

In an imperfect world: deriving the typology of counterfactual marking*

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1 Introduction

Counterfactual conditionals in many languages are marked by “fake” temporal inflection: past tense and/or imperfective morphology.¹

(Anderson, 1951; Hale, 1969; Isard, 1974; Steele, 1975; Lyons, 1977; James, 1982; Palmer, 1986; Fleischman, 1989; Iatridou, 2000; Van Linden and Verstraete, 2008)

(1) English: CF marked by **past**

- a. If I **knew** the answer **now**, I would tell you.
- b. If I **left tomorrow**, I would arrive next week.²

(2) Greek: CF marked by **past imperfective**

- a. An efevyes avrio θa eftanes eki tin ali evdomaða
if leave.PST.**IMPF** tomorrow FUT arrive.PST.**IMPF** there the other week
'If you left tomorrow, you would get there next week.'
- b. *An efiyes avrio θa eftases tin ali evdomaða
if leave.PST.**PFV** tomorrow FUT arrive.PST.**PFV** the other week

(Iatridou, 2000, ex. (21))

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¹Or an analogous INFL-related item. Nevins (2002) points out that in Burmese, which lacks tense marking, counterfactuality is encoded with a distal marker. Ritter and Wiltschko (2009, 2010) make a similar observation about CFs in Salish, and claim that the proximal/distal marking is encoded by INFL.

²This example is technically not a counterfactual conditional, but a **future less vivid** (FLV). These future-oriented conditionals share morphological and syntactic properties with true counterfactuals, and the two will be treated together here.

Puzzle: Why do some languages mark CFs with past *imperfective*?

Fake past tense has been well-documented and widely investigated (Anderson, 1951; Hale, 1969; Steele, 1975; James, 1982; Palmer, 1986; Fleischman, 1989; Iatridou, 2000; Van Linden and Verstraete, 2008, a.o.).

Some proposals analyze fake past as the **locus** of CF semantics. . .

- by proposing that “past” simply marks remoteness, either temporal or modal (Steele, 1975; Iatridou, 2000; Ritter and Wiltschko, 2010).
- by deriving CF meaning from a purely temporal past (Ippolito, 2002; Arregui, 2009).

Fake imperfective aspect in CFs is less well understood.

It has been proposed that imperfective – and not perfective – is linked to CFs. . .

- because it is a cross-linguistically **default** aspect (Iatridou, 2009),
- because *perfective* is incompatible with CFs (Arregui, 2004),
- or because imperfective (like past) contributes to the semantics of CFs (Ippolito, 2004; Ferreira, 2011).

In this talk we demonstrate that this puzzle stems from an **incomplete typology** of temporally-marked CFs

Broader temporal CF typology: 2 main types of languages

1. **Past CF languages:** require past tense – and nothing else – as a CF marker.

3 subtypes:

- (a) Languages that *appear* to also require imperfective (Iatridou, 2000; Arregui, 2009; Ippolito, 2004)
- (b) Languages that *appear* to also require perfective (Halpert and Karawani, 2012; Karawani and Zeijlstra, 2010)
- (c) Languages that allow *either* perfective or imperfective. (Iatridou, 2009)

2. **Imperfective CF languages:** require imperfective aspect as a CF marker – and nothing else.

2 subtypes:

- (a) Languages that *appear* to also require past tense.
- (b) Languages that *do not appear* to require past tense.

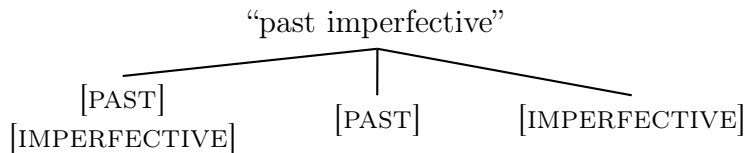
Proposal: temporal marking in CFs arises from a **single** CF operator.

This element can be realized by *either* aspect or tense (or by dedicated CF morphology).

