In search of (im)perfection: the illusion of counterfactual aspect[*]

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1   Introduction & Puzzle

Counterfactual conditionals in many languages are marked by **past tense** morphology. (Anderson, 1951; Hale, 1969; Isard, 1974; Steele, 1975; Lyons, 1977; James, 1982; Palmer, 1986; Fleischman, 1989; Iatridou, 2000; Van Linden and Verstraete, 2008)

(1) a. If I **knew** the answer **now**, I would tell you.
     b. If I **left tomorrow**, I would arrive next week.[1]

Puzzle: counterfactual conditionals (CFs) in many languages also require **imperfective** morphology (Iatridou, 2000):

(2) a. An efevɣes   avrio   θa eftanes   eki tin ali   evδomaδa
         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 efiɣes   avrio   θa eftases   tin ali   evδomaδa
         if   leave.PST.**PFV** tomorrow FUT arrive.PST.PFV the other week

                                                          (Iatridou, 2000, ex. (21))

- It has been argued that imperfective is **generally** required in CFs:

  - because imperfective makes a semantic contribution to CF interpretation (Arregui, 2009; Ippolito, 2004; Ferreira, 2011)

  - or for some non-semantic morphological/syntactic reason (Iatridou, 2000, 2009)

- We show that the apparent link between CFs and imperfective is actually **illusory**.

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[1]This 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.

The actual typology of aspect in CFs is broader: **3 types of languages**

1. Languages that require imperfective (past). (Iatridou, 2000; Arregui, 2009; Ippolito, 2004)

2. Languages that allow either perfective or imperfective (past). (Iatridou, 2009)

3. Languages that require **perfective** (past). (Halpert and Karawani, forthcoming; Karawani and Zeijlstra, 2010)

This paper brings these three patterns together into a **unified** account of aspect in CFs.

- We propose CFs in the relevant languages simply require PAST marking

- In languages where PAST is formally underspecified for aspect, marking a CF as PAST results in the occurrence of what looks like aspectual marking.

CF-linked aspect is a **morphological conspiracy**, arising from the requirement to mark **past** in CFs.

Roadmap:

§**2** Background: Typology of CF morphology

§**3** Outline of Proposal

§**4-6** Details of 3 Patterns

§**7** Discussion & Conclusions

2   Background: Morphological Marking in CFs

Recall: many languages mark counterfactuals with morphology that typically conveys purely temporal meanings.

Tense and aspect marking in CFs that does not seem to result in its ordinary temporal interpretation has been called "fake" (Iatridou, 2000).

Fake past 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).
    - or by deriving CF meaning from a purely temporal past (Ippolito, 2002; Arregui, 2009).

Fake *imperfective* in CFs has also been reported (Iatridou, 2000, 2009; Van Linden and Verstraete, 2008), but has received much less attention.

- Fake imperfective has been claimed to occur:
    - 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).

- These claims all rest on the assumption that fake aspect in CFs is always **imperfective**:
    - Following Iatridou (2000), Arregui and Ippolito assume that all CFs with fake past also show fake imperfective (if they have aspect at all).
    - Iatridou (2009) observes that some languages (e.g. Russian, Polish) allow **real** aspect in CFs, but maintains that when aspect is "fake" it is always imperfective.

- We show that the full cross-linguistic typology includes languages with fake **perfective** aspect in CFs.

- This motivates a **new** approach to aspectual morphology in CFs.

3   Implementing the proposal: 3 patterns of aspect in CFs

In this section we demonstrate that in addition to languages where imperfective or real aspect is required in CFs, there are languages that require **perfective**.

Broader typology of languages that mark CFs with fake past:

Pattern A:	**Greek, Romance, Zulu** Languages that also require **imperfective**.
Pattern B:	**Palestinian Arabic** Languages that also require **perfective**.
Pattern C:	**Russian, Polish** Languages that allow **real** perfective or imperfective aspect.

We argue: the apparent requirement for particular aspectual marking in CFs is an **illusion**.

- Rather, all these languages mark CFs with (syntactically specified) **past**.

- Morphemes that appear to convey both tense and aspect are actually **underspecified**: they encode **only** past.

- It is only in opposition to another morpheme specified for a particular aspectual value that these morphemes are canonically associated with an aspectual value of their own.

3.1 Our Proposal: Underspecified temporal morphology

As stated in the introduction, we propose that aspect in CFs arises from the need for PAST marking, in cases where temporal morphology is **underspecified** for either aspect or tense.

- This 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).

Proposal: morphology that conveys, e.g., "past imperfective" **can** be specified for both tense and aspect, but in some languages may be specified for only one.

- The apparent requirement for imperfective in CFs in Greek or Romance languages is merely a morphological reflex of the need to realize a true PAST feature.

