecedents in past counterfactuals, a generalization that she explicitly supports. In displaying (33c) I only intend to show that speakers do not consistently include *-fu-* in this type of conditional, as my data confirms.

most past readings are expressed by constructions unmarked for *-fu-*, the ‘future + past hypothesis’ loses a great deal of appeal.

It should be said, however, that despite the fact that *-a-* does not combine with past in Mapudungun conditional environments, it can nonetheless play a (different) role. In her pragmatic approach to *-fu-*, Golluscio (2000) sketches a preliminary proposal: that *-a-*’s contribution in counterfactual clauses is to introduce a conventional implicature, which the author calls ‘hypotheticality’.²³ If I understand her approach correctly, the implicature is linked to a modal component of the future marker, which Golluscio defines as ‘predictive’. This element involves a commitment of the speaker in communicating something that is ‘likely to occur, to prove true’ (Golluscio 2000: 255). The author’s main thesis is that *-fu-* cancels that implicature – a central aspect for Golluscio’s more general conception of *-fu-* as a ‘metapragmatic’ operator. Implemented in clauses that combine *-fu-* with *-a-* (of which marked conditionals constitute a subclass), the proposal can be summarized in the claim that *-fu-* cancels what *-a-* introduces: “hypotheticality appears to be the conventional implicature introduced by the Mapuche [=Mapudungun] ‘FUTURE’ marker *-a-*; this is broken by the occurrence of *-FI* [= *-fu-*] after *-a-*.” (Golluscio 2000: 256).

For reasons of space, I will not revise Golluscio’s overall pragmatic analysis of the suffix but focus primarily on its implementation with respect to counterfactual uses, which I will prove unsatisfactory.

The general problem that immediately arises from Golluscio’s approach is that the proposal does not account for the counterfactual yield of Mapudungun marked conditionals. In effect, even conceding that *-a-* introduces hypotheticality, what needs to be explained with respect to Mapudungun marked conditionals is how the falsehood of the antecedent is triggered. Since *-a-* does not occur in the antecedent of present counterfactuals (and according to Golluscio’s data, neither does *-fu-*; see (33a)), the proposal seems to lack any explanatory power in this respect. Without a more substantial claim on the semantic structure of conditionals, such as the one specified in (21b), Golluscio leaves unexplained how a counterfactual interpretation is triggered.

A second problem is related to how Golluscio links hypotheticality with certainty – and these to the semantic contribution of *-fu-*. Golluscio’s special use of the term ‘hypotheticality’ seems close to (a certain degree of) speaker’s certainty: “While [+ *-a-*] manifests the high degree of probability given by the speaker (...) the occurrence of *-FI* following *-a* potentially or actually annuls that probability” (Golluscio 2000: 256). Entering the epistemic terrain of the speaker’s certainty, however, has an unavoidable consequence: that “[*-fu-*] installs the utterance in domains associated to low degrees of confidence of the speaker” (2000: 256).

This seems problematic to me. Counterfactual statements can vary considerably in the degree of the speaker’s certainty. In some contexts, a speaker can express at least the same degree of certainty as with a bare future statement (compare examples 34a and 34b). That a counterfactual statement such as 34c expresses a high degree of

²³Golluscio treats *-a-* as a future tense, in contrast to the aspectual analysis adopted in this article. For reasons of space, I will not pursue a critical revision here.

certainty is shown by its capacity to combine with an epistemic adverb such as ‘certainly’ (34d) without a substantial change in meaning.

(34) Context: *A coin is tossed. If it turns heads, Mary wins. If it turns tails, John wins. It turns tails.*

- a. If it had turned heads, Mary would have won.
- b. Next time, Mary will win.

Context: *male speaker.*

- c. If I didn’t have a brother, I would be an only son.
- d. If I didn’t have a brother, I would certainly be an only son.

That Golluscio is aware of this problem can be seen in her attempt to relativize her epistemic characterization of *-a-fu-* constructions by placing counterfactual conditionals at one end of a continuum “which ranges, then, from ‘uncertainty’ to ‘knowledge to the contrary’”. The example used to illustrate the second of these elements is the Mapudungun equivalent to ‘If I had seen you, I would have called you [but I didn’t]’. Puzzlingly, if this example represents the ‘knowledgeable’ end of the continuum, then *-fu-* does not cancel what *-a-* introduces after all (at least not in counterfactual conditionals). Thus, the question as to how *-fu-* conveys counterfactuality is left unanswered.

