

Strength of Counterfactuality: A view from Farsi

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Like English and many other languages, Farsi uses past tense to express counterfactuality. Unlike these languages, however, antecedent falsity of counterfactual conditionals in Farsi is not cancelable.

- What linguistic factors determine the **strength of counterfactuality** in conditionals cross-linguistically?

Roadmap:

- Cancelability of counterfactuality (English & Farsi)
- Farsi conditionals
- Counterfactuals with a shiftable present
- Driving the strong counterfactuality of Farsi CFs

1 Cancelability of counterfactuality

- The term counterfactual (CF) conditionals is misleading.
- The CF conditional doesn't always imply the falsity of its antecedent.

- **Future Less Vivid** (Iatridou, 2000, 2009) :
unlikely but still realizable future possibilities, as shown in (1).

- (1) *Context: John is not a romantic person. It's unlikely that he'll buy flowers for Mary.*
If John gave flowers to Mary tomorrow, she would be pleased.

- **Anderson-Type conditionals** Anderson (1951):
reasoning for the truth of the antecedent, as shown in (2).

- (2) If the patient had had the measles, he would have shown exactly the symptoms he shows now.
✓We conclude, therefore, that the patient has the measles.
✓But we know that he doesn't have the measles.

Nevins' Generalization:

The antecedent falsity of CF conditionals in languages that lack a specialized CF marker and only use their TAM morphemes to mark counterfactuality is cancelable. (Nevins, 2002)

2 Cancelability of counterfactuality in Farsi

- Farsi breaks Nevins' generalization.
- Like English and many other languages, Farsi uses past tense to express counterfactuality (Iatridou, 2009; Bjorkman & Halpert, 2017).

Present and Future CF conditionals:

If IMPF-verb-PST, IMPF-verb-PST
Ifverb-PST, **WOULD** verb

Farsi
English

Past CF conditionals:

If verb-PP AUX-PST, IMPF-verb-PST
If verb-PP AUX-PST, **WOULD HAVE** verb-PP

Farsi
English

- The counterfactuality of antecedents of Farsi CF conditionals is **not** cancellable.

– **No Future Less Vivid:**

A conditional about the future which is still realizable, no matter how unlikely it is, can only be expressed with a morphologically subjunctive conditionals (3-a), and never with a CF conditional (3-b).

- (3) *Context: John is not a romantic person. It's unlikely that he'll buy flowers for Mary.*

- a. agar John farda be Mary gol be-dah-ad, Mary
 if John tomorrow to Mary flower SUBJ-give-3SG Mary
 xošhal mi-šav-∅-ad
 happy IMPF-become-PRES-3sg
 'If John gave/gives flowers to Mary tomorrow, she would/will be pleased.'
- b. # agar John farda be Mary gol mi-daad, Mary
 if John tomorrow to Mary flower IMPF-give.PST.3SG Mary
 xošhal mi-šod
 happy IMPF-become.PST.3sg
 'If John had given flowers to Mary tomorrow, she would have been pleased.'

- The CF conditional in (3-b) is only acceptable in a context where we *know* that John will not give flowers to Mary, for instance because he's dead. A CF conditional about the future conveys that a future possibility is no longer realizable in the future.

– **No Anderson-Type conditionals**

Anderson-type examples in Farsi cannot be uttered with a CF conditional. To express the meaning of (4-a), Farsi uses the perfect subjunctive (4-b).

- (4) a. agar bimar sorxak gerefte bud, daghighan in
 if patient measles catch-PP AUX.PST.3SG exactly this
 alayem-i ke alan neshan mi-dah-∅-ad ra
 symptoms-INDF that now show IMPF-give-PRES-3.SG RA
 neshan mi-daad.
 show IMPF-give-PST-3.SG

‘If the patient had had the measles, he would have shown exactly the symptoms he shows now.

✗We conclude, therefore, that the patient has the measles.

✓But we know that he doesn’t have the measles.