The **illusion** of both tense *and* aspect in a single CF arises because temporal morphosyntax can be **underspecified** for either aspect or tense.³

A morpheme that yields a complex meaning, e.g., “past imperfective”, **could** be specified for both tense and aspect, but **may** be specified for only one.

(3) **Possible syntactic specifications for a “past imperfective” morpheme**



This simplified typology **constrains** possible analyses of CF inflection

2 Past CF languages

The apparent puzzle of fake imperfective has arisen largely on the basis of CF marking in Greek and the Romance languages.

- In these languages, CFs are always marked with past-imperfective morphology. “Real” tense and aspect are suppressed:

(4) **French CFs: past imperfective (no real tense/aspect)**

- a. Si Pierre partait demain, il arriverait là-bas le lendemain
if Pierre left.PAST.IMPF tomorrow he would arrive there the next.day
'If Pierre left tomorrow, he would arrive there the next day.'
- b. *Si Pierre est parti demain, il serait arrivé là-bas le lendemain
if Pierre is left.PFV tomorrow he would-arrive there the next.day

In a broader typology, however, this direct association between CF and imperfective breaks down.

³This proposal is naturally framed within any morphological framework that allows morphemes to be featurally underspecified, such as Distributed Morphology (DM) (Halle and Marantz, 1993, 1994; Harley and Noyer, 1999).

In **Zulu** we find that CFs are marked by the past imperfective morpheme *be-* (5a), but that the **perfective** suffix *-ile* is **also possible** in perfectly-interpreted CFs (5b) (Halpert and Karawani, 2012).

(5) **Zulu CFs: past imperfective required (real perfective possible)**

- a. [ukuba **be-** ngi- gula] be-gi-zo-thimula
 if PAST.IMPF- 1SG- be.sick IMPF-1SG-FUT-sneeze
 ‘If I had been sick, I would have sneezed.’
- b. [ukuba **be-** ngi- thimul- **ile**] be-ngi-zo-dinga ithishi
 if PAST.IMPF- 1SG- sneeze- PFV IMPF-1SG-FUT-need 5tissue
 ‘If I had sneezed, I would have needed a tissue.’ (HK 2012, ex. (5))

In **Palestinian Arabic** (PA) we find that past **perfective** morphology marks CFs (6a) – though “real” aspectual morphology appears in imperfectively-interpreted CFs (the reverse of Zulu):

(6) **Palestinian Arabic CFs: past perfective (real imperfective possible)**

- a. [iza **ṭileʕ** halaʔ,] kaan b-iwsal ʕal waʔt la
 if leave.PAST.PFV now, be.PAST.PFV B-arrive.IMPF on the-time for
 l-muḥaadara
 the-lecture
 ‘If he left now, he would arrive on time for the lecture.’ (Halpert and Karawani, 2011, ex. (6a))
- b. [iza **kanno** **b-yitlaʕ** bakkeer kul yom,] kaan
 if be.PAST.PFV B-leave.IMPF early every day, be.PAST.PFV
 b-iwsal ʕa l-waʔt la l-muḥadaraat
 B-arrive.IMPF on the-time to the-lectures
 ‘If he were in the habit of leaving early, he would arrive to the lectures on time.’
 (Halpert and Karawani, 2011, ex. (19a))

In **Russian** (and other Slavic languages) past-marked CFs allow *both* imperfective and perfective – and do not require one particular aspect (Iatridou, 2000).

(7) **Russian CFs: past (real aspect possible)**

- a. Esli by Džon umer, my poxoroni-l-i by ego na
 if SUBJ John die.PFV.PST we bury.PFV-PST-PL SUBJ he.ACC on
 gor-e.
 mountain-LOC
 ‘If John died, we would bury him on the mountain.’
- b. Esli by Džon umira-l, s nim by-l by doktor.
 if SUBJ John die.IMPF-PST with he.INSTR be-PST SUBJ doctor
 ‘If John were dying, the doctor would be with him.’ (Sergei Tatevosov, p.c.)

These languages can be unified by assuming that they all mark CFs with (syntactically specified) PAST – and *only* PAST.

