

THE SYNTAX OF INVERTED CONDITIONAL ANTECEDENTS

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1 Introduction

This talk is about **conditional inversion (CI)**, the marking of conditional antecedents by inversion of the tensed verb with the subject:

- (1) English
 - a. **If** I **had** known, I would have acted differently.
 - b. **Had** I known, I would have acted differently.

- (2) German ¹
 - a. **Wenn** Hans **kommt** dann geht Susanne.
if Hans comes then goes Susan
 - b. **Kommt** Hans dann geht Susanne.
comes Hans then goes Susanne.
“If Hans comes, Susan goes.”

- (3) Russian ²
 - a. **Esli** by my **vyexali** vchera, my by uzhe priexali.
if BY we left yesterday, we BY already arrived
 - b. **Vyexali** by my vchera, my by uzhe priexali.
left BY we yesterday, we BY already arrived
“If we had left yesterday, we would already have arrived.”

There is a (typological) correlation between CI and **counterfactuals** (Iatridou and Embick, 1994):

- **All** languages that allow CI allow it in counterfactual antecedents.
- Only a **subset** of these allow it in indicative antecedents as well.
- In languages that allow CI in both, indicative CI is often more restricted.

Proposal:

If we take this correlation **seriously**, and frame it syntactically in terms of a motivated Probe-Goal framework, we shed light on **both** CI and counterfactuals.

¹Example (2), p. 190, Iatridou and Embick (1994).

²Alya Asarina, p.c.

The details: an outline

- The existence of CI shows that there are (at least) **2** ways to form a structure that can be semantically interpreted as a conditional antecedent:
 1. Use of *if*.
 2. Movement of a tensed verb to C^0 (in the absence of *if*).
- **However:** Syntax will not move items spontaneously, even if that movement is semantically necessary.
 - Option 2 is therefore only possible if there is an independent syntactic motivation for movement: Agree between T^0 and C^0 .
 - This Agree relation will *always* be available in (past-marked) counterfactuals, but only *sometimes* in non-counterfactuals.

2 Inversion in counterfactual antecedents

2.1 Motivating verb movement in conditional antecedents

Two questions about conditional inversion:

1. Why is movement of the verb required in the absence of *if*?
2. What syntactically licenses this movement?

First question first: what might go wrong in a conditional antecedent that lacks *if*?

- Two interface motivations for verb movement:
 - It could fulfill phonological (PF) requirement to fill C^0 .
 - It could fulfill a semantic (LF) requirement for the creation of the semantics of of a conditional antecedent.
- Assume that the second of these is correct: in this case, the common view that *if* is semantically vacuous cannot be correct, because something must go wrong in its absence – declarative clauses without any element in C^0 cannot function as conditional antecedents.
- Adopting an alternate proposal along the lines of Schein (2003), Schlenker (2004), Bhatt and Pancheva (2006): Conditional antecedents are (plural) **definite descriptions of worlds**.
- Schlenker (2004) specifically proposes that *if* is the equivalent of the definite determiner *the*, but applied to worlds rather than individuals.

Thus, the absence of *if* would prevent the creation of the definite description required for a conditional antecedent.

- In the nominal domain, however, in the absence of *the* we can create definite descriptions by **movement**: free relatives. Suppose that conditional inversion represents the equivalent for definite descriptions of worlds: movement of a world argument itself, i.e. **head movement** from T^0 to C^0 , could create the required abstraction relation for a relativized structure.
- **Thus**: In the absence of *if*, conditional inversion creates a relativized structure interpretable as the definite description required for a conditional antecedent.

Second question second: given a semantic requirement that movement occur, is there a **syntactic** motivation for movement?

- There's a question in syntax about whether interface requirements can *directly* motivate syntactic processes, or whether they depend on syntax-internal mechanisms.
- It is possible that even movement required by the interfaces does not come 'for free': syntactic movement requires a syntactic motivation (Chomsky, 1995).³
- A syntactic motivation for movement is **Agree** between two elements. If conditional inversion requires an Agree relation between T^0 and C^0 , for what feature might they be Agreeing?

The link between CI and **counterfactual** conditionals suggests that we start looking for a movement-motivating feature in the domain of counterfactuals.

- Given that the *semantic* motivation for CI proposed above exists in both indicative and counterfactual antecedents, a *syntactic* basis for movement may account for the association between CI and counterfactuals.