- "Past imperfective" morphology in these languages actually expresses only PAST: imperfective interpretation arises only in opposition to a true PERFECTIVE morpheme.

- In CFs, this "past imperfective" morphology reflects only CF "past": it does not reflect syntactic IMPERFECTIVE features.

4 Pattern A: Imperfective is a component of Past

Analyses of fake aspect have stemmed from the puzzle of fake imperfective primarily in the context of Greek and Romance languages.

In these languages, we find that CFs are always marked with past-imperfective morphology, while "real" tense and aspect is suppressed:

(3)   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 aurait arrivé là-bas le lendemain
          if Pierre is   left.PAST.**PFV** tomorrow he would-arrive there the next.day

- We argue that this apparent requirement for "past imperfective" marking arises because the "past imperfective" is the only true exponent of PAST features in these languages.

- In contrast, "past perfective" expresses only PERFECTIVE features.

  - "Past perfective" morphology receives a past interpretation simply due to incompatibility between perfective and present tense (Dahl, 1985).

- The imperfective interpretation of the "past imperfective" arises due to the absence of a privative PERFECTIVE feature.

	'past imperfective'	'past perfective'
SYNTAX		
TENSE	+PAST	$\emptyset$
ASPECT	$\emptyset$	+PERFECTIVE
MORPHOLOGY	*-ait*	*être/avoir* + ptcp
(French)	(*imparfait*)	(*passé composé*)

Table 1: *Feature specifications for Pattern A*

Independent **evidence for underspecified temporal morphology?**

- Our 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.

  Past perfect(ive) auxiliaries provide such a context: these auxiliaries standardly occur with "past imperfective" morphology, as shown in (4) for French.

(4)   **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 (4), despite the *perfective* interpretations, suggests that **morphological** imperfective comes "for free" with past tense morphology.[2]

4.1   Zulu: "past imperfective" required, perfective possible

Zulu is another example of a Pattern A language.

We argue that it has the same temporal specifications shown in Table 1, but different organization of morphemes on the verb.

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[2]The literary *passé antéieur* (*les élèves* **eurent** *etudié*), and the *passé surcomposé* (*les élèves* **ont eu** *etudié*) 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 (4).

- In Greek- and Romance-type languages, we only see fake temporal morphology in CFs.

- Some accounts of CF temporal morphology claim that the lack of "real" temporal marking in CFs in these languages arises because CFs contain no "real" tense and aspect underlyingly (Arregui, 2009; Ferreira, 2011).

- Zulu, however, demonstrates that there **can** be real aspect in CFs.

  – Zulu appears to require "past imperfective" marking in CFs – the prefix *be-*, along the lines of the languages discussed above.

  – However, Zulu also allows a perfective suffix *-ile* to co-occur with this "fake imperfective" in perfectively inerpreted CFs:

(5) [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.'   (Halpert and Karawani,
      forthcoming, ex. (5))

- The two morphemes are normally incompatible (due to the redundancy of marking both PAST and PERFECTIVE when both are interpreted temporally):

(6) *Be-   ngi- thimul- ile   izolo.
      PAST.IMPF- 1SG- sneeze- PFV yesterday

                    (Halpert and Karawani, forthcoming, ex. (19a))

- Following Halpert & Karawani (forthcoming), we assume that the "past imperfective" morpheme in Zulu, as in Greek and Romance, is actually an exponent of PAST alone.

- At the same time, "past perfective" morphology in Zulu expresses only PERFECTIVE (see Botne and Kerchner, 2000).

(7) ngi- shabal- ele manje
      1SG- disappear- **PFV** now
      "I disappear now."   (Halpert and Karawani, forthcoming, ex. (17a))

What distinguishes Zulu from Greek and Romance is that PAST and PERFECTIVE do not compete for a single morphological "slot".

What Zulu demonstrates is that real PERFECTIVE and fake PAST features can both be realized on a single verb.

5   Pattern B: Perfective is a component of Past

Even in a system with underspecified morphology, it is not necessary that *imperfective* be the unspecified aspectual value for [PAST].

In principal, we could imagine a feature system like the following:

	'past imperfective'	'past perfective'
(SYNTAX)		
TENSE	∅	+PAST
ASPECT	+IMPERFECTIVE	∅

Table 2: *Feature specifications for Pattern B*

Our prediction: in such a morphological system, "past **perfective**" will mark CFs.

We show here that CFs in **Palestinian Arabic** bear out this prediction.

(8)   [iza **ţileʕ**   halaʔ,] kaan   b-iwsal   ʕal 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.'
         (Halpert and Karawani, 2011, ex. (6a))

Like Zulu, PA can express real tense and aspect in CFs in a separate position from fake past.