Any apparent requirement for particular aspectual marking is **illusory** – arising because one aspectual value is **unspecified** in the language.

This argument proceeds in **3 parts**:

1. Simple cases where tense and aspect are clearly morphologically distinct.
2. A more complex case: arguing that “past perfective” is underspecified for aspect in PA.
3. Extending the underspecification analysis: arguing that “past imperfective” is similarly underspecified for aspect in French.

2.1 Simple cases: morphologically distinct tense and aspect

- We have already seen that languages like Russian show full aspectual contrasts in CFs (data repeated in (8)):

- (8) a. Esli by Džon umer, my poxoroni-l-i by ego na
 if SUBJ John die.PFV.PST we bury.PFV-PST-PL SUBJ he.ACC on
 gor-e.
 mountain-LOC
 ‘If John died, we would bury him on the mountain.’
- b. Esli by Džon umira-l, s nim by-l by doktor.
 if SUBJ John die.IMPF-PST with he.INSTR be-PST SUBJ doctor
 ‘If John were dying, the doctor would be with him.’ (Sergei Tatevosov, p.c.)

- This is what we would expect for all languages, if CFs require only PAST.
- This possibility, we propose, arises from the morphological **independence** of past and aspectual morphology in Russian: aspectual contrasts are determined by a system of affixes, distinct from the realization of tense morphology.
- We find a similar independence in Zulu morphology.
- Past-marked CFs in Zulu require the prefix *be-*, traditionally described as the “past imperfective” morpheme:

- (9) [ukuba **be-**ngi-gula] be-gi-zo-thimula
 if **IMPF**-1SG-be.sick IMPF-1SG-FUT-sneeze
 “If I had been sick, I would have sneezed.”

- Indeed, *be-* is generally incompatible with the “past perfective” suffix *-ile*:

- (10) *Be- ngi- thimul- ile izolo.
 PAST.IMPF- 1SG- sneeze- PFV yesterday
 intended meaning: “I sneezed yesterday.” (HK 2012, ex. (19a))

- In CFs, however, Zulu does allow these morphemes to co-occur, resulting in a perfective interpretation for the CF:

(11) [ukuba **be-** ngi- thimul- **ile**] be-ngi-zo-dinga ithishi
 if PAST.IMPf- 1SG- sneeze- PFV IMPf-1SG-FUT-need 5tissue
 ‘If I had sneezed, I would have needed a tissue.’ (HK 2012, ex. (5))

- Conclusion: the “past imperfective” morpheme actually expresses only PAST (following Halpert & Karawani (2012)).
- Why can’t “past perfective” *-ile* mark CFs on its own?
- Proposal: *-ile* expressed only PERFECTIVE: it allows present-tense interpretations with verbs of instantaneous action (see Botne and Kerchner, 2000).⁴

(12) ngi- shabal- ele manje
 1SG- disappear- PFV now
 ‘I disappear now.’ (HK 2012, ex. (17a))

In these languages we see distinct morphology that is associated with PAST – and **not** associated with aspect. It is this morphology that is required in CFs.

In Zulu, additionally, we find an **underspecified** inflectional system. This gives rise to the **illusion** of imperfective aspect marking CFs.

	<i>description</i>	<i>syntax</i>		<i>marks CFs?</i>
		<i>tense</i>	<i>aspect</i>	
Russian	“past”	PAST	(+IMPf/PFV)	yes
Zulu	“past imperfective”	PAST	∅	yes
	“past perfective”	∅	PFV	no

2.2 A more complex case

Having seen the role of underspecification in Zulu CF marking, this section turns to the slightly more complex case of Palestinian Arabic.

We will see that PA marks CFs with past **perfective**, but that perfective is the underspecified aspect in this language (not imperfective as in Zulu).

