

Variable Remoteness

The Morpho-Semantics of Mapudungun FU

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Background

- Mapudungun is a language isolate (or small family of 2) spoken in south-central Chile and the neighboring areas of Argentina. $\approx$ 200,000 living speakers.
- Agglutinating, SOV, suffixing morphology throughout.
- 36 suffix slots on verbs (Smeets 2008, p. 177).
- Frustrative FU occupies the slot separating aspects and agreement/finiteness/nominalization. I use two aspects as case studies (stative LE and prospective A), but all aspects are licensed with FU.
- Data comes from elicitation with two Mapudungun consultants and secondary literature.

Background

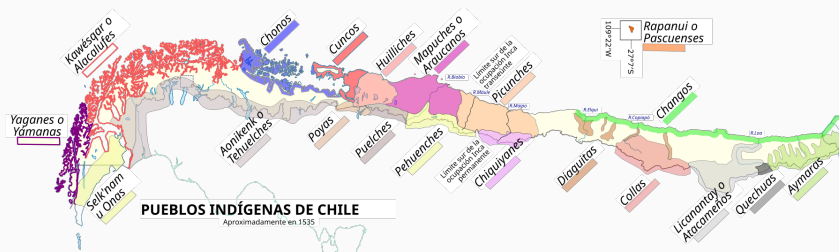


Figure 1: Indigenous languages of Chile ca. 1535

(https://commons.wikimedia.org/wiki/File:Pueblos_indigenas_de_Chile_hacia_1535-ver.svg)

Roadmap

1. Core data
2. A selectional analysis of FU
3. Moving one axis at a time
4. Uniting the readings with aspect and tense
5. Conclusion

- (1) Fey mew müle- fu- y küla peñiwen
Indeed LOC be- FU- 3 three brothers
'Once there were three brothers.' (Augusta 1910:118)
- (2) María nie- fu- y kiñe ruka, welu fende- fi- y.
María have- FU- 3 INDEF house, but sell- OB- 3
'María had a house, but she sold it.'

It is infelicitous with absolute time adverbials: it cannot index a particular $\langle w, t \rangle$ pair.

- (3) witru- le- fu- y ko, welu nie- la- y newen
 flow- LE- FU- 3 water, but have- NEG- 3 strength
 ‘The water is flowing, but with less strength.’ (Fuentes 2023,
 p. 524)
- (4) *witru- le- fu- y ko, welu masiao
 flow- LE- FU- 3 water, but too.much
 ‘The water is flowing, but too fast.’

Core data III: incomplete, avertive

(5, 6, 7 from Fuentes 2023)

(5) María amu- fu- y Pitril, welu wiño- tu- y.

María go- FU- 3 Pitril, but return- RE- 3

‘María was going to Pitril, but she turned around and came back.’

(6) María amu- a- fu- y Pitril, welu wiño- tu- y.

María go- A- FU- 3 Pitril, but return- RE- 3

‘María would have / was about to go to Pitril, but she turned around and came back.’

- (7) María amu- fu- y Pitril, welu lonko müle- la- y tañi ruka
María go- FU- 3 Pitril, but chief be- NEG- 3 POSS house
mew.

ADP

‘María went to Pitril, but the chief was not at home.’

- (8) law- uwy- fu- y
bald- ASP- FU- 3

‘He had become bald.’

(Smeets, p. 254)

Core Data V: modal weakening

FU weakens deontic necessity to weak necessity:

- (9) müle- y tañi kasko tu- le- al
be- 3 POSS helmet wear- VERB- NF
'One must wear a helmet.'

- (10) müle- fu- y tañi kasko tu- le- al
be- FU- 3 POSS helmet wear- VERB- NF
'One should wear a helmet.'

The same contrast holds with FAL: FAL+FU 'ought to' against FAL IMP.

Core Data VI: ignorance disjunction and free choice

- (11) Juan l'awentuchefe nge- fu- y chi kam wirintukufe nge- (fu)-
Juan doctor be- FU- 3 DET or writer be- (FU)-
y chi
3 DET

'Juan is either a doctor or a writer (I don't know which).'