In PA the extra "slot" for tense/aspect morphology comes via an auxiliary *kaan*.

Auxiliary *kaan* is inflected as though it were perfective,[3] but appears to mark PAST alone, while real aspectual morphology occurs on the main verb:

(9)   [iza **kanno**   **b-yitlaʕ**   bakkeer kul   yom,] **kaan**   **b-iwsal**   ʕa
         if   be.PAST.PFV B-leave.IMPF early   every day,   be.PAST.PFV B-arrive.IMPF on
         l-waʔt   la l-muħadaraat
         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))

This ability of the past auxiliary *kaan* alone to mark CFs supports the view that the "past perfective" CF marking in (8) is the exponent of PAST features only.

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[3]Discussed in a footnote in Halpert and Karawani (forthcoming).

Independent **evidence for this underspecification:**

It has been independently claimed that temporal morphology can be underspecified in varieties of Arabic.

- **Imperfective** morphology as unspecified for **tense** in PA (Benmamoun, 2000; Karawani and Zeijlstra, 2010; Halpert and Karawani, forthcoming):

  - Benmamoun (2000) claims that present imperfective predicates, which receive no independent tense morphology, behave as if no tense is present in several varieties of Arabic.[4]

  - Karawani and Zeijlstra (2010) show that imperfective marked verbs alone are incompatible with a past reading:

    (10)   b-tuktob   (*mbaareħ)
             B-write.IMPF (*yesterday)
             'She usually writes/will write.'
             (habitual)/(future)   (Halpert and Karawani, forthcoming, ex. (11))

    For a past imperfective interpretation, PA requires the past tense auxiliary *kaan* (as shown below in (11)).

- **Past perfective** morphology as unspecified for **aspect** in PA (Karawani and Zeijlstra, 2010; Bjorkman, 2011; Halpert and Karawani, forthcoming):

  - Karawani and Zeijlstra (2010) argue that the *perfective* morpheme itself in Palestinian Arabic corresponds to a tense operator.

  - 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 simply as [PAST].

  - Finally, we note that the past auxiliary *kaan* in PA is a *perfective* form of the verb *be*, though no perfective meaning is conveyed (Halpert and Karawani, forthcoming), similar to the Romance auxiliary situation described above in (4).

    (11)   kaanat   tuktub
             be.PAST.**PFV** write.IMPF
             'She used to write.'   (Halpert and Karawani, forthcoming, ex. (12a))

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[4]Specifically, Benmamoun (2000) argues that present imperfective verbs in Arabic do not raise to T, citing as evidence their interaction with negation and preference for SVO word order. Based on the absence of movement to T, Benmamoun argues that present tense features are not syntactically active.

Conclusion: The tense/aspect opposition in PA is the **reverse** of the one in Greek/Romance/Zulu:

- "Past perfective" morphology is actually only [PAST] and thus can mark counterfactuality.

- Imperfective morphology is unspecified for tense; imperfective CFs require a separate past auxiliary.

6 Pattern C: Past is independent of imperfective/perfective

Finally, our proposal allows the possibility that a language has both past imperfective and past perfective morphology, with both fully specified:

	'past imperfective'	'past perfective'
(SYNTAX)		
TENSE	+PAST	+PAST
ASPECT	+IMPERFECTIVE	+PERFECTIVE

Table 3: *Feature specifications for Pattern C*

Our prediction:

- In such a language, either past imperfective or past perfective morphology can be used to mark CFs.

- The aspectual component will always correspond to the actual interpretation of the sentence.

We find examples of such a pattern in **Russian**, which shows full aspectual contrasts in CFs:

(12) 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.)

The illusion of CF aspect disappears here: the [PAST] required by CF can be conveyed by either [PAST IMPERFECTIVE] or [PAST PERFECTIVE], so we only see "real" aspect in CFs.[5]

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[5]We would argue that this is related to the fact that Slavic marks imperfective/perfective with independent (possibly derivational) morphemes on the verb.

7 Discussion and Conclusions

We have argued that it is possible to say that CFs require only PAST morphology (in languages where CFs are marked by otherwise temporal morphology).

To account for the occurrence of **aspectual** morphology in CFs:

- Morphemes can be **underspecified** for either tense or aspect.

- Tense morphology underspecified for aspect can have a canonical aspectual interpretation based on **opposition** to morphology that *is* specified for aspect.

- In languages with underspecified PAST morphemes, the PAST morpheme is required in CFs and gives the **illusion** of "fake" aspect marking.

- When past morphology is **fully** specified for aspect (as in Russian), **only** real aspect appears in CFs.

Comparison with other accounts:

- The data we discuss are **incompatible** with:

  - any account in which the semantics of imperfective aspect is required to compose CF meanings (Ippolito, 2004; Ferreira, 2011)

  - accounts that claim perfective is itself incompatible with CFs (Arregui, 2004).