Note that I am not questioning Golluscio’s claim that *-a-* introduces certainty, prediction or hypotheticality (I have remained agnostic about these ideas). My critical point is that laying out a characterization of *-fu-* in terms of the subject’s epistemic certainty seems problematic. Once the point is made that counterfactual conditionals can bear a high degree of certainty, the characterization of *-fu-* as cancelling a high probability implicature (and what is more, as conveying a low degree of speaker’s confidence) seems dubious.

On the modal account of *-fu-* defended in this article, none of the above rises as a problem. Nothing in our proposed modal definition claims that the frustrative cancels hypotheticality (or whatever the role assigned to *-a-*). The modal definition proposed in (13) accounts for the counterfactual yield of Mapudungun marked conditionals based on the semantic contribution of *-fu-* *on its own*.

4.2 The ‘antiperfecto’ interpretation

Soto and Hasler (2015) (S&H in what follows) have presented a proposal that categorizes *-fu-* as an aspectual morpheme, dispensing with any reference to a modal meaning. The proposal is an interesting one, due to the authors’ suggestion that *-fu-* encodes a new aspectual category – what they label the ‘antiperfecto’ (AP hereafter). The central thesis is that the perfect/antiperfect pair encodes the validity/non-validity of a past eventuality by introducing a second eventuality inferentially linked to the former. As I will show in the following, despite its initial appeal, the proposal faces some empirical and conceptual difficulties, which ultimately render an unsatisfactory theory of *-fu-*.

As one would expect, the authors’ notion of the AP is based on a certain conception of the perfect. Within the wide range of interpretations found in the literature, the authors place a heavy reliance on Nishiyama and Koenig (2010), which attributes to the perfect

the introduction of two eventualities; the one described in the clause, and a ‘perfect’ state which is conversationally inferable from the former.²⁴ S&H build on this general description to express the idea of a mirror category of the perfect “which encodes the non-validity [Sp. *no-vigencia*] of a past EV [eventuality] at the time of speech” (Soto and Hasler 2015: 97, my translation from Spanish). The mirror analogy presented by S&H is meant to capture two properties of the AP, one that mimics the semantics of the perfect, and another that inverts it: (i) as with Nishiyama and Koenig’s perfect, the AP *also* introduces both a past eventuality (*e*) and a state (*s*); and (ii) as an *inverse* image of the perfect, the introduction of *s* cancels the relevance/validity of *e* at the utterance time (UT hereafter). The semantic inversion effected by the AP with respect to the perfect, then, derives from the fact that the introduction of *s* cancels the relevance/validity [Sp. *vigencia*] of *e* at utterance time (Soto and Hasler 2015: 101).²⁵

In the absence of a more explicit formulation, and given the authors’ reliance on Nishiyama and Koenig (2010), I will (re)construct and then revise what seems to me the best inferable definition of S&H’s *antiperfecto*. The definition in (35) summarizes the general description of the mirror conception just given. As shown, the first clause of the definition mimics the semantics of the perfect and the second one inverts it (see footnote for further textual evidence that the definition is in line with S&H’s informal description).²⁶

(35) Soto and Hasler *antiperfecto*

The ANTIPERFECT introduces:

- (i) an eventuality *e* that precedes UT;
- (ii) an eventuality *s* which overlaps with UT and cancels the validity of *e* at UT.

²⁴The basics of Nishiyama and Koenig’s definition of the perfect (slightly modified and substantially abridged) can be summarized as follows:

(i) The PERFECT introduces:

- 1. an eventuality *e* that precedes a reference time *t*
- 2. a perfect state *s* which overlaps with *t* and is conversationally inferable from *e*

(Nishiyama and Koenig 2010: 107–108)

²⁵The authors do not clarify the Spanish term *vigencia*, although a careful comparison of the English and Spanish abstracts of their paper makes clear that the term serves as the authors’ translation of ‘current relevance’, which is also interchangeable with ‘validity’. An anonymous reviewer commented that to an English speaker, these are two totally different notions. It should also be said that the term ‘current relevance’ has been used extensively, but not unproblematically, in previous theories of the perfect.

²⁶After presenting Nishiyama and Koenig’s (2010) characterization of the perfect, S&H (2015: 97–101) propose that the AP “also introduces two eventualities, Ev [*e* in (35)] and S [*s* in (35)], which share the same characteristics as the eventualities introduced by the perfect, except that the introduction of S cancels the current relevance/validity [Sp. *vigencia*] of Ev at the time of speech” (my translation). Said characteristics are temporal: (i) Ev [*e* in (35)] precedes the time of speech (“the antiperfect encodes the non-validity at the time of speech of a preceding Ev”, p. 97); and (ii) S [*s* in (35)] overlaps the time of speech (“... a state (S hereafter) that overlaps the time of speech”; p. 99). This is pretty much what occurs in (35).