- (12) Juan l'awentuchefe nge- y chi kam wirintukufe nge- y chi
Juan doctor be- 3 DET or writer be- 3 DET

'Juan is either a doctor or a writer (guessing game).'

- (13) Pablo pepi iy- (a-) fu- y kiñe turrón kam kiñe galleta
Pablo ABIL eat- A- FU- 3 one turrón CON one cookie

'Pablo can take a turrón or a cookie.'

FU is preferred but not obligatory in the ignorance disjunction.

Core Data VII: Cancellation vs. ignorance

- (14) Maríá l'awentuchefe nge- fu- y
 Maria healer be- FU- 3
 'Maria used to be a doctor' / 'Maria is a bad doctor'
- (15) Maríá l'awentuchefe nge- fu- y. #Hasta fachantü
 Maria healer be- FU- 3. #Up-to today
 l'awentuchefe nge- y.
 healer be- 3
 'Maria used to be a doctor. #These days she is also a doctor.'
- (16) Maríá l'awentuchefe nge- fu- y. Petu l'awentuchefe nge- y.
 Maria healer be- FU- 3. Still healer be- 3
 'Maria used to be a doctor. She still might be.'

- The inference suspends under a hedged continuation (16).
- The deviance of (15) is bare correction of an implicature without a corrective marker. “In fact” correction needs to be tested.
- Essentially the same pattern as Tlingit *éen* (Cable 2017).

A challenge for monosemy

The Mapudungun morpheme FU does, at minimum, all of the following:

- incomplete, avertive, frustrative-proper
- discontinuous past, remote past
- suboptimality (explicit with *-küle-*)
- modal weakening (necessity → weak necessity)
- subjunctive and past-revision conditionals, in antecedent and consequent
- ignorance disjunction and free choice under a possibility modal

Fake past and distance

- Corpus data and consultant judgments suggest the salient interpretation of OOB FU is past (Valdivia labels it *pretérito* in his 1606 grammar).
- Iatridou (2000): past morphology contributes an exclusion relation, with modal remoteness a metaphorical extension of temporal remoteness.
- Ippolito (2013): past backtracks, then follows an alternative branch.

The scale ρ and its ceiling

FU combines with a restrictor ρ , a set of world-time pairs, and a prejacent P . ρ is inherently ordered, either temporally or modally (Lassiter 2017).

$\text{PREC}(m) = F_{\text{HIST}}(m) \cap \{s : t(w') \leq t(w_0)\}$ m = the RT-world-time pair

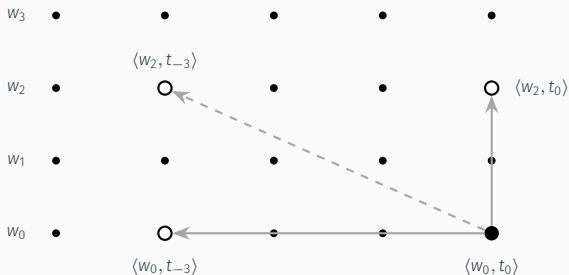
$F_{\text{STER}}(m) = \{s : t(w) = \text{RT} \wedge s \leq_{\text{NORM}} m\}$ m = the max. world-time pair

The descent condition requires every member of ρ to be both comparable to m and at or below m . In the two modes this has different consequences:

- Temporal ρ : precedence within a single world on the temporal axis.
- Modal ρ : F_{STER} contains the world-time pairs at RT across the modal scale, ordered by normality. s_0 is a member.

The world-time grid

Assume world-time pairs $\langle w, t \rangle$. Times run along x , worlds along y . FU selects one world-time pair from a domain of such pairs, licensed to move along only one axis at a time.