- As we have already seen, PA requires “past perfective” morphology in CFs:

⁴It is generally true that perfective aspect has a default past interpretation (Dahl, 1985) – though in languages like Russian the (morphological) present perfective has a *future* interpretation)

(14) [iza **tleʃ** halaʔ,] kaan b-iwsal ʃal waʔt la
 if leave.PAST.PFV now, be.PAST.PFV B-arrive.IMPF on the-time for
 l-muħaadara
 the-lecture
 ‘If he left now, he would arrive on time for the lecture.’ (HK 2012, ex. (6a))

- Like Zulu, PA can also express real aspect in CFs,⁵ in which case fake CF past is marked via the auxiliary *kaan*.

Auxiliary *kaan* is inflected as though it were perfective, while real aspectual morphology occurs on the main verb:

(15) [iza **kanno** **b-yitlaʃ** bakkeer kul yom,] kaan b-iwsal
 if be.PAST.PFV B-leave.IMPF early every day, be.PAST.PFV B-arrive.IMPF
 ʃa l-waʔt la l-muħadaraat
 on the-time to the-lectures
 ‘If he were in the habit of leaving early, he would arrive to the lectures on time.’
 (HK 2012, ex. (19a))

In PA it is **perfective**, rather than imperfective, that appears to be required in CFs.

Our proposal: PA is just like Zulu and Russian (and English) – it marks CFs with PAST alone.

The “perfective” of the “past perfective” is **illusory**. The perfective interpretation arises only from the absence of IMPERFECTIVE in the syntax.

Independent evidence for illusory “perfective”:

- Karawani & Zeijlstra (2010) argue that “past perfective” morphology in PA corresponds to a tense operator, with no aspectual specification.
- Bjorkman (2011) argues that patterns of auxiliary use in Arabic can be most straightforwardly accounted for if the “past perfective” is syntactically (and morphologically) specified for a single inflectional value ([PAST]).
- Finally, the past *imperfective* in PA is periphrastic, and we find that the past *imperfective* auxiliary *kaan* in PA is morphologically *perfective*.

(16) kaanat tuktub
 be.PAST.PFV write.IMPF
 ‘She used to write.’ (HK 2012, ex. (12a))

No perfective interpretation is associated with sentences like (16): this demonstrates that perfective morphology can occur without any perfective *syntax*.

⁵PA can also mark real *tense*, by using a second instance of auxiliary *kaan*.

We are now in a position to extend the underspecification analysis, motivated for Zulu and Arabic, to account for the original puzzle of fake imperfective.

2.3 Extending the underspecification analysis

We began with the puzzle of the fake imperfective, repeated for French in (17):

- (17) **French CFs: past imperfective (no real tense/aspect)**
- a. Si Pierre partait demain, il arriverait là-bas le lendemain
 if Pierre left.PAST.**IMPF** tomorrow he would arrive there the next.day
 ‘If Pierre left tomorrow, he would arrive there the next day.’
- b. *Si Pierre est parti demain, il serait arrivé là-bas le lendemain
 if Pierre is left.PAST.**PFV** tomorrow he would-arrive there the next.day

- We argue that the apparent requirement for “past imperfective” marking arises because this morphology in fact reflects *only* syntactically specified PAST.
- Its imperfective interpretation arises due to the absence of a privative PERFECTIVE feature.

Independent evidence for illusory “imperfective”

- This proposal rests on the idea that “past imperfective” is specified simply as [PAST]. Evidence for this comes from the occurrence of “past imperfective” morphology in contexts where we would expect either perfective or no aspect at all.

Pluperfect (past perfect) auxiliaries provide such a context: these auxiliaries standardly occur with “past imperfective” morphology, as shown in ((18)) for French.

- (18) **French pluperfects: perfective interpretation, “imperfective” auxiliary**
- a. Les élèves avaient étudié.
 The students have.PAST.**IMPF** study.PTCP
 “The students had studied.”
- b. L’hiver était arrivé
 The-winter be.PAST.**IMPF** come.PTCP
 “Winter had come.”

- The imperfective morphology in ((18)), despite the *perfective* interpretations, suggests that **morphological** imperfective comes “for free” with past tense morphology.⁶

On this account, languages like French are distinguished from Arabic by specifying PERFECTIVE rather than IMPERFECTIVE in their aspectual system.