2.2 Establishing the link between CI and counterfactuals

Iatridou and Embick (1994) give cross-linguistic evidence that supports a link between CI and counterfactuals: Table 1, repeated from their paper, shows that no language allows CI in indicatives while disallowing it in counterfactuals:

³For example, Szabolcsi (2004) argues that positive polarity items are semantically required to outscope negation, but can only move to do so when **independently** able to move.

	Counterfactuals	Indicatives
English	+	-
German	+	+
Dutch	+	+
Yiddish	+	+
Icelandic	+	+
Swedish	+	+
Old English	+	+
Middle English	+	+
Greek	-	-
French	(-)	-
Italian	+	-
Spanish	-	-
European Portugese	+	-
Romanian	+	-
Galician	(-)	-
Russian	+	(+)
Bulgarian	+	-
Polish	(-)	-
Breton	+	(-)
Estonian	+	(?)

Table 1: Crosslinguistic availability of CI⁴

Moreover, they show that in languages with CI in both types of antecedents, inverted *counterfactual* antecedents are less restricted in their distribution.⁵

	Initial	Final
German	count. & indic.	count.
Dutch	count. & indic.	count.
Yiddish	count. & indic.	–
Icelandic	count. & indic.	count & indic.
Old English	count. & indic.	count. & (indic.)
Swedish	count. & indic.	count.

Table 2: Initial/final asymmetries in CI

Conclusion:
Counterfactuals are the core case of conditional inversion.

⁴The majority of this table is repeated from Iatridou and Embick (1994), p. 191. Added here are Breton (Schafer, 1995) and Estonian (Külmoja, 2005).

⁵Table 2 shows a subset of the data from Iatridou and Embick (1994, p.192), showing only those languages that allow both indicative and counterfactual inversion in the first place. Considered on their own, counterfactual inverted antecedents also show a cross-linguistic preference for initial position.

2.3 Capitalizing on the link to counterfactuals

Recall the question: Are there features whose Agree relation in counterfactuals could motivate T^0 to C^0 movement?

Yes: Counterfactual past morphology.

It is well-known that many languages mark counterfactual antecedents with a “fake” past tense that is not interpreted temporally, but has been proposed to be interpreted **modally** (Steele, 1975; James, 1982; Iatridou, 2000):

- (4) Evidence for “fake” counterfactual past: present- and future-oriented adverbs with past-tense morphology:
- a. If you **were** outside **right now**, you would have gotten frostbite.
 - b. If the students **left tomorrow**, they might miss the snowstorm.⁶

Iatridou (2000) proposed that this “past” feature is actually an **exclusion feature**, located in T^0 but able to be interpreted *either* temporally or modally.

Proposal: Counterfactual “past” is interpreted not in T^0 but in the left periphery. It agrees with T^0 , resulting in the “past” inflection on the main verb.

The difference in its syntactic position is what results in its different interpretation: in the left-periphery, “past” is interpreted as indicating remoteness of **worlds**, rather than of times.⁷

What is this “past” feature?

Ritter and Wiltschko (2009, 2010): What we think of as “tense” is really a function of clausal anchoring; the same basic feature ($[\pm \text{coincidence}]$) heads clauses in all languages, but this feature may index different deictic properties in different languages.

In familiar European languages, obligatory features index the *time* of situations.

In (Halkomelem) Salish, similarly obligatory features index the *location* of situations.

In Blackfoot, obligatory features index the *participants* in situations.

- Ritter and Wiltschko (2010) extend this to counterfactual “past”, proposing that counterfactual C^0 can value $[-\text{coincidence}]$ on T^0 . Formalizing this slightly differently:

$[\pm \text{coincidence}]$ in T^0 : The time (or location, or participants) of the *vP* situation do/don’t coincide with the time (or location, or participants) of the utterance/matrix situation.

$[\pm \text{coincidence}]$ in C^0 : The **world** of the clause does/doesn’t coincide with the **world** of the utterance/matrix situation.

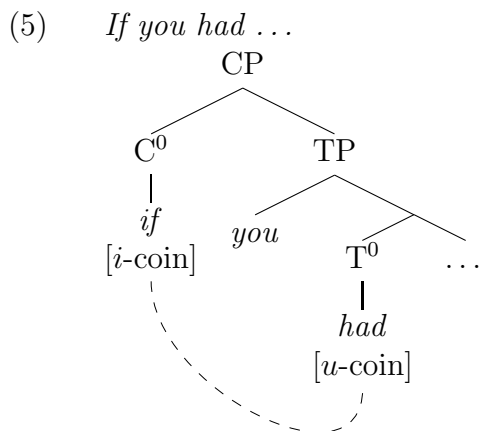
⁶Technically this is not a counterfactual, but a future-less-vivid.