Other approaches to frustratives

- **Aspect:** antiveridical aspects asserting nonculmination in languages with weak culmination implicatures (Carol and Salanova 2018).
- **Modal:** assert *V*, presuppose suboptimality with respect to a scale (Fuentes 2023).
- **Aspect and maximality:** non-inertial with parametric non-maximality (Nadathur and Everdell 2025).
- **Tense:** the cessation inference is pragmatic, and the marker is an ordinary past (Cable 2017).

Sources of variation

- Kusliy and Vostrikova (2025) derive discontinuous past from pragmatic strengthening plus a silent Exh subject to a crosslinguistic obligatoriness parameter. Modal meanings are not attested in their paper, though they may exist.
- Unlike O'dam (Nadathur and Everdell 2025), Mapudungun has only one frustrative and does not distinguish maximality from nonmaximality. FU is compatible with both *tʰi* and *tʰipup* contexts.

Interim summary table

View	Aspect	Scale ρ	Tense
suboptimality	LE / default-stative	normality F_{STER}	nonfuture
incompletive (failure)	default-stative	normality F_{STER}	nonfuture
discontinuous past	default-PFV	temporal F_{HIST}	nonfuture
remote past	default-PFV	temporal F_{HIST}	past
avertive/FITP	any, with A	supplied by A	NF/past
disjunctive	A, under <i>pepi</i>	supplied by A	nonfuture?

The analysis is Stalnakerian (1968). The unmarked form trivially asserts $P(s_0)$. FU shifts the world-time pair of evaluation by a selection function unconstrained along its axis of evaluation.

Generalizing the selection function

Stalnaker's σ returns the $\leq_w$ -closest A-world. FU's $\sigma(s_0, \rho)$ differs by:

- **No closeness!** σ returns a member of ρ unconstrained.
- Stalnaker always measures from w . FU measures from m_ρ : the RT-world-time pair on the temporal scale, the best world-time pair on the normality scale.
- Stalnaker's σ takes A and returns an A-world; σ takes ρ and returns a ρ -pair, for which P is then asserted.

$\Rightarrow$ this is just a choice function

FU is choice-functional over times or worlds.

$$\llbracket \text{FU} \rrbracket = \lambda \rho_{\langle s, t \rangle} . \lambda P_{\langle s, t \rangle} . \lambda w_0 : \rho \subseteq \{s : s \leq_\rho m_\rho\} \wedge |\rho \cap P| \geq 2 . P(\sigma(s_0, \rho))$$

- **Descent:** $\rho \subseteq \{s : s \leq_\rho m_\rho\}$. m_ρ is the least upper bound of ρ .
- **Monophobia:** the cardinality of ρ is at least 2, else the contribution of FU is trivial.

Generalized derivation

$$\begin{aligned}\llbracket \text{FU} \rrbracket(\rho)(\text{AspP})(s_0) &= \text{AspP}(\sigma(s_0, \rho)) \\ &\models \sigma(s_0, \rho) \leq_\rho m_\rho \quad (\text{Descent}) \\ &\rightsquigarrow \neg \text{AspP}(s_0) \quad (\text{Quantity, against } \rho = \{s_0\}) \\ &\therefore \sigma(s_0, \rho) \neq s_0\end{aligned}$$

ρ	m_ρ	FU-event differs from s_0 in
PREC	the RT-pair	t
F_{STER}	the maximally normal (w, t)	w
F_{BRANCH}	contingent on A	w or t , after RT

Aspect: an entry for LE

Mapudungun is a covert tense language in the sense of Matthewson (2006): aspects fix the event to a covert NONFUTURE or PAST tense head. The Mapudungun facts follow St'át'imcets in lacking FUTURE (Fuentes 2020).

LE gives progressive readings with atelic predicates (*sit*) and resultative readings with telic ones (*go up the stairs*). It is in complementary distribution with the progressive *meke* and composes freely with A and FU.

$$\llbracket \text{LE} \rrbracket = \lambda V_{\langle l, st \rangle} . \lambda w . \exists e [V(e)(w) \wedge t(w) \subset \tau(e\uparrow) \wedge t(w) = \text{RT}]$$

$e\uparrow$: the result state for telic V , a homogeneous subinterval for atelic V (Altshuler and Schwarzschild 2013).