There are several problems with this (inferred) definition. The first and most obvious is the analytic link with pastness in the first clause of (35). As I have shown towards the end of section 2, this is an overgeneralization, put into question by the very productive rendering of *-fu-* clauses with present temporal interpretations (12a–d) (see also Golluscio 2000: 245). Somewhat surprisingly, Soto and Hasler also offer an example of this type:

- (36) Ñi malle nie-fu-y kiñe mansun welu pepi-ngilla-la-y
 POSS.1 uncle have-AP-IND.3SG a ox but can-buy-NEG-IND.3SG
 kangelu ñi nie-a-el kiñe trarin
 another POSS.1 have-FUT-NMLZ a couple-of.oxen
 ‘My uncle has an ox, but he can’t buy another one to make a couple.’ (Soto and Hasler 2015: 108)

As far as I am aware, the authors do not offer any explanation as to why (36) should not be taken as a counterexample to their theory, as it obviously is. To this non-past reading one would have to add counterfactuals (2), weak necessity (3b) and unattainable desires (3d) statements – all of which are marked with *-fu-* and can have a present temporal perspective.

As for the second clause in (35), things are even more problematic. The difficulties ensue from the stipulation that the reference time corresponds to the UT. This (somewhat arbitrary) assumption suggests that what the authors call the ‘antiperfect’ actually corresponds to the ‘present antiperfect’.²⁷ Be this as it may, the fundamental problem lies in the fact that the second clause makes incorrect empirical predictions with respect to a significant number of *core readings*. Consider, for example, one of the most frequent uses of *-fu-*: the unachieved-goal interpretation built out of an eventive VP.

- (37) Context. *You are telling the story of the chief Pascual Manquepi to your grandson. According to the facts, Pascual Manquepi died more than a hundred and fifty years ago on his way to Pitiril. Presumably, he and his horse fell off a cliff.*
 Q: Can you say...?
 Lonko Pascual Manquepi amu-le-fu-y Pitiril, welu
 Chief Pascual Manquepi go-ST-FRUST-IND.3SG Pitiril but
 la-y rūpū mew
 die-IND.3SG road INST
 Intended: ‘Chief Pascual Manquepi was going to Pitiril, but he died on his way.’
 HM: ‘Yes’

What is the relevance/validity that is cancelled at *utterance time* here? What would be the current relevance/validity of chief Pascual Manquepi’s (fatal) journey to Pitiril about a hundred and fifty years ago? The point is not trivial, since the occurrence of *-fu-* in narratives such as the one presented above is very productive – something that sharply contrasts with the well-known unacceptability of the perfect in sentences such as the following (from Ritz 2012: 885):

²⁷Note that this is not a stipulation made in Nishiyama and Koenig’s (2010) characterization of the perfect.

(38) * Charles Darwin has visited Australia.

If “we cannot describe any relevant consequences of [Charles Darwin’s] visit to Australia” (Ritz 2012: 885), we are certainly in no better position with respect to the (impeded) arrival of Lonko Manquepi to Pitiril. Nevertheless, and in contrast to (38), the *-fu-* sentence in (37) is acceptable. This strongly suggests that *-fu-* does not encode the cancellation of the current relevance/validity of a past eventuality, as the authors defend.

The case can also be made with statives:

(39) Context. *Imagine that about a year ago, in January, you went for a walk to a nearby hill and you saw a big round apple hanging from a branch. As you came closer, you realized that the apple was not ripe. Two months later, by the end of that summer, you came back and could eat that same apple, which was all juicy and perfectly ripened by then.*

How would you say: ‘The apple was not ripe in January, but I ate it in March’.

HM:	Ti	mansana	afü-la- fu -y	enero	mew,
	DET	apple	ripe-NEG-FRUST-IND.3S	January	INST
	welu	yi-fi-n	marzo	mew.	
	but	eat-OBJ-IND.1S	March	INST	

The state of the apple at utterance time is obviously irrelevant here. Hypothesizing a current state (the digested state of the apple?) that cancels the validity of its past unripe state seems at odds with the intended meaning of the utterance in (39), which is simply non-continuation: a change of state from non-ripened (at then₁) to ripe (at then₂), with both of the then_n intervals traced in the past.

It seems to me that these incongruencies derive from the authors’ attempt to equate the reference time with UT. As mentioned, this is a perfectly sound move for representing the semantics of the present perfect. But for our subject matter (the semantics of *-fu-*), it commits the authors to the idea that the time about which a *-fu-* claim is made corresponds (by definition) to the UT. As examples (37) and (39) show, however, this is highly counterintuitive. Both utterances are about a past event/state (the former a hundred and fifty years ago, the latter nearly a year ago), not about a current relevance being cancelled by a putative state overlapping UT.