⁶The literary *passé antérieur* (*les élèves eurent étudié*), and the *passé surcomposé* (*les élèves ont eu étudié*) in French do involve apparently perfective auxiliaries. These forms, however, are limited to temporal adjuncts: consequently, we argue such auxiliaries could receive perfective features from a higher syntactic source, unlike the morphologically “imperfective” auxiliaries in (18).

They are distinguished from **both** Arabic and Zulu in lacking a strategy to realize the specified member of the perfective/imperfective contrast in CFs – in addition to CF (PAST) morphology.

2.4 Interim Summary

The following table summarizes the claims of this section:

(19)

	<i>description</i>	<i>syntax</i>		<i>marks CFs?</i>
		<i>tense</i>	<i>aspect</i>	
Russian	“past”	PAST	(+IMPF/PFV)	yes
Zulu & French	“past imperfective”	PAST	∅	yes
	“past perfective”	∅ ⁷	PFV	no
Palestinian Arabic	“past imperfective”	∅	IMPF	no
	“past perfective”	PAST	∅	yes

- This is a simplified typology of temporal marking in CFs: in all of these languages, only PAST tense is required to mark CFs.
- Aspect is implicated to the extent that certain tense morphemes may be *underspecified* for aspect.
- By investigating the actual syntactic specifications of temporal morphology in these languages, we can show that even when particular aspectual *meanings* appear to co-occur with the required PAST tense, this aspect is not actually specified in the syntax.

3 Imperfective CF languages

The languages discussed in the previous section all involve a clear past tense morpheme.

Question: Do any languages actually require true syntactic aspectual marking in CFs?

- For example, a language in which aspect is marked using a separate morpheme from tense – and CFs require a particular aspect morpheme.

Answer: We do find such languages, but they appear to use fake aspect *alone* to mark CFs.

In these languages, it appears that **imperfective** morphology is required in CF constructions.

⁷Given the present tense form of the “past perfective” auxiliary in many Romance languages, it may be that the “past perfective” is actually syntactically specified for present tense, rather than no tense at all.

3.1 Hindi: imperfective aspect, no apparent past tense

In **Hindi**, CFs are marked using *habitual* morphology, without any apparent past tense.

- (20) a. Agar vo macchlii khaa-**taa** ho-**taa**, to use yeh biimaarii nahiiN
if he fish eat-HAB be-HAB then he.DAT this illness NEG
ho-tii
be-HAB.FEM
'If he ate fish (on a regular basis), then he would not have this disease.'
b. Agar vo gaa rahaa ho-**taa**, to log wah wah kar rahe ho-te
if he sing PROG be-HAB then people wow wow do PROG be-HAB
'If he were singing, people would be going 'wow wow'.' (Iatridou 2009, (15),
(12))

- As Iatridou (2009) and Bhatt (1997) discuss, the habitual marker *-taa* appears in all CF constructions in Hindi.
- This morpheme is clearly specified for aspect but not for tense: outside of CF conditionals, *-taa* must co-occur with either a past or present tense auxiliary:

- (21) a. Ram roj ghar jaa-**taa** hai
Ram every.day home go-HAB PRES
'Ram goes home every day.'
b. Ram roj ghar jaa-**taa** thaa
Ram every.day home go-HAB PST
'Ram used to go home every day.'
c. *Ram roj ghar jaa-**taa**
Ram every.day home go-HAB
(Bhatt 1997, ex., (11d))

- Iatridou (2009), following Bhatt (1997), assumes that Hindi is a language that requires (a covert) fake past in CFs, but as the data above show, it is not clear that this is the case.
- There is therefore no morphological correspondent to a past tense operator, and no independent means of motivating a covert operator.
- It therefore appears that Hindi is a language that marks CFs with imperfective (habitual) aspect alone.