- b. agar bimar sorxak gerefte bash-ad, daghighan in
 if patient measles catch-PP AUX.SUBJ-3SG exactly this
 alayem-i ke alan neshan mi-dah-∅-ad ra
 symptoms-INDF that now show IMPF-give-PRES-3.SG RA
 neshan mi-dah-∅-ad
 show IMPF-give-PRES-3.SG

‘If the patient had had the measles, he would have shown exactly the symptoms he shows now.

✓We conclude, therefore, that the patient has the measles.

✗But we know that he doesn’t have the measles.

- Farsi breaks Nevins’ generalization.
 - Farsi marks counterfactuality with past.
 - Counterfactuality of Farsi CFs is strong.

3 Farsi conditionals

- Like many languages, Farsi distinguishes among different kinds of conditionals via a combination of Tense/Aspect/Mood morphology in the antecedent of conditionals.
- It is the aspect that is responsible for manipulating the temporal location of the antecedent situations.
 - The imperfective aspect refers to present and future events.
 - The perfect aspect refers to past events.
- Tense marks the conditional’s relationship to the presuppositions of the context.
 - Conditionals whose antecedents are marked with the present tense yield a factual interpretation. A factual conditional is assertable only if the antecedent is presupposed to be true (usually by someone other than the speaker (Bhatt & Pancheva, 2017; Iatridou, 1991)).

- Conditionals whose antecedents are marked with the past tense yield a counterfactual interpretation, and they are assertable only if the antecedent is presupposed to be false.
- Conditionals whose antecedent are marked with the subjunctive are used only if the antecedent consistent with CG, but CG is unsettled with respect to the truth of p (Mari & Portner, 2018).¹

		TENSE		
		PRESENT	PAST	∅ (SUBJUNCTIVE)
Imperfective	CG	p	¬p	$p \vee \neg p$
	time	present/future	present/future	present/future
	morphology	IMPF-verb.PRES	IMPF-verb-PST	SUBJ-verb (=IMPF-verb.∅)
	interpretation	factual	counterfactual	hypothetical
Perfect	CG	p	¬p	$p \vee \neg p$
	time	past	past	past
	morphology	verb.PP AUX.PRES	verb.PP AUX.PST	verb.PP AUX.SUBJ
	interpretation	factual	counterfactual	hypothetical

- Farsi makes a morphological distinction between hypothetical and factual conditionals.
- The present tense in the antecedent of Farsi conditionals, (5), presupposes that there is already a proposal to settle the question regarding the truth of the antecedent proposition (p) in CG.
- Hypothetical (indicative) conditionals (∅-tense), (6), need only to be consistent with CG (Stalnaker, 1975).

(5) (PRES) [if p-PRES, q]: factual (6) (PRES) [if p-∅, q]: hypothetical

- In the following context only a conditional marked with subjunctive is felicitous.

Context: Police is investigating the speculation that Oswald might not be the murderer, but nothing is certain.

- (7) Agar Oswald Kennedy ro na-košte #ast/ baš-ad,
 if Oswald Kennedy RA NEG-kill-PP AUX.PRES.3SG/ AUX.SUBJ.3SG,
 kas-e digar-i ou ro košte ast
 person-EZ another-INDF him RA kill.PP AUX.PRES.3SG
 ‘If Oswald didn’t killed Kennedy, someone else did.’

¹I take the subjunctive to be the morphological realization of zero tense in Farsi.

- In the context below, both factual and hypothetical conditionals are felicitous.

Context: Investigation is complete. It is confirmed that Oswald wasn't the murderer.

- (8) Agar Oswald Kennedy ro na-košte **ast/** **baš-ad,**
 if Oswald Kennedy RA NEG-kill-PP AUX.PRES.3SG/ AUX.SUBJ.3SG,
 kas-e digar-i ou ro košte ast
 person-EZ another-INDF him RA kill.PP AUX.PRES.3SG
 'If Oswald didn't killed Kennedy, someone else did.'