It should be noted that the problems presented above (related to the two clauses in the definition of the AP in (35)) may not apply to other aspectual conceptions of the frustrative (see Carol and Salanova 2019 for a different approach). The problems pointed out above do not derive from the aspectual categorization of the morpheme, but from treating *-fu-* as a (special type or reverse image of the) *perfect*.

Lastly, example (39) makes manifest another serious problem for S&H’s proposal (and for any aspectual conception of frustrative more generally): the interaction of *-fu-* with negation. As shown in (40), *-fu-* scopes above negation, a pattern observed in frustratives but not in perfects (or other aspectual categories, which would include AP).

- (40) a. I haven’t read the book. (neg<asp)
- b. Ti mansana afü-la-**fu**-y enero mew (frust<neg)
 DET apple ripe-NEG-FRUST-IND.3SG January INST
 ‘The apple wasn’t ripe in January.’

The scopal properties of *-fu-* (and frustratives more generally) with respect to negation can be accounted for by a modal analysis such as the one presented in section 3. In effect, as Copley (2005) has shown for Tohono O’odham frustrative *cem*, a negative FRUST(p) sentence asserts that all inertial worlds are not-p worlds. In the same vein, the negation in (40b) affects only the assertion in the modal definition (‘in all the optimal/inertial worlds, the apple is not ripe’), whereas the presupposition that the actual world is not optimal/inertial survives negation. The implication is that the apple changed its state (see Copley 2005: 11–13 and Kroeger 2017: 21–22 for further details).

Irrespective of the theoretical framework, the interaction of a morpheme with negation provides a solid ground on which to test its categorial status. Since one key feature of S&H’s proposal is that *-fu-* pertains to the aspectual sphere, one would expect at least a cursory description of such interaction. The authors, however, do not raise the issue. Taken together with the empirical incongruencies examined throughout this section, Soto and Hasler’s theory fails to provide a convincing case for their proposed category. As far as *-fu-* semantics is concerned, the theory proves inadequate.

5. CONCLUSION

This article has examined a diverse set of interpretations attested in *-fu-* clauses in Mapudungun, which include unachieved-goal, non-continuation, counterfactuality, weak necessity and unattainable desires. Following recent developments in the study of both frustratives and conditionals, I have shown how a modal conception of the suffix can tentatively integrate these different readings into a unified account.

As the article shows, when *-fu-* marks an eventive VP, the meaning of the clause tends to be that a certain expectation or goal was impeded. When marking statives one can attest, in addition to the unachieved goal reading, the interpretation that the described state does not hold any longer at utterance time. Interestingly, in both eventives and statives what is impeded, interrupted or discontinued can, but need not, be the event or state described by the marked sentence.

Concerning the occurrence of *-fu-* in conditional constructions, the paper contributes a more precise analysis than the ones previously offered in both the Mapudungun and frustrative literature. Some technical points were raised as to how exactly a modal analysis should be implemented to account for the falsity of the antecedent in sentences of the form *if p, then FRUST(q)*. The proposed distribution of labour can be summarized in four steps: (i) the *if* clause restricts the domain of quantification of the frustrative, the basic assertion of which is that the marked consequent *q* holds in all the accessible worlds (the first clause of our definition in (13)). Then, (ii) the presupposition of the frustrative adds that the actual world is not among the optimal worlds (the second clause of our definition). The combination of (i) and (ii) entails that (iii) *q* is false in the actual world. Finally, (iv) by *modus tollens* (*if p, then q* and *not q* entails *not p*) the falsity of the antecedent follows. Taken together with the fact that *-fu-* does not have an analytical link to pastness, the proposed

analysis suggests that the modal component of the suffix plays a quite authentic role in the semantics of marked conditionals.

This characterization of *-fu-* has been supplemented with a brief discussion about the interactions of the frustrative with other modals. As shown, the frustrative conveys weak necessity and unattainable desires in strikingly similar ways to X-morphology in transparent OUGHT and WISH languages (von Fintel and Iatridou 2008, 2023). Several interpretative possibilities were discussed. After discarding a reduction of endo-X to either exo-X or core readings, an away-from-default interpretation for weak necessity and unattainable desires was pondered, leaving a trace for more collaborative research in the future. The overall contribution of the article, then, is to offer a description of a broader morphosemantic landscape of *-fu-* clauses than the one already available in the literature, making room for novel empirical findings and discussion.

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