LE is the aspect in (3). Under NONFUTURE tense: $\text{PREC} \cap \text{STAT} = \{w_0, t_0\}$.

- Mapudungun has a silent PFV. Both stative and perfective are available at a nonfuture RT with neither strictly default.
- The perfective arises under a past RT and the stative arises under a nonfuture RT.
- The ambiguity in the doctor case is resolved through a CG effect.

Aspect: A

Another challenge for a unified semantics: one morpheme A means “must,” “might,” “will,” and “almost.”

A returns a set of world-time pairs consisting of the P-continuations from RT.

$$\llbracket A \rrbracket = \lambda P_{\langle s, t \rangle}. \lambda w. w \in F_{\text{HIST}}(\text{RT}) \wedge \text{RT} < t(w) \wedge P(w)$$

Scale	Reading
deontic continuations	deontic
stereotypical continuations	plain future, prospective, <i>almost</i>
none	might

Why one axis at a time

$$\text{PREC}(m) = F_{\text{HIST}}(m) \cap \{w : t(w) \leq t(m)\}$$

$$F_{\text{STER}}(m) = \{w : t(w) = \text{RT} \wedge w \leq_{\text{NORM}} m\}$$

Restriction on FU is primitively bound to one axis. FU takes only one restrictor, so it *cannot* move diagonally.

Explicitly differing in both should then require some additional morphology.

This is A: supply anterograde branches from a contextual anchor over which FU can then choose.

Deriving canonical frustratives

- **Discontinuous Past:** the FU witness is at a past world-time pair at which the state holds.
- **Proper:** $PFV \times NONFUT$; $\neg P(w_0, t_0)$ is trivial $\rightarrow$ FU coerces outcome reading.
- **Incompletive:** the default aspect for an eventive at nonfuture RT is stative-progressive, which leaves the temporal domain a singleton. Bare *amu-fu-y* is understood OOB as in-progress failure; the proper reading needs a coerced perfective (the chief not being at home).
- **Avertive** requires A: FU selects a branch at which P . P is not the actual continuation in avertive, but it is in FITP.

A diagonal FU requires A to supply an anchor for world variation in the antecedent from which FU can select. The desired 'second application' shifts along a new branch, where the second A then generates new branches from which the second FU can then select.

Conclusion

- FU is choice-functional over worlds or times but not both.
- Nonactuality is a strongly preferred Quantity implicature from competition with the trivial subdomain. FU itself is nonveridical.
- The readings of FU are tightly bound to aspect and a covert tense.
- Suboptimality arises when the host aspect eliminates the possibility of temporal variation. Under a condition that fixes $t(w)$, the temporal domain holds exactly one satisfying pair, which is therefore excluded by monophobia.

- Thank you! *Chaltu may!*

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Conditionals

Antecedent	Consequent	Category
V	V-A	Indicative
V-FU	V-AFU	Subjunctive
V-FU	V / V-A	Concessive
V-FU	V-A(FU)	FLV
V-AFU	V-AFU	Past-revision

- (17) Future-less-vivid.

Si hiciera sopaipillas para la fiesta, Juan se las comería.

Yiwiñkofke- fu- le kawiñ mew, Juan ta kofke- tu-
sopaipilla- FU- COND.3 party PRP Juan then bread- VBLZ-
a- (fu)- y
A- (FU)- 3

‘If he made sopaipillas for the party, Juan would eat them.’

(18) Past-revision.

Si hubiera hecho sopaipillas para la fiesta, Juan se las habría comido.

Yiwiñkofke- a- fu- le kawin mew, Juan ta kofke-
sopaipilla- A- FU- COND.3 party PRP Juan then bread-
tu- a- fu- y
VBLZ- A- FU- 3

‘If he had made sopaipillas for the party, Juan would have eaten them.’