- Subjunctive signals that the antecedent proposition has not been accepted in the common ground yet. That is the common ground still has both p and \neg p worlds.

Context: It's a well-known fact that Oswald wasn't the murderer.

- (9) Agar Oswald Kennedy ro na-košte **ast/** **#baš-ad,**
 if Oswald Kennedy RA NEG-kill-PP AUX.PRES.3SG/ AUX.SUBJ.3SG,
 kas-e digar-i ou ro košte ast
 person-EZ another-INDF him RA kill.PP AUX.PRES.3SG
 'If Oswald didn't killed Kennedy, someone else did.'

- CF conditionals in Farsi pattern with factual conditionals.
- They also presuppose that the question of p has been (proposed to be) settled in the CG.

Context: Investigation is complete. It is confirmed that Oswald was in fact the murderer.

- (10) a. Agar Oswald Kennedy ro na-košte **bud,** kas-e
 if Oswald Kennedy RA NEG-kill-PP AUX.PST.3SG, person-EZ
 digar-i ou ro košte bud
 another-INDF him RA kill.PP AUX.PST.3SG
 'If Oswald hadn't killed Kennedy, someone else would have.' False
- b. # Agar Oswald Kennedy ro na-košte **baš-ad,** kas-e
 if Oswald Kennedy RA NEG-kill-PP AUX.SUBJ.3SG, person-EZ
 digar-i ou ro košte ast
 another-INDF him RA kill.PP AUX.PRES.3SG
 'If Oswald didn't killed Kennedy, someone else did.'

4 Theories of CFs: the role of past tense

- There are two main approaches to account for the semantic contribution of the past morpheme in counterfactuals:
 - **the past as modality approach** (Iatridou 2000; Schulz 2014; Karawani & Zeijlstra 2013, a.o) : Past tense morphemes contribute **either** a temporal reference to a time different from the present time **or** a modal reference to a world different from the actual world.
 - **the past as past approach** (Ippolito 2013; Arregui 2005; Grønn & Von Stechow 2009; Romero 2014; Khoo 2015, a.o): Past tense morphemes always express a temporal reference to a time previous to the present time in all of its usages. It takes the counterfactual reading of past tense morphemes to follow from a past evaluation point.

5 Counterfactuals with a shiftable present

- I follow Ippolito (2013); Arregui (2005)a.o, in taking the CF conditional to involve a past operator which scopes the whole conditionals and shifts the accessibility time to a past time.
- The antecedent of CF conditionals contains a zero tense pronoun, as shown in (11) (Arregui, 2009; Romero, 2014).

(11) PAST [if p-∅, q]

- I propose that (11) can be morphologically realized as past subjunctive (Russian) or past if the language has a tense deletion rule (English).

Past Subjunctive Generalization:

- In languages that have a paradigm for past subjunctive such as German, the antecedent of conditionals of CF conditionals appears in past subjunctive (Iatridou 2000, von Stechow 2012).
- *“In the languages that have a subjunctive, what factors determine whether the subjunctive will be used in CFs?”*

Only those languages that have a paradigm for past subjunctive use the subjunctive in counterfactual conditionals.” (Iatridou, 2000)

- Farsi represents a language where none of these options is available.
- Farsi lacks a specialized CF form.
- Instead, Farsi use its shiftable present (Sameri & Karimi-Doostan 2019; Tsilia 2021) to mark counterfactuality.

Ana in 2004: "John lives in Amherst now."

(12) dar 2004, Ana gof-t ke John dar Amherst zendegi
 In 2004, Ana say-PST.3SG that John in Amherst live
 mi-kon-ad.
 IMPF-do-3SG
 'In 2004, Ana said that John lived in Amherst (then).'