  - accounts in which CFs necessarily have no **real** tense or aspect (e.g. Ferreira, 2011; Arregui, 2009) – Zulu, PA, and Russian all mark real temporal content in CFs.

- Our analysis is in line with the view that **past** is the locus of CF meaning, but distinguishes between two methods of implementation:

  - In our account, it is crucial that CFs be specified syntactically for PAST.

  - As we saw in languages like Greek, Romance, and Zulu, a morpheme that merely conveys a past *interpretation* is not sufficient to yield a CF interpretation.

  - Our account is thus most in line with proposals that claim that the past required in CFs reflects a syntactic remoteness operator (either temporal or modal) that is encoded by a specific PAST feature (Steele, 1975; Iatridou, 2000; Ritter and Wiltschko, 2010).

  - In contrast, accounts that derive CF meaning from a temporal past *interpretation* (Ippolito, 2002; Arregui, 2009; Ferreira, 2011) do not distinguish between syntactically specified PAST and past tense *interpretation*.

  - They therefore do not predict that featural underspecification should be relevant.

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A   Appendix: Some apparent counterexamples

In our conclusion, we suggested that our proposal supports the view that PAST features occur in counterfactuals because they express generalized *remoteness* (Isard, 1974; Steele, 1975; Lyons, 1977; James, 1982; Fleischman, 1989; Iatridou, 2000).

- This view is also supported by the fact that languages have been reported to repurpose locative (non-temporal) distal morphology to mark CFs (Wiltschko, 2009; Ritter and Wiltschko, 2010; Nevins, 2002).

- This raises the question of whether all categories that are repurposed for CF marking express remoteness in non-CF contexts.

In fact, though our typology covers the apparent use of aspect in range of languages that *also* use fake past to mark CFs, there are some languages in which fake aspect *alone* seems to mark CFs.

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

(13)   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, ex. (15), (12))

- As Iatridou (2009) and Bhatt (1997) discuss, habitual morphology is clearly specified for aspect in Hindi and appears in all CF constructions.

  This pattern is an apparent counterexample to our generalization that aspect plays no role in CF marking.

- However, while Iatridou (2009) assumes that Hindi is a language that requires fake past in CFs, it is not immediately clear that this is the case (cf. Bhatt, 1997).

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

(14)   a.   age fardaa   mi-raft   hafte-ye ba'd mi-resid
              if   tomorrow dur-go.PAST.Stm week-EZ next dur-arrive.PAST.Stm
              "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.Stm-1SG, a lot pride
              mi-kard-am
              dur-do.PAST.Stm-1SG
              "If I knew the answer now, I would be very proud (lit.: take pride a lot)"

- That this morphology is imperfective can be seen from the fact that it also occurs in non-counterfactual imperfectives:

(15)   a.   man har   ruz raah mi-rav-am
              I   every day path DUR-go-1sg
              "I walk every day"
    b.   man daar-am raah mi-rav-am
              I   have-1sg path DUR-go-1sg
              "I am walking (now)"

- The stem form that occurs in Persian CFs, as in (14), is traditionally referred to as the *past* form of the stem.

- This might suggest that Persian is a language in which CFs require *both* PAST and true (non-illusory) IMPERFECTIVE morphology.

- It should be noted, however, that the "past" stem does occur in some limited non-past contexts, in particular the formal future form in (16):

(16)   Sârâ daru-hâ-yaš râ   xâh-ad   xord
        S.   medicine-PL her-ACC want.3SG eat.PAST.Stm
        "Sârâ will have her medicine."   (Taleghani, 2008, ex. (30), 117)

- Its occurrence in this context suggests that despite its traditional name, the "past" stem does not actually convey semantic or syntactic past tense. Persian thus appears to be like Hindi in marking CFs with imperfective morphology alone.

It is possible that the **lack** of past marking in Hindi and Persian CFs is related to the presence of true imperfective morphology.

- Our main claim in this talk has been that the requirement for PAST can give rise to an illusion that aspect is also required.

- If CFs are *not* marked with PAST, however, they may be marked by other "fake" morphology. The question is then why imperfective can be repurposed for CF marking.

The only previous approach to aspect in CFs that can account for the Hindi data (and which could possibly be extended to Persian) is Ferreira (2011), who relies on Iatridou and Bhatt's claims that the Hindi habitual is *capable* of co-occurring with a silent past operator (and always does in CFs).

However, Hindi permits **real** aspect to be marked in addition to CF habitual marking, which is incompatible with Ferreira's assumption that CF clauses are not specified for real tense or aspect.

The question of how to account for truly imperfectively marked CFs remains an open research question.