3.2 Persian: imperfective aspect, illusory past tense

In **Persian**, CFs are marked with imperfective verbal prefix *mi-* (Iatridou 2009, data p.c. from Arsalan Kahnemuyipour):

- (22) a. age fardaa **mi**-raft hafte-ye ba'd **mi**-resid
 if tomorrow DUR-go.PAST week-EZ next DUR-arrive.PAST
 “If he left tomorrow, he would arrive next week.”
 b. age alaan javaab-e so'aal-o **mi**-dunest-am, xeyli eftexaar
 If now answer-EZ question-acc. DUR-know.PAST-1SG, a lot pride
mi-kard-am
 DUR-do.PAST-1SG
 “If I knew the answer now, I would be very proud (lit.: take pride a lot)”

- This morphology also occurs in non-counterfactual imperfectives:

- (23) a. man har ruz raah **mi**-rav-am
 I every day path DUR-go.NONPST-1sg
 “I walk every day”
 b. man daar-am raah **mi**-rav-am
 I have-1sg path DUR-go.NONPST-1sg
 “I am walking (now)”

- While Hindi showed no evidence of [PAST] morphology in CFs, Persian uses the so-called “past stem” in CFs ((22)), though non-CF imperfectives can take the “non-past” stem ((23)).
- The use of the “past stem” in CFs might suggest that Persian is a language in which CFs require *both* PAST *and* syntactically specified (non-illusory) IMPERFECTIVE morphology.
- On the other hand, just as we saw *illusory aspect* in Past CF languages, the “pastness” of the “past stem” here may also be illusory.

Independent evidence for illusory “past”: the “past” stem does occur in some limited non-past contexts, in particular the formal future form in ((24)):

- (24) **“Past stem” in formal future form**
 a. Sârâ daru-hâ-yaš râ xâh-ad xord
 S. medicine-PL her-ACC want.3SG eat.PAST
 “Sârâ will have her medicine.” (Taleghani 2008, ex. (30))
 b. xâh-am raft
 want-1SG go.PAST
 ‘I will go.’ (Maziar Toosarvandani, p.c.)

(25) “Past stem” with prospective interpretation (colloquial Farsi)

- a. raft-am
go.PAST-1SG
‘I went’ / ‘I’m about to go.’ (Maziar Toosarvandani, p.c.)

- The use of the “past” stem in these contexts suggests that this stem does not actually convey syntactic [PAST] tense.

Open question: Even if the “past” stem does not encode syntactic [PAST], its occurrence in CF conditionals still must be accounted for (since the imperfective marker typically occurs with a “nonpast” stem).

- It is possible that the explanation lies in the use of “past” stems in conditional constructions more generally (Toosarvandani, p.c.), though this remains a question for future research.

3.3 Taking Stock

- In this section, we have expanded the typology of temporal marking in CFs: we have seen languages where [IMPERFECTIVE] aspect is unambiguously implicated in CFs.
- True syntactic [PAST] does not seem to play a role.
- As with the Past CF languages, it appears that in these languages, only one temporal ingredient is required to mark counterfactuality.

4 Discussion

We have shown that languages that use temporal morphology to mark CFs *either* require [PAST] *or* [IMPERFECTIVE] – but not both.

The illusion of both tense and aspect marking arises from independent properties of a language’s morphosyntactic system – the underspecification of certain morphological elements.

Two further important points:

- CFs can mark “real” tense and aspect even in the presence of “fake” morphology: Zulu and Arabic (Halpert and Karawani, 2012), Hindi (Bhatt, 1997).
- There is no single tense or aspect that is required in all languages that mark CFs with fake temporal morphology.

These generalizations have important implications for the theory of CF marking.

4.1 Analyses incompatible with revised typology

The improved typology we have reached here is **incompatible** with some analyses that have been proposed in the past.

1. Counterfactuality is **not** derived from past meaning.

Languages that mark CFs with imperfective morphology alone – such as Hindi and Persian – cannot be accounted for by proposals in which temporal past is crucially involved in the composition of CF meanings (Ippolito, 2004; Arregui, 2009; Ferreira 2011)

2. Counterfactuality is **not** dependent on imperfective.

Languages that allow or require perfective marking in CFs – such as Arabic or Russian – are incompatible with proposals that imperfective aspect is required in addition to past to compose CF meanings (Ippolito, 2004; Ferreira, 2011).