- I propose (14) as the structure of CF conditionals in Farsi.
- (13) PAST [if p-Ø, q] (14) PAST [if p-PRES, q]
 Past subjunctive/ Deleted past Shiftable present

past subjunctive	deleted past	CF marker	shiftable present	Language
✓	✓	✗	✗	Italian
✓	✗	✗	✓	Russian
✓	✓	✗	✓	?
✗	✓	✗	✗	English, French
✗	✓	✗	✓	Modern Greek
✗	✗	✓	✓	Hungarian
✗	✗	✓	✓	Hebrew, Japanese
✗	✗	✗	✓	Farsi
✓	✓/✗	✓	✓/✗	non-existent
✗	✓	✓	✗	non-existent?

Generalization:

past subjunctive > deleted past > CF marker ≥ shiftable present

6 Driving the strong counterfactuality of Farsi CFs

- Following Stalnaker (1975), von Stechow (1998), Leahy (2018), and von Stechow & Iatridou (2020), a.o., I take CF marking to indicate that the domain of

quantification is partly outside of the context set.

- Given that Farsi has a special form (subjunctive) to mark an unsettled CG (mixed of p and $\neg p$ world), and that embedded present tense presupposes settledness, a CF conditional strongly implies the falsity of the antecedent.

➤ Presupposition of **Past [if p,q]**: $D(w) \not\subseteq CG$

Present tense **[if p-PRES,q]**: $CG \cap p = ps^a$

Subjunctive **[if p-∅,q]**: $CG \cap p \neq \emptyset \wedge CG \cap p \neq CG$

Farsi

$\Rightarrow CG \cap p = CG - ps = \{ \emptyset \text{ if } ps = CG \text{ or it has the effect of rejecting } p \}$

^aprojected set (Farkas & Bruce, 2010) $\{ps = CG \text{ or } CG \text{ updated with the previously asserted } p \text{ (i.e. there's already a propositional discourse referent for } p.)\}$

- In languages with the past subjunctive or the tense deletion rule, CF conditionals pattern with subjunctive-marked conditionals in lacking a settledness presupposition.
- The antecedent falsity of CF conditionals in these languages arises as a presuppositional implicature from the competition between CF conditionals in (13) and hypothetical (indicative) conditionals in (6) whose presuppositions are asymmetrically ordered by logical strength (Leahy, 2018; Mackay, 2019).

7 Conclusion

What linguistic factors determine the **strength of counterfactuality** in conditionals cross-linguistically?

- Presuppositions of the tense pronoun in the antecedent.
- Presuppositions of the subjunctive mood, even if CF conditionals is not marked with it.

Appendices

Japanese?

- (15) Mary-ga asita {ku-**reba**/ki-**ta-ra**/#ku-**ru-to**},
 Mary-NOM tomorrow {come-COND/come-PST-RA/come-PRES-TO},
 kaigi-ni de-**ta** daroo.
 meeting-LOC join-PST MODAL
'If Mary had come tomorrow, she would have joined.'
 (Mizuno & Kaufmann, 2018)²
- (16) (Mosi) Saburo-ga koko-ni ku-**ru-to**, Hanako-ga
 (if) Saburo-NOM here-to come-PRES-TO, Hanako-NOM
 yorokon-da(-daroo)-ne.
 be-pleased-perhaps-ENDING
*'when Saburo came here, Hanako would have been pleased.'*³
 (Ogihara, 2014)
- Can **ta-ra** be PST-PRES?
 - Can **ru-to** be PRES-PST?

References

- Anderson, Alan Ross. 1951. A note on subjunctive and counterfactual conditionals. *Analysis* 12.
- Arregui, Ana. 2005. On the accessibility of possible worlds: The role of tense and aspect. Doctoral dissertation, University of Massachusetts, Amherst.
- Arregui, Ana. 2009. On similarity in counterfactuals. *Linguistics and Philosophy* 32:245–278.
- Bhatt, Rajesh, & Roumyana Pancheva. 2017. Conditionals. *The Wiley Blackwell Companion to Syntax, Second Edition* 1–48.