⁷This departs from analyses such as Ippolito (2003) and Arregui (2009), who both propose, though in slightly different ways, that the past of counterfactuals is still a *temporal* past.

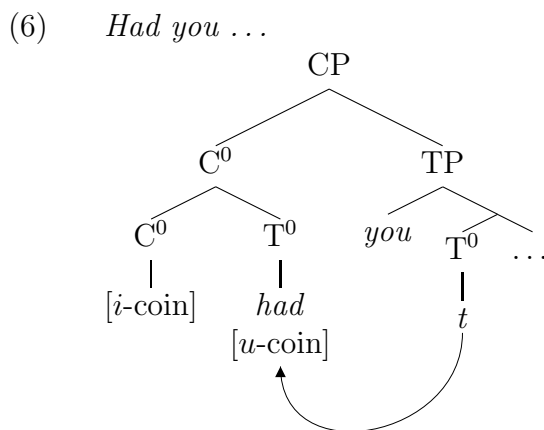
- What is critical for the application to CI is that a counterfactual [-coincidence] feature interpreted in C^0 is **the same feature** as the feature ordinarily responsible for temporal morphology and interpretation.

Applying this to the syntax of CI:

- In an ‘ordinary’ (non-inverted) counterfactual with *if*, this “past” [-coincidence] feature (assumed for concreteness to occur on counterfactual C^0) Agrees with its uninterpretable counterpart on T^0 , but has no consequences for movement due to the presence of *if*.⁸



- *If* is not obligatory, however, as existence of counterfactual inversion shows.
- In the absence of *if*, C^0 will be empty and the Agreement between T^0 and C^0 will permit raising of the tensed verb:



⁸This requires a framework in which interpretable features can act as Probes. This is possible either in a framework such as (Pesetsky and Torrego, 2001, 2002), in which valuation and interpretability are divorced from one another (such that interpretable but unvalued features can act as Probes), or one such as implicitly adopted by Zeijlstra (2008), in which even valued interpretable features can function as Probes.

Interim Summary:

In counterfactuals, T^0 and C^0 Agree for [-coincidence] (“past”). This Agree relation provides the syntactic basis for head movement from T^0 to C^0 when this is required to generate the semantics of a conditional antecedent (in the absence of *if*).

The evidence for the association of modally-interpreted “past”/[-coincidence] with a left-peripheral position so far comes entirely from the existence of CI in counterfactuals.

Is there independent evidence for this association?

2.4 Further evidence from Turkish counterfactuals

Turkish counterfactual morphology provides independent evidence that counterfactual “past” is located **not** in T^0 but instead in a higher structural position.

Conditional antecedents in Turkish are marked by a conditional suffix on the main verb (*-(y)sa*).

- In **indicative** (temporally past) antecedents, this morpheme occurs to the *right* of the past tense marker:

(7) Indicative: **V-past-cond**

Dün gece Can erken yat-**di-ysa** sabah erken kalk-abil-ir.
 Last night John early sleep-Past-COND morning early get-up-MOD-Past
 If John went to bed early last night, he can get up early this morning.

- In **counterfactual** antecedents, the conditional suffix occurs to the *left* of the past tense marker (Aygen, 2004):

(8) Counterfactual: **V-cond-past**

Dün gece Can erken yat-**sa-ydı** sabah erken kalk-ar-dı.
 Last night John early sleep-COND-Past morning early get-up-AOR-Past
 If John had gone to bed early last night, he would have got up early in the morning.

- Assuming some version of the Mirror Principle (Baker, 1985), the contrast between (7) and (8) provides a reason to think that the past morphology we see in counterfactual antecedents is in a *structurally different position* than ordinary temporally-interpreted past morphology.
- In fact, we can derive these different morpheme orders using exactly the analysis of conditional antecedents proposed above, if we assume that the Turkish ‘past’ morpheme is *morphologically* interpreted in the same location in which it is *semantically* interpreted.