Such languages also create a problem for the proposal that perfective aspect is generally incompatible with CFs (Arregui, 2004).

3. CFs **do** allow “real” tense and aspect marking.

Some authors have proposed that CFs necessarily have no **real** tense or aspect (e.g. Ferreira, 2011; Arregui, 2009) – ordinary temporal semantics are repurposed for CF interpretations.

Languages like Zulu, Arabic, Russian, and Hindi are all counterexamples to this: all allow real temporal marking, sometimes “doubled” with fake temporal marking.

4.2 Analyses favoured by revised typology

The typology of CF marking described in this paper does argue for certain analytical approaches:

1. Counterfactuality associated with a **single** position.

The fact that only one temporal category (tense **or** aspect) is used to mark CFs suggests a single syntactic position associated with CF meaning.

This is in line with the view that there is a CF operator which can be spelled out either:

- by a dedicated CF morpheme or
- by a morpheme that also happens to spell out PAST or IMPERFECTIVE

Once this single choice is made, other properties (e.g. the illusion of secondary marking, compatibility with “real” inflection) fall out from broader properties of the language’s inflectional morphosyntax.

2. CF-linked position is **higher** than T^0 or Asp^0 .

From the fact that Zulu, Arabic, and Hindi allow CF inflection to co-occur with “real” tense/aspect, we can conclude that CF inflection is associated with a position **distinct** from T^0 or Asp^0 .

There is also reason to think that this position is **higher** than both T^0 and Asp^0 : in Arabic and Hindi, fake CF marking occurs on the highest verb or auxiliary, while real temporal marking is lower.

Even in languages without this doubling, there is evidence that CF is associated with a high – left peripheral – position:

Turkish CF marking: The past morpheme in Turkish conditionals is structurally higher when CF-linked than when temporally interpreted (Aygen 2004).

CF-linked Conditional Inversion (CI): Some languages allow conditional antecedents to be marked by **inversion** of the finite verb to C^0 :

- (26) a. If I had known ...
b. Had I known ...

Iatridou and Embick (1994) show that CI shows a cross-linguistic link to CFs – outside the V2 Germanic languages it is **only** possible in CF antecedents.

This pattern again suggests that CFs have some link to a left-peripheral position, possibly the same position that is the source of “fake” tense/aspect.

3. CF operator shares featural content with PAST.

Many authors have suggested that CFs share some abstract meaning with past tense, at least metaphorically (Fleischman, 1989; James, 1982; Steele, 1975, a.o.).

Some have suggested more concretely that CF and past tense share a **feature** in common (Iatridou, 2000; Wiltschko, 2009; Ritter and Wiltschko, 2010) – such a feature could form the basis of post-syntactic insertion of a single morpheme in both contexts.

Ritter and Wiltschko (2009, 2010): “tense” is really a general function of clausal anchoring ([\pm coincidence]), but may index different deictic properties in different languages.

- In familiar European languages: indexes the *time* of situations.
- In (Halkomelem) Salish: indexes the *location* of situations.
- In Blackfoot: indexes the *participants* in situations.

They propose to extend this to CF marking, proposing that [- coincidence] in C^0 establishes non-coincidence of the **world** of the clause, rather than its time (or location, or participants).

5 Conclusions

This paper has broadened the descriptive typology of tense/aspect marking in CFs:

- Languages can mark CFs with **either** PAST **or** IMPERFECTIVE – but not both.
- Morphemes can be **underspecified** for either tense or aspect, and in non-CF contexts receive a canonical interpretation for their underspecified value.

Some questions for future research

1. What is the featural overlap between CF and IMPERFECTIVE, paralleling the [-coincidence] overlap between CF and PAST?
2. Similarly, for languages that have both PAST marking and IMPERFECTIVE marking, what determines which morpheme appears in CFs?
3. What allows some languages to express both fake CF and real temporal marking, while others cannot?
 - What limits the expression of real temporal marking even in languages that do express simultaneous real and fake?
e.g. Zulu and Hindi allow real aspect, but not real tense, in CFs.

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