²This is Ogihara's gloss for *ta-ra*. Mizuno & Kaufmann (2018) glossed it as COND.

³"It strongly suggests that there were multiple occurrences of Saburo's coming here."

(Ogihara, 2014)

- Bjorkman, Bronwyn, & Claire Halpert. 2017. In an imperfect world: deriving the typology of counterfactual marking. In *Modality across syntactic categories*, ed. Ana Arregui, María Luisa Rivero, & Andrés Salanova, volume 63. Oxford University Press.
- Farkas, Donka F, & Kim B Bruce. 2010. On reacting to assertions and polar questions. *Journal of semantics* 27:81–118.
- von Fintel, Kai. 1998. The presupposition of subjunctive conditionals. In *The interpretive tract*, ed. Uli Sauerland & Orin Percus, volume 25. Massachusetts Institute of Technology MIT Working Papers in Linguistics.
- von Fintel, Kai. 2012. Subjunctive conditionals. In *The Routledge Companion to Philosophy of Language*, ed. Delia Graff Fara & Gillian Russell. Routledge.
- von Fintel, Kai, & Sabine Iatridou. 2020. Prolegomena to a theory of x-marking. *Ms. under review for Linguistics and Philosophy*.
- Grønn, Atle, & Arnim Von Stechow. 2009. Temporal interpretation and organization of subjunctive conditionals. *Ms. Unoversity of Oslo*.
- Iatridou, Sabine. 1991. Topics in conditionals. Doctoral dissertation, Massachusetts Institute of Technology.
- Iatridou, Sabine. 2000. The grammatical ingredients of counterfactuality. *Linguistic inquiry* 31.
- Iatridou, Sabine. 2009. Some thoughts about the imperfective in counterfactuals. In *Handout from Yale Imperfective Workshop, April*.
- Ippolito, Michela. 2013. *Subjunctive conditionals: A linguistic analysis*, volume 65. MIT Press.
- Karawani, Hadil, & Hedde Zeijlstra. 2013. The semantic contribution of the past tense morpheme in palestinian counterfactuals. *Journal of Portuguese Linguistics* 12.
- Khoo, Justin. 2015. On indicative and subjunctive conditionals. *Philosophers' Imprint* 15.
- Leahy, Brian. 2018. Counterfactual antecedent falsity and the epistemic sensitivity of counterfactuals. *Philosophical Studies* 175.

- Mackay, John. 2019. Modal interpretation of tense in subjunctive conditionals. *Semantics and Pragmatics* 12.
- Mari, Alda, & Paul Portner. 2018. Mood variation with belief predicates: Modal comparison in semantics and the common ground. *Manuscript, ENS and Georgetown University* .
- Mizuno, Teruyuki, & Stefan Kaufmann. 2018. Past-as-past in japanese counterfactuals. In *Proceedings from the Annual Meeting of the Chicago Linguistic Society*, volume 54, 309–323. Chicago Linguistic Society.
- Nevins, Andrew Ira. 2002. Counterfactuality without past tense. In *Proceedings of the North East Linguistic Society*. GLSA.
- Ogihara, Toshiyuki. 2014. The semantics of ‘-ta’ in japanese future conditionals. *The art and craft of semantics: a Festschrift for Irene Heim* 2:1–21.
- Romero, Maribel. 2014. Fake tense in counterfactuals: A temporal remoteness approach. *The art and craft of semantics: A festschrift for Irene Heim* 2.
- Sameri, Motahareh, & Gholamhossein Karimi-Doostan. 2019. Embedded tense interpretation and sequence of tense in persian. *Lingua* 226:1–19.
- Schulz, Katrin. 2014. Fake tense in conditional sentences: A modal approach. *Natural Language Semantics* 22.
- Stalnaker, Robert C. 1975. Indicative conditionals. *Philosophia* 5.
- Tsilia, Anastasia. 2021. Embedded Tense: Insights from Modern Greek .