3 Extension to non-counterfactuals

Having now proposed an account of conditional inversion in **counterfactuals**, we now turn to the availability in some languages of conditional inversion in **indicatives**

There are only a subset of languages in which conditional inversion is possible in indicative antecedents, as shown by the following extract from Table 1:

	Counterfactuals	Indicatives
German	+	+
Dutch	+	+
Yiddish	+	+
Icelandic	+	+
Swedish	+	+
Old English	+	+
Middle English	+	+
(Russian)	+	(+)

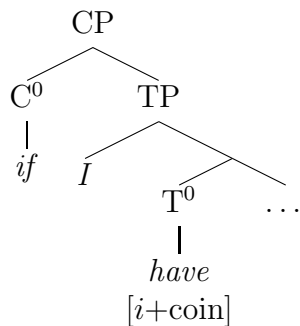
Table 3: Languages with both indicative and counterfactual inversion

Above it was suggested that, in the absence of *if*, movement of the main verb is required to create the abstraction required of conditional antecedents, **but this movement cannot occur without syntactic motivation.**

With just the tools and assumptions we have in place so far, this predicts no movement in indicative antecedents.

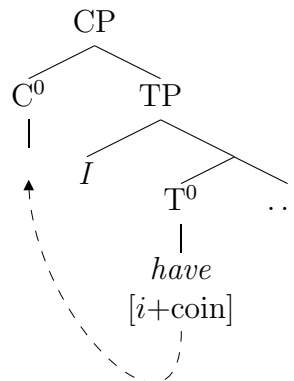
- (11) When *if* is present, no Agreement occurs but this is not a problem, because *if* creates the required abstraction:

If I have ...



- (12) When *if* is absent, however, the lack of Agreement between T^0 and C^0 is a problem for indicatives: movement to C^0 is semantically required, but nothing motivates it.

Have I ...



However if some other process resulted in movement, the requirement to move T^0 to C^0 would be satisfied.

- Iatridou and Embick (1994) propose that CI in indicative antecedents should be linked to the availability of **narrative inversion** in the relevant Germanic languages.

Thus: inversion in indicative conditionals is restricted because indicative antecedents do not come automatically with an Agree relation between T^0 and C^0 .

Moreover, if some **morphological** feature other than “past” [-coincidence] were to result in agreement between T^0 and C^0 , the absence of [-coincidence] would not be fatal to inversion in indicative antecedents.

- This is plausibly the case for ‘indicative’ CI in Icelandic (as well as in Old English), where inversion in non-counterfactual conditionals requires the use of subjunctive morphology (as in (13b)), which is not possible in an uninverted conditional (as shown by (13d)).

- (13)
- Ef hann hefur faridh, eg kom⁹
if he has.PRES.IND gone, I come
“If he has gone, I will come.”
 - Hafi hann faridh, eg kom
has.PRES.SUBJ he gone, I come
 - *Hefur hann faridh, ...
has.PRES.IND he gone
 - *Ef hann hafi faridh, ...
if he has.PRES.SUBJ gone

If subjunctive, like counterfactual [-coincidence], is associated with the left periphery (as seems likely given its association with irrealis modality), then Agreement between it and the tensed verb will provide a basis for verb movement.

⁹Example from Iatridou and Embick (1994).

4 Conclusion

This talk has proposed that if we look closely at the connection between CI and counterfactuality, we can cast light on the structures involved in both:

- The typological restriction of CI to counterfactuals suggests that the “fake past” of counterfactuals is associated with the left periphery, where it is interpreted modally (cf. Ritter and Wiltshko, 2010).
- With a counterfactual feature in C^0 , we can **motivate** the head movement of CI via Agreement between T^0 and C^0

Implications:

- This indirectly supports a particular analysis of antecedent *if*-clauses: for verb movement to be semantically required, *if* must have a semantics that can be replicated by movement-based abstraction.
- Similarly, the motivation for CI advanced here requires that head movement be able to have semantic consequences (as argued for by head movement can have semantic consequences (as in Lechner, 2007 and others, against Chomsky, 2000, et seq.)

Further topics for investigation:

- Associations between CI and focus: inverted antecedents do not allow focus, for example by elements such as *only* and *even* (Iatridou and Embick, 1994).
- External syntax of inverted antecedents: limited to initial position in some languages (Iatridou and Embick, 1994).
- Restriction of CI in contemporary English: only possible with *had*, *were*, and *should*. Unlike other cases of T^0 to C^0 movement, does not allow *Do*-support.

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